

DOES A SUPPLIER HAVE THE MARKET
POWER WE THOUGHT IT HAD?

The Use of Vertical Integration
and Vertical Restraints to Restore
the Supplier's Market Power
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Abstract

Conventional wisdom presumes that a supplier in a monopolistic market, or in an oligopolistic market that is not perfectly competitive, has the power to charge a supra competitive wholesale price. In contrast, recent economic studies show that the supplier of an intermediate product may not be able to charge a supra competitive wholesale price. This is because the supplier will have an incentive to grant a marginal price concession to one buyer (in exchange for a fixed payment from this buyer) at the expense of competing buyers. The Article demonstrates how vertical integration and vertical restraints can be used to remove the supplier's incentive to grant such concessions, and thus restore the supplier's market power. This reveals an anticompetitive explanation for vertical integration and vertical restraints that has been neglected by legal commentators and decision-makers. Furthermore, the Article exposes more subtle legal implications of the supplier's incentive to grant concessions: vertical merger is more anticompetitive than vertical internal expansion; the "double marginalization" and "input substitution efficiencies" of vertical integration are less important than conventionally thought; when the supplier is contractually bound to enforce vertical restraints, they should raise more antitrust concern; and, in contrast to the case law's rule, minimum resale price maintenance is less anticompetitive than exclusive territories.

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I. Introduction

Legal scholars, courts and economists have conventionally thought that suppliers are able to set prices for their products so as to maximize their profits. If the supplier operates in a perfectly competitive market, the supplier is expected to charge a competitive price. On the other hand, if the supplier operates in a market that is not perfectly competitive, conventional legal and economic wisdom has generally assumed that the supplier possesses the power to charge supra competitive prices. Thus, for example, a monopolistic supplier is assumed to be able to charge a supra competitive monopoly price for its product. Even in a market with more than one, but only a few, firms (i.e., an oligopolistic market), suppliers are expected by conventional legal and economic analysis to possess the power to charge supra competitive prices.¹

This conventional wisdom has brought with it overreaching policy implications regarding vertical integration (i.e., where the supplier and a buyer are under joint control) and vertical restraints (such as a determination of the resale price the buyers are permitted to charge end consumers, or granting each buyer an exclusive territory). If a monopolistic, or oligopolistic, supplier has the power to charge a supra competitive price which maximizes its profits, it has been consistently argued that vertical integration and vertical restraints

¹ This conventional wisdom will be portrayed in more detail *infra*, note 17 and accompanying text, and throughout Part III.

involving this supplier are not anticompetitive. This is because, according to the conventional wisdom, the supplier can charge a supra competitive wholesale price² even without integrating with one (or more) of its buyers, and without imposing vertical restraints upon its buyers. Thus, the supplier's anticompetitive market power (i.e., its power to charge prices above its marginal cost)³ is manifested either with or without vertical integration and vertical restraints. These practices, so the argument goes, do not add to the anticompetitive nature of the market, which stems from the supplier's market power.⁴

This Article challenges the above-mentioned conventional wisdom. It proposes, as recent economic studies have proven, that a supplier may not possess the market power it was previously thought to possess. The reason, in a nut shell, is that when the supplier sells its intermediate product⁵ to downstream firms,⁶ and these downstream firms compete with one another (say, over the business of end consumers), the supplier may not be able to commit to charging the supra competitive price which maximizes the supplier's profits. This commitment problem is driven by the fact that the supplier may have an incentive to grant concessions to downstream firms with regard to the

² The term “wholesale price” is used for simplicity of exposition and refers also to other forms of “marginal” pricing (i.e., pricing per unit bought or sold). For example, it also refers to royalties that buyers pay the supplier per each unit sold by the buyers to consumers.

³ The marginal cost is the cost of producing and supplying the marginal unit.

⁴ Particular instances of this argument will be discussed *infra* in Part III.

⁵ Examples of a supplier of an intermediate product include a manufacturer selling to retailers, who in turn sell the product to consumers, or a supplier of an input used to produce another product, which is then sold to end consumers. The analysis applies equally to cases with more than two stages in the vertical chain. Thus, for example, the analysis and conclusions equally apply to a manufacturer selling to wholesalers, which in turn sell to retailers.

wholesale price of the supplier's product. A wholesale price concession allows the downstream firm receiving the concession to lower its resale price, steal business from its competitors, and raise its profits. This increase in profits can then be shared between the supplier and the downstream firm receiving the concession through a fixed payment from the downstream firm to the supplier.

The supplier's incentive to grant such concessions, however, has an unraveling effect, which causes the wholesale price to eventually be well below the supra competitive wholesale price which maximizes the supplier's profits.⁷ Accordingly, the incentive to grant one downstream firm a wholesale price concession at the expense of other downstream firms dissipates the supplier's market power.⁸ This may occur even in cases where the supplier enjoys a monopoly position, or is an oligopolist conventionally believed to possess market power.

Furthermore, vertical integration, as well as vertical restraints that eliminate competition among downstream firms with regard to the resale of the supplier's product, aid the supplier in solving its commitment problem. Thus, vertical integration and vertical restraints may be used by the supplier to restore its market power.⁹ This reveals an anticompetitive effect of vertical integration and vertical restraints that has not yet been addressed by legal commentary or

⁶ Downstream firms are those that buy the intermediate product and either resell the same product (in the case of downstream retailers or wholesalers) or use it as an input in the production of a new product.

⁷ This effect will be demonstrated in more detail, through a simple example, *infra* in Part II.A.

⁸ For simplicity of exposition, the supplier's difficulty in committing to charging a supra competitive price which maximizes its profits will occasionally be referred to as "the commitment problem".

⁹ As suggested by the economics literature cited *infra* at note 19.

decision-making. The legal literature and decision-making regarding vertical integration and vertical restraints presumes that the supplier can exploit its market power even without vertical integration and restraints. This presumption leads legal scholars and decision makers to treat vertical integration and vertical restraints much more leniently than warranted.

The rest of the Article is organized as follows: Part II uses a simple example to illustrate the supplier's commitment problem. It then analyzes the characteristics of the commitment problem and the conditions for its existence. In particular, the commitment problem will not exist if downstream firms do not compete with one another. On the other hand, the commitment problem still exists even where downstream firms' transfers to the supplier are a function of their actual sales (such as the case of royalty contracts, or where downstream orders are made after downstream sales are realized). That is, even when a concession to one downstream firm reduces the supplier's earnings from competing downstream firms, the supplier's urge to make the concession can be shown, under reasonable assumptions, to remain in tact.

Furthermore, a supplier might be interested in selling to downstream firms which are capacity constrained, since the commitment problem is then less likely to exist. This is because a capacity constrained downstream firm is constrained from using a wholesale price concession to steal business from its rival. It is also shown how the commitment problem exists not only where the supplier is monopolistic, but also where there are multiple (although few) suppliers in competition with one another.

Part II then examines how downstream firms' beliefs about the wholesale prices paid by their competitors affect the supplier's commitment problem. Under the plausible assumption that downstream firms are not naive, and therefore understand that given their contract with the supplier, the supplier will maximize its profits with regard to its relations with other downstream firms, the commitment problem indeed exists. Finally, it is inquired whether a supplier can overcome the commitment problem through the development of a reputation for not making wholesale price concessions. It is shown that the supplier cannot always plausibly develop such a reputation.

Part III examines the most important policy implications that the supplier's commitment problem introduces. Vertical integration helps the supplier solve the commitment problem. If the supplier is vertically integrated with a downstream firm, it has less of an incentive to grant concessions to nonintegrated downstream firms, since they will use these concessions to steal business away from the supplier's downstream affiliate. Moreover, the commonly cited "double marginalization"¹⁰ and "input substitution"¹¹ efficiencies of vertical integration turn out to be much less important than previously thought. These efficiencies are based on the idea that without

¹⁰ The double marginalization efficiency stems from the idea that without vertical integration, consumers suffer from two markups: the supplier charges a wholesale price above its marginal cost, and downstream firms add their own markup. According to this alleged efficiency, vertical integration eliminates the supplier's markup, since the supplier "charges" its downstream affiliate a wholesale price equal to the supplier's marginal cost.

¹¹ The "input substitution" efficiency refers to the case where downstream firms mix the supplier's input with other inputs to produce a new product. It is claimed that without vertical integration, if the supplier possesses market power, downstream firms will use an inefficiently low proportion of the supplier's input.

vertical integration the supplier possesses market power. Due to the commitment problem, however, without vertical integration the supplier does not possess market power as conventionally believed.¹² Additionally, vertical restraints that eliminate downstream competition (e.g., operation through a sole outlet, imposition of minimum resale price maintenance (“minimum rpm”), or creation of exclusive territories for each downstream firm) when effectively implemented, can help the supplier solve its commitment problem. If downstream firms do not compete with one another, a downstream firm cannot use a wholesale price concession to steal business from its rivals. This eliminates the supplier’s and a downstream firm’s motivation to negotiate a wholesale price concession.

The commitment problem also introduces more subtle implications regarding vertical integration and vertical restraints. For example, if the supplier faces the commitment problem, vertical merger with an existing downstream firm can be shown to be more anticompetitive than vertical internal expansion by the supplier. This is because vertical internal expansion adds a new downstream facility while vertical merger eliminates a formerly unintegrated downstream firm. Since under internal expansion there are more unintegrated downstream firms (other things being equal) than under vertical merger, the supplier’s urge to make concessions on the expense of unintegrated

¹² When downstream firms do not compete, the “double marginalization” and “input substitution” efficiencies are unimportant for other reasons. Although the commitment problem does not exist without downstream competition, in such cases the supplier would generally prefer to eliminate its markup and share downstream profits through fixed franchise fees (see *infra* note 89).

downstream firms is greater (and therefore prices will be lower) under internal expansion.

The commitment problem also offers a justification for a refined version of the “vertical agreement” doctrine.¹³ Minimum rpm, sole outlet, or exclusive territories arrangements which contractually bind the supplier to enforce them are potentially more anticompetitive than such schemes unaccompanied by such a contractual obligation.¹⁴ This is because without such a binding contract, the supplier may have the urge (due to the commitment problem portrayed above) to encroach on the downstream firm’s exclusive territory or segment and sell to additional downstream firms, for lower wholesale prices, or to grant concessions to downstream firms while allowing them to deviate from the resale price floor. Such opportunistic behavior will tend to lower resale prices. A binding contract credibly commits the supplier not to breach the downstream firm’s exclusivity, leaving resale prices high.

A related implication of the commitment problem is that minimum rpm may be less anticompetitive than exclusive territories. This is because conventional minimum rpm schemes (even if they were enforceable in court) do not contractually bind the supplier to enforce them. On the other hand, most conventional exclusive territories schemes (if enforceable in court) *do*

¹³ According to the traditional vertical agreement doctrine, if the supplier unilaterally chooses to operate through a sole outlet, or through downstream firms in exclusive territories, there is no vertical agreement and thus no Sherman Act Section 1 violation (Sherman Act Section 1 (15 U.S.C. §1 (1994)), prohibits agreements that restrain trade). See *United States v. Colgate & Co.*, 250 U.S. 300 (1919); *Monsanto Co. v. Spray-Rite Svce. Corp.*, 465 U.S. 752 (1984).

¹⁴ Cindy R. Alexander and David Reiffen, *Vertical Contracts as Strategic Commitments: How are They Enforced?*, 4 J. ECON. & MANAG. STRAT. 623 (1995) make this point.

contractually bind the supplier not to deviate from them. Thus, exclusive territories enable the supplier to more credibly commit not to behave opportunistically. This stands in contrast to the case law's more lenient treatment toward exclusive territories than toward minimum rpm.¹⁵

Part III also stresses that although the commitment problem is probabilistic, so are other anticompetitive effects that have traditionally been the basis for antitrust intervention. A striking example is antitrust's scrutiny of horizontal mergers, which is based on probabilistic anticompetitive effects.

II. The Supplier's Commitment Problem--a Challenge to the Conventional Wisdom

A. A simple example

Suppose a monopolistic supplier, say, of Barbie Dolls¹⁶ sells its Barbie Dolls through two toy retailers: toy retailer A and toy retailer B. The toy retailers sell the Barbie Dolls to end consumers and compete with one another over these end consumers. Conventional economic and legal analysis has

¹⁵ See *Continental T.V. v. GTE Sylvania*, 433 U.S. 36 (1977) (holding that exclusive territories are subject to a rule of reason inquiry) and, on the other hand, *Dr. Miles Medical Co. v. John D. Park & Sons Co.*, 220 U.S. 373 (1911) (holding that minimum rpm is subject to a per se prohibition); See also *Business Electronics Corp. v. Sharp Electronics Corp.*, 485 U.S. 717 (1988). To be sure, the particular exclusive territories scheme in the above-mentioned *Continental T.V.* case did not obligate the supplier to protect a downstream firm's exclusivity (see Alexander and Reiffen, *id.*). Still, the legal rule created by this case does not distinguish between exclusive territory schemes that obligate the supplier to enforce them and exclusive territory schemes that do not bind the supplier in such a way. The article implies that courts and agencies should make such distinctions.

¹⁶ For the sake of simplicity and emphasis, it is assumed that the supplier is a monopolist and faces no competition from other suppliers. One can imagine, for example, that consumers of Barbie dolls see no other doll as a close substitute, and, additionally, that no other manufacturer produces Barbie dolls. We shall see in Part II.D that the substantive point made here is similar in the case where competing manufacturers exist.

assumed that the competition between the toy retailers does not affect the monopolistic Barbie doll supplier's ability to charge high prices. It is conventionally thought that because there are no other suppliers of Barbie dolls the monopolist can set a high wholesale price per Barbie doll, that maximizes its profits.¹⁷ In other words, it has been generally assumed that the monopolist can charge the monopoly wholesale price for the Barbie dolls it sells.¹⁸

This conventional wisdom, however, does not necessarily hold.¹⁹ To see this, suppose that, despite the competition between the toy retailers, they are able to make profits from selling the Barbie Dolls to end consumers. That is, the toy retailers are able to sell each Barbie doll for more than their marginal cost of selling the Barbie Dolls.²⁰ In particular, suppose each of the toy retailers

¹⁷ Most economics literature dealing with vertical relations and vertical restraints make this assumption. See, for example JEAN TIROLE, *THE THEORY OF INDUSTRIAL ORGANIZATION* ch. 4 (1988); M. Katz, *Vertical Contractual Relationships* in *HANDBOOK OF INDUSTRIAL ORGANIZATION* ch.11 (Richard Schmalensee and R. Willig, eds. 1989); Frank Mathewson and Ralph A. Winter, *An Economic Theory of Vertical Restraints* 15 *RAND J. ECON.* 27 (1984); Martin K. Perry and Robert H. Porter, *Can Resale Price Maintenance and Franchise Fees Correct Sub-optimal Levels of Retail Service?*, 8 *INT'L J. INDUS. ORGANIZATION* 115 (1989); Janusz A. Ordover et. al., *Equilibrium Vertical Foreclosure* 80 *AM. ECON. REV.* 127 (1990). In addition, all legal analyses of vertical integration and vertical restraints make this assumption as well, either implicitly or explicitly. See *infra* Part III.

¹⁸ One notable exception is the "countervailing power" theory, which hinges on the possibility that strong and large buyers may possess bargaining power that can countervail the monopolist supplier's market power (see e.g., F.M. SCHERER AND DAVID ROSS, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 528 (3d ed. 1990). The point that we make in this Article regarding the supplier's commitment problem, however, is different, both analytically and with regard to the factual assumptions on which it hinges. In particular, as will be revealed shortly, the existence of the commitment problem does not depend on the buyers being large, or having any bargaining power whatsoever.

¹⁹ A few recent economic studies show this through the use of formal models. See Oliver Hart and Jean Tirole, *Vertical Integration and Market Foreclosure* *BROOKINGS PAPERS: MICROECONOMICS* 1990 205; Daniel P. O'Brien and Greg Shaffer, *Vertical Control with Bilateral Contracts*, 23 *RAND J. ECON.* 299 (1992); and R. Preston McAfee and Marius Schwartz, *Opportunism in Multilateral Vertical Contracting: Nondiscrimination, Exclusivity, and Uniformity*, 84 *AM. ECON. REV.* 210 (1994).

²⁰ This will occur, for example, if the toy retailers' stores are located at different locations. In such a case, each toy retailer can attract some consumers (those who are located nearest to this toy retailer) even if the other toy retailer is selling for a somewhat lower price. For a formal economic model illustrating this see, for example, Tirole, *supra* note 17 at 279; and ANDREU MAS-COLELL ET. AL.,

is able to make a total present value of \$400 from selling Barbie Dolls. Suppose further that the Barbie doll supplier attempts to set the monopoly wholesale price per Barbie doll (say, a price of \$10 per Barbie doll). Let us assume that if the supplier charges the monopoly wholesale price per Barbie doll, it makes a total present value of \$1000.

But if the supplier attempts to charge the monopoly wholesale price per Barbie doll (of \$10), the supplier and one of the toy retailers, say, toy retailer B, will have an incentive to negotiate the following secret deal: The supplier will secretly cut the wholesale price per Barbie doll that toy retailer B has to pay (say, from \$10 per Barbie doll to \$9 per Barbie doll).²¹ This will grant toy retailer B a competitive advantage over toy retailer A, since toy retailer B will now buy each Barbie doll for less. Toy retailer B can therefore cut its retail price of Barbie Dolls and steal business away from toy retailer A. Consequently, suppose toy retailer B expects to make a total present value of \$405 from selling Barbie Dolls, while toy retailer A will make only a total present value of \$395 from selling Barbie Dolls (instead of the \$400 it would have made but for the concession toy retailer B got). Thus, toy retailer B would be willing to pay the supplier a fixed payment of up to \$5 in exchange for such a wholesale price concession. Such a fixed payment can make the wholesale

MICROECONOMIC THEORY 395 (1995). Pricing above marginal cost is also predicted if, in the eyes of consumers, the toy retailers provide somewhat different services (*id.*).

²¹ The assumption that this deal is secret and is not observed by toy retailer A simplifies the analysis. However, as will be shown in Part II.F *infra*, even when concessions are observed by competing retailers, the commitment problem may still exist.

price concession (from \$10 per Barbie doll to \$9 per Barbie doll) worthwhile to the supplier.

Suppose the supplier's loss in profits from sales involved in the concession to toy retailer B is \$1. This loss in profits is attributable to two factors. First, the wholesale price which maximizes the supplier's profits from sales is, by assumption, \$10 per Barbie doll, and not \$9. Therefore, if the supplier sells the Barbie Dolls for any price below \$10 per unit, it must forgo some profits from sales. Second, to the extent that toy retailer A's transfers to the supplier are a function of toy retailer A's actual sales of Barbie Dolls, toy retailer A's lost business will translate into lower transfers from toy retailer A to the supplier.

Part II.C below will show how a concession will still be worthwhile for the supplier, even in cases where toy retailers' transfers to the supplier are a function of their actual sales. As to the fact the supplier loses from lowering the wholesale price below the wholesale price that maximizes the supplier's profits, as can be shown, generally, this factor will not prevent the supplier from facing the commitment problem.²² This is because a small concession that the supplier will grant toy retailer B will affect the supplier's profits from sales only a little, if the concession is small enough. Still, even a small concession toy retailer B gets may enable toy retailer B to cut its retail price and steal a considerable market share from toy retailer A. Toy retailer B's resulting increase in profits

²² See O'Brien and Shaffer, *supra* note 19, at 303.

can be shown, under reasonable assumptions, to always be greater than the supplier's loss due to a slight deviation from its monopoly price.

The same can be said for additional price concessions. Suppose the supplier indeed granted a small concession to toy retailer B (from \$10-the monopoly wholesale price-to \$9). Now that the price toy retailer B is paying is \$9, another small concession will also affect the supplier's profits only slightly, while the potential gain that toy retailer B can make by stealing business from toy retailer A is again considerable.

Since the supplier's profits from sales go down only by \$1, the supplier will still grant the concession to toy retailer B if toy retailer B will pay the supplier a fixed payment above \$1. As we have seen above, toy retailer B is indeed willing to pay the supplier a fixed payment above \$1, as long as it does not exceed \$5 (the profits toy retailer B makes from the concession granted to it). Therefore, in this example, there exists a mutually beneficial deal between the supplier and toy retailer B according to which toy retailer B will get the concession and pay the supplier a fixed payment between \$1 and \$5. For example, toy retailer B can pay the supplier a fixed payment of \$2. In such a case, the supplier's total expected profits will be $999 + 2 = 1001$, toy retailer B's total profits will be $405 - 2 = 403$, and toy retailer A's total profits will be \$395.

Thus, despite the fact that the monopoly wholesale price (which maximizes the supplier's profits from sales) is \$10, the supplier may find it difficult to commit to charging the monopoly wholesale price. In the above-mentioned example, the supplier would have an incentive to grant toy retailer B

a wholesale price concession. This is because, although the supplier consequently earns less from direct sales, this loss is more than compensated for by the fixed payment toy retailer B pays the supplier in exchange for the wholesale price concession. This fixed payment is funded by the business toy retailer B steals from toy retailer A thanks to the concession. Naturally, toy retailer B and the supplier, when bargaining over the concession, disregard toy retailer A's lost profits, and seek to maximize only their own profits.

Toy retailer A, on its part, if it is rational and sophisticated enough, will understand that the supplier and toy retailer B have an incentive to negotiate such a secret wholesale price concession. Accordingly, toy retailer A might not be willing to pay the supplier the monopoly wholesale price of \$10 in the first place. Put differently, toy retailer A itself will demand a wholesale price concession from the supplier. The supplier, despite it being a monopolist, will find it hard to refuse, because, as toy retailer B, toy retailer A too will be able to offer the supplier a fixed payment (say, of 2) that will more than compensate the supplier for the concession.

In fact, for any wholesale price the supplier aims to set which is above the supplier's marginal cost of supplying the Barbie Dolls, each toy retailer in this example will fear that the supplier is making a secret wholesale price concession in favor of the competing toy retailer. Moreover, for every wholesale price above the supplier's marginal cost, the supplier and a toy retailer will be able to raise their joint profits by negotiating a wholesale price concession on the expense of the other toy retailer. According to this reasoning,

the wholesale price will eventually be equal to the supplier's marginal cost of supplying the Barbie Dolls.

The fact that a supplier of an intermediate product may not be able to commit to charging a supra competitive wholesale price which maximizes its profits, even if this supplier is a monopolist, or one among only a few firms,²³ is striking. It involves policy implications for a whole array of antitrust issues. The most important policy implications will be treated *infra* in Part III. It is also important, however, to point out that a supplier of an intermediate product will not always be unable to commit to charging a supra competitive wholesale price. The following sections will explore in more detail the conditions required to create the supplier's commitment problem.

B. Competition among downstream firms

In order for the supplier's commitment problem to arise it is necessary that the downstream firms to which the supplier sells compete with one another. If downstream firms do not compete with one another, there is no joint incentive on the part of the supplier and a downstream firm to negotiate a wholesale price concession. In the above-mentioned example, suppose toy retailer A and toy retailer B did not compete with regard to Barbie dolls, because one of them sells such dolls only to businesses, and the other sells them only to individuals, or because they are both owned by the same firm.²⁴ The

²³ See *infra* Part II.D.

²⁴ The same result applies in the case where downstream firms do operate in the same relevant market but there is nevertheless no competition among them, because downstream prices are fixed, either by a

supplier will not agree to negotiate a wholesale price lower than the monopoly wholesale price. The monopoly wholesale price, by definition, maximizes the supplier's profits from sales, and any lower wholesale price would reduce its profits from sales. None of the toy retailers will be induced to offer any fixed payment, or other type of transfer, that would make a wholesale price concession worthwhile to the supplier. This is because there is no competing toy retailer from which any of the toy retailers can steal business by lowering retail prices.

Surely, if a toy retailer were to receive a wholesale price concession, this toy retailer's profits would rise (either if the toy retailer passed on the price concession to consumers and increased sales, or if the toy retailer kept the retail price as high as before and pocketed the reduction in the wholesale price). But these increased profits of the toy retailer are not at the expense of the other toy retailer (because the toy retailers do not compete with regard to Barbies). The increased profits are purely at the expense of the supplier, which sold the dolls for less than its profit-maximizing wholesale price. This is precisely why the supplier will not agree to such a wholesale price concession, and the toy retailer cannot offer the supplier any fixed payment that would make the concession worthwhile to the supplier. Accordingly, when there is no competition among downstream firms, the supplier is able to commit to charging a supra competitive wholesale price, as assumed by conventional wisdom.

regulatory agency or by some form of cartel among the downstream firms. Downstream competition may also be eliminated by an effectively implemented vertical restraint. The latter will be discussed at

i. Downstream capacity constraints

Even if downstream firms compete with one another, the downstream firm receiving the concession must have the capacity to serve all of the buyers that will flow to it when it cuts its retail price. Therefore, when all downstream firms are capacity constrained, the supplier is better able to commit not to grant concessions. This suggests that the supplier might prefer its downstream buyers to operate in smaller facilities, since their capacity constraint would help the supplier better commit to a supra competitive profit maximizing wholesale price.

Interestingly, an empirical study of gasoline retailing²⁵ finds that totally independent gasoline retailers, with which the refiner experiences the least control over retail prices²⁶ have considerably less capacity than stations that are subject to more scrutiny from the refiner. This result is consistent with the point made in the preceding paragraph. The more control the refiner has over retail prices, the weaker its commitment problem, since the supplier could use its control over retail prices to overcome the commitment problem. The supplier can do so by eliminating downstream competition²⁷ or by eliminating retailers' profits, say, through effective minimum purchase requirements, inducing the

Parts III.B-III.C *infra*.

²⁵ Andrea Shepard, *Contractual Form, Retail Price, and Asset Characteristics in Gasoline Retailing*, 24 RAND J. ECON. 58, 67-68 (1993).

²⁶ *Id.* at 62.

²⁷ See Part II.B *supra* and Parts III.B-C *infra*, showing how elimination of downstream competition solves the commitment problem.

retailer to lower retail prices.²⁸ When stations are independently owned, and such control by the refiner is less effective or possible, the supplier could still avoid the commitment problem by making sure the independent stations it works with are capacity constrained.

If some downstream firms are capacity constrained and some are not, the supplier's commitment problem would be only partly eliminated. The supplier would have an incentive to negotiate concessions with downstream firms that are not capacity constrained, but would be able to charge downstream firms that are capacity constrained a supra competitive wholesale price.

C. Are transfers from downstream firms to the supplier a function of downstream sales?

Suppose, in the example of Part A above, that toy retailer A's payments to the supplier are a function of toy retailer A's actual sales. For instance, toy retailer A's contract with the supplier could provide that toy retailer A pay the supplier a fixed royalty for every Barbie doll toy retailer A manages to sell. When toy retailer B receives a wholesale price concession (or a concession with regard to the royalty per unit retailer B has to pay), cuts its retail price, and steals business away from toy retailer A, toy retailer A will sell fewer Barbie

²⁸ If downstream firms make no profits, the commitment problem does not exist. Zero profits downstream mean that all profits from sales of the supplier's product to consumers go to the supplier. In such a case, the supplier has no incentive to grant a downstream firm a concession, since if this downstream firm uses it to steal business from other downstream firms this reduced business would be completely at the expense of the supplier. See *infra* notes 31-34.

Dolls, and consequently pay less royalties to the supplier.²⁹ Thus, although the supplier gains from granting a concession to toy retailer B (through a fixed payment from toy retailer B), the supplier loses from a decline in toy retailer A's payments.

At first blush, it might be thought that in such a case—where the supplier loses from a decline in toy retailer A's sales and payments—the commitment problem might disappear, since a concession the supplier grants retailer B backfires on the supplier via reduced payments from retailer A. However, economists O'Brien and Shaffer³⁰ show, in a formal model using quite general and reasonable assumptions, that even when downstream firms' transfers to the supplier are a function of their actual sales, the commitment problem still exists.

In particular, it can be shown that the commitment problem will exist as long as downstream firms' net profit (profit from sales net of the downstream firms' payments to the supplier) decrease when a rival downstream firm receives a wholesale price concession. In such cases, the supplier does not internalize a downstream firm's entire loss from a concession granted to a rival downstream firm. This condition for the commitment problem to exist turns out to always be true.³¹

²⁹ See McAfee and Schwartz, *supra* note 19, at 220.

³⁰ *Supra* note 19.

³¹ To roughly illustrate O'Brien and Shaffer's formal result, recall that the commitment problem exists as long as a downstream firm's net profits from sales is a declining function of the wholesale price its rivals pay. As can be shown, this condition is met if downstream firms' marginal payment (i.e., their payment for the marginal unit they sell) to the supplier is lower than their retail price. But if transfer

There is only one unlikely exception to this result, which is the case where marginal payments to the supplier *equal* the retail price charged by the downstream firm.³² As can be shown, in such cases the commitment problem disappears. Intuitively, if the injured downstream firm makes no profits from sales, this means all of these profits are transferred to the supplier. Therefore, it must be the case that the supplier internalizes all of the losses the concession caused. In practice, it is highly unlikely, however, that a downstream firm would want to operate where it expects to make zero profits from sales. Even if the supplier induces downstream firms to operate in such situations, by giving them a fixed payment (such as a slotting allowance, a “bonus”, and the like) the supplier would have to carefully scrutinize these downstream firms’ behavior: examine how they promote the supplier’s product, the shelf space they grant it, and the services they provide. Without such close scrutiny, downstream firms will not have an incentive to promote the supplier’s product, since they make zero profits from selling it.³³ Indeed, many empirical studies and case studies

arrangements are such that a downstream firm has to pay the supplier a marginal payment *exceeding* its retail price, the downstream firm would lose from sales and would rather not sell at all.

³² What matters is a downstream firm’s *marginal* payments to the supplier and not *total* payments. If downstream firms pay the supplier a fixed payment (e.g., a franchise fee) that is not a function of actual downstream sales, this payment would not affect the analysis. Even if this fixed payment is large, and leaves downstream firms, overall, with no profits, the commitment problem would still exist, as long as downstream firms, after “sinking” the fixed payment, make profits from sales, i.e., charge retail prices exceeding their marginal payments to the supplier.

³³ One way the supplier could overcome this problem is by conditioning the fixed payment it pays downstream firms upon downstream firms’ reaching a pre-specified target of sales. However, the supplier might have inferior information as to the level of demand downstream and as to what would be the appropriate target. Moreover, if the supplier is dominant in its market, it might be constrained from using such “loyalty rebates”, due to the fear of antitrust scrutiny. Loyalty rebates granted by a dominant supplier might exclude competing suppliers and may constitute unlawful monopolization, in violation of Section 2 of the Sherman Act (that declares a felon “every person who shall monopolize, or attempt to monopolize ... any part of the trade or commerce among the several States....” 15 U.S.C. 2 (1994)).

show, for the industries examined in them, how downstream firms make positive profits from sales.³⁴

D. Multiple suppliers

The commitment problem also may dissipate market power short of monopoly power. For example, if the Barbie doll supplier from Part II.A faces (imperfect) competition from a Cindy doll supplier, conventional industrial organization analysis predicts they can both charge prices exceeding their marginal costs of production provided that consumers view Cindy dolls as somewhat different from Barbie Dolls.³⁵ If these suppliers sell through toy

³⁴ See Francine Lafontaine, *Agency Theory and Franchising: Some Empirical Results*, 23 RAND J. ECON. 263 (1992) (showing that downstream firms make positive profits in Business Format Franchising); See also Francine Lafontaine, *How and Why Do Franchisors Do What They Do: A Survey Report*, in FRANCHISING: PASSPORT FOR GROWTH AND WORLD OF OPPORTUNITY (Patrick J. Kaufmann ed. 1992), at 18 (Lafontaine finds that only 2 of the 117 franchisors in her survey asked for royalty rates that increased with the level of sales, which have the nature of leaving downstream firms with very low profits from sales. All other 115 franchisors in the survey either used fixed royalties or decreasing royalties-which have the nature of leaving downstream firms with considerable profits from sales); See also FRANCINE LAFONTAINE & KATHRYN L. SHAW, THE DYNAMICS OF FRANCHISE CONTRACTING: EVIDENCE FROM PANEL DATA 8, 11 (National Bureau of Economic Research Working Paper No. 5585, 1996) (finding, using data from 2782 franchising firms between the years 1980-1992, that royalty rates are usually constant over time, and have an average rate of only 6.2% of sales and a maximum rate of 30% of sales, again leaving franchisees with considerable profits from sales); Kabir C. Sen, *The Use of Initial Fees and Royalties in Business-format Franchising*, 14 MANAGERIAL & DECISION ECON. 175, 183 (1993) (examining a sample of 1046 franchises and finding the mean royalty rate to be only 5.36% and the maximum royalty rate to be 50%, meaning that all franchisees in his sample are left with considerable profits from sales); Patrick J. Kaufmann & Francine Lafontaine, *Costs of Control: The Source of Economic Rents for McDonald's Franchisees*, 37 J. LAW ECON. 417 (1994) (downstream profits from sales found to exist in McDonald's franchises); Richard L. Smith II, *Franchise Regulation: An Economic Analysis of State Restrictions on Automobile Distribution*, 25 J. L. & ECON. 125, 129 (1982) (downstream profits from sales found to exist in car dealerships); Shepard, *supra* note 25 (downstream profits from sales exist in the case of gasoline retailers).

³⁵ See *supra* note 20. A supplier facing few competitors is also conventionally expected to possess market power if the location of its facility is important to downstream firms buying from it and this location is somewhat separated from the locations of other suppliers' facilities (*id.*). Finally, if suppliers' facilities have constrained capacity, suppliers are again expected to have the power to charge a price above their marginal costs (Tirole, *supra* note 17 at 211).

retailers, however, which are in competition with one another,³⁶ they may face the same commitment problem faced by the monopolistic Barbie doll supplier of Part II.A: they will be induced to grant one toy retailer a concession at the expense of the other. Accordingly, the suppliers may be compelled to charge wholesale prices well below their profit maximizing wholesale prices.³⁷

E. Can the supplier develop a reputation for not making concessions?

An obvious question arising from the preceding analysis is whether the supplier can somehow avoid the commitment problem by developing a reputation for not making wholesale price concessions. If the supplier expects to operate for a very long time, it would benefit from developing such a reputation. In the example from Part II.A, if the Barbie doll supplier succeeds in developing a credible reputation of one who never grants wholesale price concessions, neither toy retailer would suspect that the supplier is granting concessions to the other toy retailer. In such a case, toy retailers will agree to pay the supplier the monopoly wholesale price at the outset, and they will not try to negotiate concessions. In some industries, such a reputation may be feasibly developed.³⁸ In many other industries, however, such a reputation cannot be successfully developed. The following discussion will show that in

³⁶ For our purposes, it does not matter whether there are only two retailers, which sell both Cindies and Barbies, or whether there are two retailers which sell Cindies and two different toy retailers which sell Barbies.

³⁷ If some of the competing suppliers overcome their commitment problem (e.g., by using vertical integration or vertical restraints) and others do not interesting questions arise regarding suppliers' corresponding pricing behavior. This will be pursued further *infra* Part III.A, note 64 and accompanying text.

many cases, the supplier will find it difficult to develop a credible reputation for not making concessions.

A reputation for not making concessions, in most cases, cannot be developed unless there is a way for the injured downstream firms to somehow retaliate in response to a concession granted to their competitors.³⁹ If downstream firms cannot credibly threaten to somehow “punish” the supplier for granting concessions, it will be very difficult for the supplier to credibly commit to not granting them. After all, as we have seen, if the supplier attempts to charge a wholesale price above its marginal cost, it can make a profit from granting a concession.

A threat on the part of downstream firms to retaliate in response to a concession granted to a competing downstream firm will not always be credible, however. First, usually the threat of retaliation is not credible if retaliation is painful to the retaliator, since it will find it profitable to reconsider its threat. Suppose the supplier, in our example, grants toy retailer B a concession at the expense of toy retailer A. Suppose further that toy retailer A finds out about the concession and wants to retaliate against the supplier (say, by terminating its relationship with the supplier, or preferring other suppliers). The supplier could always offer toy retailer A an even greater concession-at the

³⁸ See Michael Hardt, *Market Foreclosure Without Vertical Integration*, 47 *ECON. LETTERS* 423 (1995).

³⁹ Such retaliation could take the form of terminating the relationship with the supplier (See O'brien and Shaffer, *supra* note 19, at note 8), buying less from the supplier and more from its competitors, granting the supplier less attractive shelf space, and so on. Hardt, *supra* note 38, assumes that downstream firms retaliate by agreeing to pay no more than the supplier's marginal cost in future

expense of toy retailer B. Toy retailer A now faces a choice between retaliating (causing harm not only to the supplier but also to itself) or receiving an even greater concession from the supplier, which will raise toy retailer A's profits. Toy retailer A's incentive to choose the latter course of action considerably weakens the credibility of the former. Of course, if downstream firms' threat of retaliation is not credible, the supplier will not be deterred from granting concessions. Knowing this, downstream firms will not agree to pay a supra competitive wholesale price at the outset.

Second, if the supplier is dominant in its market, toy retailer A may have very little leverage to harm the supplier in any way, since it depends on the supplier's business. Third, toy retailer A may need to invest, from the beginning of its dealings with the supplier, in sunk, relationship specific, investments, that bind toy retailer A to the supplier. This, again, weakens the credibility of toy retailer A's threat to retaliate by terminating its relationship with the supplier, or buying less from it.⁴⁰

Fourth, the concession to toy retailer B might not be observable by toy retailer A. In such a case, of course, toy retailer A cannot threaten to "punish" the supplier, because it is not aware of the concession. It could be argued that toy retailer A may be able to infer that toy retailer B has received a concession from the fact that toy retailer B cut its resale price. Toy retailer B's price cut may also be explained, however, by factors other than a wholesale price

periods, once they realize that the supplier has granted a concession. This particular form of retaliation will be discussed shortly.

concession from the supplier, such as a reduction in toy retailer B's other costs, or a reduction in the demand for toy retailer B's services. Furthermore, in more complex cases than the one in our example, when there are several stages in the vertical chain (e.g., a manufacturer sells to wholesalers, who sell to retailers, and only the retailers sell to end consumers) tracing a manufacturer's price concession to a wholesaler, that was passed on down the vertical chain (to retailers, and, finally, to end consumers) may be even more difficult.

In cases where toy retailer A is not certain if the supplier indeed granted a concession to toy retailer B, it would be hard for toy retailer A to credibly retaliate, since it would have to retaliate every time toy retailer B cuts its retail price, even where the cut was induced by factors other than a concession from the supplier. Retaliation in such a great number of cases would be harmful to toy retailer A, and therefore less credible. Finally, if there are several downstream firms, each may try to free ride on the other downstream firms' efforts to discipline the supplier. Since such acts of discipline harm the punishing downstream firm as well as the supplier, each downstream firm would prefer that the other downstream firms discipline the supplier.⁴¹ Thus, all downstream firms might refrain from action, relying on others to act instead.

⁴⁰ See McAfee and Schwartz, *supra* note 19.

⁴¹ A downstream firm terminating its relationship with the supplier suffers all of the costs of such punishment, but shares the benefits of it with its downstream competitors.

Hardt⁴² presents a formal model in which the supplier, in certain cases, will not grant concessions, out of its fear that downstream firms (that formerly agreed to pay the monopoly wholesale price) which observed a concession granted to their rival, will not agree to pay more than the supplier's marginal cost in the future. In Hardt's framework, if a supplier is deterred by the fear that downstream firms will not agree to pay more than the supplier's marginal cost in the future, this serves as a credible commitment on the part of the supplier not to grant concessions. Knowing this, downstream firms will agree to pay the monopoly wholesale price at the outset.

This type of supplier reputation too might not always be achievable. First, as demonstrated above, concessions to one downstream firm are not always observable to other downstream firms. If downstream firms cannot observe a concession granted to their rival, the supplier will still have an incentive to grant the concession and make a profit. The same would be true if downstream firms can "put one and one together" and realize such a concession had been made, but only a considerable time after the concession was granted. In such a case there is a considerable time lag between granting the concession and retaliation by injured downstream firms—a time lag in which the downstream firm receiving the concession could steal a considerable amount of profits from its rivals. Accordingly, the profits that can be made from the concession may well outweigh the future losses due to the delayed retaliation.

⁴² *Supra* note 38.

Second, the reputation Hardt speaks of is best developed when the supplier and downstream firms expect to interact for a considerably long time. This is not always the case.⁴³

Third, even if the supplier and downstream firms expect to interact for a long time, the question if the supplier will be deterred by retaliation depends on the weight the supplier places on future profits versus current profits. The higher the interest rate, and the larger are the supplier's current deals with the downstream firm receiving the concession, the less weight the supplier will place on future profits and the more weight it will place on current profits. Accordingly, the supplier's short term profits from granting the concession may outweigh its long term loss from retaliation by downstream firms.

The analysis here resembles, in many respects, that of cartels between competitors. Cartels between competing firms too have been shown to *sometimes* be stable even without communication between the firms and without the use of practices that help firms commit not to undercut the cartel's price.⁴⁴ A firm might be deterred from undercutting the cartel price (thereby developing a "reputation" for not cheating the cartel) because it realizes its competitors will retaliate and a price war will occur in future periods. Still, it is well known that the threat of a price war does not always deter a firm from

⁴³ In certain industries, a big fraction of sales is concentrated in a particular time of the year (e.g. toys in Christmas, or Matzos in Passover). In such short periods, a reputation for not making concessions is particularly hard to develop.

⁴⁴ See Tirole, *supra* note 17 at ch. 6.

cheating on the cartel. Firms sometimes need to use practices that facilitate cartels in order for the cartel to succeed.⁴⁵

The point made here is analogous; Suppliers could *sometimes* solve their commitment problem via their reputation and without using vertical integration or vertical restraints. In many other cases, however, suppliers need vertical integration and vertical restraints to solve the commitment problem, since they will not be able to develop a credible reputation for not making concessions. Practices facilitating cartels are conventionally thought to be anticompetitive, in spite of the fact cartels are *sometimes* stable even without such practices. This Article argues that vertical integration and vertical restraints are anticompetitive, because they improve the *prospects* of the supplier's solving its commitment problem, in those cases where the supplier cannot develop a reputation for not making concessions.

F. Observability by downstream firms of concessions given to their competitors

In the toy retailing example of Part II.A, we assumed that concessions granted by the supplier to toy retailers are secret, and competing toy retailers cannot observe them after they are given. This assumption simplified the analysis. In this subsection, we shall examine the consequences of relaxing this assumption. As can be shown, the supplier's inability to commit to charging its profit-maximizing wholesale price may exist whether or not downstream firms

⁴⁵ See Tirole, *id.* and Scherer & Ross, *supra* note 18 at ch. 7.

are able to observe concessions made in favor of their competitors.⁴⁶ Nevertheless, if downstream firms are able to observe concessions made by the supplier in favor of their competitors, the analysis of the supplier's commitment problem becomes more complex.⁴⁷

When downstream firms observe a concession given to their competitor, they might readjust their pricing strategies accordingly. This readjustment will generally be anticipated by the supplier and the downstream firm receiving the concession, and it may change the magnitude of the concession. In our toy retailer example, suppose the supplier grants a wholesale price concession to toy retailer B, and that both parties know that toy retailer A will be able to observe this concession after it has been granted. Suppose further that after observing the concession granted to toy retailer B, and anticipating that toy retailer B will consequently cut its retail price, toy retailer A readjusts its pricing strategy and price cuts itself. Toy retailer A may react in such a manner in order to "strike first" and mitigate the harm that the anticipated price cut by toy retailer B will cause.⁴⁸ Such a reaction is expected to harm toy retailer B, since, by price cutting, toy retailer A steals some business back from toy retailer B. If the supplier and toy retailer B anticipate this reaction on the part of toy

⁴⁶ McAfee and Schwartz, *supra*, note 19, at 221.

⁴⁷ One implication of downstream firms being able to observe concessions was stated in Part II.E, *supra*: observability of concessions is a necessary (though not a sufficient) condition for the supplier to be able to credibly develop a reputation for not making concessions, thereby avoiding the commitment problem.

⁴⁸ Such a response would be feasible for toy retailer A only in a situation in which toy retailer A is charging resale prices above its marginal costs. For a formal presentation of this type of competitive interaction among firms (termed in the industrial organization literature as "strategic complements", see Tirole, *supra* note 17 at 323-337.

retailer A, they will typically negotiate a smaller concession than they would have otherwise negotiated. By negotiating a smaller concession (thereby enabling a smaller price cut by toy retailer B) they would mitigate toy retailer A's eagerness to price cut itself. In such cases, it can be shown that the eventual wholesale price charged by the supplier will be somewhat higher than the supplier's marginal cost.⁴⁹

An opposite effect is expected to occur if an anticipated price cut by toy retailer B would make toy retailer A extract output (rather than price cut and try to attract more business), or leave the market altogether (due to reduced profits).⁵⁰ Under such circumstances, toy retailer B and the supplier would tend to negotiate an even larger concession than they would have negotiated but for their anticipation of such a response. This is because a larger concession would enable toy retailer B to charge an even lower retail price, which would trigger more extraction of output (or even exit of the market) by toy retailer A. This would raise toy retailer B's profits even more. In such cases, the commitment problem is exacerbated by downstream firms' eagerness to become more aggressive and induce their rivals to extract output.⁵¹

Therefore, the joint incentive of the supplier and each toy retailer to negotiate price concessions would still exist, even where concessions in favor

⁴⁹ McAfee and Schwartz, *supra*, note 19, at 221.

⁵⁰ This type of competitive interaction, where when one firm becomes more "aggressive" (i.e., cuts prices and increases output) the competing firm raises prices and reduces output, is termed in the industrial organization literature as "strategic substitutes" (see Tirole, *supra* note 17 at 323-337).

of one toy retailer are observable by the other toy retailer. Even though toy retailer A observes the concession given to toy retailer B, the concession still grants toy retailer B a competitive advantage over toy retailer A, and enables toy retailer B to steal business from toy retailer A. Thus, the same intuition discussed in Part II.A provides that the supplier will not be able to commit to charging the monopoly wholesale price, unless the supplier can credibly develop a reputation for not making concessions.⁵²

G. Downstream firms' beliefs about their rivals' contracts

Economists O'brien and Shaffer⁵³ and McAfee and Schwartz,⁵⁴ who analyzed the supplier's commitment problem from a formal game theoretical perspective, state that the outcome regarding the wholesale price charged by the supplier “suffers” from what economists term “multiple equilibria”. In other words, mathematically, there are many possible outcomes regarding the wholesale price to be charged. The reason is that these outcomes depend on downstream firms’ beliefs about the supplier's offers to other downstream firms.

In particular, if each downstream firm believes that the supplier is offering other downstream firms the same wholesale price as the supplier

⁵¹ McAfee and Schwartz, *supra*, note 19, at 221. The question if, in a particular industry, a retailer would respond to a competing retailer’s price cut by price cutting (or rather contracting output) itself is difficult to answer in practice.

⁵² See *supra* Part II.E.

⁵³ *Supra*, note 19.

⁵⁴ *Supra*, note 19.

offered it, the supplier will not face a commitment problem at all.⁵⁵ The reason is easily seen through the toy retailer example of Part II.A. Suppose each toy retailer believes that the supplier's offer to it is identical to the supplier's offer to the other toy retailer. If the supplier offers to sell to toy retailer A (for example) for the monopoly wholesale price, toy retailer A will believe that the supplier is offering to sell to toy retailer B for the monopoly wholesale price as well. Put differently, toy retailer A will not suspect the supplier of granting a wholesale price concession to toy retailer B. Accordingly, toy retailer A will probably accept such an offer without hesitation. Analogously, toy retailer B too will accept the supplier's offer to sell the Barbie dolls for the monopoly wholesale price. This is because toy retailer B will believe that toy retailer A has received the same offer from the supplier.

Moreover, under such beliefs, if the supplier offers toy retailer A a wholesale price concession, toy retailer A will believe that a similar wholesale price concession is being offered to toy retailer B. Accordingly, toy retailer A believes the wholesale price concession will not grant it any competitive advantage over toy retailer B. But then toy retailer A will not be willing to pay the supplier a fixed payment that would make the wholesale price concession worthwhile to the supplier. Accordingly, the supplier and toy retailer A will not negotiate a wholesale price concession in the first place. A parallel discussion would show that the supplier and toy retailer B will not negotiate a wholesale

⁵⁵ McAfee & Schwartz, *id.*

price concession, since toy retailer B will think that toy retailer A too is receiving the same concession.

The latter assumption as to the beliefs of downstream firms is, however, quite implausible. It is unreasonable to assume that each downstream firm believes the supplier is offering other downstream firms the same wholesale price the supplier has offered it. The most sensible assumption as to downstream firms' beliefs is that downstream firms are more sophisticated, and realize that the supplier makes offers to downstream firms that are most beneficial to the supplier under the circumstances. Thus, in our toy retailer example, if the supplier offers to sell to toy retailer A for the monopoly wholesale price, toy retailer A understands that the supplier will be induced to grant toy retailer B a wholesale price concession at the expense of toy retailer A. Accordingly, toy retailer A will not be inclined to pay the supplier the monopoly wholesale price. Similarly, suppose the supplier offers toy retailer B a wholesale price concession (supposedly, at the expense of toy retailer A). It would be reasonable to assume that toy retailer B expects the supplier to grant toy retailer A an even greater concession, at the expense of toy retailer B.⁵⁶ Accordingly, toy retailer B would not be inclined to pay such a wholesale price, but rather a lower one. Under these latter assumptions, as was shown by

⁵⁶ See *supra*, Part II.A.

economists McAfee and Schwartz,⁵⁷ the commitment problem indeed exists in full force.

III. Legal Implications

A. Vertical integration

Vertical integration between the supplier and a downstream firm will help solve the supplier's commitment problem. Let us illustrate this through the simple toy retailer example of Part II.A, where there is a monopolistic supplier of Barbie dolls and two downstream toy retailers: toy retailer A and toy retailer B. In this example, what drove the supplier and toy retailer B's joint incentive to negotiate a concession in favor of toy retailer B was their disregard of the losses consequently caused to toy retailer A. The supplier's incentives change dramatically, however, if it vertically integrates with toy retailer A.⁵⁸ Once the supplier and toy retailer A are one entity, all profits and losses are shared between them. Under vertical integration, the supplier no longer disregards toy retailer A's losses from a concession granted to toy retailer B, since the supplier and toy retailer A are one. Due to vertical integration, the supplier's commitment problem is eliminated.⁵⁹

⁵⁷ *Supra* note 19, at 221. Similarly, both McAfee and Schwartz, *id.*, and O'Brien and Shaffer, *supra* note 19, show that the commitment problem exists when downstream firms believe that a concession is granted uniquely to them, while all other downstream firms are charged the monopoly wholesale price (in the case of a monopolistic supplier). This belief is also quite implausible, however, unless it is assumed that downstream firms believe that the concession offered to them is no more than a random mistake on the part of the supplier. (McAfee and Schwartz, *id.*)

⁵⁸ See Hart and Tirole, *supra* note 19.

⁵⁹ The exact behavior of the supplier following vertical integration may depend on industry circumstances. In the Hart and Tirole, *id.* framework, a vertically integrated monopolistic supplier finds

Without vertical integration, we have seen that the monopolistic supplier, due to its commitment problem, might not be able to fully exploit its monopolistic position. Although the supplier is the only one in the industry, it might be forced to charge a wholesale price well below its profit maximizing monopoly wholesale price, and produce well above the monopoly quantity. The supplier's commitment problem is therefore beneficial from a welfare perspective. As illustrated in Part II.A, retailers use the supplier's wholesale price concessions to steal business from one another by lowering their retail prices.⁶⁰ Thus, the supplier's commitment problem is directly translated into lower retail prices, to the benefit of consumers. In contrast, under vertical integration, the supplier will be able to completely exploit its monopoly position. It will be able to commit to producing no more than the monopoly quantity, and charge unintegrated downstream firms the monopoly wholesale price.

The anticompetitive effect of vertical integration identified here similarly applies to the case of multiple suppliers, discussed in Part II.D.

it most profitable to completely foreclose its input from the unintegrated downstream firm. Such foreclosure will occur whenever supplying to the unintegrated downstream firm will sufficiently reduce the profits of the vertically integrated entity (by depressing the price in the downstream market) (see Hart and Tirole, *id.*, at 208). Under different assumptions regarding industry circumstances, where keeping the unintegrated downstream firm operating is beneficial for the vertically integrated firm (e.g., due to its low costs or attractive location), the monopolistic supplier may continue supplying the unintegrated downstream firm, charging it the monopoly wholesale price. In any case, the basic point made in the text remains robust to different industry configurations: vertical integration eliminates the supplier's commitment problem and enables the supplier to exploit its market power.

⁶⁰ Note that when the supplier is induced to grant a wholesale price concession, the downstream firm receiving the concession always cuts the resale price as well, to the benefit of consumers downstream. The downstream firm does not "pocket" the wholesale price reduction. This is because if the downstream firm does not cut the retail price, it cannot steal business from its competitors, and cannot

Suppose the Barbie doll supplier competes with a Cindy doll supplier, though each of them still possesses some market power.⁶¹ Assume, each of the suppliers sells through two toy retailers who compete with one another.⁶² If the Barbie doll supplier integrates with one of the toy retailers who sells Barbies, the supplier will no longer have an incentive to grant wholesale price concessions to the other retailer who sells Barbies, since the other retailer would then steal business and profits from the Barbie doll supplier's retailing affiliate. This will restore the Barbie doll supplier's power to charge a supra competitive wholesale price.

If the Cindy doll supplier too is vertically integrated with one of the toy retailers selling Cindy Dolls, the Cindy doll supplier too will be able to commit to charging a supra competitive wholesale price. If, on the other hand, the Cindy doll supplier is not vertically integrated, and it still faces the commitment problem, it will be induced to charge low wholesale prices. The fact the Barbie doll supplier does not face the commitment problem may affect the Cindy doll supplier's pricing behavior in two different ways, depending on the way they interact. One possibility is that the Cindy doll supplier will itself charge higher wholesale prices, since it knows the (vertically integrated) Barbie doll supplier

afford to pay the supplier a fixed payment that would induce the supplier to grant the wholesale price concession (see *supra* Part II.A).

⁶¹ *Supra* Part II.D.

⁶² Again, for our purposes, it matters not whether there are only two retailers, which sell both Cindies and Barbies, or whether there are two retailers which sell Cindies and two different toy retailers which sell Barbies.

will charge higher wholesale prices.⁶³ A second possibility is that the Cindy doll supplier, knowing that the Barbie doll supplier will charge higher prices and reduce quantity due to its vertical integration with a toy retailer, will expand output and cut prices.⁶⁴

The analysis is slightly more complex (although the basic conclusions do not change) if there are more than two downstream firms. Suppose there are three, instead of two, toy retailers, called toy retailer A, toy retailer B, and toy retailer C. If the Barbie doll supplier integrates with toy retailer A, it still might be induced to grant toy retailer B a concession. Although such a concession harms toy retailer A (which is merged with the supplier) it also harms toy retailer C. Since the vertically integrated entity still disregards the losses to toy retailer C, it does not fully internalize the losses caused by the wholesale price concession. Suppose toy retailer B can make \$6 after the concession, by stealing business from toy retailers A and C, and toy retailers A and C each lose \$3 due to the loss of business. Toy retailer B can offer the supplier a fixed payment of up to \$6, that may leave the supplier better off despite the lower wholesale price and toy retailer A's loss of \$3.

Still, since the integrated downstream firm is harmed by a concession granted to an unintegrated downstream firm, such a concession, due to vertical

⁶³ This will occur if the type of competition between the suppliers is of the “strategic complements” type (see *supra* note 48).

⁶⁴ This would be the case if the type of competition between the suppliers is of the “strategic substitutes” type (see *supra* note 50). Kenneth S. Corts & Darwin V. Neher, *Credible Delegation* (April 1998) (unpublished manuscript, on file with author) present a formal model showing how suppliers

integration, becomes less likely, or of less magnitude. Therefore, even when there are more than two downstream firms, and the supplier integrates only with one of them, vertical integration enables the supplier to commit to charging a higher wholesale price than it could have without vertical integration. Furthermore, in cases where the supplier, after vertical integration, will find it optimal to sell its input only to its downstream affiliate,⁶⁵ the commitment problem is completely eliminated, regardless of the number of downstream firms. The supplier will sell only to its downstream affiliate and avoid the commitment problem altogether.

The same point made here in the context of vertical integration applies to internal expansion by the supplier into the downstream market. The supplier can alleviate its commitment problem either by merging with an existing downstream firm or by creating a new downstream facility (or facilities) to operate under the supplier's ownership. Both of these routes make the supplier internalize the losses to its downstream affiliate from a concession given to an unintegrated downstream firm. Accordingly, both routes lower the profitability to the supplier of granting such a concession.

Still, vertically integrating with an existing downstream firm may be a more effective way for the supplier to regain commitment power than internal expansion. Internal expansion involves the addition of a new downstream facility, while vertical merger eliminates one formerly unintegrated downstream

might strategically chose to be vertically integrated with a retailer or vertically separated from it depending on their rival's expected reaction.

firm. We have seen above that the more numerous the unintegrated downstream firms in the market, the more difficulties the supplier faces in committing to a supra competitive price, despite vertical integration.⁶⁶ Thus, internal expansion may be less effective in restoring the supplier's commitment ability and therefore less anticompetitive than vertical merger.

Note that the anticompetitive effect of vertical merger identified here exists even if the supplier merges with only one of several downstream firms, while the other downstream firms continue to operate. Even such vertical integration improves the supplier's ability to commit to charging a supra competitive wholesale price.⁶⁷ Thus, the supplier need not acquire all downstream firms that buy the supplier's input for vertical integration to have an anticompetitive effect.

The preceding analysis reveals an anticompetitive effect of vertical merger that has not yet been acknowledged by legal commentary or the decisions of courts and agencies. A vertical merger helps the supplier utilize its market power and charge supra competitive prices, whereas, without the vertical merger, the supplier might not have been able to commit to charge supra competitive prices.

⁶⁵ See *supra* note 59.

⁶⁶ As we have seen, this is true in the case where even after internal expansion (or vertical integration) the supplier still sells to unintegrated downstream firms. If, after vertical merger or internal expansion, the supplier sells only to its downstream affiliate (see *supra* note 59), internal expansion and vertical merger would be equivalently effective in solving the commitment problem.

⁶⁷ See *supra* the text accompanying notes **Error! Bookmark not defined.**-65.

In particular, a large body of legal commentary, often referred to as the “Chicago School” view, consistently alleged that there is only “one monopoly profit” the monopolistic supplier can make. According to this reasoning, even without vertical integration, a monopolistic supplier can set a monopoly wholesale price that maximizes its profits. Downstream firms, so the argument goes, will have to set a high price that reflects the monopolistic wholesale price they have to pay for the supplier's product. Thus, the argument continues, the price charged to end consumers will reflect the supplier's monopoly position regardless of whether the supplier is integrated with a downstream firm or not.

Indeed, the “one monopoly profit” allegation is stressed in all of the leading legal analyzes of vertical integration as well as in several court and agency decisions. For example Richard Posner⁶⁸ states:

Imagine an industry with two levels, production and distribution: if production is monopolized and distribution is competitive, can the monopolist increase his profits by buying out the distributors?...If the producer acquires the distributors and increases the retail markup he will have to decrease the producer markup by the same amount. He cannot maximize his profits by charging a price above the monopoly price...

The “one monopoly profit” claim is similarly stressed by Areeda & Turner in their seminal treatise: “Under any given cost and demand conditions, there is but one maximum monopoly profit to be gained from the sale of an

end-product.”⁶⁹ as well as by other major authorities.⁷⁰ Riordan and Salop,⁷¹ in a recent and comprehensive analysis of the antitrust treatment toward vertical mergers, also fail to address the anticompetitive motivation for vertical integration that this Article focuses upon. For example, they assume that “... if a set of spark plugs is absolutely essential to the construction of an automobile, then a spark plug monopolist could, in effect, control the automobile market and extract all the monopoly profits.”⁷² This presumption ignores the point driving our analysis, that a monopolistic supplier may not be able to commit to its monopoly wholesale price, and thus may not be able to “extract all monopoly profits”.⁷³

The “one monopoly profit” argument is also cited and applied in several court decisions. For example, in *Western Resources, Inc. v. Surface Transportation Board*,⁷⁴ electricity utilities which transport coal through railroads challenged a merger between Burlington Northern, Inc. (“BN”) and

⁶⁸ RICHARD A. POSNER, *ANTITRUST LAW, AN ECONOMIC PERSPECTIVE* 197 (1976); See also ROBERT H. BORK, *THE ANTITRUST PARADOX* 229, 239 (1978).

⁶⁹ 3 PHILIP AREEDA & DONALD F. TURNER, *ANTITRUST LAW*, ¶725B.

⁷⁰ See, for example, RICHARD A. POSNER & FRANK EASTERBROOK, *ANTITRUST* 870 (2d ed. 1989) (“There is only one monopoly profit to be made in a chain of production”); PHILLIP AREEDA & LOUIS KAPLOW, *ANTITRUST ANALYSIS* 489 (5th ed. 1997) (“The power already possessed by the...monopolist to control the price and output...effectively controls the price and output of independent [downstream firms].”); Thomas G. Krattenmaker & Steven C. Salop, *Analyzing Anticompetitive Exclusion*, 56 *ANTITRUST L. J.* 71, 85 (1987) (“Where the input supplier is a single-firm monopoly, the supplier often would require no help in exercising [market] power.” Although the authors discuss exceptions to this argument (such as using vertical integration to evade price regulation, *id.*)), they fail to refer to the motivation for vertical integration identified here, namely, using vertical integration to solve the commitment problem.

⁷¹ Michael H. Riordan & Steven C. Salop, *Evaluating Vertical Mergers: A Post Chicago Approach*, 63 *ANTITRUST L.J.* 513 (1995).

⁷² *Id.* at 534; see also *id.* at 543.

⁷³ See also *id.* at 517, 519-520.

⁷⁴ 109 F.3d 782 (D.C. Cir. 1997).

The Atchinson, Topeka and Santa Fe Railway Company ("Santa Fe"). For several electric utilities, Santa Fe had a monopoly over tracks terminating at the utility, while there was competition among a few railroads, including BN, with regard to railroad transportation of coal from the coal mines up to Santa Fe's lines.⁷⁵ The Court of Appeals approved the merger, as did the Interstate Commerce Commission, on the grounds of the "one monopoly profit" claim. Using the Court of Appeals language:

[T]he Commission rejected petitioners' claims based on the one-lump theory, which says that there is only one monopoly profit to be gained from the sale of an end-product or service (here the transportation of coal for use at an electric generating plant). Because a monopolist at the end stage of production is in a position to capture that entire profit, integration backwards upstream, even when accompanied by monopolization of the earlier stages (which hasn't happened here) normally does not enable it to raise the profit-maximizing price and thus inflicts no harm on the ultimate customer. See 3 Areeda & Turner, Antitrust Law P 725b, at 199.⁷⁶

The court of appeals failed to take account of the commitment problem as an anticompetitive motivation for vertical integration. In particular, it failed to acknowledge that before the merger between BN and Santa Fe, Santa Fe

⁷⁵ Therefore, the merger between Santa Fe and BN is a vertical merger, in the sense that BT, in order to provide a utility with transportation of its coal from the coal mine to the utility's plant, needs to acquire the right to use Santa Fe's tracks, that reach this plant.

⁷⁶ 109 F.3d at 787.

might have had an incentive to grant BN and its competitors concessions, due to the commitment problem. Merger between Santa Fe and BN might have solved Santa Fe's commitment problem, since it causes the merged entity to internalize some of the losses from concessions granted to "downstream" railroads. Consequently, the prices utilities pay for transports might be substantially higher after the merger than before it.

Similarly, in *Lamoille Valley Railroad Company v. Interstate Commerce Commission*⁷⁷ the court of Appeals stressed that "Ordinarily, a vertically integrated monopolist has no incentive to use its monopoly power over one level of production...to increase profits at another level... As the leading treatise puts it, "there is but one maximum monopoly profit to be gained" from a monopoly of one level of production, and that profit may be gained directly at the monopolized level...through appropriate pricing. 3 P. Areeda & D. Turner, *Antitrust Law* s 725B (1978)."⁷⁸ A similar allegation is made by the District Court in *Turner Broadcasting v. Federal Communications Commission*⁷⁹:

The orthodox thinking on vertical integration by an unregulated monopoly is that such integration normally adds nothing material to the distortions implicit in the monopoly itself. A monopoly is able to achieve a single monopoly profit on its sales, and its ownership of resources

⁷⁷ 711 F.2d 295, 318 (D.C. Cir. 1983).

⁷⁸ The court, later in its decision, dealt with the above-mentioned "evasion of price regulation" exception, *supra* note 70.

⁷⁹ 910 F.Supp 734, 774 (D.C 1995).

supplying an input normally has no bearing on the extent to which the price of its final product will exceed the competitive price.⁸⁰

The “one monopoly profit” allegation should properly be read as applying equally to suppliers with market power short of monopoly power. As we have seen, according to conventional industrial organization analysis, a supplier may still possess the power to charge supra competitive wholesale prices even though competing suppliers exist.⁸¹ According to the “one monopoly profit” logic, a supplier with such market power (even short of monopoly power) can charge a supra competitive wholesale price which maximizes its profits, regardless of whether it is integrated with a downstream firm which buys its brand. In contrast, our analysis demonstrates that without vertical integration, the supplier (either a monopolist, or oligopolist) may not be able to commit to charging the supra competitive wholesale price which maximizes its profits. Vertical integration with a downstream firm helps restore the supplier's ability to exploit its market position.

i. The reduced importance of the “double marginalization” and “input substitution” efficiencies

As we have seen in the preceding paragraphs, the supplier's commitment problem reveals an anticompetitive effect of vertical integration not addressed by legal commentary and court decisions. We shall now further demonstrate

⁸⁰ See also *Town of Concord v. Boston Edison Company*, 915 F.2d 17, 23 (1st Cir. 1990), *cert. denied*, 11 S.Ct. 1337 (1991).

how the commitment problem substantially lessens the importance of two of the *efficiencies* commonly alleged by commentators and courts to exist in vertical integration.

The first such efficiency, commonly cited in defense of vertical integration, is that vertical integration eliminates “double marginalization”.⁸² This efficiency is based on the premise that a supplier with market power (either due to a monopoly position or due to an oligopoly position) will charge a supra competitive wholesale price for every input unit. Downstream firms too, so the argument goes, may possess market power, i.e., the power to charge a price exceeding their marginal cost.⁸³ These downstream firms, given the supra competitive wholesale they pay for the input, will add their own markup, due to their own market power, resulting in an even more supra competitive price than the price that would be charged by a vertically integrated firm.

According to this reasoning, vertical integration actually tends to reduce the price of the end product, since it eliminates this “double markup” or so called “double marginalization”. Once the supplier and a downstream firm are one entity, the supplier supplies the input to its downstream affiliate for a price equal to the supplier’s marginal cost. Consequently, the price is only marked up once, instead of twice.

⁸¹ See *supra* note 20 and the text accompanying note 35.

⁸² See, e.g., Riordan and Salop, *supra* note 71, at 525, note 37, and the literature cited there; Areeda and Kaplow, *supra* note 70, at 490-491; Byars v. Bluff City News Co., 609 F.2d 843, 861 (6th Cir. 1979); *Town of Concord*, 915 F. 2d at 24.

⁸³ See *supra* note 20.

The commitment problem, however, shows that without vertical integration, the supplier may not be able to commit to charge a supra competitive wholesale price. In the extreme case, where secret concessions can be made, we have demonstrated how the supplier will charge downstream firms a price equal to the supplier's marginal cost.⁸⁴ In such a case, there will be no "double markup" even without vertical integration, since the supplier will have no markup. Even in cases where the wholesale price is not driven all the way down to the supplier's marginal cost⁸⁵ the commitment problem will cause the supplier's markup to be smaller than contemplated by conventional wisdom. Here too, therefore, the "double markup" problem is less important than conventionally thought. Consequently, the often cited efficiency of vertical integration involved in the elimination of a "double markup" is less important than previously thought.

A second commonly cited efficiency of vertical integration is the "input substitution" efficiency.⁸⁶ This efficiency refers to the case where downstream firms use an input supplied by a supplier with market power, together with other inputs, to produce a new product. In cases where downstream firms can use varying quantities of the inputs to produce the downstream product, the optimal mix of inputs used should be determined by the marginal costs of producing these inputs. It is alleged that when the supplier of input A, for

⁸⁴ See *supra* Part II.A.

⁸⁵ As in some of the cases discussed *supra* Part II.F.

example, possesses market power, it will charge a wholesale price exceeding the input's marginal cost of production. Therefore, under the assumption that the other inputs are supplied to the downstream firms for a price equal to the inputs' marginal costs of production, downstream firms will use an inefficiently small proportion of input A, and an inefficiently large proportion of the other inputs. Vertical integration, as is commonly alleged, helps eliminate this inefficient distortion, because once the supplier and a downstream firm are one entity, the supplier supplies the input to its downstream affiliate for its marginal cost. Accordingly, the use of this input in the production of the end product is determined according to the input's marginal cost, as production efficiency requires.

As the "elimination of double marginalization" efficiency, the "input substitution" efficiency too is based on the premise that the supplier is able to charge a supra competitive wholesale price for its input. As we have seen, however, the supplier may not be able to commit to charge such a wholesale price. At the extreme, when the supplier, despite its perceived "market power", is obliged to sell the input for its marginal cost, the input will be used by downstream firms in its efficient proportion (assuming other inputs are priced at their marginal cost of production). Thus, even without vertical integration, there will be no inefficient input substitution. Even in cases where the supplier is able to charge a wholesale price somewhat higher than the input's marginal

⁸⁶ See, e.g., Riordan and Salop, *supra* note 71, at 525; Bork, *supra* note 68, at 229; Areeda and

cost,⁸⁷ this wholesale price, due to the commitment problem, will be well below the supra competitive wholesale price anticipated by the conventional wisdom. Consequently, the often cited “input substitution” efficiency of vertical integration, as the “double marginalization” efficiency, is less important than perceived by conventional wisdom.

If downstream firms buying the supplier’s product, for some reason, do not compete with one another (due to price regulation, a downstream cartel, or vertical restraints eliminating downstream competition) the commitment problem disappears, as shown above.⁸⁸ In such a case, however, for completely different reasons, the double marginalization and input substitution efficiencies are of less importance. The reason is that where downstream firms do not compete with one another, the supplier and downstream firms would generally prefer to eliminate the supplier’s markup by using two part tariffs: the supplier will charge its marginal cost per unit of input, while charging downstream firms a fixed franchise fee to share their profits from sales.⁸⁹

In such cases, there will be no problems of double markup or input substitution, even absent vertical integration. The fixed franchise fee will not adversely affect resale prices or the input mix, since it is a fixed cost and, as such, does not affect downstream firms’ pricing or unit production. If

Kaplow, *supra* note 70, at 508-509; *Turner Broadcasting v. Federal Communications Commission*, 910 F.Supp 734, 775 (D.C. 1995).

⁸⁷ See *supra* Part II.F.

⁸⁸ *Supra* Part II.B.

downstream firms buying the supplier's input do compete, however, the competition will dissipate overall profits and reduce the franchise fee downstream firms will be willing to pay. In such cases, in order to maximize its profits, the supplier will generally need to charge a wholesale price above its marginal cost.⁹⁰ But then, as stated, the commitment problem will cause the supplier to charge a wholesale price well below its profit maximizing wholesale price.

Therefore, it turns out that both the double marginalization efficiency and the input substitution efficiency, which are abundantly cited as important efficiencies of vertical integration, are generally much less important than previously thought. If downstream firms buying the supplier's input compete, the commitment problem substantially lessens these efficiencies' importance. Conversely, if downstream firms do not compete, these efficiencies generally become irrelevant because the supplier will want to eliminate its markup and share downstream profits via a fixed franchise fee.

B. Operation through a sole outlet

The supplier can also avoid the commitment problem by selling to only one downstream firm.⁹¹ The reason is straightforward. If the supplier supplies to only one downstream firm, there is obviously no competition among

⁸⁹ See Tirole, *supra* note 17, at 184. The supplier and downstream firms will prefer to eliminate the double markup since, the double markup inflates the resale price *above* the price which maximizes the supplier and downstream firms' joint profits.

⁹⁰ *Id.*

⁹¹ See McAfee and Schwartz, *supra* note 19, at 223.

downstream firms who buy the supplier's input. Therefore, the supplier does not have an incentive to grant a concession to one downstream firm at the expense of a competing downstream firm.⁹² Thus, if the supplier sells only to one downstream firm, it can commit to charging its profit maximizing wholesale price (e.g., the monopoly wholesale price, if the supplier is a monopolist) or franchise fee,⁹³ and the commitment problem disappears. The same reasoning implies that selling through a sole outlet also solves the commitment problem of an oligopolistic supplier with market power short of monopoly power.⁹⁴

It should be noted that the supplier must be able to commit to sell exclusively to a single downstream firm. In principle, once the supplier proceeds to operate through a sole outlet, the supplier will have an incentive to break this exclusivity, and sell to an additional downstream firm, for a lower wholesale price, at the expense of its “exclusive” outlet.⁹⁵ This wholesale price concession will grant the second downstream firm a competitive advantage over the existing downstream firm, enabling the second downstream firm to steal business from the existing downstream firm. The second downstream firm

⁹² See *supra* Part II.B, stressing how competition among downstream firms is the driving force behind the supplier's commitment problem.

⁹³ With a sole downstream outlet, the supplier can establish a more complex payment schedule, such as a two part tariff. Under such an arrangement, the supplier sells each unit of the input to its exclusive downstream firm for a price equal to the supplier's marginal cost. It then collects a fixed franchise fee from the downstream firm to extract all, or part, of the downstream firm's monopoly profits. With such a two part tariff, the supplier and downstream firms can raise their joint profits while avoiding problems of “double marginalization” and/or “input substitution” discussed *supra* in Part III.A.i (see *supra* notes 89-90 and accompanying text.)

⁹⁴ If some of the suppliers sell through a sole outlet, thereby overcoming the commitment problem, and others do not, the effect of interaction among them is similar to the case of vertical integration by only some of the suppliers (see *supra* Part III.A, note 64 and accompanying text.)

will thus be willing to pay the supplier a fixed payment that would make the concession worthwhile to the supplier.

This incentive has some resemblance to the incentive described in Part II.A above to grant concessions to *existing* downstream firms at the expense of their competitors. The difference is that it is usually much easier to commit to sell to only one downstream firm, than to commit to not making concessions to existing downstream firms. First, a mere wholesale price concession to an existing downstream firm is considerably easier to keep secret from competing downstream firms than is selling to a downstream firm which formerly did not buy from the supplier at all. Second, a wholesale price concession is usually more difficult to verify in court than is the commencement of sales to an additional downstream firm. Thus, a contractual obligation to grant a downstream firm exclusivity is more effective than, say, a contractual obligation not to grant concessions to existing downstream firms.

Accordingly, a contractual obligation to grant exclusivity to a downstream firm benefits the supplier, because it restores the supplier's ability to extract the total profits enabled by the supplier's market position. Without this contractual obligation, the "exclusive" downstream firm might not trust the supplier to refrain from selling to additional downstream firms and thus might not agree to pay the high wholesale price and/or franchise fee that would maximize the supplier's profits.

⁹⁵ See McAfee and Schwartz, *supra* note 19, at 223, who also bring examples of such opportunistic

This suggests a rationale for a refined version of the “vertical agreement” doctrine with regard to sole outlets.⁹⁶ According to the vertical agreement doctrine, if the supplier unilaterally chooses to operate through a sole outlet, through downstream firms in exclusive territories, or through downstream firms that charge resale prices not below the resale prices preferred by the supplier, there is no vertical agreement and thus no Sherman Act Section 1⁹⁷ violation.⁹⁸ The previous analysis shows that if the supplier is *contractually bound to enforce* a downstream firm’s exclusivity, there should be more antitrust concern than if the supplier is not contractually bound to do so.⁹⁹ This is because without such a binding contract, the supplier may have the urge (analogous to the commitment problem) to encroach on the downstream firm’s exclusivity and sell to additional downstream firms. Such opportunistic behavior will tend to lower resale prices. A binding contract credibly commits the supplier not to encroach on the downstream firms’ exclusivity, leaving resale prices high.¹⁰⁰

Legal commentary regarding exclusive dealerships and sole outlets has failed to observe the role of such practices in solving the supplier's commitment

encroachment by suppliers on downstream firms’ exclusivity.

⁹⁶ The same point applies to exclusive territories and minimum rpm arrangements, that will be explored *infra* Part III.C.

⁹⁷ 15 U.S.C. §1 (1994).

⁹⁸ See *United States v. Colgate & Co.*, 250 U.S. 300 (1919); *Monsanto Co. v. Spray-Rite Svce. Corp.*, 465 U.S. 752 (1984).

⁹⁹ See Alexander and Reiffen, *supra* note 14.

¹⁰⁰ This is a *refined* version of the “vertical agreement” doctrine, because, according to the traditional doctrine, the required vertical agreement exists even if only downstream firms agree to the restraint. That is, the supplier need not bind itself to enforce the agreement for the traditional “vertical agreement” requirement to be fulfilled.

problem. Areeda and Turner,¹⁰¹ for example, assume that the supplier would not want to establish an exclusive outlet, because “that would ultimately have the effect of creating a monopoly for a favored customer who could then exercise monopsony power over [the supplier], unless...[the supplier] would be assured of sharing in such a monopoly”.¹⁰² In addition, the above-mentioned “one monopoly profit” claim applies, according to its proponents, in the current context as well as in the vertical integration context described in Part III.A. According to this claim, a monopolistic supplier (or a supplier with market power short of monopoly) can exploit its market power regardless of the number of downstream firms through which it operates. This is because, according to this argument, the supplier can set a supra competitive wholesale price, which maximizes its profits, regardless of the number of downstream firms that buy from the supplier. For example, Bork¹⁰³ claims that “[w]hen a manufacturer wishes to impose resale price maintenance or vertical division of

¹⁰¹ *Supra* note 69, at 614-615.

¹⁰² *Id.* Areeda and Turner do make the plausible implication that selling to an exclusive downstream firm may grant this downstream firm more bargaining power, which would reduce the supplier’s profits. Even with an exclusive downstream firm, however, the supplier may, in some cases, possess substantial bargaining power, due to its ability to switch to a different exclusive downstream firm. In any case, the bargaining power issue presents only one side of the coin. What commentators such as Areeda and Turner fail to address is that the supplier may have an anticompetitive motivation to operate through an exclusive downstream firm, because this eliminates the supplier’s commitment problem. When this factor more than offsets the above-mentioned bargaining power factor, the supplier will prefer operating through a sole outlet.

¹⁰³ *Supra* note 68, at 289. Such arguments were also made with regard to the analogous case of a vertically integrated monopoly’s refusal to deal with non integrated downstream firms. See John Cirace, *An Economic Analysis of Antitrust Law’s Natural Monopoly Cases*, 88 W. VA. L. REV. 677, note 197 and accompanying text (1986); Charles R. Andres, *Refusals to Deal by Vertically Integrating Newspaper Monopolists: Paschall v. Kansas City Star Co.*, 11 WM. MITCHELL L. REV. 527, note 170 and accompanying text (1985) (forwarding the above-mentioned “one monopoly profit” hypothesis to allege that a refusal to deal with non-integrated downstream firms will not reduce competition).

reseller markets, or any other restraint upon the rivalry of resellers, his motive cannot be the restriction of output...”.¹⁰⁴

This “one monopoly profit” allegation is again based on the incorrect premise that the supplier can exploit its market power even if it sells to several downstream firms which compete with one another. The “one monopoly profit” argument stands in direct contrast to the point mentioned in this Article: When selling to several downstream firms in competition with one another, the supplier may not be able to commit to charging a supra competitive wholesale price. Elimination of downstream competition (in our context-operation through a single downstream firm) restores the supplier's ability to charge a supra competitive wholesale price (or franchise fee) that would maximize the supplier's profits.

In several antitrust cases, the courts consistently stated that they would be hostile to exclusive dealership agreements if the supplier possessed market power.¹⁰⁵ The courts in these decisions implicitly assume that the supplier’s “market power” is exploitable with or without the sole outlet arrangement. The fear in these cases is that operation through a sole outlet will exacerbate the supplier’s existing market power via the creation of a monopolistic downstream firm. According to this fear, a sole outlet arrangement will enlarge the “double markup”: the supplier’s markup will be accompanied by the sole distributor’s

¹⁰⁴ See also Areeda & Kaplow, *supra* note 70 at 637-638, 612-613.

¹⁰⁵ See e.g., *Packard Motor Car Co. v. Webster Motor Car Co.*, 242 F.2d 418 (D.C. Cir.), *cert. denied*, 355 U.S. 822 (1957), and the cases cited in Phillip Areeda & Louis Kaplow, *Antitrust Analysis* 657 (4th ed. 1988), at note 44.

monopolistic mark up, to the detriment of consumers. This particular fear, however, that sole outlet arrangements will exacerbate the double markup, can usually be rebutted once we acknowledge that a supplier with market power and its sole outlet will maximize their profits by eliminating the double markup any way. As mentioned earlier,¹⁰⁶ they can do so by using a two part tariff: the supplier will charge the exclusive downstream firm a price per unit equal to the supplier's marginal cost, and the downstream firm's profits from sales can be divided through a fixed franchise fee.

The anticompetitive effect of sole outlet arrangements identified here is different. It exists even where the supplier and its sole outlet eliminate the double markup via a two part tariff. The point is not that a downstream monopoly will exacerbate the supplier's *already exploited* market power. What the above-mentioned court decisions fail to identify is that the elimination of downstream competition will enable the supplier to exploit its market power in the first place. Due to the commitment problem, with downstream competition, the supplier could not have fully exploited its market power.

C. Resale price maintenance and exclusive territories

As stressed in Part II.B above, the driving force behind the supplier's commitment problem is competition among downstream firms. Therefore, it is clear that elimination of competition among downstream firms solves the commitment problem. The previous paragraph dealt with elimination of

¹⁰⁶ See *supra* note 89.

downstream competition in the most extreme manner, namely, operating through a single downstream firm. The current section will deal with two other devices the supplier can use to eliminate downstream competition: minimum resale price maintenance and exclusive territories.

Minimum resale price maintenance (“rpm”) refers to a price floor imposed on downstream firms which buy the supplier's input. That is, downstream firms cannot undercut this price floor when selling their product. With a minimum rpm arrangement successfully implemented there is no mutual incentive on the part of the supplier and a downstream firm to negotiate a wholesale price concession.¹⁰⁷ This is because even if a downstream firm receives a wholesale price concession, it cannot use it to steal business from its downstream competitors, since it is unable to cut its resale price. Accordingly, a downstream firm receiving a concession would not be able to afford to offer the supplier a fixed payment that would make the wholesale price concession worthwhile to the supplier.¹⁰⁸ Thus, if minimum rpm is successfully implemented, the supplier can restore its ability to charge a supra competitive wholesale price or franchise fee¹⁰⁹ which maximizes its profits.

¹⁰⁷ O'Brien and Shaffer, *supra*, note 19, at 306.

¹⁰⁸ The analysis applies both to a monopolistic supplier and to the case with an oligopolistic supplier discussed *supra* in Part II.D. If some suppliers eliminate their commitment problem (e.g., by using minimum rpm) and some do not, the consequential competitive interaction between them is analogous to the case of vertical integration by only some of the suppliers (see *supra* Part III.A, note 64 and accompanying text.)

¹⁰⁹ As stressed earlier (*supra* notes 89-90 and accompanying text) when downstream competition is eliminated, the supplier will generally prefer to charge downstream firms a price per unit equal to the supplier's marginal cost and share the downstream firms' profits from sales through fixed franchise fees.

The preceding analysis demonstrates that the price floor imposed by minimum rpm need not be industry wide. Suppose there are multiple (although only a few) suppliers and that each supplier possesses market power.¹¹⁰ Even in such a case, all a supplier needs in order to overcome its commitment problem is to impose a price floor on downstream firms buying this supplier's brand.

A second way to eliminate downstream competition and restore the supplier's commitment power is to designate each downstream firm an exclusive territory or demand segment.¹¹¹ Under such an arrangement, downstream firms do not compete with regard to the sale of the supplier's brand. Accordingly, if a downstream firm were to receive a wholesale price concession from the supplier, it could not use the concession to steal business from other downstream firms, since it does not compete with these downstream firms. Therefore, a downstream firm could not afford to pay the supplier a fixed payment that would make a wholesale price concession worthwhile to the supplier.

As in the case of exclusive outlets, discussed in Part III.B above, in the current context, of minimum rpm and exclusive territories, the supplier must be able to commit to adhere to the rpm or exclusive territories arrangements in order for them to restore the supplier's market power. If such a commitment is not obtained, once minimum rpm or exclusive territories arrangements are supposedly in place, the supplier will generally have an incentive to deviate

¹¹⁰ *Supra* Part II.D.

from these arrangements.¹¹² For example, if a minimum rpm arrangement is supposedly in place, the supplier might have an incentive to grant one downstream firm a wholesale price concession on the expense of other downstream firms and enable the downstream firm to cut its resale price below the price floor. Conversely, if an exclusive territories or exclusive segments arrangement is in place, the supplier might have an incentive to add downstream firms to an existing downstream firm's exclusive territory and grant the new downstream firms concessions on the expense of existing downstream firm.

The supplier will, of course, benefit from successfully committing to enforcing the minimum rpm or exclusive territories arrangements (either contractually, or through development of a reputation for enforcing such arrangements) since this will help solve the commitment problem and restore the supplier's market power. Therefore, as with the case of sole outlets, minimum rpm and exclusive territories arrangements are potentially more anticompetitive when the supplier is contractually bound to enforce them.¹¹³

Interestingly, the analysis above suggests that minimum rpm is *less anticompetitive* than exclusive territories. The reason is that conventional minimum rpm schemes (even if they were enforceable in court) do not contractually bind the supplier to enforce them. They merely bind the

¹¹¹ See O'Brien and Shaffer, *supra* note 19, at 305.

¹¹² See Alexander and Reiffen, *supra* note 14.

¹¹³ *Id.*

downstream firms to adhere to the minimum resale price. On the other hand, conventional exclusive territories schemes (if enforceable in court) do contractually bind the supplier not to deviate from them. Therefore, exclusive territories enable the supplier to more credibly commit not to deviate from the exclusive territories scheme, since such deviation exposes the supplier to legal action by injured downstream firms. This stands in contrast to the case law's more lenient treatment toward exclusive territories as opposed to minimum rpm.¹¹⁴

As with vertical integration and sole outlets, legal commentary and decision-making have failed to address this anticompetitive effect of minimum rpm and exclusive territories. By eliminating downstream competition, these practices restore the supplier's ability to exploit its market power and charge a supra competitive price which maximizes its profits. This result stands in direct contrast to a large body of the legal commentary suggesting that minimum rpm and exclusive territories do not possess anticompetitive effects. Such allegations are based on the above-mentioned "one monopoly profit" claim, leading commentators to presume that the supplier is able to charge a supra competitive wholesale price which maximizes its profits, regardless of the level of downstream competition. Thus, so the argument goes, suppression of downstream competition, through the imposition of minimum rpm or exclusive

¹¹⁴ See *supra* note 15.

territories, would just harm the supplier, unless such restriction of downstream competition produces offsetting efficiencies in distribution.

Bork, for example, argues that “If [the supplier] had any power to restrict output, it would exercise that power directly... There is no need for vertical restraints on retailers or wholesalers. The vertical restraints could not be anticompetitive for any effect they might have on the manufacturer’s level of the industry.”¹¹⁵ Bork therefore concludes that:

When a manufacturer wishes to impose resale price maintenance or vertical division of reseller markets, or any other restraint upon the rivalry of resellers, his motive cannot be the restriction of output and, therefore, can only be the creation of distributive efficiency. That motive should be respected by the law.¹¹⁶

Other leading sources reach similar conclusions.¹¹⁷

Along the same lines, in a recent Article, Marvel¹¹⁸ argues that:

[M]anufacturers will not voluntarily enforce cartels for their dealers...a manufacturer has no more interest in inefficient distribution than do

¹¹⁵ Bork, *supra* note 68, at 290.

¹¹⁶ Bork, *Id.* at 289.

¹¹⁷ See, for example, Posner, *supra* note 68, at 147; Lester G. Telser, *Why Should Manufacturers Want Fair Trade?*, 3 J. L. & ECON. 86 (1960); Richard A. Posner, *The Next Step in the Antitrust Treatment of Restricted Distribution-Per Se Legality*, 48 U. CHI. L. REV. 6 (1981); Frank H. Easterbrook, *Vertical Arrangements and the Rule of Reason*, 53 ANTITRUST L.J. 135 (1984); Areeda and Kaplow, *supra* note 70, at 612-613 (“Ordinarily, a manufacturer will maximize its profits by selling wholesale at a price satisfactory to itself and by encouraging maximum competition among dealers in order that their profit margins might be as low as possible...” (*id.*, at 613); and Howard P. Marvel, *The Resale Price Maintenance Controversy: Beyond the Conventional Wisdom*, 63 ANTITRUST L.J. 59, 61 (1994); The same sort of reasoning is present in most of the economics literature. See, for example, F.W. Taussig, *Price Maintenance*, 6 AM. Econ. Rev. 170 (Papers & Proceedings 1916); Katz, *supra* note 17, at 678.

¹¹⁸ *Supra*, note 117.

consumers...Higher mark ups [for retailers] mean that the net-of-margin demand curve faced by the manufacturer is lower than need be. Lower demand curves are less profitable. If retailer price competition is suppressed, the manufacturer must anticipate some benefit to offset the adverse effects of the higher dealer margins that result.

This argument is the same as Bork's above-mentioned statement, only put more formally. Marvel's argument is based on his presumption that the supplier is able to commit to its profit maximizing wholesale price, regardless of the level of downstream competition. The supplier, so the argument goes, can exploit its market power by setting its profit maximizing wholesale price, and allowing competition among downstream firms to lower downstream firms' profit margins as much as possible. According to this reasoning, minimum rpm, by elevating downstream firms' markups, only harms the supplier (unless minimum rpm also produces offsetting efficiencies in distribution), since it lowers the demand for the supplier's product more than is optimal for the supplier. Marvel's argument does not take account of the possibility that the supplier may not be able to commit to charging its profit maximizing wholesale price, due to the commitment problem, and that minimum rpm (as well as exclusive territories) can be used to solve the commitment problem.

D. The commitment problem as a “probability result”

It could be argued that the possibility that the supplier faces a commitment problem preventing it from exploiting its market power is a

“probability result”.¹¹⁹ Such an argument could be based, for example, on the allegation that the commitment problem depends, as illustrated in Part II.G, upon the beliefs of downstream firms about the wholesale prices paid by their competitors. In particular, if we were to assume that downstream firms are naive and believe that the wholesale price offered to them is also offered to all other downstream firms, the commitment problem, as demonstrated in Part II.G above, does not exist. Moreover, it could be claimed that the alleged anticompetitive effect of vertical integration and vertical restraints is probabilistic because the supplier could, in certain cases, solve the commitment problem by developing a reputation for not making concessions, even without using vertical integration or vertical restraints.¹²⁰

Therefore, it could be alleged that one must exercise caution before making policy implications based on the commitment problem. But such an argument should not be taken too far. Historically, antitrust law and policy did not hesitate in showing hostility toward certain practices, even though the anticompetitive effects of these practices are uncertain and probabilistic. A striking example is the antitrust treatment of horizontal mergers. In order to condemn a horizontal merger through Clayton Act Section 7,¹²¹ the antitrust merger provision, it is well established that the plaintiff need only show

¹¹⁹ For criticism of this sort, although not in the context of the commitment problem, see Michael W. Klass and Michael A. Salinger, *Do New Theories of Vertical Foreclosure Provide Sound Guidance for Consent Agreements in Vertical Merger Cases?*, 40 ANTITRUST BULL. 667 (1995).

¹²⁰ *Supra* Part II.E.

probable anticompetitive effects.¹²² With this well known attitude of antitrust law toward horizontal mergers in mind, the probabilistic nature of the commitment problem becomes less troubling.

To illustrate further, let us compare a horizontal merger between suppliers of an intermediate product with a vertical merger (or restraint) between a supplier of an intermediate product and a downstream firm. If the industry in which the horizontal merger occurred was concentrated, the legal rule tends to condemn the merger as anticompetitive.¹²³ The economic reasoning behind this legal rule rests mainly on two expected anticompetitive effects of horizontal mergers in concentrated industries.¹²⁴ The first is the increased probability of tacit collusion among the fewer firms remaining in the industry after the merger. The term “tacit collusion” refers to a situation where firms charge a cartel like price even without communicating, because each firm fears that its price cut will trigger a price war, that will harm the price cutting firm itself in the long run.

¹²¹ 15 U.S.C. §18 (1994) (prohibiting acquisitions of “the whole or any part of the stock” or “the whole or any part of the assets” of another firm where “the effect of such acquisition may be substantially to lessen competition...”).

¹²² See *F.T.C. v. Procter & Gamble Co.* 386 U.S. 568, 577 (1967) (“[Clayton Act Section 7] can deal only with probabilities, not with certainties. And there is certainly no requirement that the anticompetitive power manifest itself in anticompetitive action before Section 7 can be called into play. If the enforcement of Section 7 turned on the existence of actual anticompetitive practices, the congressional policy of thwarting such practices in their incipency would be frustrated.” (*Procter & Gamble, id.*); see also *Brown Shoe Co. v. United States*, 370 U.S. 294 (1962), 323, 343, 346; *Ash Grove Cement Company v. Federal Trade Commission*, 577 F.2d 1368, 1378-1379 (9th Cir. 1978); *Unites States v. E.I. Du Pont De Nemours*, 353 U.S. 586, 589 (1957); and Areeda and Kaplow, *supra* note 70, at 802.

¹²³ *Id.* Also, at least antitrust agencies tend to look at countervailing efficiencies involved in the merger. See The Department of Justice and Federal Trade Commission 1992 Horizontal Merger Guidelines, 57 FR 41552.

¹²⁴ *Id.*

Second, courts and agencies may fear that firms in a more concentrated market, following the merger, will be able to exercise more market power, and charge an even higher supra competitive price than before the merger. This may occur even if there is no “tacit collusion” in the industry.¹²⁵ As can be shown, after a horizontal merger, when there are even fewer firms in the market, they are expected by conventional industrial organization analysis to charge prices even higher above their marginal costs.¹²⁶

Both these effects, feared in horizontal mergers, however, are probabilistic in nature. The possibility of tacit collusion, even when there are very few firms in the market, is definitely probabilistic. This is true for at least two reasons. First, tacit collusion may not be sustainable in the industry, because firms’ urge to price cut on the collusive price might be too great.¹²⁷ Second, formal models of “tacit collusion” predict that even when tacit collusion is sustainable, the industry’s price may still be competitive. Here too, as in the formal game-theoretic modeling of the commitment problem, there are “multiple equilibria”, and the outcome is ambiguous.¹²⁸

¹²⁵ See *supra* note 35.

¹²⁶ See Tirole, *supra* note 17, at 283.

¹²⁷ See Tirole, *id.* at 245-247. Moreover, it would be extremely difficult for an antitrust court or agency to distinguish between an oligopoly in which tacit collusion is sustainable and an oligopoly in which it is not sustainable. Among other characteristics, such a distinction requires knowledge by the court or agency about how important are future earnings to each firm so as to deter it from triggering a price war, what are the gains from price cutting, and what are the price cutters’ expected losses from a price war. (*id.*). Accordingly, the fear of tacit collusion being easier to sustain is definitely probabilistic.

¹²⁸ Only if we continue to assume that firms somehow coordinate over a supra competitive price can we infer that oligopolistic “tacit collusion” is indeed anticompetitive (*id.*, at 245-247, 253). Such coordination, however, may be unfeasible, since explicit contact regarding the collusive price is subject to antitrust prosecution, and tacit coordination may be difficult. For cases in which such coordination problems are especially acute see Tirole, *id.*, at 250-251.

Furthermore, the possibility that a horizontal merger between suppliers of an intermediate product will raise firms' market power (even without tacit collusion) is also probabilistic. As was shown in Part II, suppliers of an intermediate product may not possess market power, because, due to the commitment problem, they might not be able to commit to charge a supra competitive price. If suppliers in an oligopoly faced the commitment problem before the merger, they presumably continue to face the commitment problem after the merger. Thus, when the commitment problem exists for most, or all, of the suppliers in the market, a horizontal merger between suppliers in this market will not necessarily raise the suppliers' market power. This is because suppliers did not possess market power either before or after the merger. As long as we are convinced that there is a nontrivial probability that the commitment problem exists, then there is a nontrivial probability that a horizontal merger will not raise suppliers' market power. This too renders the conventional fear from horizontal mergers between suppliers of intermediate products probabilistic.

The preceding paragraphs have shown that the anticompetitive effects of a horizontal merger (at least between suppliers of an intermediate product) are probabilistic in nature, even when the market is extremely concentrated. Still, we have seen that this probabilistic nature does not stop antitrust courts and agencies from their tendency to condemn such horizontal mergers in appropriate cases. Analogously, even though the commitment problem focused upon here is probabilistic, this should not stop us from drawing policy

implications from it. It should at least be considered, among other theories of vertical integration and vertical restraints, in order to evaluate the probable anticompetitive effect of these practices.

IV. Conclusion

The commitment problem faced by a supplier of an intermediate product introduces the possibility that such a supplier does not possess the market power it was believed to possess by conventional wisdom. Vertical integration and vertical restraints can be used to overcome the commitment problem and restore the supplier's market power. The commitment problem therefore exposes a plausible anticompetitive motivation for vertical integration and vertical restraints that has not been considered, and should be considered, by legal scholars, courts and antitrust agencies. Moreover, courts and antitrust agencies should take account of the more subtle implications of the commitment problem. First, due to the commitment problem, not only is vertical merger more anticompetitive than conventionally thought, it also involves less efficiencies than conventionally thought. This is because the often cited "double marginalization" and "input substitution" efficiencies of vertical integration become much less important. Second, courts and agencies should inquire whether a sole outlet, exclusive territories or minimum rpm arrangement binds the supplier to enforce it. Courts and agencies fail to do so. In contrast, due to the commitment problem, vertical restraints possess more anticompetitive harm if the supplier is contractually bound to enforce them, and

less competitive harm is the supplier is not bound in such a manner. Finally, the commitment problem implies that minimum rpm is usually *less* anticompetitive than exclusive territories. In contrast, minimum rpm is prohibited *per se* by the case law while exclusive territories are scrutinized under the more lenient rule of reason.