

VERTICAL CONTROL

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Antitrust litigation often requires courts to consider challenges to vertical “control.” How does a firm injure competition by limiting the behavior of vertically related firms? Competitive injury includes harm to consumers, labor, or other suppliers from reduced output and higher margins.

Historically, antitrust considers this issue by attempting to identify a market that is vertically related to the defendant, and then consider what portion of it is “foreclosed” by the vertical practice. There are better mechanisms for identifying competitive harm, including a more individualized look at how the practice injures the best placed firms or bears directly on a firm’s ability to reduce output and increase its price without losing so many sales that the price increase is unprofitable. This Article discusses these mechanisms.

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INTRODUCTION

Although antitrust has developed unifying doctrines for addressing horizontal mergers and agreements, analysis of vertical relationships has not

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reached a similar consensus.¹ The problem of vertical control revolves around one question: How does a firm injure competition by limiting the behavior of vertically related entities? The affected entities are either “upstream” firms and persons, including labor, that supply the firm in question or else “downstream” firms or persons that purchase from it. After an early period of antagonism toward vertical control, antitrust courts subsequently shifted to a very benign position.² Yet, despite the potential for competitive injury, which includes harm to consumers, labor, or other suppliers from reduced output and higher prices,³ antitrust law still lacks a unified theory about how vertical relationships can harm competition.

When it comes to horizontal arrangements, antitrust policy has developed largely agreed upon mechanisms for analyzing competitive effects in agreements like cartels, joint ventures, and mergers of competitors. Their competitive threats have been robustly theorized. Horizontal agreements or mergers reduce the number of effective rivals in a market, making collusive outcomes, including higher prices, more likely. In some cases they may permit pairs of firms in product differentiated markets to raise prices unilaterally⁴ or even create a monopoly.⁵ By contrast, a vertical merger or contract does not automatically reduce the number of firms in any market or give any participant a larger market share.

Vertical “control” in this context means something more than a simple one-off transaction that leaves the parties free to engage in all other business. Examples of vertical control include vertical mergers, in which one firm acquires a vertically related firm,⁶ or vertical integration by contract, in which the parties agree to longer term relationships that come with other restrictions. These contractual relationships come in a large variety, which has complicated legal analysis. Among the varieties are relatively long-term

¹ On antitrust policy concerning vertical integration by dominant firms, see 3B PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION* ¶¶ 755–69 (4th ed. 2016); on vertical mergers, see *id.* ¶ 1000 (4th ed. 2016); on vertical contractual restraints by firms that are not necessarily dominant, see *id.* ¶¶ 1600, 1800 (4th ed. 2017–18). On the meandering course of antitrust analysis of vertical arrangements, see HERBERT HOVENKAMP, *THE OPENING OF AMERICAN LAW: NEOCLASSICAL LEGAL THOUGHT, 1870–1970*, at 220–42 (2015).

² See HOVENKAMP, *supra* note 1 (detailing the history of judicial posture towards instances of vertical control).

³ See HERBERT HOVENKAMP, *FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE* § 2.3(c) (6th ed. 2020).

⁴ See PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶ 914 (4th ed. 2017) (discussing how mergers may threaten unilateral anticompetitive effects in product differentiated markets).

⁵ See *id.* ¶ 911; *N. Secs. Co. v. United States*, 193 U.S. 197, 322 (1904) (condemning merger to monopoly by two east-west transcontinental railroads).

⁶ See HOVENKAMP, *supra* note 1, at 221; AREEDA & HOVENKAMP, *supra* note 1, ¶ 1000(c) (4th ed. 2016).

arrangements in which one firm agrees to deal exclusively in the other's products (exclusive dealing),⁷ both short-term and long-term arrangements in which one firm agrees to take combinations of two or more products from the other firm (tying and bundling),⁸ and arrangements in which a firm promises that the terms it offers others will be less favorable, or at least no more favorable, than the terms given to the contracting party (most-favored-nation, or MFN, agreements).⁹ There are also variations or combinations of these, including several that involve conditional discounts or rebates rather than outright prohibitions.¹⁰

Many earlier antitrust decisions involving vertical control exhibited deep suspicion of devices that a firm operating at one market level might employ in order to control output or dealing at a second upstream or downstream level.¹¹ Some decisions feared monopolistic leveraging, or the idea that a firm with a monopoly in one product could use a vertical agreement such as tying to extract additional monopoly profits in a second product.¹²

More recently, the emergent theory of competitive harm has been some version of “foreclosure,” or the idea that a restrictive vertical agreement can exclude competitors or at least severely limit their opportunities. Under this model, vertical practices are often considered to involve distinct upstream

⁷ See AREEDA & HOVENKAMP, *supra* note 1, ¶ 1800 (4th ed. 2018).

⁸ See *id.*

⁹ See *id.* ¶ 768(a)(6) (4th ed. 2015) (discussing monopolistic MFN clauses); *id.* ¶ 1807(b)(1) (discussing MFN clauses as a form of quasi-exclusive dealing).

¹⁰ Section 3 of the Clayton Act, which applies to exclusive dealing and tying, expressly includes discounts and rebates. 15 U.S.C. § 14 (applying to “discount from, or rebate upon” the prohibited condition).

¹¹ For vertical mergers and ownership, see *United States v. Paramount Pictures, Inc.*, 334 U.S. 131 (1948) (considering vertical integration between movie production companies and movie theaters, ultimately resulting in consent decree); *United States v. Yellow Cab Co.*, 332 U.S. 218, 226 (1947) (condemning acquisitions by Checker, a taxicab manufacturer, and taxicab operating companies); *United States v. Am. Tobacco Co.*, 221 U.S. 106, 181–83 (1911) (divesting vertical ownership between producers of tobacco and wrapping foil for tobacco products); *United States v. Corn Prods. Refin. Co.*, 234 F. 964, 985 (S.D.N.Y. 1916) (condemning corn sugar makers' control of the candy market). On contractual vertical restraints, see *Dr. Miles Med. Co. v. John D. Park & Sons Co.*, 220 U.S. 373, 404 (1911) (“The right of alienation is one of the essential incidents of a right of general property in movables, and restraints upon alienation have been generally regarded as obnoxious to public policy, which is best subserved by great freedom of traffic in such things as pass from hand to hand.”). And more recently, see *United States v. Arnold, Schwinn & Co.*, 388 U.S. 365, 378 (1967) (“[T]he decree should be revised to enjoin any limitation upon the freedom of distributors to dispose of the Schwinn products, which they have bought from Schwinn, where and to whomever they choose.”).

¹² *E.g.*, *Carbice Corp. of Am. v. Am. Patents Dev. Corp.*, 283 U.S. 27 (1931) (discussing tying as patent misuse by facilitating leveraging from patented machine to unpatented tied product); *Int'l Salt Co. v. United States*, 332 U.S. 392 (1947) (discussing similarly the tying of patented machines to unpatented salt); *United States v. Griffith*, 334 U.S. 100, 105, 107 (1948) (condemning a film distributor's use of buying power in some markets to “increase[] their leverage over their competitive situations”).

and downstream markets.¹³ Foreclosure typically occurs when the restraint covers a large enough percentage of one of these markets to make the entry or survival of independent competitors less likely.

Foreclosure analysis focuses on two questions about potential harms to competition: First, does the defendant have sufficient power in one of the markets to create and enforce this restraint?¹⁴ And second, does the challenged practice tend to cut off, or foreclose, a sufficient amount of competition in the vertically related market?¹⁵

A much more benign theory of vertical control, developed by Chicago School writers such as Robert Bork and Richard Posner, severely downplayed foreclosure concerns. For them, vertical agreements were almost always competitively harmless and should be legal.¹⁶ Their thinking was heavily influenced by Ronald Coase's idea that a vertical contract is nothing more than a substitute for an internal production decision.¹⁷ For example, the automobile maker could either manufacture its own engine blocks or buy them from someone else. While that decision had no consequences for competition, self-production might lead to lower transaction costs. Further, when firms do things internally, they usually do so exclusively. If Ford decides to build its own engine blocks rather than purchase them, it typically will not go into the business of selling them to rivals. So why should an exclusive contract be treated any differently?

Harm to competition from a vertical merger or exclusive contractual restraint is not automatic. At one extreme, it might do no more than realign buyers and sellers after subtracting out those firms that are removed by an exclusive arrangement. But at the other extreme, a vertical merger or exclusive contract could completely cut off producers of the vertically related product. For example, if the only hospital in a town used a merger or

¹³ See, e.g., *Pac. Bell Tel. Co. v. linkLine Commc'ns, Inc.*, 555 U.S. 438, 449 (2009) (discussing vertical price squeeze in an "upstream market" for wholesale production of digital services and a "downstream market" for retail sales); *Paladin Assocs., Inc. v. Mont. Power Co.*, 328 F.3d 1145, 1160 (9th Cir. 2003) (discussing tying as involving an upstream market for the tying product and a downstream market for the tied product); *Alaska Airlines, Inc. v. United Airlines, Inc.*, 948 F.2d 536, 545 (9th Cir. 1991) (discussing vertical refusal to deal and an upstream market for airline flight reservation systems controlled by airlines in the downstream market).

¹⁴ E.g., *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 7 (1984) (finding a thirty percent market share insufficient).

¹⁵ *Tampa Elec. Co. v. Nashville Coal Co.*, 365 U.S. 320, 330–31 (1961) (finding a foreclosure too small when considering the entire geographic market for coal). On *Tampa Electric*, see *infra* text accompanying notes 21–26.

¹⁶ See ROBERT H. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* 225–45, 280–98 (1978); Richard A. Posner, *The Next Step in the Antitrust Treatment of Restricted Distribution: Per Se Legality*, 48 U. CHI. L. REV. 6 (1981).

¹⁷ See R.H. Coase, *The Nature of the Firm*, 4 *ECONOMICA* 386, 388 (1937) (noting that "within a firm, these market transactions are eliminated and in place of the complicated market structure with exchange transactions is substituted the entrepreneur co-ordinator").

exclusive contract to procure anesthesiology services through a single firm, the effect could be to dry up that town's remaining market for anesthesiology services: As a general matter, one cannot practice anesthesiology without a hospital, and no alternatives remain. By contrast, if the same hospital should enter an exclusive agreement with a plowing company for snow removal, the arrangement would simply remove one customer from the snow removal market. Here, the hospital makes up only a small part of the market for snow removal, and the remaining plowing firms would go right on competing for everyone else.

This Article introduces unified concepts as applicable to vertical control scenarios. Section I discusses the foreclosure problem and vertically related firms. Section II then relates foreclosure to market definition, and Section III introduces the principle of "recapture." Section IV synthesizes these concepts, while Section V considers how courts might scrutinize markets subject to technological differentiation.

I

AGGREGATED VS. ECONOMIC ASSESSMENTS OF VERTICAL EFFECTS

Antitrust analysis has historically estimated market power by reference to market share of a defined "relevant market," from which it draws inferences about a firm or cartel's ability to charge a monopoly price.¹⁸ In vertical cases, courts also assess foreclosure at the upstream or downstream level by considering the range of buyer or seller alternatives to the contracting firms.

This foreclosure question differs from the market power question, however. Its focus is not on the power to set high prices, but rather on the strength and number of alternatives to the allegedly foreclosed firm. While courts considering vertical practices sometimes speak of upstream and downstream "markets," they are not necessarily talking about "relevant markets" in the market power sense. The U.S. Government's 2020 Vertical Merger Guidelines acknowledge this difference by changing the terminology: They speak of a primary market but a "related product" to refer to the vertically related firm or firms.¹⁹ The fear is of higher prices in the primary market, which is facilitated by some form of foreclosure or other injury that occurs in the related product.

As a general matter, the threat in the level containing the related product

¹⁸ See AREEDA & HOVENKAMP, *supra* note 1, ¶ 500 (5th ed. 2021) (addressing market power and market definition to determine a relevant market).

¹⁹ U.S. DEP'T OF JUST. & FED. TRADE COMM'N, VERTICAL MERGER GUIDELINES 3–4 (2020) [hereinafter VERTICAL MERGER GUIDELINES] ("A related product is a product or service that is supplied or controlled by the merged firm and is positioned vertically or is complementary to the products and services in the relevant market.").

is not higher prices. Often it is just the opposite. For example, when a dominant firm merges with or enters an exclusive contract with a downstream firm, the resulting foreclosure may enable the dominant firm to increase its prices in the upstream market. But the remaining rivals in the downstream market will often end up earning less or in some cases be excluded from the market altogether. For this reason, foreclosed rivals who produce the vertically related product are often the plaintiffs in private antitrust challenges to vertical restraints or mergers.²⁰

The Supreme Court confronted the question of available alternative trading opportunities, or foreclosure, in *Tampa Elec. Co. v. Nashville Coal Co.*²¹ An electric utility located in northern Florida built a new generation facility that burned coal. It entered into a traditional common law requirements contract to purchase all of its coal needs for 20 years from Nashville Coal at an agreed upon price. The market price of coal later increased, making the price in the requirements contract unfavorable to the coal company. In order to get out of it, the coal company filed a declaratory judgment action claiming that the agreement, which bound the coal company to provide the utility with all of its coal needs, foreclosed competing coal producers.²² As a result, the coal company argued, the contract violated the Clayton Act's prohibition on exclusive dealing contracts that anticompetitively preclude a selling firm from dealing with competitors.²³ Today, an antitrust lawsuit under that theory would be dismissed under the "antitrust injury" doctrine: Whatever its status under the state law of requirements contracts, as far as competition policy was concerned, Nashville Coal was the beneficiary rather than the victim of the exclusive coal agreement.²⁴ It was the *other* coal producers who allegedly suffered competitive injury.

The Supreme Court ruled against the coal company, but not on that ground. Rather, it looked at the geographic range over which Nashville and other coal companies sold coal. While the coal covered by the contract was a significant percentage of coal sales in Tampa Electric's immediate purchasing area (Florida and Georgia), Nashville Coal and its predecessors

²⁰ *E.g.*, *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2 (1984) (discussing tying in the context of a challenge to a hospital's exclusive contract with an anesthesiologist, brought by a competing anesthesiologist); *ZF Meritor, LLC v. Eaton Corp.*, 696 F.3d 254 (3d Cir. 2012) (discussing exclusive dealing in the context of foreclosed competitors' challenge to an exclusive agreement in the market for heavy-duty transmissions); *see also Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477 (1977) (involving a vertical merger challenge by a competitor of acquired downstream firms).

²¹ 365 U.S. 320, 329 (1961).

²² *Id.* at 321. The Supreme Court had recently decided that a contract that is unlawful under the antitrust laws cannot be enforced. *See Kelly v. Kosuga*, 358 U.S. 516, 521 (1959).

²³ 15 U.S.C. § 14.

²⁴ On "antitrust injury," *see AREEDA & HOVENKAMP, supra* note 1, ¶¶ 335, 337 (5th ed. 2021).

were located in Kentucky and Tennessee.²⁵ If one looked over the entire area between the buyer and seller, there were many coal producers and many coal purchasers. Of these, the challenged utility contract covered less than one percent of sales.²⁶

Since *Tampa Electric*, the courts have tended to measure foreclosure by looking at the entire range of potential trading partners who might be plausible alternatives to the entity for which foreclosure is claimed.²⁷ They have settled on foreclosure percentages in the range of thirty to forty percent as the minimum needed for illegality.²⁸ But this narrow focus misses a variety of possible competitive harms from vertical exclusion. In some cases, the exclusive agreement may not exclude a firm altogether but may raise its costs in a way that facilitates monopoly pricing.²⁹ In other cases, it may make a price increase profitable by changing bargaining relationships.³⁰

Proper analysis of vertical control arrangements has unfortunately been hindered by the Supreme Court's conclusion in the *AmEx* case that if a vertical practice is involved, market power can be established only by reference to a relevant market.³¹ Although there are some workarounds, this doctrine can make the competitive effects question much more difficult to answer, particularly in markets for differentiated producers or products.³²

²⁵ *Tampa Elec. Co. v. Nashville Coal Co.*, 168 F. Supp. 456, 457 (M.D. Tenn. 1958).

²⁶ *Tampa Elec. Co.*, 365 U.S. at 333 (finding a maximum foreclosure of 0.77%).

²⁷ *E.g.*, *Collins v. Associated Pathologists, Ltd.*, 844 F.2d 473, 479 (7th Cir. 1988) (holding that a pathologist's objection to a hospital's exclusive dealing arrangement with another pathologist should be tested in a national market in which hospitals recruit pathologists, not the market into which the hospital sold its own services); *Balaklaw v. Lovell*, 14 F.3d 793, 799 (2d Cir. 1994) (holding that the relevant market is the area in which anesthesiologists competed for jobs; here, a hospital solicited contracts from anesthesiologists in several states); *Ryko Mfg. Co. v. Eden Servs.*, 823 F.2d 1215, 1233–35 (8th Cir. 1987) (holding that in a contract for provision of car washing equipment to service stations, the relevant market for determining foreclosure was the entire national market for car wash equipment of various types).

²⁸ *See Stop & Shop Supermarket Co. v. Blue Cross & Blue Shield of R.I.*, 373 F.3d 57, 68 (1st Cir. 2004) (“For exclusive dealing, foreclosure levels are unlikely to be of concern where they are less than 30 or 40 percent.”); *United States v. Microsoft Corp.*, 87 F. Supp. 2d 30, 52 (D.D.C.), *aff'd in part, rev'd in part*, 253 F.3d 34, 70 (D.C. Cir. 2000) (finding that a roughly forty to fifty percent foreclosure is necessary under section 1 of the Clayton Act); *see also AREEDA & HOVENKAMP, supra note 1, ¶ 1821* (4th ed. 2019) (summarizing case law on the minimum requisite shares for unlawful exclusive dealing).

²⁹ *See infra* text accompanying notes 39–41.

³⁰ *See infra* text accompanying notes 49–53.

³¹ *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2285 n.7 (2018). On methodologies for assessing market power, including market definition and alternatives, *see infra* text accompanying notes 32–49. In *AmEx*, the government had sought to prove market power both indirectly, by reference to a relevant market, and directly by reference to price-volume relationships. The district court had found a relevant market for general purpose credit and charge card purchases, in which AmEx had 26.4%, as against Visa's 45% and MasterCard's 23.3%. It also found direct evidence. *See United States v. Am. Express Co.*, 88 F. Supp. 3d 143, 188–89 (E.D.N.Y. 2015).

³² *See Herbert Hovenkamp, The Looming Crisis in Antitrust Economics*, 101 B.U. L. REV. 489, 528 (2021) (criticizing the Supreme Court's vertical control analysis in the *AmEx* decision).

Notwithstanding *AmEx*, antitrust analysis is increasingly moving away from methodologies for assessing power that require a market definition and toward alternatives that look directly at output responses to price changes or at the effect of certain practices on bargaining relationships.³³ One significant limitation of market definition approaches to assessing power is their inability to deal with any degree of differentiation in either products or geography. Once we have defined a relevant market, all of the firms inside that market are treated as if they are perfect competitors, which means that they are regarded as having infinitely high substitutability from one to another. By contrast, if a market is defined so as to exclude a particular firm, that firm is treated as if it does not compete at all. This approach cannot begin to pick up the complex array of situations in which firms bargain with one another. Recent developments in antitrust law have started to consider alternative ways of measuring market shares and foreclosure effects, including direct measuring and recapture.

II

METERING FORECLOSURE: DIRECT MEASUREMENT AND MARKET SHARES

Foreclosure occurs when a vertical merger or exclusive contract provision denies market opportunities to rivals. For example, if a city has ten appliance retailers and an appliance manufacturer either purchases or enters an exclusive dealing agreement with one of them, there are still nine remaining retailers through which competing appliance manufacturers can sell. If the manufacturer should make such deals with all ten, however, then competing manufacturers could not retail in that town, except perhaps by building their own retail stores. Several factors are relevant to determining foreclosure, including the number of sellers of the related product, their relative sizes, the number that have been made inaccessible by a vertical restriction, and the difficulty of establishing new ones.

The measurement of foreclosure in vertical exclusion cases has been predominantly binary. Consistent with the theory of relevant markets, the traditional approach to foreclosure would treat the ten retail stores in the example above as identical in product offerings, although not in size, which is essential for computing overall foreclosure as a percentage of the market. This approach subjected foreclosure theory to a criticism popularized by the Chicago School that the profit maximizing price of a good does not change simply because one firm also comes to own the retailers.³⁴ That would do no

³³ See *id.* at 512–14 (illustrating alternative methodologies and discussing flaws with only using market definition).

³⁴ See Robert H. Bork, *Vertical Integration and the Sherman Act: The Legal History of an Economic Misconception*, 22 U. CHI. L. REV. 157 (1954) (criticizing the “leverage” theory of tying

more than force manufacturer substitution from one store to another. But that classical foreclosure theory ignores many lessons from marginalist economics, one of which is that in equilibrium, only the marginal retailer earns competitive returns.³⁵ Other retailers who have lower costs will earn more. Others may have had even higher costs, but if the market is competitive they will have exited.³⁶

This rather conventional observation about marginal market participants drives the rationale for theories of RRC, or raising rivals' costs. As a result, it is difficult to see why some people objected to it.³⁷ The 2020 Vertical Merger Guidelines acknowledge the theory and supply some illustrations.³⁸

Traditionally, the foreclosure resulting from a vertical merger (or other arrangement) was measured against the full range of firms selling in the market where foreclosure was feared. That was the procedure that the Supreme Court followed in the *Tampa Electric* case.³⁹ It counted up all the coal sellers in the geographic range covered by the transaction, added up their output, and concluded that the challenged contract covered less than one percent of this amount. Significantly, the market was coal, a commodity, and the Court did not trouble itself with questions about product differentiation, differences in quality, or differential production costs.

Once we consider the role of marginal and inframarginal firms, the "market definition" question changes, or at least acquires a change in focus. It is no longer particularly important to know the full range of vertically related sellers, nor the market shares of those that are tied up by the exclusive arrangement. For example, suppose the related product is differentiated from one firm to the next or that the producers have different costs or are more or less desirable for some other reason. In that case, it is less important to know all of the firms in the market than it is to know whose behavior is constrained by the challenged arrangement and who are that firm's closest rivals.

and exclusive dealing); Herbert Hovenkamp, *Robert Bork and Vertical Integration: Leverage, Foreclosure, and Efficiency*, 79 ANTITRUST L.J. 983, 995–97 (2014) (discussing Bork and the Chicago School's criticism of foreclosure and leverage theory).

³⁵ In most cases involving a fungible product, the marginal seller is the one with the highest costs.

³⁶ Thus, some economists distinguish raising rivals' costs from "total foreclosure" while discussing the two concepts together. See Carl Shapiro, *Vertical Mergers and Input Foreclosure: Lessons from the AT&T/Time Warner Case*, REV. INDUS. ORG. (forthcoming 2021), <http://faculty.haas.berkeley.edu/shapiro/verticalmergers.pdf>.

³⁷ E.g., RICHARD A. POSNER, ANTITRUST LAW 196 (2d ed. 2001) (describing RRC as "not a happy formula").

³⁸ VERTICAL MERGER GUIDELINES, *supra* note 19, at 4.

³⁹ See *supra* text accompanying notes 21–26; see also Herbert Hovenkamp, *Competitive Harm from Vertical Mergers* (Inst. for L. & Econ., Research Paper No. 20-51, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3683386 (discussing circumstances under which vertical mergers can be anticompetitive).

Suppose, for example, that the ten retailers in the allegedly foreclosed market have markup costs ranging from twenty to thirty percent. In competitive equilibrium, the higher cost firms will just barely stay in business while the lower cost ones will earn a profit. In that case, a vertical merger or exclusive contract with the lowest cost firm could relegate rival manufacturers to dealing with the higher cost firms. With the lower cost firm taken out of the mix, the equilibrium price charged by the remaining sellers could be higher.⁴⁰

In order to perform this analysis, we would not have to define the market for the retailers. We would merely need to identify those that were the most desirable from the upstream parties' point of view. Both the Vertical Merger Guidelines and some of the case law permit this approach.⁴¹ The better placed trading partners could be those that are geographically closest if transportation costs are important. They could also be those that produce more desirable products or that employ superior and more cost-effective technologies.

In *Qualcomm*, for example, the district court observed that Qualcomm, a dominant producer of modem chips for cellular phones, procured an exclusive agreement to supply chips to Apple, thus excluding Intel as a supplier. Apple was the most desirable customer, and Qualcomm did not wish for Apple to be purchasing from two different suppliers.⁴² Apple, by contrast, wanted the two modem chip suppliers to be competing with one another so that it could obtain more favorable terms.⁴³ That would have been the more competitive outcome. Qualcomm responded by refusing to supply

⁴⁰ This is particularly true in the relatively common situation where the supplier's cost curves are upward sloping. Thanks to Steven Salop for this observation. *See also* Jonathan B. Baker, Nancy L. Rose, Steven C. Salop & Fiona Scott Morton, Recommendations and Comments on the Draft Vertical Merger Guidelines 6, 12 (Feb. 23, 2020), https://www.ftc.gov/system/files/attachments/798-draft-vertical-merger-guidelines/vmg21_baker_rose_salop_scott_morton_comments.pdf (suggesting that the elimination of the lowest cost trading partner could raise equilibrium price).

⁴¹ *See, e.g.*, VERTICAL MERGER GUIDELINES, *supra* note 19, at 6–7 (discussing a vertical merger obtaining the best sources of oranges and relegating others to more costly oranges); *see also* *Novell, Inc. v. Microsoft Corp.*, 505 F.3d 302, 312 n.19 (4th Cir. 2007) (stating that a consumer or competitor outside of the relevant market is not necessarily precluded from having an antitrust injury); *United States v. Dentsply Int'l, Inc.*, 399 F.3d 181, 191 (3d Cir. 2005) (holding that Dentsply's exclusive dealing imposed on key dealers and relegated rival dental laboratories to more costly and less effective distribution channels); *United States v. Microsoft Corp.*, 253 F.3d 34, 70 (D.C. Cir. 2001) (holding that Microsoft's actions foreclosed Netscape's access to the most efficient distribution channels). For a contrasting approach, *see* *Omega Env't, Inc. v. Gilbarco, Inc.*, 127 F.3d 1157, 1162–63 (9th Cir. 1997) (treating all distribution channels alike and dismissing the plaintiff's complaint).

⁴² *See* *FTC v. Qualcomm, Inc.*, 411 F. Supp. 3d 658, 736 (N.D. Cal. 2019), *rev'd*, 969 F.3d 974 (9th Cir. 2020).

⁴³ *Qualcomm*, 411 F. Supp. 3d at 736.

chips to Apple's newest devices unless it obtained an exclusive deal.⁴⁴ The district court found this conduct unlawful, but the Ninth Circuit reversed, concluding that the only serious competition for Apple's business was with Intel. It even conceded that the result of its exclusive arrangement with Apple was very likely higher prices. It faulted the district court for identifying the relevant harm as accruing to Qualcomm's customers, "resulting in higher prices to consumers," rather than to Qualcomm's competitors.⁴⁵ The Ninth Circuit apparently believed that injury to customers fell outside of the relevant market and that only injury to competitors counted.⁴⁶

What the Ninth Circuit should have seen is that this dispute involved two well-placed suppliers (Qualcomm and Intel) with a single large and highly desired customer (Apple) who was naturally attempting to force competition between them. Instead, Qualcomm took advantage of its dominant position to insist on exclusive dealing. Affirming liability should have been straightforward, particularly given the fact that prices were conceded to be higher as a result.

The court had seen this already in the 1916 *American Can* case, where the defendant, who was a dominant maker of metal food cans, bought up or acquired exclusive deals covering all of the superior can-making machinery. This relegated rivals to inferior technologies:

[F]or a year or two after defendant's formation it was practically impossible for any competitor to obtain the most modern, up-to-date, automatic machinery, and [] the difficulties in the way of getting such machinery were not altogether removed until the expiration of the six years for which the defendant had bound up the leading manufacturers of [can-making] machinery.⁴⁷

When considering foreclosure from a vertical practice, a fact finder must focus less on the overall range of alternatives and more on the relative placement and quality of the acquired or contracting firm vis-à-vis the most closely competing alternatives. It is not necessary to define the market for these firms overall, but the fact finder must identify the closest rivals. To the extent the defendant's vertical practice ties up the lowest cost or best of the related producers, rivals will be relegated to those that are inferior. As a theory of harm, raising rivals' costs is more likely and occurs more frequently than complete market exclusion, although the latter is possible too. The fact finder would usually require expert testimony to determine the equilibrium price effects on the defendant and the vertically related firm, and also of rivals attempting to compete with it.

⁴⁴ *Id.* at 737–38.

⁴⁵ *Qualcomm*, 969 F.3d at 992–93.

⁴⁶ *Id.* at 992–93, 1002.

⁴⁷ *United States v. Am. Can Co.*, 230 F. 859, 875 (D. Md. 1916).

One important consequence of this approach is that the market share numbers that the antitrust case law traditionally attaches to foreclosure percentages are not particularly meaningful in most cases. The tying and exclusive dealing case law generally aggregates the market subject to foreclosure concerns and considers foreclosure as a percentage of the whole, as the Supreme Court did in *Tampa Electric*. In general, it proclaims minimum market foreclosure percentages in the range of thirty percent to forty percent as a condition for illegality.⁴⁸ When we focus more accurately on marginal effects and the possibility of raising rivals' costs, however, these numbers are much less significant. For example, if the lowest cost firm in a market is subject to an exclusivity agreement, anticompetitive results, particularly RRC, could occur even if the percentage of total sales was far less than thirty percent. By contrast, if only the least efficient firm or firms in a market were made subject to such an agreement, even aggregate foreclosure percentages higher than forty percent might result in no competitive harm.

III

MARKET DEFINITION AND DIRECT MEASUREMENT: "RECAPTURE"

Whenever a firm raises its price, it will, *ceteris paribus*, lose some sales. Whether the price increase is profitable depends on the size of the price increase, the firm's margins, and the number of sales that it loses. If the firm can recapture some of these lost sales, then a price increase of any given magnitude will be more likely to be profitable.⁴⁹

The idea of "recapture" has become an essential component of modern economic analysis of market definition, as well as more direct measures of market power. The theory depends on observed differences in cost, quality, margins, or other attributes among alternative firms. That is, it assumes that the firms are not perfect competitors. Beyond that, it is relatively straightforward: Firm A will lose a certain number of sales if it increases its own product price. Considering A alone, that price increase could be

⁴⁸ Cf. *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 7–8, 18, 31 (1984) (reversing the Fifth Circuit's finding of a tying arrangement by East Jefferson Hospital, which served thirty percent of the relevant geographic market, between use of the hospital's operating rooms and the hospital's chosen and exclusive anesthesia service, and holding that there had been "no showing that the market as a whole [had] been affected at all by the [exclusive anesthesia service] contract"); *Sewell Plastics, Inc. v. Coca-Cola Co.*, 720 F. Supp. 1196, 1212–14 (W.D.N.C. 1989), *aff'd*, 912 F.2d 463 (4th Cir. 1990) (holding that even with forty percent of the market in the southeastern United States, Southeastern Container, Inc. did not have the market power to charge a price above the competitive level, which meant that its exclusive dealing with The Coca-Cola Company did not have an anticompetitive effect on the market). See also HOVENKAMP, *supra* note 3, §§ 6.2, 6.5b, 10.3 (identifying minimum foreclosure percentages required by courts for various vertical offenses).

⁴⁹ HOVENKAMP, *supra* note 3, § 9.5.

unprofitable. But suppose that a high percentage of those lost sales go to firm B, which produces a reasonably close substitute. If these B sales were added back in (recaptured), the price increase could be profitable. For purposes of market definition, we would express that conclusion by saying that A and B are essential components of a “hypothetical monopolist,”⁵⁰ which means that A standing alone is not a monopolist, but A plus B together might be.⁵¹ As a result, A and B are in the same relevant market.⁵² If the two were owned by the same firm or organized into a cartel, their joint price increase might be profitable even though A’s price increase acting alone was not. Depending on the substitution differences between A and B together and other firms in the market, as well as the two firms’ margins, this could also warrant challenging a merger of A and B under the theory of “unilateral effects.”⁵³ If A and B together are still not enough to sustain the required price increase, we repeat the exercise, perhaps by including firm C as part of the merger and contemplating whether the substitution differences between firms A, B, and C together and other firms in the market could warrant an anticompetitive

⁵⁰ Some courts and writers speak of a “hypothetical cartel,” which confers the same meaning. *E.g.*, *Fed. Trade Comm’n v. Wilh. Wilhelmsen Holding ASA*, 341 F. Supp. 3d 27, 47 (D.D.C. 2018); *see also* David Glasner & Sean P. Sullivan, *The Logic of Market Definition*, 83 ANTITRUST L.J. 293, 314 (2020).

⁵¹ On this reasoning in the 2010 Horizontal Merger Guidelines, *see* Carl Shapiro, *The 2010 Merger Guidelines: From Hedgehog to Fox in Forty Years*, 77 ANTITRUST L.J. 49, 90–91 (2010) (stating the key inquiry for the hypothetical monopolist analysis is “what percentage of the unit sales lost, when that product’s price rises, are recaptured by other products controlled by the hypothetical monopolist”). *See also* Daniel P. O’Brien & Steven C. Salop, *Competitive Effects of Partial Ownership: Financial Interest and Corporate Control*, 67 ANTITRUST L.J. 559, 573 (2000) (reasoning that a hypothetical firm facing a net loss in profits due to a price increase driving away customers may have different incentives if it can merge with a competitor in order to recapture some of the profits that would otherwise be lost from the price increase). For evaluating mergers, the theory goes back at least forty years. *See* Gregory J. Werden, *The 1982 Merger Guidelines and the Ascent of the Hypothetical Monopolist Paradigm*, 71 ANTITRUST L.J. 253, 254 (2003) (stating that “the hypothetical monopolist paradigm predates the 1982 Merger Guidelines by more than two decades” but did not find much appreciation by antitrust scholarship until the late 1970s).

⁵² For explanation of the antitrust Agencies’ approach, *see* U.S. DEP’T OF JUST. & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES 11–12 (2010) [hereinafter HORIZONTAL MERGER GUIDELINES]. *See also* Joseph Farrell & Carl Shapiro, *Recapture, Pass-Through, and Market Definition*, 76 ANTITRUST L.J. 585, 586, 588 (2010) (identifying how the government defines the relevant market using the hypothetical monopolist test, according to the Horizontal Merger Guidelines, and presenting a new method for applying the test).

⁵³ *See* *United States v. H&R Block, Inc.*, 833 F. Supp. 2d 36, 81 (D.D.C. 2011) (“A merger is likely to have unilateral anticompetitive effect if the acquiring firm will have the incentive to raise prices or reduce quality after the acquisition, independent of competitive responses from other firms.”); *see also* AREEDA & HOVENKAMP, *supra* note 1, ¶¶ 913–15 (4th ed. 2017) (discussing power assessment and market definition in unilateral effects cases, unilateral effects in product-differentiated markets, and how capacity constraints or differential costs can facilitate unilateral effects); Shapiro, *supra* note 51, at 60–85 (analyzing the “distinct modes of analysis that the Agencies use to investigate unilateral effects in different market settings”); O’Brien & Salop, *supra* note 51, at 573–84 (analyzing how incentives regarding unilateral pricing change based on the structure of corporate control between the acquiring and acquired firms).

challenge—and so on.

A vertical merger can work the same way: It can facilitate a price increase when it enables revenues that might otherwise be lost from such a price increase to be recaptured through the increased sales by the acquired firm.⁵⁴ Indeed, one of the approaches taken in the Vertical Merger Guidelines is a variant of the hypothetical monopolist test used for market definition.⁵⁵

For example, suppose an automobile manufacturer acquires a firm that produces automobile bodies and sells them to several automobile producers.⁵⁶ After the acquisition, the automobile body firm, now owned by the automobile manufacturer, raises the price of bodies. As a result, some competing automobile manufacturers switch away and purchase automobile bodies from another supplier. Assume that prior to the acquisition, this price increase would have been unprofitable to the body manufacturer alone—the number of lost sales was too great in comparison with the price increase. Subsequent to the merger, however, some customers respond to the autobody price increase imposed on rival automobile manufacturers by switching to the acquiring automobile manufacturer. In that case, some of the losses that would have accrued to the body manufacturer as an independent entity are recaptured in increased sales of automobiles. This recapture may be sufficient to make the price increase profitable.

The government used this theory in its unsuccessful challenge to AT&T's acquisition of Time Warner ("TW").⁵⁷ AT&T distributes cable and satellite TV services to its various subscribers. It owns DirecTV as well as some smaller cable television companies. TW is a very large owner of digital media, which it licenses to digital programming distributors such as AT&T. Digital programming is non-rivalrous, which means that each digital copy can be licensed out an indefinite number of times. It is also subject to

⁵⁴ Cf. Steven C. Salop, *Invigorating Vertical Merger Enforcement*, 127 YALE L.J. 1962, 1973 (2018) (describing how an upstream merging firm can raise the input price it charges to the rivals of its downstream merger partner—"upward pricing pressure"—which can push consumers to the downstream merging firm instead of its rivals and allow it to raise its price); Serge Moresi & Steven C. Salop, *vGUPPI: Scoring Unilateral Price Incentives in Vertical Mergers*, 79 ANTITRUST L.J. 185, 197–98 (2018) (counting "market recapture percentage" as a component of a mathematical representation of incentives for an upstream firm to change the output price charged by its downstream merger partner).

⁵⁵ VERTICAL MERGER GUIDELINES, *supra* note 19, at 5 (referencing the hypothetical monopolist test described in the Horizontal Merger Guidelines); see HORIZONTAL MERGER GUIDELINES, *supra* note 52, at 11–12 (describing implementation of the test).

⁵⁶ These facts are hypothetical but are adopted loosely from the General Motors/Fisher Body merger, which occurred in 1926. For opposing views of the acquisition, compare R.H. Coase, *The Acquisition of Fisher Body by General Motors*, 43 J.L. & ECON. 15 (2000), with Benjamin Klein, *Fisher-General Motors and the Nature of the Firm*, 43 J.L. & ECON. 105 (2000). One difference between the hypothetical and the real situation is that prior to their merger Fisher and GM apparently dealt only with one another.

⁵⁷ *United States v. AT&T, Inc.*, 310 F. Supp. 3d 161 (D.D.C. 2018), *aff'd*, 916 F.3d 1029 (D.C. Cir. 2019).

significant product differentiation, and there are large differences in marginal value among content suppliers. TW owns titles such as the *Harry Potter* movie series and *Wonder Woman* that are not only highly desirable but also unavailable elsewhere. An independent TW would have no incentive to deny programming to anyone willing to pay its price, which would be the profit-maximizing rate for free-standing TW. In that case, TW's profit-maximizing strategy would be to license to all takers, perhaps with some price discrimination to the extent that its customers had differing demand elasticities.⁵⁸

After the merger, however, things change. AT&T, the new owner of TW, also owns distribution assets. If AT&T/TW raises the license price for some of its media or simply blocks licensing to some third-party carriers, TW will still lose sales, but some of that lost revenue will be recaptured to the extent that it induces customers to switch to an AT&T firm as a distributor. TW is not like one out of ten appliance stores in an area that might be reasonably good substitutes for one another. Rather, for many of its titles there are no good alternatives. For example, current customers of Dish Network might respond to higher fees or a blackout of desirable TW titles by switching to DirecTV, which AT&T also owns.⁵⁹ Whether that tradeoff is profitable—and by how much—is an empirical question and depends on the diversion rate at which subscribers will switch; but it also indicates that AT&T/TW's profit-maximizing price following the merger would be higher than it had been prior to the merger. The “where . . . the effect . . . may be substantially to lessen competition”⁶⁰ language of section 7 of the Clayton Act is triggered by a probable price increase caused by the merger.⁶¹

This theory also works for some contractual relationships, although to the best of my knowledge, no court has applied it. One of Ronald Coase's contributions to law and economics was the insight that anything that can be accomplished within a firm can be specified with a properly designed

⁵⁸ The cost of licensing is virtually zero, and supply is unlimited. As a result, the optimal strategy would be to license to every potential customer at a price equal to the inverse of its elasticity of demand. See, e.g., W. Michael Hanemann, *Willingness to Pay and Willingness to Accept: How Much Can They Differ?*, 81 AM. ECON. REV. 635, 638–39 (1991) (noting that willingness to pay varies inversely with elasticity of demand).

⁵⁹ See Final, Corrected Brief of Appellant at 16, 47–48, *United States v. AT&T, Inc.*, 310 F. Supp. 3d 161 (D.C. Cir. 2018) (No. 18-5214), 2018 WL 5099066, at *16, *47–48 (noting that after the merger, AT&T could use blackouts to switch subscribers to DirecTV or other AT&T outlets); *id.* at 68 (speaking of these switchers as the “diversion rate”).

⁶⁰ 15 U.S.C. § 14.

⁶¹ See Moresi & Salop, *supra* note 54, at 197 (explaining how vertical merger may lead to price increases by the post-merger firm); see also Shapiro, *supra* note 36, at 4 (illustrating the relationship between RRC and diversion). For good analysis of other recent vertical mergers decisions, see Steven C. Salop, *Analyzing Vertical Mergers to Avoid False Negatives: Three Recent Case Studies*, ANTITRUST, Summer 2019, at 27.

contract.⁶² A vertical control agreement can harm competition when it enables a firm to recapture revenues from a price increase that it would otherwise have lost. In order to work, a contractual arrangement would have to force a price increase (or quality decrease) that would ordinarily be unprofitable but that the firm would be able to recapture as a result of its contractual relationship with another firm.

One contractual tool for this purpose is the most-favored-nation (“MFN”) clause, which is a contractual provision that specifies the minimum price that a contracting partner must charge to third parties in competition with the principal firm.⁶³ For example, the automobile manufacturer in the previous illustration might enter a long-term contract with the body manufacturer that also requires the latter to charge higher prices to the automobile manufacturer’s competitors. This could induce customers to switch to the automobile manufacturer’s automobiles, thus recapturing lost profits elsewhere. The body manufacturer would have to be compensated for its lost profits from the high prices charged to the rivals, but to the extent the strategy is profitable to the auto manufacturer, it will be able to share its profits, and the two will reach a joint maximizing solution.⁶⁴

A class of eBook sellers has filed such a complaint against Amazon, alleging that its MFN agreements with publishers force prices to be higher at Amazon’s eBook selling competitors. The complaint alleges that:

Because of Amazon’s market power in the Relevant Market, these contractual requirements prevent Amazon’s actual and potential rivals from offering lower prices or promotions, introducing different business models, or developing innovative products. One competitor told the Committee that the effect of Amazon’s MFN and related provisions is that publishers “raise the price on competitor sites to match Amazon’s price.” In other words, Amazon uses the MFN and related provisions to raise prices not only on its own platform, but also on platforms that it does not control.⁶⁵

⁶² See generally Coase, *supra* note 17, at 390–91 (noting that firms allow the consolidation of a series of contracts into one); Steven N.S. Cheung, *The Contractual Nature of the Firm*, 26 J.L. & ECON. 1 (1983) (expanding on Coase’s work).

⁶³ See, e.g., Class Action Complaint at 2–3, *Silverman v. Amazon, Inc.*, (S.D.N.Y. Feb. 11, 2021) (No. 1:21-cv-01256), 2021 WL 528598 (alleging that Amazon’s use of MFN clauses in eBook sales to prevent book publishers from offering lower prices on alternative eBook platforms is anticompetitive and illegal); see also *id.* at 3 (noting that the result of the MFN clauses is that the plaintiff class—eBook purchasers—must pay more for eBooks on alternative platforms than they would absent the MFN clauses’ influence on pricing).

⁶⁴ Cf. R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 15 (1960) (pointing to the fact that “[t]he economic problem in all cases of harmful effects is how to maximise the value of production,” which does not necessarily account for social costs, like higher prices to consumers) (emphasis added).

⁶⁵ Class Action Complaint, *supra* note 63, at 30. The complaint also alleges that Amazon controls about eighty percent of eBook sales in the United States. *Id.* at 2.

This would serve to protect Amazon's own higher margins and, if necessary, enable Amazon to compensate the publishers for losses of revenue on other sites. While this outcome could be accomplished by means of a vertical merger between Amazon and eBook publishers, it could also be accomplished through a sufficiently specified contract.

IV POWER AND EFFECTS

The metered foreclosure and recapture strategies outlined here depend on rates of substitution or responses to price changes that traditional market definition approaches fail to capture. That is not surprising. The tools of market definition were developed before empirical methodologies for measuring marginal substitution rates, or elasticities, came into vogue.⁶⁶

Because of its binary approach, traditional tools that estimate market power by reference to a relevant market work very poorly for this purpose. They can count something as inside the market or outside but cannot meter gradations. For example, if several potential vertically related trading partners have different costs or other measures of desirability, any approach that depended on placing them in a relevant market for measurement of foreclosure would put them either inside or outside, but it could not meter anything in between. Of course, a court might conduct a separate fact finding to the effect that the acquired or obligated firms were better placed than rivals, but this alone would not enable it to quantify the results.

The better approach is to start out with the pair of firms subject to a merger or whose conduct is governed by an exclusionary contract provision. The question of whether this pairing will result in a price increase depends on how the arrangement limits the opportunities of alternative firms, whether upstream or downstream. This is a function of the extent to which a merger or contracting partner has cost or placement advantages over the next best placed firms. If we can produce these numbers for a small number of best placed firms, the definition of a broader relevant market adds nothing. Nor does information about the share of the overall market that is covered by the restraint. If we cannot produce these figures with any degree of reliability, then defining markets and measuring shares is a poorer alternative, although at that point we may have no choice. That is, market definition approaches should be the fallback when more direct measures are unavailable.

V

⁶⁶ For pioneering work in this area, see RICHARD S. MARKOVITS, *ECONOMICS AND THE INTERPRETATION AND APPLICATION OF U.S. AND E.U. ANTITRUST LAW* (2014). See also Louis Kaplow, *On the Relevance of Market Power*, 130 HARV. L. REV. 1303 (2017).

MARKET BOUNDARIES FOR TECHNOLOGICALLY DIVERSE PRODUCTS

Vertical practices are not the only ones that jump traditional market boundaries, although the facts are often buried in questions about market definition, which incidentally also distorts the analysis. Markets subject to a high degree of technological differentiation pose analogous problems. These are products that are differentiated by far more than by simple branding or design details.

Consider the *Continental Can* decision, which condemned the merger of a manufacturer of metal food cans with a maker of glass jars.⁶⁷ Although cans and glass jars compete for some uses, they are highly differentiated products that use both different inputs and different production technologies. That makes market definition issues very hazardous. After finding that there were some markets in which cans and bottles competed, including baby food, soft drinks, and beer, the Court lumped cans and bottles into one market and condemned the merger in an aggregated can/bottle market. In a different legal context, and with a different outcome, the decision in the *DuPont (Cellophane)* case declined to condemn DuPont of monopolization after lumping cellophane, waxed paper, wrapping paper, and metal foil together into a single market for “flexible packaging materials.”⁶⁸

In both of these cases, simply lumping the diverse products into a single market was mistaken. The issue in *DuPont* was more difficult than the one in *Continental Can*, but both courts would have done better to apply a version of the recapture analysis described previously. The question in *Continental Can* was whether there was some grouping of sales for which the merger would have led to a price increase. For example, standalone Continental’s ability to raise its price to beer producers⁶⁹ may have been limited by the competition from Hazel-Atlas’s glass bottles. Continental would lose too many sales. To the extent those purchasers defected to Hazel-Atlas, however, the merger would enable Continental to recapture them, perhaps making its price increase profitable. This process may have to be repeated for other uses for which cans and bottles were viable alternatives. Success might also depend on Continental’s ability to price discriminate against the grouping of sales under scrutiny. The language of section 7 of the Clayton Act, which condemns a merger with anticompetitive effects “in any line of commerce,”⁷⁰

⁶⁷ United States v. Cont’l Can Co., 378 U.S. 441 (1964).

⁶⁸ United States v. E.I. du Pont de Nemours & Co., 351 U.S. 377, 397–400, 404 (1956) (dismissing the complaint after concluding that DuPont lacked power in a broad market for flexible packaging materials); see also AREEDA & HOVENKAMP, *supra* note 1, ¶ 539 (using the *DuPont* case to “question decisions relying on apparent high cross-elasticity of demand at prevailing prices to adopt a broad market”).

⁶⁹ For this analysis, we assume that Continental had the power to price discriminate between different types of can customers.

⁷⁰ 15 U.S.C. § 18.

would reach a merger that led to a price increase in just a subset of the markets in question.

The issue in *DuPont* is more difficult to address for two reasons. First, in a monopolization case, the substitution query may have to be applied to a larger number of firms than a single merger partner. Whether cellophane enjoyed substantial market power depended on its substitutability with multiple candidates. These included wax paper, glassine, greaseproof paper, brown wrapping paper, tin foil, and so on, starting with the closest rival for any particular use.⁷¹ Each alternative that met the hypothetical monopolist requirement should have been included in the market until the alternatives were exhausted or the defendant's share was too small to sustain a monopolization charge.⁷² Once again, a price increase would very likely depend on DuPont's ability to price discriminate against those purchasers who lacked good alternatives.

Second, the Court would have to be satisfied that substitution was not observed because DuPont was *already* selling cellophane at a significant markup above its costs—the well-known “Cellophane fallacy” problem.⁷³ Answering that question will involve econometrics rather than market definition. Measurement tools are available for determining the extent to which a firm's prices exceed its costs.⁷⁴ Addressing the markup directly may dispense with the need to define a relevant market. That is, a high price/cost margin is itself evidence of significant market power. That may be all that is needed in situations where the legal standard does not insist on a market definition as a mechanism for establishing power.

CONCLUSION

Evaluating vertical control mechanisms requires an understanding of how a challenged structure (whether in property or contract) changes the constraints under which parties bargain. In a well-functioning market, two

⁷¹ See *supra* note 68 and accompanying text.

⁷² Cf. *DuPont*, 351 U.S. at 417 (Warren, C.J., dissenting) (noting that while the prices of the two major producers of cellophane, DuPont and Sylvania, moved in lockstep, the prices of other flexible packaging materials seemed to be unaffected by changes in cellophane prices).

⁷³ On this problem, see HOVENKAMP, *supra* note 3, § 3.4 (using a method that exaggerates the relevant market of a product—i.e., considering the pricing of cellophane against the pricing of all “flexible packaging materials”—which results in an overly large market definition and inaccurate evaluation of competitive pricing).

⁷⁴ Cf. Steven Berry, Martin Gaynor & Fiona Scott Morton, *Do Increasing Markups Matter? Lessons from Empirical Industrial Organization*, 33 J. ECON. PERSPS. 44 (2019) (noting recent improvements in the theory for measuring price/cost margins); see also Chad Syverson, *Macroeconomics and Market Power: Context, Implications, and Open Questions*, 33 J. ECON. PERSPS. 23 (2019) (comparing various approaches); Carl Shapiro, *Antitrust in a Time of Populism*, 61 INT'L J. INDUS. ORG. 714, 730 (2018) (emphasizing the study of individual markets in order to assess market power via levels of sales concentration).

bargaining partners will maximize any value that is jointly available. While that proposition is naturally associated with the Coase Theorem,⁷⁵ it is in fact far broader and covers all situations in which contracting parties are able to reach an agreement.⁷⁶

An important corollary, however, is that agreements may be jointly maximizing precisely because they create a monopoly. Cartels are the most obvious example of this.⁷⁷ Legal rules sometimes constrain firms' ability to make profit-maximizing deals because those deals, once made, injure competition.⁷⁸ In such cases, understanding how a restraint or acquisition affects particular bargaining relationships can tell us much more than any information concerning the overall relevant market in which the firms operate. This approach requires increased sensitivity to the fact that even the firms that are properly placed into the same defined market may be quite different from one another. So even though a grand theory of vertical control could simplify the legal query, courts should be attentive to the case-specific details in firm and market structures that may lead to foreclosure and market restraints.

⁷⁵ E.g., Joseph Farrell, *Information and the Coase Theorem*, 1 *ECON. PERSPS.* 113, 123 (1987) (providing an example where party B prefers to offer a less generous contract to party A than the contract that maximizes joint surplus because the less generous contract gives more of the surplus to B); Robert Cooter, *The Cost of Coase*, 11 *J. LEG. STUD.* 1, 4 (1982) ("The proposition that resource allocation is efficient, regardless of the structure of liability law, provided that bargaining is frictionless, is one version of the Coase Theorem.").

⁷⁶ See, e.g., Daniel F. Spulber, *Complementary Monopolies and Bargaining*, 60 *J.L. & ECON.* 29 (2017) (exploring various scenarios of bargaining decisions under the Cournot model, where input suppliers choose maximum quantities above those that maximize joint benefits).

⁷⁷ See HOVENKAMP, *supra* note 3, § 4.1 (observing—within an analysis of cartel cheating—that the profit-maximizing price of a perfectly functioning cartel is the same as the monopoly price).

⁷⁸ In the context of patent law, see Erik Hovenkamp, *Competition, Inalienability, and the Economic Analysis of Patent Law*, 21 *STAN. TECH. L. REV.* 33 (2018).