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Vertical Restrictions and Antitrust Policy: What About the Evidence?

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Theories of vertical restraints have shown that vertical practices have the potential to harm competition. Although (or because) they are based on more realistic market structures and account explicitly for strategic interactions among competitions, the predictions of these models are necessarily more fragile than those of the earlier models. Practitioners who rely mainly on economic theory to assess the competitive impact of vertical restraints in any given setting face a formidable inferential problem: Not only must they decide which model best applies to the particular factual circumstances in which the restraint has been adopted, they also must then determine whether the model chosen has the particular combination of parameters that would result in an anticompetitive equilibrium. The theory of vertical control tells us that anticompetitive effects are possible, but until theory can be used to determine how likely it is that a restraint will lead to an anticompetitive outcome, decision makers will be left with a considerable amount of uncertainty. In this world, enforcement decisions should be guided by prior beliefs and loss functions. The authors' review of the existing empirical evidence—which informs their priors—suggests that vertical restraints are likely to be benign or welfare-enhancing.

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I. Introduction

Since the 1977 *Sylvania* decision[1]—in which the U.S. Supreme Court eschewed its prior "formalistic line drawing," and instead based its decision on demonstrable economic effects—a successful antitrust plaintiff in the U.S. courts must show that a challenged vertical restraint is likely to harm consumer welfare.[2] This movement is due, in part, to the Chicago School critique of then-current theories of harm from vertical relationships, which identified several compelling efficiency-enhancing rationales for vertical restraints.[3]

Over the past 20 years, post-Chicago theories of vertical restraints have shown that vertical practices have the potential to harm competition. Although (or

1 Cont'l T.V. Inc. v. GTE Sylvania Inc., 433 U.S. 36 (1977) [hereinafter *Sylvania*]. In *Sylvania*, the U.S. Supreme Court overruled United States v. Schwinn, 388 U.S. 365 (1967), and held that non-price vertical restrictions were to be judged under the rule of reason. Under the rule of reason, a plaintiff must show that the agreement is likely to have "genuine adverse effects on competition." In support of its abandonment of per se treatment, the Court observed in *Sylvania* how exclusive territories had the potential to "induce competent and aggressive retailers to make the kind of investment of capital and labor that is often required in the distribution of products unknown to the consumer" (*Sylvania,* at para. 55). A few years later, in Monsanto Co. v. Spray-Rite Service Co., the Court again endorsed vertical restrictions that encourage retail service and supported a manufacturer's right to terminate a discounting dealer to prevent free riding ("independent action is not proscribed. [A supplier] has a right to deal, or refuse to deal, with whomever it likes as long as it does so independently"). (Monsanto Co. v. Spray-Rite Service Co., 465 U.S. 752, 760–61 (1984).) For a full discussion of this evolution, *see* T. Muris, *GTE Sylvania and the Empirical Foundations of Antitrust*, 68 Antitrust L.J. 899 (2001).

2 Since 1977, The Sherman Act, Section 1 cases involving vertical restraints—with the exception of explicit minimum resale price maintenance—are evaluated under the rule of reason. This standard requires a plaintiff to show that the agreement is likely to have "genuine adverse effects on competition." *See* Federal Trade Comm'n v. Indiana Fed'n of Dentists, 476 U.S. 447, 460 (1986). *See also* Virgin Atl. Airways, Ltd v. British Airways PLC, 257 F.3d 256, 264 (2d Cir. 2001) (plaintiff is required to show that the agreements in question "had an actual adverse effect on competition as a whole in the relevant market") and P. Areeda & H. Hovenkamp, Antitrust Law (2003), para. 1503a ("Every antitrust suit should begin by identifying the ways in which a challenged restraint might possibly impair competition."). Likewise, under The Sherman Act, Section 2, the plaintiff must show that "a monopolist's act . . . [has] an 'anticompetitive effect.' That is, it must harm the competitive *process* and thereby harm consumers" (emphasis added). *See* United States v. Microsoft, 253 F.3d 34, 58 (D.C. Cir. 2001) [hereinafter *Microsoft*]. Based on his analysis of post-*Sylvania* case law, Ginsburg concluded that "non-monopolists have been effectively freed from antitrust regulation of vertical nonprice restraints" (D. Ginsburg, *Vertical Restraints: De Facto Legality Under the Rule-of-Reason*, 60 Antitrust L.J. 67–81 (1991)). A similar movement away from form-based competition analysis of vertical restraints is occurring in the European Union. In 1999 and 2000, the European Commission issued a new Block Exemption Regulation and accompanying guidelines that focus on the competitive effects of vertical restraints entered into by "non-dominant" firms under Article 81. *See* Commission Regulation (EC) No. 2790/99 on the Application of Article 81(3) of the Treaty to Categories of Vertical Agreements and Concerted Practices, 1999 O.J. (L 336) and Guidelines on Vertical Restraints, 2000 O.J. (C 291) 1. Vertical agreements entered into by firms exceeding a 30 percent threshold (but below the 50 percent level required for "dominance") are judged by their overall competitive effect, including an accounting of efficiencies (*id.* at para. 116). For a discussion of the Commission's greater reliance on economics when analyzing vertical practices involving non-dominant firms, *see* Vincent Verouden, *Vertical Agreements and Article 81(1) EC: The Evolving Role of Economic Analysis*, 71 Antitrust L.J. 525 (2003).

3 *See, e.g.*, Robert H. Bork, The Antitrust Paradox (1978).

because) they are based on more realistic market structures (i.e. oligopoly, instead of monopoly or perfect competition) and account explicitly for strategic interactions among competitions, the predictions of these models are necessarily more fragile than those of the earlier models. Accordingly, equilibria in which the restraints reduce welfare require very specific—and difficult to verify in real-world settings—assumptions about (among other things) costs, demand, the nature of input contracts, conditions of entry, the slope of reaction functions, and the information available to firms. Seemingly minor perturbations to these assumptions can reverse the predicted welfare effects of the practice in question.[4]

The sensitivity of equilibria to factors that are difficult to observe empirically means that it is extremely difficult for an antitrust practitioner to determine whether a given vertical restraint is anticompetitive in any particular set of circumstances. In contrast to mergers among competitors, there are intrinsic efficiencies to vertical control that render the ultimate competitive effects of a given vertical restraint inherently ambiguous, even in the absence of production efficiencies. Practitioners who rely mainly on economic theory to assess the competitive impact of vertical restraints in any given setting face a formidable inferential problem: Not only must they decide which model best applies to the particular factual circumstances in which the restraint has been adopted, they also must then determine whether the model chosen has the particular combination of parameters that would result in an anticompetitive equilibrium.

We argue that economic theory actually provides policymakers with very little guidance as to whether vertical restraints are likely to be beneficial or harmful in any particular factual setting. Importantly, the conditions necessary for vertical restraints to harm welfare generally are the same conditions under which the practices increase consumer welfare. For example, pre-existing market power in the primary market typically is necessary for vertical integration to raise price to un-integrated rivals, but vertical integration under these conditions normally also would eliminate double-markup distortions, a pro-competitive effect. Determining which effect dominates depends on a variety of parameters that typically are hard to observe. Further, although there are well-known theories of efficiencies from vertical restraints due to better alignment of upstream and downstream firms' incentives, none of the theories are developed enough to show how to weigh the potential harm from vertical restraints against claimed efficiencies.

If a theory does not allow a decision maker to use observable criteria to distinguish pro- from anticompetitive outcomes with a reasonable degree of precision, then its ability to inform policy decisions is quite limited. Absent a direct empirical evidence of the effects of the practice in question (for example, from com-

4 Of course, if one could establish which assumptions are appropriate (i.e. which assumptions yield predictions consistent with the evidence and which do not), then one could select and apply the appropriate theory. Our point is that this is extremely difficult to do in most cases.

paring markets with the restraint to those where the restraint is not present), enforcement decisions unavoidably will be subject to substantial uncertainty.

In the context of antitrust policymaking, decision making under uncertainty could be modeled as a process whereby decision makers use observed data to update their prior beliefs about the likely efficiency of a given vertical restraint, yielding a posterior belief. If empirical evidence is difficult to interpret, these observations will cause little, if any, modification to these prior beliefs. Enforcement decisions accordingly will mainly reflect the strength of these "priors." Although credible empirical evidence (i.e. evidence from peer-reviewed academic studies) on the equilibrium effects of vertical practices is somewhat limited, most studies show that vertical restraints increase (or at worst, do not reduce) economic welfare.

ALTHOUGH CREDIBLE EMPIRICAL EVIDENCE ON THE EQUILIBRIUM EFFECTS OF VERTICAL PRACTICES IS SOMEWHAT LIMITED, MOST STUDIES SHOW THAT VERTICAL RESTRAINTS INCREASE (OR AT WORST, DO NOT REDUCE) ECONOMIC WELFARE.

The remainder of the paper is organized as follows. Section II examines some of the pro-competitive virtues of vertical restraints and Section III examines static and dynamic theories of harm from vertical restraints. Section IV reviews the relevant empirical literature. Section V examines the implication for enforcement policies. Section VI offers some conclusions.

II. The Benefits of Vertical Restrictions

Vertical integration and other vertical contracts can mitigate inefficiencies that arise in the vertical relationship. In this section, we review the primary efficiencies that flow from vertical restraints.

A. ELIMINATING DOUBLE MARKUPS

When competition is imperfect at both levels (i.e. both upstream and downstream firms earn positive margins), total downstream output will be less than what a vertically integrated firm would produce. The limiting case of upstream and downstream monopolists illustrates this point. The downstream seller could increase its profits if it could obtain its input at marginal cost rather than at the monopoly price, and the upstream supplier could increase its profits if the downstream firm ceased marking up its output, thus expanding demand for the upstream monopolist's input. Clearly, both firms have an incentive to integrate and sell the final good at a price that equates marginal cost to the downstream firm's marginal revenue. In this case, output rises, prices fall, and joint profits increase. Note that elimination of the double markup can be thought of as the unilateral effect of a merger among complements.

In addition to vertical integration, maximum resale price maintenance allows a manufacturer directly to constrain the ability of a downstream retailer to exploit local market power, and so can accomplish the same result.

B. INCREASING INCENTIVES TO PROVIDE DEMAND-ENHANCING SERVICES

Because a manufacturer and a retailer may have different incentives to provide sales-generating effort, a manufacturer may find it efficient to restrict the distribution of its product. By limiting intra-brand competition, a manufacturer can enhance inter-brand competition with its rivals.

Retail promotion and service is an important complement to many consumer goods. To reach an optimal level of output, a manufacturer often will find it efficient to provide those consumers who are indifferent between purchasing or not with extra services to make the purchase worth their while. For instance, relatively uninformed consumers of high-end electronic equipment may require expert assistance to determine the proper product for them—without such assistance they may choose not to purchase a product at all. A manufacturer also may desire a retailer to take steps to assure that a product maintains the level of quality that consumers expect from a given brand. For example, a brewer may insist that a retailer store its beer in a certain way to preserve its quality. Without proper storage, total demand for the brand (i.e. not merely demand at the one retail location) would be lower because consumers would likely associate the poor quality not with the retailer's inadequate storage, but with the manufacturer's product.[5]

In many cases, however, retailers will have less of an incentive to engage in sales-generating effort than manufacturers. For instance, when the manufacturer's profit margin for additional sales is large in relation to the retailer's (as may be the case for branded products), the retailer rationally will provide a lower level of promotion than is optimal for the manufacturer.[6] Further, because retailers do not reap all of the benefit from a manufacturer's reputation, they are likely to have an incentive to provide suboptimal effort to maintain a level of qual-

5 *See, e.g.*, Adolph Coors Co. v. FTC, 497 F.2d 1178 (10th Cir. 1974).

6 For example, one study reports that apparel manufacturers' average gross profit margin is 46 percent compared to only nine percent for "multiple apparel retailers." The authors note that this disparity in compensation for marginal sales "will limit the incentive of retailers to invest in developing and promoting their Web sites unless there is some form of co-op funding or restructured pricing" (R. Gertner & R. Stillman, Vertical Integration and Internet Strategies in the Apparel Industry, 49 J. Indus. Econ. 417, 427 (2001)).

ity that is associated with a manufacturer's brand name.[7] Thus, a manufacturer will need to compensate the retailer for expending the desired effort and would like to enter into a contract that spells out the services that a retailer must perform. Because retail service provisions can be complex and difficult to measure, often a manufacturer will find it impracticable to specify in a contract the exact type and level of promotional services it desires from retailers.

One solution to this problem is for a manufacturer to have distribution policies that insulate retailers from intra-brand (other sellers of that manufacturer's product) competition. In this way, a manufacturer can provide its retailers with sufficient compensation to create incentives to supply the desired retail service.[8]

Limited distribution policies also can prevent discounters from free-riding on a full-service retailer's efforts to increase demand.[9] Under this special services free-riding argument, absent exclusive territories, a consumer may come to the full-service retailer to learn about the product from a knowledgeable and attentive sales staff, but purchase the product from a discounter that offers lower prices because it does not provide any service. Insulated from discounters, full-service retailers can capture the full return to their service efforts, thereby helping to assure that the optimal level of service is achieved.

Exclusive dealing arrangements may be necessary to prevent retailers and rival manufacturers from free-riding off of a supplier's direct investments. For instance, a supplier that provides distributors subsidized rent, displays, or sales-force training may be concerned that these distributors will use this investment to promote rival manufacturers' products.[10] Even when the investment cannot be used to promote rivals' products, exclusivity could be a way to prevent a distributor from holding up a manufacturer that has made a relationship-specific investment.[11]

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7 This phenomenon may be likely to arise in a franchise context. For example, although a restaurant franchisee using low-quality ingredients would lose repeat sales at its outlet, it may also cause fewer patrons to visit other franchisees' outlets as well. The low-quality franchisee does not internalize the full costs of actions that depreciate the brand name capital of the franchisor. *See* B. Klein, *The Economics of Franchise Contracts*, 2 J. Corp. Fin. 9 (1995) and P. Rubin, *The Theory of the Firm and the Structure of the Franchise Contract*, 21 J.L & Econ. 223 (1978).

8 *See* B. Klein & K. Murphy, *Vertical Restraints as Contract Enforcement Mechanisms*, 31 J.L. & Econ. 265 (1988).

9 *See* L. Telser, *Why Should Manufacturers Want Fair Trade?*, 3 J.L. & Econ. 86 (1960). *See also* Isaksen v. Vermont Castings, Inc., 825 F.2d 1158, 1161–62 (7th Cir. 1987) (Posner, J.) (describing how minimum resale price maintenance can also be used to assure that dealers provide the proper level of service by preventing discounters from free-riding).

10 *See* H. Marvel, *Exclusive Dealing*, 25 J.L. & Econ. 1 (1982).

11 *See* B. Klein, *Exclusive Dealing as Competition for Distribution "on the Merits,"* 12 Geo. Mason L. Rev. 119, 139–40 (2003).

Where there is no obvious investment made by the manufacturer, there still may be a need for imposing exclusivity on distributors. As noted above, given misaligned incentives, a manufacturer typically will have to compensate a distributor for promotion and obviously, a supplier will want to assure that it is getting the promotion that it paid for. A distributor may have an incentive to steer marginal consumers—who are likely to be indifferent between brands—to higher-profit margin brands, or may have an incentive not to expend promotional effort to switch a consumer to the supplier's brand when a consumer has a preference for a rival brand. Exclusivity may be a way to prevent this sort of distributor opportunism.[12]

III. Theories of Competitive Harm From Vertical Restraints

Partly as a reaction to the Chicago School critique of vertical antitrust policy, new theories have been offered that show how vertical control can reduce equilibrium welfare . These models fall into two broad categories: static and dynamic. In static models, the competitive harm results from integrated firms softening competition with rivals. In dynamic models, integrated firms typically increase their profits and reduce welfare by preventing entry and/or inducing the exit of rivals. In either case, the concept of foreclosure plays a crucial role. The possibility that firms could profit from raising rivals' (and potentially their own) costs constitutes much of the basis for challenging the Chicago School view that vertical restraints seldom harm competition.[13] In this manner, the concept of foreclosure is a unifying theme across these post-Chicago models.

A. STATIC MODELS

In their seminal paper, Salop and Scheffman (1983)[14] point out that vertical integration or restraints sometimes provide ways for firms to raise their rivals' costs and thereby profitably reduce market output. They show how the dominant firm can raise input costs (both its own and its rivals') by "over-purchasing inputs" through either excessive purchases of inputs on the open market or

12 *See id*.

13 In this paper we focus on the case of fixed proportions technology, which formed the basis for most of the Chicago view that vertical integration and restraints are benign or efficient.

14 S. Salop & D. Scheffman, *Raising Rivals' Costs*, 73 Am. Econ. Rev. 267 (1983). *See also* S. Salop & D. Scheffman, *Cost Raising Strategies*, 36 J. Indus. Econ. 19 (1987).

excessive purchases of productive capacity through vertical integration.[15] This action may be profitable and may reduce partial equilibrium welfare, depending on cost and demand parameters and the cost-raising technology. However, there is no general incentive to raise rivals' costs, and even when it is privately profitable to do so, the attendant welfare consequences may be positive.[16] If the cost-raising strategy is profitable, it may lead to an increase or decrease in price. This is because the dominant firm may expand output enough to offset the contraction in the output of the fringe. If the strategy leads to an increase in price, total welfare still may rise if the dominant firm is more efficient than the fringe firms, as the shift in output from the fringe to the dominant firm can increase productive efficiency.

Another set of models focuses on the ability of profitable vertical mergers to lead to higher prices and lower output downstream.[17] Although they differ in their assumptions about the nature of upstream and downstream competition (i.e. Cournot or Bertrand), these models' anticompetitive results rest on integration causing an increase in the price that non-integrated downstream rivals pay for an input.

In softening-competition models, because the integrated firm has an incentive to compete less aggressively upstream, the remaining non-integrated suppliers have an incentive to raise their prices to the remaining non-integrated downstream firms. At the same time, however, the integrated firm's downstream output increases because it enjoys lower input costs than its rivals. This fact—combined with the elimination of the integrated firm's downstream unit's demand for the input—lowers demand for non-integrated input suppliers. The net effect of these two forces determines whether vertical integration will raise the input price for non-integrated firms. Of course, such foreclosure is only a necessary condition for competitive harm in these models—even if the input price rises, total output may increase if the integrated firm's costs fall sufficiently.[18]

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15 A substitute for vertical integration in this context may be the cartelization of the upstream market. For example, Granitz and Klein argue that Standard Oil raised rival refiners' costs by cartelizing the oil transportation market (the railroads) and conspiring with them to charge rival refiners higher prices for transportation services. *See* E. Granitz & B. Klein, *Monopolization by Raising Rivals' Costs: The Standard Oil Case*, 39 J.L. & Econ. 1 (1996).

16 A cost-raising strategy is profitable if it raises the dominant firm's residual demand curve by more than its average cost curve. This generally depends on the cost and demand parameters and the cost-raising technology.

17 *See, e.g.*, M. Salinger, *Vertical Integration and Market Foreclosure*, 103 Q.J. Econ. 345 (1988); J. Ordover, G. Saloner, & S. Salop, *Equilibrium Vertical Foreclosure*, 80 Am. Econ. Rev. 127–42 (1990) [hereinafter OSS (1990)]; and, J. Ordover, G. Saloner, & S. Salop, *Equilibrium Vertical Foreclosure: Reply*, 82 Am. Econ. Rev. 698–703 (1992).

18 *See* D. Reiffen & M. Vita, *Comment: Is There New Thinking on Vertical Mergers?*, 63 Antitrust L.J. 917 (1996).

A necessary condition for these models to predict foreclosure is the ability of the integrated upstream supplier to commit credibly to a post-merger withdrawal from the input market, thereby allowing the remaining firm(s) to raise their price. Importantly, if the pre-merger upstream market is effectively competitive (i.e. Bertrand competition in homogeneous goods), then vertical integration does not change the integrated firm's decision to supply downstream rivals with the input unless the merger somehow creates an ability for the integrated firm to commit to competing less aggressively upstream.[19]

B. DYNAMIC MODELS

Dynamic models also involve foreclosure, focusing on exclusive dealing, tying, and bundling as ways to foreclose rivals from access to inputs, thereby deterring entry and/or inducing the exit of competitors. Whinston (1990) was the first to examine rigorously the potential entry-deterring effects of tying.[20] His model shows that a commitment to tying can cause a firm to price more aggressively against its rivals in the tied good market. If economies of scale characterize production in the tied good market, this commitment can deter entry because the potential tied good entrant realizes that the resulting low price will not permit it to cover its average costs. Carlton and Waldman (2002) show how a monopolist can use tying to preserve its monopoly in future periods or extend it into newly emergent markets.[21] Nalebuff (2004) shows that a company with market power in two products that can bundle them together can make it harder for a rival selling only one of the products to compete.[22]

The welfare effects of tying and bundling in these models are theoretically ambiguous, for a variety of reasons. In Whinston's model, for example, the commitment to compete more aggressively caused by tying can also lower price. In addition, the welfare effects of entry into the tied good market are typically ambiguous because of the usual tradeoff between greater product variety and the

19 Reiffen makes this point forcefully in his critique of OSS (1990), which shows how an upstream Bertrand competitor can create market power for itself by vertically integrating if the integrated firm can somehow commit to compete less aggressively for sales to the unintegrated downstream rival. *See* D. Reiffen, *Equilibrium Vertical Foreclosure: Comment*, 82 Am. Econ. Rev. 694 (1996). *See also* Reiffen & Vita, *supra* note 18. Choi and Yi explore switching costs and investments in specific technology as possible means for an upstream Bertrand competitor to commit to supplying only its downstream unit. *See* J. Choi & S.-S. Yi, *Vertical Foreclosure with the Choice of Input Specification*, 31 RAND J. Econ 717–43 (2000). Chen uses switching costs as a way for a non-integrated downstream firm to commit credibly to purchasing its input only from the integrated firm, which has an incentive to continue supplying the unintegrated downstream rival because it has a cost advantage over its upstream rival. *See* Y. Chen, *On Vertical Mergers and Their Competitive Effects*, 32 RAND J. Econ 667–85 (2001).

20 M. Whinston, *Tying, Foreclosure, and Exclusion*, 80 Am. Econ. Rev 837 (1990).

21 D. Carlton & M. Waldman, *The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries*, 33 RAND J. Econ. 194–220 (2002).

22 B. Nalebuff, *Bundling as an Entry Barrier*, 119 Q. J. Econ. 159–88 (2004).

fixed costs of entry. Whinston summarizes the welfare and policy implications of his analysis as follows:

> "While the analysis vindicates the leverage hypothesis on a positive level, the normative implications are less clear. Even in the simple models considered here, which ignore a number of other possible motivations for the practice, the impact of this exclusion on welfare is uncertain. This fact, combined with the difficulty of sorting out the leveraged-based instances of tying with other cases, makes the specification of a practical legal standard extremely difficult."[23]

Carlton and Waldman also express caution in using their analysis to condemn tying. In the working paper version of their paper, they discuss the antitrust implications of their analysis:

> "It would be a grievous mistake to condemn such strategic behavior and attempt to use the antitrust laws to condemn it without an analysis of the welfare consequences of such behavior and without an analysis of the likelihood of being able to correctly identify such behavior without simultaneously condemning welfare enhancing behavior. Too often in the past, antitrust advocates have confused the theoretical possibility of harm with an empirical demonstration of such a harm."[24]

Similar to the dynamic effects of tying and bundling, the dynamic effects of exclusive dealing arise from denying rivals sufficient scale to be profitable.[25] Like most of the literature on vertical restraints, the exclusive dealing models are high-

23 Whinston, *supra* note 20, at 855–56.

24 D. Carlton & M. Waldman, The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries 37–39 (Nat'l Bureau of Econ. Research, Working Paper No. 6831, 1998), at 37.

25 *See, e.g.*, I. Segal & M. Whinston, *Naked Exclusion: Comment*, 90 Am. Econ. Rev. 296–309 (2000) and E. Rasmusen, J.M. Ramseyer & J. Wiley, Jr., *Naked Exclusion*, 81 Am. Econ. Rev 1137–44 (1991). Mathewson and Winter examine the case of two firms selling through a downstream monopolist using linear prices. Abstracting from economies of scale, they show that the effect of exclusive dealing (ED) on prices is ambiguous. For parameters in which ED is profitable, it may lead to more aggressive bidding for the right to be the exclusive supplier and, thus, a lower input price. This is a potential

ly stylized. For example, these papers assume that downstream markets are served by local monopolists, and that the scale economies in the upstream market take a particular form. Even in these simple settings, the welfare effects of exclusive dealing are theoretically ambiguous.

IV. Empirical Evidence

In reviewing existing empirical studies of vertical integration and vertical restraints,[26] two features immediately stand out: First, there is a paucity of support for the proposition that vertical restraints and vertical integration are likely to harm consumers. Of all the studies we reviewed, only one (a study of vertical integration between cable television franchises and cable programmers) purports to find unambiguously an instance where vertical integration was harmful to consumers. And, in this instance, the losses were minuscule (US$0.60 per cable subscriber per year). Second, a far greater number of studies found that the use of vertical restraints in the particular context studied improved welfare unambiguously (i.e. resulted in lower prices and larger quantities).

THERE IS A PAUCITY OF SUPPORT FOR THE PROPOSITION THAT VERTICAL RESTRAINTS AND VERTICAL INTEGRATION ARE LIKELY TO HARM CONSUMERS.

footnote 25 cont'd

benefit of ED that must be weighed against possible entry-deterrent effects. *See* F. Mathewson & R. Winter, *Tying as a Response to Demand Uncertainty*, 28 RAND J. ECON. 566–83 (1997). O'Brien and Shaffer and Bernheim and Whinston consider the case of nonlinear contracts (but retain the downstream monopoly assumption). Bernheim and Whinston show that ED can potentially deter entry and thereby reduce competition in "non-coincident" markets (i.e. markets other than those in which exclusive dealing is used). Exclusive dealing is costly in the markets in which it is imposed because it induces more aggressive bidding by manufacturers for the right to be exclusive—as demonstrated by O'Brien and Shaffer. However, the benefit of less competition in non-coincident markets may outweigh this cost. The welfare effects of ED in these models are ambiguous. Among other difficulties, equilibria exist in which only one firm serves the market even without exclusive dealing (O'Brien and Shaffer), so entry deterrence can occur given the right scale conditions even if ED is not used (Bernheim and Whinston). *See* D. O'Brien & G. Shaffer, *Nonlinear Supply Contracts, Exclusive Dealing, and Equilibrium Market Foreclosure*, 6 J. ECON. & MGMT. STRATEGY 755–85 (1997) and B.D. Bernheim & M. Whinston, *Exclusive Dealing*, 106 J. POL. ECON. 64–103 (1998).

26 For a more thorough review of the relevant literature, see J. Cooper, L. Froeb, D. O'Brien, & M. Vita., *Vertical Antitrust Policy as a Problem of Inference*, 23 INT'L J. INDUS. ORG. 639 (2005), at Table 1 . In carrying out this survey, we limit our review to those papers that address issues of explicit antitrust policy interest. We do not discuss the extensive literature on contract choice in franchise relationships, nor do we discuss the literature (with one exception) that examines optimal contract/integration choice in the face of asset specificity (*see, e.g.,* P. Joskow, *Vertical Integration and Long-term Contracts: The Case of Coal-burning Electric Generating Plants*, 1 J.L. ECON. & ORG. 33–80 (1985)).

For example, studies have found support for the proposition that vertical restraints and vertical integration solve the double-markup problem and reduce costs in other ways in fast food, gasoline, beer, and cable television markets.[27] Other studies bearing on the double markup or other cost-savings issues analyze the competitive effects of vertical restraints in a broader cross-section of industries. For example, in her study of litigated resale price maintenance (RPM) cases, Ippolito (1991) found that 30 percent of litigated RPM cases involved maximum RPM, suggesting that in these instances vertical restraints were used as a means for constraining downstream market power.[28]

The empirical literature also provides at least indirect evidence that vertical restraints sometimes are used to induce the provision of demand-increasing activities by retailers.[29] Ippolito (1991) and Ippolito and Overstreet (1996) found that in their samples, the use of RPM generally was consistent with demand-increasing activities by retailers.[30] Also consistent with this rationale for vertical restraints are Sass and Saurman's (1996) findings that the ban on exclusive territories in beer sales reduced beer consumption by six percent.[31] Mullin and Mullin (1997) found vertical integration induced investment in relationship-

27 *See, e.g.*, T. Chipty, *Vertical Integration, Market Foreclosure, and Consumer Welfare in the Cable Television Industry*, 91 Am. Econ. Rev. 428, 428–50 (2001); M. Slade, *Beer and the Tie: Did Divestiture of Brewer-Owned Public Houses Lead to Higher Beer Prices?*, 108 Econ. J. 565, 565–600 (1998); M. Vita, *Regulatory Restrictions on Vertical Integration and Control: The Competitive Impact of Gasoline Divorcement Policies*, 18 J. Reg. Econ. 217 (2000); M. Vita, *Must Carry Regulations for Cable Television Systems: An Empirical Analysis*, 12 J. Reg. Econ. 159, 159–72 (1997). K. Graddy, *Do Fast-Food Chains Price Discriminate on the Race and Income Characteristics of an Area*, 15 J. Bus. & Econ. Stat., 391 (1997); J. Barron, T. Beck, & J. Umbeck, *Will Open Supply Lower Retail Gasoline Prices?*, 63 Contemporary Econ. Pol'y 22 (2004); and, J. Barron & J. Umbeck, *The Effects of Different Contractual Arrangements: The Case of Retail Gasoline Markets*, 27 J.L. Econ. 313 (1984).

28 P. Ippolito, *Resale Price Maintenance: Empirical Evidence from Litigation*, 34 J.L & Econ. 263–94 (1991).

29 That is, manufacturers might wish to induce their retailers to provide services to consumers that will increase demand for the product (e.g. showing consumers how to operate complicated electronic equipment). One problem is that these services may be subject to "free-riding," that is, the customer goes to the full service retailer to learn about the product, and then proceeds to purchase the product from a no-frills discount retailer (this motive for vertical restraints was first articulated by Telser. *See* L. Telser, *Why Should Manufacturers Want Fair Trade?*, 3 J.L. & Econ. 86 (1960). Vertical restraints (such as minimum RPM) can be used to prevent this free-riding. More generally, vertical restraints can be used to provide incentives for the provision of any non-contractable service that enhances demand with or without service externalities among retailers. *See*, *e.g.*, Mathewson & Winter, *supra* note 25, at 27.

30 *See* Ippolito, *supra* note 28 and P. Ippolito & T. Overstreet, *Resale Price Maintenance: An Economic Assessment of the Federal Trade Commission's Case against the Corning Glass Works*, 39 J.L & Econ 285–328 (1996).

31 T. Sass & D. Saurman, *Efficiency Effects of Exclusive Territories: Evidence from the Indiana Beer Market*, 34 Econ. Inquiry 597–615 (1996).

specific assets in steel production.[32] Hersch (1994) also concluded that his stock market event study provided evidence consistent with the efficiency rationale for RPM.[33] Heide, Dutta, and Bergen's (1998) study of exclusive dealing contracts found that a key determinant of the use of exclusive dealing contracts was whether or not manufacturers compensated dealers for services potentially "free rideable" by rival manufacturers.[34] Notably, the study also found that the perception by managers of likely entry reduced the probability of using exclusive dealing contracts, thus casting doubt on the empirical importance of exclusionary motives for vertical restraints among the firms in their sample.

A few studies obtained results consistent with both pro- and anticompetitive characterizations of vertical restraints. Gilligan's (1986) event study obtained negative abnormal returns upstream when RPM contracts were challenged, a result consistent with efficiency and manufacturer collusion explanations for RPM (because manufacturer profits would be expected to fall under either of these possibilities).[35] In their study of cable television, Waterman and Weiss (1996) found that cable systems that owned pay movie channels were less likely to carry rival pay channels, a finding consistent both with pro- and anticompetitive behavior. A decision to integrate vertically into programming is presumptively profitable—the profits could arise either from greater efficiency (elimination of double markups) or from foreclosure of some sort.[36] Last, Hastings (2004) found that retail petrol prices increased when "unbranded" stations were acquired by a branded refiner.[37] However, she concludes that the change in price at newly acquired stations is attributable to the effects of "branding" formerly "unbranded" retailers, not to greater vertical control by refiners. Indeed, she notes explicitly that her empirical evidence does not support "divorcement" restrictions (i.e. proscriptions on the vertical control of gasoline retailers by refiners).

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32 J. Mullin & W. Mullin, *United States Steel's Acquisition of the Great Northern Ore Properties: Vertical Foreclosure or Efficient Contractual Governance?*, 13 J.L. Econ. & Org. 74–100 (1997).

33 P. Hersch, *The Effects of Resale Price Maintenance on Shareholder Wealth: The Consequences of Schwegmann*, 42 J. Indus. Econ. 205 (1994).

34 J. Heide, S., & M. Bergen, *Exclusive Dealing and Business Efficiency: Evidence from Industry Practice*, 41 J.L. & Econ. 387, 387–404 (1998).

35 T. Gilligan, *The Competitive Effects of Resale Price Maintenance*, 17 RAND J. Econ. 544 (1986).

36 D. Waterman & A. Weiss, *The Effects of Vertical Integration Between Cable Television Systems and Pay Cable Networks*, 72 J. Econometrics 357 (1996).

37 J. Hastings, *Vertical Relationships and Competition in Retail Gasoline Markets: Empirical Evidence from Contract Changes in Southern California*, 94 Am. Econ. Rev. 317 (2004).

Overall, our review leads us to characterize the empirical literature on vertical restraints and vertical integration in much the same manner as LaFontaine and Slade:

> "[T]he empirical evidence concerning the effects of vertical restraints on consumer wellbeing is surprisingly consistent. Specifically, it appears that when manufacturers choose to impose such restraints, not only do they make themselves better off, but they also typically allow consumers to benefit from higher quality products and better service provision. In contrast, when restraints and contract limitations are imposed on manufacturers via government intervention, often in response to dealer pressure due to perceptions of uneven bargaining power between manufacturers and dealers, the effect is typically to reduce consumer welfare as prices increase and service levels fall. The evidence supports the conclusion that in these markets, manufacturers and consumer welfare are apt to be aligned, while interference in the market is accomplished at the expense of consumers (and of course manufacturers)."[38]

V. Implications for Antitrust Policy Towards Vertical Restraints

Antitrust enforcers seldom can be certain about whether a particular business practice is anticompetitive or not. Invariably, enforcers sometimes will make errors. Two types of errors, and concomitant losses, will attend any enforcement decision rule: losses from prosecuting pro-competitive practices (false positives),[39] and losses from failing to prosecute anticompetitive practices (false negatives). An optimal enforcement policy will challenge a vertical restraint only if the expected cost of false negatives is greater than the expected false positives. Thus, a (optimal) decision to challenge a given restraint is more likely if:

1) the cost of false positives is low relative to the cost of false negatives;

2) there are strong priors that a given practice is anticompetitive; and

38 F. LaFontaine & M. Slade, *Exclusive Contracts and Vertical Restraints: Empirical Evidence and Public Policy*, *in* HANDBOOK OF ANTITRUST ECONOMICS (Paola Buccirossi ed., forthcoming 2005), at 22.

39 If an investigation continues, but a court later finds against the enforcement authority, the loss may only be that associated with a temporary stay of the conduct at issue.

3) economic theory suggests strongly that the evidence likely was generated by an anticompetitive rather than a pro-competitive or benign practice.

In this framework, the degree to which specific evidence is helpful, and the prior beliefs about the competitive impact of a practice, may vary according to the type of vertical restraint at issue and the pro- and anticompetitive theories posited. For example, based on the empirical evidence reviewed in Section IV, our priors that RPM or exclusive dealing are pro-competitive may be stronger than our priors for other forms of vertical control on which there has been little empirical work. Further, evidence of downstream foreclosure and economies of scale will affect the likelihood differently in the case of maximum RPM than in the case of exclusive dealing.

SHOWING FORECLOSURE ALONE SHOULD NOT SHIFT THE BURDEN ONTO THE DEFENDANT TO JUSTIFY THE RESTRAINT (OR INTEGRATION) THAT IS BEING CHALLENGED. INSTEAD, BECAUSE FORECLOSURE IS ONLY A NECESSARY CONDITION FOR HARM, AN ENFORCER (OR PLAINTIFF) MUST ALSO HAVE THE BURDEN OF SHOWING A CAUSAL LINK BETWEEN FORECLOSURE AND SOME INDICATION OF REDUCED CONSUMER WELFARE.

Assuming the decision maker can measure the relevant evidence accurately, theory may allow us to define safe harbors. Some evidence may contradict the necessary conditions for anticompetitive effects under the relevant theory. For instance, upstream market power is a necessary condition for anticompetitive effects in many models. Thus, if highly competitive upstream markets are observed, a policymaker can rule out most theories of competitive harm. It is important, however, for policymakers to avoid creating safe harbors that allow necessary conditions for harm to evolve into de facto sufficient conditions. For example, showing foreclosure alone should not shift the burden onto the defendant to justify the restraint (or integration) that is being challenged. Instead, because foreclosure is only a necessary condition for harm, an enforcer (or plaintiff) must also have the burden of showing a causal link between foreclosure and some indication of reduced consumer welfare (i.e. lower downstream output or higher downstream costs).

As a threshold matter, however, we must be careful about what we mean by "foreclosure." Foreclosure in the abstract—denial of the ability to purchase an input from a particular firm—has no competitive effect if firms can still purchase the input at the same price. A more precise definition centers on an increase in rivals' costs. As Salinger notes with respect to a softening of competition, an economically meaningful definition of foreclosure is an increase in the price of an input.[40] Further, in dynamic models foreclosure is relevant in terms of competi-

40 M. Salinger, *Vertical Integration and Market Foreclosure*, 103 Q. J. ECON. 345–56, 53 (1988).

tion only if it raises rivals' costs by denying scale economies. It is also important to note that in both static and dynamic models, foreclosure is only a necessary condition for harm. Even if a vertical practice forecloses rivals, efficiencies inherent to the vertical relationship among firms must be considered.

Current U.S. antitrust law appears to be consistent with the view that foreclosure is only a necessary condition for an antitrust challenge. As a threshold matter, a plaintiff must show foreclosure.[41] But even if a plaintiff shows substantial foreclosure, at least some courts have held that it also must show that the defendant's agreements are likely to result in prices above (and thus output below) the competitive level.[42] To assess the likely competitive effects of market foreclosure, courts examine such factors as the defendant's market share and entry barriers, and the likelihood that rivals can find alterative means to reach the downstream market.[43] Because courts look at foreclosure from specific input suppliers instead of increased rivals' costs, and because a defendant bears the burden of showing efficiencies, including elimination of the double markup, a rule of reason inquiry is likely to give too much weight to evidence of foreclosure. Nevertheless, it is promising that at least some courts view foreclosure as only a necessary condition, and not a sufficient condition, for harm to competition.

Once we depart from evidence that contradicts necessary conditions for competitive harm, theory becomes less useful as a guide for enforcement decisions. Decision makers may observe evidence that is consistent with the necessary conditions for anticompetitive harm, but that is at least equally consistent with procompetitive theories. For example, upstream market power is necessary for theo-

41 *See* Tampa Elec. Co. v. Nashville Coal Co., 365 U.S. 320, 327–28 (1961) (a plaintiff challenging an exclusive deal must show that it "foreclose[s] competition in a substantial share of the line of commerce affected," so that "the opportunities for other traders to enter into or remain in that market must be significantly limited"). Courts have suggested that a plaintiff must show that the defendant's exclusive deals have foreclosed rivals from at least 40–50 percent of the relevant market for there even to be the potential for anticompetitive effects. *See Microsoft*, *supra* note 2, at 70 and United States v. Microsoft Corp., 87 F. Supp. 2d 30, 52 (D.D.C. 2000). Courts also look at the temporal dimension of foreclosure, analyzing duration and terminability. *See* Concord Boat Corp. v. Brunswick Corp., 207 F.3d 1039, 1063 (8th Cir. 2000) [hereinafter *Concord Boat*] (78 percent of downstream market covered by de facto exclusive deals are not anticompetitive when the boat builders "were free to walk away from the discounts at any time"). *See also* Omega Environ., Inc., v. Gilbarco, Inc., 127 F.3d 1157, 1163–64 (9th Cir. 1997) (exclusive contracts covering 38 percent of market unlikely to foreclose competition when contracts were terminable with 60 days notice, and all were terminable within a year).

42 *See* Barr Labs., Inc. v. Abbott Labs., 978 F.2d 98, 111 (3d Cir. 1992) ("the degree of market foreclosure is only one of the factors involved in determining the legality of an exclusive dealing arrangement") and Roland Mach. Co. v. Dresser Indus., Inc., 749 F.2d 380, 394 (7th Cir. 1984) (in addition to substantial foreclosure, a necessary condition for exclusive dealing to be unlawful is that "the probable (not certain) effect of the exclusion will be to raise prices above (and therefore reduce output below) the competitive level, or otherwise injure competition"). *See also* H. Hovenkamp, Antitrust Law (1998), at para. 1821c1 ("[A]ntitrust is not concerned with denial of access in the abstract, but only with denial of access that foreseeably results in an output reduction and attendant increase in price").

43 *See Concord Boat*, *supra* note 41, at 1059 and *id.* at para. 1821d.

ries of harm, as well as efficiencies resulting from elimination of double markups, to obtain. In the case of tying or exclusive dealing, moreover, even large levels of downstream foreclosure and scale economies may not suggest a net anticompetitive effect because such evidence does not rule out an inference that plausible efficiencies from these practices—such as enhanced promotional incentives or the attenuation of hold-up problems[44]—outweigh any competitive loss.[45]

Further complicating this problem is that the use of dynamic models to guide policy requires enforcers to speculate about potential harm that may occur as entry is deterred or exit hastened and weigh this against current benefit. Significantly, this kind of short-run benefit versus long-run harm analysis is the opposite of the kind of policy calculus typically conducted with horizontal mergers. There we focus on the short run because the long run is inherently ambiguous, and there are competitive forces, like entry and product repositioning, that tend to mitigate long-run harm. Bringing vertical cases under a dynamic theory of harm when current benefits are already in existence would turn this logic on its head.

DIFFERENT JURISDICTIONS CAN SHARE THE SAME BELIEFS REGARDING THE THEORETICAL AND EMPIRICAL EFFECTS OF VERTICAL RESTRAINTS, BUT QUITE LEGITIMATELY CAN ARRIVE AT DIFFERENT ENFORCEMENT POSTURES IF THE RELATIVE WEIGHT ACCORDED FALSE NEGATIVES AND FALSE POSITIVES VARIES ACCORDING TO CONDITIONS IN DIFFERENT MARKETS.

These observations yield some important implications for decisions regarding vertical practices. First, to the extent that theory provides little guidance in classifying evidence beyond allowing us to determine safe harbors, a decision maker's beliefs that a specific vertical practice is pro- or anticompetitive should closely mimic his or her prior beliefs regarding such practices in general.

Second, even with uninformative theory and priors that suggest vertical practices to be efficient, if the expected loss from false negatives is sufficiently large, then it makes sense to challenge a particular restraint. This means that different jurisdictions can share the same beliefs regarding the theoretical and empirical effects of vertical restraints, but quite legitimately can arrive at different enforcement postures if the relative weight accorded false negatives and false positives varies according to conditions in different markets.

It is possible, for example, that the U.S. and EU enforcement regimes agree on the likely welfare effects of vertical agreements, but because other considerations are an important determinant of EC competition policy, the cost of false-positive

44 *See, e.g.*, Klein & Murphy, *supra* note 8 and H. Marvel, *Exclusive Dealing*, 25 J.L. & ECON. 1 (1982).

45 *See* D. CARLTON & M. WALDMAN, *supra* note 24 (noting how plausible claims of efficiencies should defeat an "antitrust attack" on physical tying, and urging courts to "demand much more than mere theoretical possibility" when balancing competitive harms versus benefits for contractual and virtual ties).

errors from vertical agreements may be perceived as higher in the European Community. For example, certain vertical restraints—like exclusive territories based on national boundaries—can impair integration, which is the European Community's paramount goal. Such considerations rationally may lead EC officials to treat vertical restraints with greater hostility than their U.S. counterparts. Likewise, more flexibility in U.S. markets and the legal doctrine of stare decisis (which counsels against the overturning of legal precedents except in extraordinary circumstances) may lead U.S. authorities to be more concerned with avoiding false positives.[46]

VI. Conclusion

The outcome-based approach to antitrust ushered in by *Sylvania* in the United States (and gaining momentum in the European Community) requires enforcement officials to demonstrate likely adverse effects on welfare. We view this primarily as a problem of inference: Given the evidence, what is the probability that a given practice is anticompetitive? One approach to the inference problem is to establish screens based on structural conditions like market share, where harm is presumed if the conditions are met. Unfortunately, the search for a screen that works well in all but a few well-specified instances has proved elusive.[47]

A second approach is one based on an economic model of the restraint. Under this approach, policymakers posit a theory under which the restraint in question can harm competition, against alternatives in which the restraint is benign or pro-competitive, and then determine which theory best explains the available evidence. In this paper, we have argued that it is difficult to distinguish welfare-enhancing from welfare-reducing vertical practices based on evidence. The the-

46 The reluctance to overrule precedent, and the collective action problem associated with private incentives to challenge bad precedent, is likely to insulate the deterrent effect of a type-I error, while the market may be self-correcting with respect to type-II errors. As Easterbrook observes:

> "If the court errs by condemning a beneficial practice, the benefits may be lost for good. Any other firm that uses the condemned practices faces sanctions in the name of *stare decisis*, no matter the benefits. If the court errs by permitting a deleterious practice, though, the welfare loss decreases over time. Monopoly is self-destructive. Monopoly vices eventually attract entry."

See Frank Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 2–3 (1984) (*reprinted in* 1 COMPETITION POL'Y INT'L 179–215). *See also* F. McChesney, *Talking 'Bout My Antitrust Generation: Competition for and in the Field of Competition Law*, 52 EMORY L.J. 1401, 1412 (2003) ("The cost of Type II errors . . . will be low, as long as barriers to entering markets plagued by suspected anticompetition are also low. As prices rise because of anticompetitive contracts or practices, new entrants emerge to alleviate or even eradicate the problem").

47 For a discussion of screens, *see* J. VICKERS, ABUSE OF MARKET POWER (U.K. Office of Fair Trading, Working Paper, 2004).

ory of vertical control tells us that anticompetitive effects are possible, but until theory can be used to determine how likely it is that a restraint will lead to an anticompetitive outcome, decision makers will be left with a considerable amount of uncertainty. In this world, enforcement decisions should be guided by prior beliefs and loss functions. Our review of the existing empirical evidence—which informs our priors—suggests that vertical restraints are likely to be benign or welfare-enhancing.

Given the current state of knowledge, we suggest a third approach to guide enforcement policy. Under this approach, policymakers draw inferences about the competitive effects of the restraint by comparing markets with and without the restraint to determine the effect of the restraint. This could be a comparison of the same market before and after adoption of the constraint, or a comparison of a cross-section of markets in different geographic areas. The quality of the experiment and how closely it mimics the effect of the restraint would be issues for the court or decision maker to resolve.

It is trite to conclude with a call for more empirical work in this area, but the demand is acute. Practitioners in all countries, including those in the United States, are begging for clarity in the area. Uncertain enforcement standards chill the use of these restraints and, if the studies reviewed in this paper, in general, reflect the effects of these restraints, then antitrust policy could be acting as a tax on wealth-enhancing activity. In addition, economic analysis has provided the basis for a global convergence of policy towards horizontal restraints. If it is going to have a similar effect on vertical policy, then it is going to have to provide guidance to practitioners. Empirical evidence will not only shift our prior beliefs about the probability that a given practice is anticompetitive, but it will also inform theory, and hopefully, identify a set of circumstances under which anticompetitive effects are not just possible, but likely.