



*Analyzing Vertical Mergers: Accounting for
the Unilateral Effects Tradeoff and Thinking
Holistically About Efficiencies*

Roger D. Blair
Christine S. Wilson
D. Daniel Sokol
Keith Klovers
Jeremy A. Sandford

Analyzing Vertical Mergers: Accounting for the Unilateral Effects Tradeoff and Thinking Holistically About Efficiencies

Roger D. Blair, Christine S. Wilson, D. Daniel Sokol, Keith Klovers & Jeremy A. Sandford*

Introduction

Vertical mergers are once again a hot topic. Over the past several years, commentators have vigorously debated whether the approach traditionally taken by the US Federal Trade Commission (“FTC”) and US Department of Justice Antitrust Division (“DOJ”) (collectively, the “Agencies”) is fully aligned with economic thinking that is both *au courant* and administrable. Recently, talk has turned to action: in the past three years, DOJ litigated the first agency-led vertical merger challenge in approximately forty years,¹ the Agencies held the first public hearings on vertical mergers in many years,² and the Agencies issued new Vertical Merger Guidelines, the first jointly issued agency guidance on the topic.³

In these discussions, some argue that vertical mergers pose at least the same anticompetitive potential as their horizontal brethren, and therefore

* Roger D. Blair is the Huber Hurst Professor and Departmental Chair, Department of Economics, University of Florida. Christine S. Wilson serves as Commissioner, US Federal Trade Commission. D. Daniel Sokol is a Professor of Law, University of Florida Levin College of Law and Senior Advisor, White & Case LLP. Keith Klovers is Of Counsel, Wilson Sonsini Goodrich & Rosati LLP. Jeremy A. Sandford serves as Economic Advisor to Commissioner Wilson, US Federal Trade Commission. The views expressed herein are our own and do not necessarily reflect the views of our institutions, including the US Federal Trade Commission, or any other Commissioner.

¹ See *United States v. AT&T Inc.*, 310 F. Supp. 3d 161, 193–94 (D.D.C. 2018), *aff’d*, 916 F.3d 1029 (D.C. Cir. 2019).

² See *FTC Hearing #5: Vertical Merger Analysis and the Role of the Consumer Welfare Standard in U.S. Antitrust Law*, FED. TRADE COMMISSION (Nov. 1, 2018), <https://perma.cc/P7SW-3LWD>; *Public Workshops on Draft Vertical Merger Guidelines*, U.S. DEP’T OF JUSTICE, ANTITRUST DIV. (June 26, 2020), <https://perma.cc/2KV9-2TE3>.

³ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, VERTICAL MERGER GUIDELINES (2020), <https://perma.cc/389K-H8FP>.

deserve equal skepticism and scrutiny.⁴ Yet, this view is at odds with most of the economic literature, which generally finds that vertical mergers (and restraints) generate greater procompetitive benefits than horizontal mergers, typically making them, on net, procompetitive. First and foremost, vertical mergers allow the merged firm to eliminate a markup it would otherwise pay a supplier; this dynamic is called the elimination of double marginalization (“EDM”). Whereas EDM is an inherent or unilateral effect, vertical mergers also produce a number of standard efficiencies, like more efficiently allocating risk and incentivizing asset-specific investments, which benefit consumers by expanding output.

This is not to say that all vertical mergers and restraints are lawful. Vertical mergers may also allow a firm to engage in anticompetitive conduct, like raising rivals’ costs (“RRC”), complete foreclosure, or misuse of information. Yet RRC and EDM are both inherent, unilateral competitive effects—two sides of the same coin—even if they do not necessarily share equal magnitude. As a result, the economic literature finds that a vertical merger’s aggregate procompetitive benefits are likely to exceed its anticompetitive effects across a wide range of—but not all—possible scenarios.⁵

Yet the law has not always followed the economics, and sometimes has explicitly parted ways with it. In the mid-twentieth century, the law viewed efficiencies as either irrelevant or anticompetitive, and it therefore condemned many vertical mergers.⁶ Of course, this was the same era when comprehensive sectoral regulation was celebrated despite its destructive consequences for consumers, the originally intended beneficiaries of these byzantine legal frameworks.⁷

⁴ See, e.g., Jonathan B. Baker, Nancy L. Rose, Steven C. Salop & Fiona Scott Morton, *Five Principles for Vertical Merger Enforcement Policy*, 33 ANTITRUST 12, 14 (2019) (“[E]nforcers also should not set a higher evidentiary standard for finding anticompetitive harms from a vertical merger than it applies when reviewing horizontal deals.”).

⁵ See, e.g., D. Bruce Hoffman, Acting Dir., Bureau of Competition, Fed. Trade Comm’n, Remarks on Vertical Merger Enforcement at the FTC at Credit Suisse 2018 Washington Perspectives Conference 4 (Jan. 10, 2018), <https://perma.cc/W9TW-R5F6> (“To summarize, overall there is a broad consensus in competition policy and economic theory that the majority of vertical mergers are beneficial because they reduce costs and increase the intensity of interbrand competition. That consensus has support in the empirical research. Does that mean all vertical mergers are benign? No, it doesn’t.”).

⁶ See *infra* Section II.A.

⁷ See, e.g., Christine S. Wilson & Keith Klovers, *The Growing Nostalgia for Past Regulatory Misadventures and the Risk of Repeating These Mistakes with Big Tech*, 8 J. ANTITRUST ENF’T 10, 12–14 (2019) (recounting the genesis and early history of the Interstate Commerce Commission and Civil Aeronautics Board).

Ultimately the tide shifted with economic analysis leading the way.⁸ Year by year, the economic evidence has indicated ever more clearly that vertical integration—whether by merger or otherwise—is typically procompetitive.⁹ The shift towards economically informed legal analysis profoundly affected the design of sector regulations, from transportation, to banking, to energy. As a result, most sectoral regulations banning vertical integration have fallen,¹⁰ as have other vertical restraints harmful to consumer welfare.¹¹

The recognition that vertical integration is typically procompetitive also required a significant course correction in antitrust law and policy. In the late 1970s, vertical mergers became more difficult to challenge.¹² In 1984, the DOJ revised its Merger Guidelines to recognize that vertical mergers “are less likely than horizontal mergers to create competitive problems.”¹³ As a result, the Agencies and the parties resolved almost all vertical merger concerns via consent agreements (“consents”),¹⁴ which

⁸ See, e.g., OLIVER E. WILLIAMSON, *MARKETS AND HIERARCHIES: ANALYSIS AND ANTITRUST IMPLICATIONS* (1975); Roger D. Blair & David L. Kaserman, *A Note on Bilateral Monopoly and Formula Price Contracts*, 77 AM. ECON. REV. 460 (1987); Paul L. Joskow, *The Role of Transaction Cost Economics in Antitrust and Public Utility Regulatory Policies*, 7 J.L. ECON. & ORG. 53 (1991); Benjamin Klein, Robert G. Crawford & Armen A. Alchian, *Vertical Integration, Appropriable Rents, and the Competitive Contracting Process*, 21 J.L. & ECON. 297 (1978).

⁹ See *infra* Part I; see also Roger D. Blair & D. Daniel Sokol, *The Rule of Reason and the Goals of Antitrust: An Economic Approach*, 78 ANTITRUST L.J. 471, 491 n.90 (2012) (noting that vertical integration through merger can lead to “increased competition”); Leah Brannon & Douglas H. Ginsburg, *Antitrust Decisions of the U.S. Supreme Court, 1967 to 2007*, 3 COMPETITION POL’Y INT’L 3, 12 (2007) (same); William E. Kovacic & Carl Shapiro, *Antitrust Policy: A Century of Economic and Legal Thinking*, 14 J. ECON. PERSP. 43, 53 (2000) (same); D. Daniel Sokol, *The Transformation of Vertical Restraints: Per Se Illegality, the Rule of Reason, and Per Se Legality*, 79 ANTITRUST L.J. 1003, 1006 (2014) (same).

¹⁰ See Wilson & Klovers, *supra* note 7, at 10–12.

¹¹ See SAM PELTZMAN & CLIFFORD WINSTON, *DEREGULATION OF NETWORK INDUSTRIES* (2000) (describing the deregulation of various industries); Paul L. Joskow & Nancy L. Rose, *The Effects of Economic Regulation*, in 2 HANDBOOK OF INDUSTRIAL ORGANIZATION 1485 (Richard Schmalensee & Robert Willig eds., 1989) (explaining how the deregulation of the airline industry since 1978 has improved consumer welfare); Paul L. Joskow, *Regulation and Deregulation After 25 Years: Lessons Learned for Research in Industrial Organization*, 26 REV. INDUS. ORG. 169, 169–70, 188–89 (2005) (outlining the deregulation in various industries that began in the 1970s).

¹² See *infra* Part II.

¹³ U.S. DEP’T OF JUSTICE, *MERGER GUIDELINES* 23 (1984), <https://perma.cc/7WQF-ALW8>.

¹⁴ See Steven C. Salop & Daniel P. Culley, *Revising the US Vertical Merger Guidelines: Policy Issues and an Interim Guide for Practitioners*, 4 J. ANTITRUST ENFT 1, 25 & n.80, 28 & n.92 (2015). Some consents may have been less effective. See Steven C. Salop, *Invigorating Vertical Merger Enforcement*, 127 YALE L.J. 1962, 1976, 1992 (2018). Antitrust agencies should take care to craft effective consents. For remedying some of the limitations of existing consents, see, for example, Press Release, U.S. Dep’t of Justice, Antitrust Div., Justice Department Will Move to Significantly Modify and Extend Consent

ranged from the traditional to the quixotic,¹⁵ and in the handful of remaining cases, the parties abandoned the merger. Indeed, it took almost forty years for the Agencies to litigate another vertical merger challenge, *United States v. AT&T Inc.*,¹⁶ and to issue new Vertical Merger Guidelines. The Vertical Merger Guidelines acknowledge that “the agencies more often encounter problematic horizontal mergers than problematic vertical mergers”¹⁷ and describe an approach in which the Agencies will balance the tradeoff of procompetitive effects of EDM with the harms resulting from RRC. We call this the “unilateral effects tradeoff.”¹⁸

Given this economic and legal history, the best way for antitrust law and policy to distinguish potentially anticompetitive vertical mergers from potentially procompetitive or competitively benign ones is not, as some populists have argued, to simply ban all such mergers.¹⁹ Rather, following the approach set out by the D.C. Circuit in *AT&T*, policymakers should create a series of presumptions, based on economic effects and a careful case-by-case analysis using existing empirical tools (and recalibrating those tools over time as economic learning advances),²⁰ to assess the likely economic effects of a given vertical merger. Although “the lack of rules or even presumptions on vertical mergers” is untenable,²¹ it makes little sense to reflexively “readopt”²² bygone legal rules that were then, and even more surely are now, divorced from economic learning.

Decree with Live Nation/Ticketmaster (Dec. 19, 2019), <https://perma.cc/JP8P-GE2N>; Press Release, Fed. Trade Comm’n, FTC Imposes Conditions on UnitedHealth Group’s Proposed Acquisition of DaVita Medical Group (June 19, 2019), <https://perma.cc/DFJ5-DXRX>; Press Release, Fed. Trade Comm’n, FTC Imposes Conditions on Northrop Grumman’s Acquisition of Solid Rocket Motor Supplier Orbital ATK, Inc. (June 5, 2018), <https://perma.cc/CE8G-TKAJ>.

¹⁵ See, e.g., Christine S. Wilson & Keith Klovers, *Yes We Can, But Should We?: Merger Remedies During the First Obama Administration*, COMPETITION POL’Y INT’L ANTITRUST CHRONICLE 2 (Dec. 2014).

¹⁶ 310 F. Supp. 3d 161 (D.D.C. 2018).

¹⁷ DEP’T OF JUSTICE & FED. TRADE COMM’N, *supra* note 3, at 2.

¹⁸ *Id.* at 4–5 (describing how the Agencies will evaluate the “net effect” of EDM and RRC).

¹⁹ For example, Professor Lina Khan argues that “[t]he best way to preserve fair and open competition is . . . simply to completely ban any network monopolist from owning businesses that place it in competition with the companies that depend on it to reach [the] market . . . [which] is what previous generations did with railways.” Kevin Carty, Leah Douglas, Lina Khan & Matt Stoller, *6 Ideas to Rein in Silicon Valley, Open Up the Internet, and Make Tech Work for Everyone*, N.Y. MAG.: INTELLIGENCER (Dec. 11, 2017), <https://perma.cc/XZ94-FS5H>.

²⁰ James Bernard, Rebecca Kirk Fair & D. Daniel Sokol, *Why Does the Consumer Welfare Standard Work? Matching Methods to Markets*, COMPETITION POL’Y INT’L ANTITRUST CHRON., Nov. 2019, at 1–7.

²¹ Open Markets Institute, American Economic Liberties Project, Frank Pasquale & Maurice Stucke, Comment Letter on Draft Vertical Merger Guidelines, at 16 (Feb. 10, 2020), <https://perma.cc/CHC9-QWAE>.

²² See *id.* at 1, 21–24 (urging readoption of the Department of Justice’s 1968 Merger Guidelines).

Rather, policymakers should adopt and refine the burden-shifting framework set out in *United States v. Baker Hughes, Inc.*²³ and first applied to vertical mergers in *AT&T*.²⁴ Although this approach is generally accepted, the discussion today on burden shifting misses two critical refinements. First, because EDM and RRC are two sides of the same coin, if a plaintiff alleges an RRC theory of harm, then it should bear the burden (in step one) of demonstrating that the merger is likely to produce a *net* unilateral anticompetitive effect. Such an approach is consistent with the Vertical Merger Guidelines, which state that the Agencies will assess the “net effect” of all changes to a merged firm’s unilateral incentives.²⁵ In litigation, this goal is achieved only if the analysis addresses *both* RRC and EDM; specifically, the plaintiff must show that the anticompetitive effect of RRC likely exceeds the procompetitive benefit of EDM in the instant case—the unilateral effects tradeoff. The same logic also likely applies to complete foreclosure, which is simply a more extreme form of RRC. This approach should guide both judicial review and agency enforcement.

Second, if the plaintiff carries its burden at step one, then the defendant should be able to argue, and courts and Agencies should seriously consider, the full range of procompetitive efficiencies. As economists have long known, vertical integration can expand output by reducing transaction costs, better allocating risk, diffusing new technologies and techniques, reducing inventory costs, and better coordinating investment decisions. These efficiencies are real and should be credited when proven. Given the state of the literature on the efficacy of vertical contracting and the approach used in horizontal mergers, defendants in these cases should not bear the burden of demonstrating that every hypothetical alternative method of achieving these efficiencies is closed to them. That is, antitrust needs to embrace a “holistic efficiency analysis,” which incorporates this broader set of efficiencies that is well recognized in the academic literature.

This Article is structured in three parts. Part I examines the economic literature, both theoretic and empirical. Part II reviews the legal history, starting with passage of the Clayton Act in 1914. Part III sets out the proposed legal framework that synthesizes the economics and the law.

²³ 908 F.2d 981, 991–92 (D.C. Cir. 1990).

²⁴ *United States v. AT&T, Inc.*, 310 F. Supp. 3d 161, 191 (D.D.C. 2018).

²⁵ DEP’T OF JUSTICE & FED. TRADE COMM’N, *supra* note 3, at 5.

I. Economics of Vertical Mergers and Vertical Restraints

Vertical integration refers to a firm's decision to operate at two (or more) stages in the production and distribution of a product. For example, suppose that a downstream retail grocery chain owned an upstream dairy farm that produced raw milk,²⁶ which it transferred to its retail outlets after processing. The chain would be vertically integrated from the production stage to the processing stage to the retail distribution stage.

A merger integrating two firms along the same vertical chain incentivizes each formerly separate firm to account for the effect of its actions on its merging partner. For example, an unintegrated retailer's profits may increase if a wholesaler decreases its price to that retailer. The same retailer's profits may also increase if the wholesaler raises its price to the retailer's competitors. Finally, the retailer's price may affect the profit earned by the wholesaler via sales to other retailers, as consumers substitute across retailers based on price. Unintegrated firms ignore the effect of their actions on the profits of other firms; integrated firms optimally internalize how their actions affect their upstream and downstream affiliates.

Horizontal merger enforcement is commonly premised on a single analogous change to a unilateral incentive.²⁷ A firm can increase the profit of any other horizontally related firm by raising its price, thus diverting some of its demand to that firm. Unintegrated firms ignore this external effect, while integrated firms internalize the effect by increasing price to the detriment of consumers. Antitrust scrutiny of horizontal mergers often proceeds by measuring the effect of the unilateral incentive to increase price against that of productive efficiencies generated by the merger.

In contrast, vertical mergers generate a more complex set of unilateral incentives, some of which typically benefit consumers and some of which typically harm consumers. The net effect of these incentives is ambiguous as a theoretical matter, meaning vertical mergers often benefit consumers even in the absence of productive efficiencies. Accounting for both

²⁶ In discussing the distribution chain from the initial production stage to the final consumer, "downstream" refers to the move of goods towards the final consumer. Thus, when raw milk moves from a dairy farm to a milk processor, it is moving downstream. Movements "upstream" are the opposite, that is, these movements are further away from the final consumer.

²⁷ Coordinated theories of harm also exist for horizontal mergers. See, e.g., Nathan H. Miller & Matthew C. Weinberg, *Understanding the Price Effects of the MillerCoors Joint Venture*, 85 *ECONOMETRICA* 1763, 1788–89 (2017). However, the focus in merger enforcement since the 1992 Horizontal Merger Guidelines has been on unilateral effects.

unilateral incentives and productive efficiencies, the empirical literature finds that vertical mergers usually benefit consumers. For example, Professors Francine Lafontaine and Margaret Slade survey the empirical literature and find that it “is highly supportive of the efficiency of vertical integration and mergers . . . [and] indicates that integration benefits consumers.”²⁸ Two other surveys find similarly strong evidence that vertical integration generally benefits consumers.²⁹ In *United States v. AT&T, Inc.*, the district court was persuaded by evidence that three similar past vertical mergers did not result in price increases.³⁰

Determining prospectively whether a particular merger is likely to harm or benefit consumers necessarily involves a weighing of procompetitive and anticompetitive unilateral effects, even before accounting for productive efficiencies. Horizontal mergers have widely accepted indicia for likely unilateral harm.³¹ No such indicia exist for vertical mergers. Evidence that anticompetitive effects are likely to be large is unavailing if it is not analyzed concurrently with procompetitive effects.³² Thus, while neither economic theory nor empirical evidence rule out the possibility of harmful vertical mergers, both suggest that such

²⁸ Francine Lafontaine & Margaret Slade, *Vertical Integration and Firm Boundaries: The Evidence*, 45 J. ECON. LIT. 629, 675 (2007).

²⁹ James C. Cooper, Luke M. Froeb, Dan O'Brien & Michael G. Vita, *Vertical Antitrust Policy As a Problem of Inference*, 23 INT'L J. INDUS. ORG. 639, 658 (2005) (“Most studies find evidence that vertical restraints/vertical integration are procompetitive . . .”); Global Antitrust Institute, Comment Letter on the Federal Trade Commission’s Hearings on Competition and Consumer Protection in the 21st Century, at 6–7 (Sept. 6, 2018), <https://perma.cc/SDG2-PM3A> (finding that, of eleven papers written since 2008 identifying welfare implications of vertical integration, six found “positive welfare changes; four [found] no change, a mixed change, or no economically meaningful change . . . and only one (and perhaps two) had results that are consistent with a negative impact”). *But see* Marissa Beck & Fiona Scott Morton, *Evaluating the Evidence on Vertical Mergers* (Feb. 26, 2020) (unpublished comment), <https://perma.cc/GVZ6-X8NY> (cautioning against strong inferences drawn from the vertical merger retrospectives surveyed by Lafontaine & Slade, Cooper et al., and the Global Antitrust Institute).

³⁰ See *United States v. AT&T, Inc.*, 310 F. Supp. 3d 161, 215 (D.D.C. 2018).

³¹ See, e.g., U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES 20 (2010) [hereinafter HORIZONTAL MERGER GUIDELINES], <https://perma.cc/Q9HL-WNPV> (“Unilateral price effects are greater, the more the buyers of products sold by one merging firm consider products sold by the other merging firm to be their next [best] choice.”).

³² See Gopal Das Varma & Martino De Stefano, *Equilibrium Analysis of Vertical Mergers*, 65 ANTITRUST BULL. (forthcoming 2020) (manuscript at 2–3), <https://perma.cc/DHA9-WE8J> (“[W]e show that RRC and EDM are not two separate effects. Instead, they are inseparably linked because the extent of EDM affects the strength of the RRC incentive, making EDM to be not just a stand-alone competitive benefit to be weighed against RRC.”).

mergers may be difficult to distinguish from more common procompetitive vertical mergers, outside of special circumstances.³³

The remainder of this Section describes procompetitive effects (including productive efficiencies) and anticompetitive effects of vertical mergers in greater detail. It then discusses balancing the two effects and the types of evidence that might support an inference of harm.

A. *Procompetitive Effects of Vertical Integration*

This Section discusses both a procompetitive unilateral effect—the elimination of double marginalization—and procompetitive efficiencies. EDM is an inherent result of a vertical merger that must be analyzed concurrently with any anticompetitive unilateral effects. Some of the efficiencies that may result from vertical mergers have close analogues to those commonly resulting from horizontal mergers, while others may be unique to vertical merger analysis. The breadth and likelihood of productive efficiencies that may result from vertical mergers demands that efficiencies be given serious attention before reaching a conclusion that a vertical merger is likely to harm consumers. This Section addresses primarily the circumstance in which vertical integration is achieved by merger.

1. Elimination of Double Marginalization

The literature on EDM traces back to Professor Joseph J. Spengler, who recognized that upstream and downstream monopolists, operating independently, price inefficiently because they choose their own markups without reference to one another.³⁴ When an upstream firm sells its output, it will maximize profits by setting price above its marginal cost, weighing the benefit of a higher margin against the reduction in demand caused by a higher price. A downstream firm treats the upstream firm's price as part of its cost and imposes its own markup when it sells its own output, for the same reason the upstream firm charges a markup. In effect, there is a markup on a markup.

A vertical merger incentivizes the combined firm to eliminate the double markup. Before merging, when the upstream firm sets its price, it ignores that a decrease in its price raises the downstream firm's profit and instead maximizes only its own profit. After merging, the combined firm

³³ See *infra* Section I.C.3.

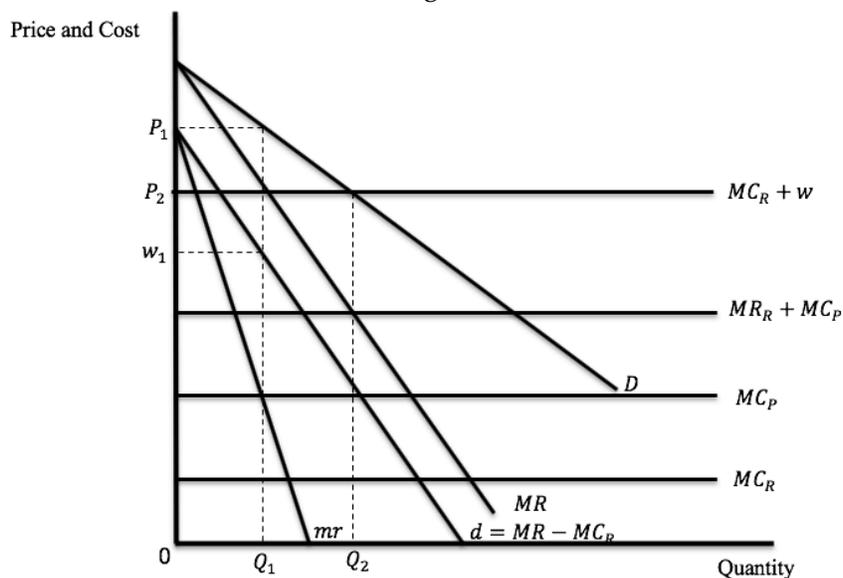
³⁴ See Joseph J. Spengler, *Vertical Integration and Antitrust Policy*, 58 J. POL. ECON. 347, 349 (1950).

internalizes the effect of the upstream price on downstream profit and thus lowers the upstream price.

Indeed, the integrated firm optimally will lower the upstream markup charged to the integrated downstream firm all the way to zero. Any internal transfer price paid from the downstream firm to the upstream firm neither increases nor decreases the combined firm's overall profit. Instead, the transfer price lowers the profit of the downstream firm but increases the profit of the upstream firm by the same magnitude. Hence, the upstream firm optimally sets its internal price to the downstream firm to reflect the overall cost of the input to the firm.³⁵

Because it considers the impact of its choices on its affiliate, the merged firm earns a profit greater than the sum of the upstream and downstream profits of the unintegrated firms. This merger also benefits consumers: as the final good price falls, quantity rises, and both consumer welfare and total welfare increase. These results can be illustrated with a relatively simple economic model.

Figure 1



Suppose an upstream wholesale monopolist manufactures a product while an independently owned and operated downstream retail

³⁵ External factors, such as the tax code, may affect these transfer prices.

monopolist sells the product at retail.³⁶ In Figure 1, D represents the demand for the final product as sold by the retailer and MR is the associated marginal revenue. The marginal cost of performing the retail function is MC_R .

The retailer maximizes its profit by setting marginal revenue equal to marginal cost. For the retailer, its marginal cost is the sum of the marginal cost of retailing (" MC_R ") and the wholesale price that the retailer pays to the wholesaler. Thus, profit maximization requires purchasing and selling that quantity where $MR = MC_R + w_1$. Rearranging the condition provides the wholesaler's derived demand: $w_1 = MR - MC_R$, which is labeled $d = MR - MC_R$ in Figure 1. As one can see, d is parallel to MR ; the vertical distance between MR and d is the marginal cost of retailing, MC_R . The corresponding marginal revenue of d is mr .

The wholesaler optimally will produce where its marginal revenue (" MR ") is equal to its marginal cost of production (" MC_P "). The wholesale price (" w_1 ") is found on the derived demand d at the profit-maximizing quantity, which is Q_1 . Thus, the wholesaler produces Q_1 and sells it to the retailer at a price of w_1 . Its profit is equal to $(w_1 - MC_P)Q_1$.

The retailer will maximize its profit by buying and reselling that quantity where its marginal revenue (" MR ") is equal to its marginal cost, which is $w_1 + MC_R$. As one can see in the figure, the profit maximizing quantity is Q_1 and the corresponding price is P_1 . The retailer's profit is $(P_1 - w_1 - MC_R)Q_1$.

As both the wholesaler and retailer set a price above marginal cost, there is double marginalization. Were the wholesaler and retailer to vertically integrate, the combined firm would maximize its profit by equating the marginal revenue (" MR ") on sales of the final good to its total marginal cost of production and retailing ($MC_P + MC_R$). The profit maximizing quantity is Q_2 and the corresponding price is P_2 . Thus, integration causes the retail price to fall from P_1 to P_2 and the quantity sold increases from Q_1 to Q_2 . Under vertical integration, the combined firm sets a single markup over its combined cost of production and retailing, $MC_P + MC_R$.

EDM results when the merged firm internalizes the negative pricing externality that its upstream price has on its downstream margin; therefore, EDM is likely to result from any vertical merger for which this type of externality exists. Consequently, this phenomenon will arise in any

³⁶ EDM is illustrated using successive monopolists to abstract away from other unilateral effects that would result from a vertical merger of oligopolists. Our EDM analysis would extend to this case unaltered.

vertical merger in which the downstream firm is a current customer of the upstream firm and pays a markup over the upstream firm's costs. It will also arise in vertical mergers involving a downstream firm that does not currently purchase from the upstream firm but would likely do so after integration. Indeed, EDM may even arise in vertical mergers in which the downstream firm is unlikely to purchase from the upstream firm after integration, if the merger would improve the bargaining position of the downstream firm when negotiating with its unintegrated supplier.

Although EDM is a common phenomenon in vertical mergers, it is not always present. For example, EDM may not occur if the upstream firm's product is technologically incompatible with the downstream firm's needs. Similarly, if an already vertically integrated firm acquires an upstream rival, there may be no double margin to eliminate. Finally, if unintegrated firms have been able to completely eliminate double margins via contract, then their merger would, by definition, not result in EDM (although the mere possibility of achieving EDM via contract should not meaningfully alter analysis of EDM in any particular merger³⁷).

There is some debate about the frequency of the specialized circumstances described in the previous paragraph. For example, Professors Jonathan Baker, Nancy Rose, Steven Salop, and Fiona Scott Morton noted that "common assumptions that EDM merger benefits are inevitable . . . and that EDM can be presumed to be merger-specific" are not supported by economic reasoning.³⁸ American Antitrust Institute President Diana Moss suggests "[t]here is a well-established case for caution regarding EDM, which is rooted in the restrictive assumptions underlying the theory."³⁹

Contrary to these assertions, a vertical merger is likely to result in EDM if the cost to the upstream firm of supplying an input to the downstream firm (i.e., exclusive of markup) is less than the cost to the downstream firm of acquiring the same input from an unintegrated firm. Since an unintegrated firm typically will charge a markup above its costs, this condition will generally apply. While some types of contracts, such as two-part tariffs, can mitigate the double marginalization problem outside of vertical integration,⁴⁰ there is no evidence that firms that have not already implemented such contracts are likely to be able to fully eliminate

³⁷ See *infra* Section I.A.3.

³⁸ Jonathan B. Baker, Nancy L. Rose, Steven C. Salop & Fiona Scott Morton, Comments Letter on the Draft Vertical Merger Guidelines, at 31 (Feb. 24, 2020), <https://perma.cc/W9MN-X3W9>.

³⁹ American Antitrust Institute, Comment Letter on Draft Vertical Merger Guidelines, at 10 (Feb. 25, 2020), <https://perma.cc/LNQG-8UX9>.

⁴⁰ See *infra* Section I.A.3.

the double margin by changing contracting practices.⁴¹ In fact, the empirical literature supports the contrary conclusion—namely, that vertical integration via contract is an imperfect substitute for vertical integration via merger.⁴² The Vertical Merger Guidelines endorse this perspective in noting that “[t]he Agencies do not, however, reject the merger specificity of the elimination of double marginalization solely because it could theoretically be achieved but for the merger.”⁴³

Most retrospective studies find that vertical integration benefitted consumers, and few show harmful effects.⁴⁴ Merger retrospectives often measure the performance of merged firms against a set of similarly situated control firms. Such studies may be limited to observing the overall effects of a vertical merger on merging firms and may be unable to distinguish between various procompetitive and anticompetitive effects.⁴⁵ Nonetheless, the literature suggests that EDM is very likely to contribute significantly to the procompetitive effects of most vertical mergers.⁴⁶

⁴¹ See Daniel P. O’Brien, *The Antitrust Treatment of Vertical Restraints: Beyond the Possibility Theorems*, in SWEDISH COMPETITION AUTHORITY, *THE PROS AND CONS OF VERTICAL RESTRAINTS* 40, 63 (2008) (“The use of nonlinear contracts can mitigate double-marginalization, but it does not necessarily eliminate it.”).

⁴² See *United States v. AT&T, Inc.*, 916 F.3d 1029, 1038 (D.C. Cir. 2019) (describing EDM likely to result from the merger); Gregory S. Crawford, Robin S. Lee, Michael D. Whinston & Ali Yurukoglu, *The Welfare Effects of Vertical Integration in Multichannel Television Markets*, 86 *ECONOMETRICA* 891, 893–94 (2018) (finding substantial savings from integration in the cable industry); Lafontaine & Slade, *supra* note 28, at 649 (summarizing strong empirical support for inefficiencies associated with contracting); see also discussion of the GM/Fisher merger *infra* Part III.

⁴³ DEPT’ OF JUSTICE & FED. TRADE COMM’N, *supra* note 3, at 12.

⁴⁴ See Francine Lafontaine & Margaret Slade, *Franchising and Exclusive Distribution: Adaptation and Antitrust*, in II *OXFORD HANDBOOK OF INTERNATIONAL ANTITRUST ECONOMICS* 387 (Roger D. Blair & D. Daniel Sokol eds., 2014) (providing a literature review); LaFontaine & Slade, *supra* note 28, at 677 (“[O]verall a fairly clear empirical picture emerges. The data appear to be telling us that efficiency considerations overwhelm anticompetitive motives in most contexts. Furthermore, even when we limit attention to natural monopolies or tight oligopolies, the evidence of anticompetitive harm is not strong.”).

⁴⁵ But see Fernando Luco & Guillermo Marshall, *The Competitive Impact of Vertical Integration by Multiproduct Firms*, 110 *AM. ECON. REV.* 2041, 2043 (2020) (measuring separately the effects of vertical integration on integrated and nonintegrated firms, finding unintegrated products increased in price by 1.2 to 1.5 percent, while prices for integrated products decreased by 0.8 to 1.2 percent).

⁴⁶ See Cooper et al., *supra* note 29, at 648 (surveying twenty-two empirical papers, which “appear to provide strong support for the proposition that vertical integration/vertical restraints often help solve double markup problems”); Crawford et al., *supra* note 42, at 893–94 (describing an estimated structural model of the cable industry allowing a finding that “\$0.79 of each dollar of profit realized by its integrated partner is internalized . . . when integrated MVPDs and RSNs bargain with each other” and that the overall effect of vertical integration, even in the absence of program access rules, “is to increase consumer and total welfare”); Panos Kouvelis, *Drug Pricing for Competing*

EDM benefits are likely to be largest when the upstream firm, prior to the merger, charges a large markup to the downstream firm it acquires.⁴⁷ Benefits may be smaller if the merging firms already engage in some form of nonlinear contracting, or if the upstream firm is capacity constrained.

In summary, unlike horizontal mergers, vertical mergers induce a procompetitive unilateral effect in addition to any such anticompetitive effects and in addition to procompetitive productive efficiencies.

2. Efficiencies

Often commentary on the procompetitive effects of vertical mergers focuses on EDM. Though EDM is important, there are many other potential procompetitive effects that should be considered. These efficiencies play a role in both vertical mergers and mergers of complementary or adjacent products.⁴⁸ These efficiencies, while real both in terms of theory and empirics, often are not developed by the parties or credited by the Agencies. This “chicken and egg” problem hinders substantive development of efficiency arguments, both in litigation and during the Agencies’ merger review process.⁴⁹

Pharmaceutical Manufacturers Distributing Through a Common PBM, 27 PROD. OPER. MGMT. 3799 (2018) (finding “when the price sensitivity of the PBM’s market size is sufficiently small, unless the vertical integration is associated with a sufficient increase in the market base, social welfare decreases after the integration due to the profit loss from the non-integrated branded drug manufacturers. When the price sensitivity of the PBM’s market size is relatively large, the elimination of double marginalization benefits plan enrollees and significantly expands the PBM’s price-driven market size, which leads to a higher social welfare in the post-integration model”); Gunther Glenk & Stefan Reichelstein, *Synergistic Value in Vertically Integrated Power-to-Gas Energy Systems*, 29 PROD. OPER. MGMT. 526, 526–28 (2020) (identifying vertical integration effectiveness in electric energy); Ricard Gil, *Does Vertical Integration Decrease Prices? Evidence from the Paramount Antitrust Case of 1948*, 7 AMER. ECON. J. 162 (2015). On the limits of the assumptions on EDM see John Kwoka & Margaret Slade, *Second Thoughts on Double Marginalization*, ANTITRUST MAG., Spring 2020, at 51; Jaideep Shenoy, *An Examination of the Efficiency, Foreclosure, and Collusion Rationales for Vertical Takeovers*, 58 MGMT. SCI. 1482, 1500 (2012) (“Collectively, our findings indicate that firms use corporate takeovers to expand their vertical boundaries consistent with an efficiency improvement rationale as predicted by the transaction cost economics and property rights theories.”).

⁴⁷ See *infra* note 68 and accompanying text.

⁴⁸ See, e.g., Annabelle Gawer & Rebecca Henderson, *Platform Owner Entry and Innovation in Complementary Markets: Evidence from Intel*, 16 J. ECON. & MGMT. STRATEGY 1 (2007); Zhuoxin Li & Ashish Agarwal, *Platform Integration and Demand Spillovers in Complementary Markets: Evidence from Facebook’s Integration of Instagram*, 63 MGMT. SCI. 3438 (2017).

⁴⁹ See Christine S. Wilson, Comm’r, Fed. Trade Comm’n, Remarks on Breaking the Vicious Cycle: Establishing a Gold Standard for Efficiencies at Bates White Antitrust Webinar (June 24, 2020), <https://perma.cc/88HA-K25L>.

a. *Reduction of Transaction Costs*

Related to but distinct from EDM is the reduction of transaction costs through merger.⁵⁰ Transaction costs explain why certain firms vertically integrate via merger rather than through contracts (markets).⁵¹ Nobel laureate Oliver Williamson defined a transaction as an event “when a good or service is transferred across a technologically separable interface. One stage of [processing or assembly] activity terminates and another begins.”⁵² Thus, there is a choice of “make” or “buy” to reduce transaction costs.⁵³

The conditions under which transaction costs occur will vary with the particular governance mechanism used for a given transaction’s economic consequence.⁵⁴ Those organizations that can reduce transaction costs are more likely to create more value for themselves.

The theory that vertical integration may beneficially eliminate transaction costs first emerged in the 1970s, although its origins belong to Professor Ronald Coase.⁵⁵ Empirical literature followed,⁵⁶ as did literature

⁵⁰ For EDM reviews outside of economics, see, for example, Gérard. P. Cachon & Patrick T. Harker, *Competition and Outsourcing with Scale Economies*, 48 *MGMT. SCI.* 1314 (2002).

⁵¹ See Mikko Ketokivi & Joseph T. Mahoney, *Transaction Cost Economics As a Theory of Supply Chain Efficiency*, 29 *PROD. & OPERATIONS MGMT.* 1011, 1011 (2020) (“TCE [is] one of the most cited and applied organization theories in operations and supply chain management research . . .”); see also Andy A. Tsay, John V. Gray, In Joon Noh & Joseph T. Mahoney, *A Review of Production and Operations Management Research on Outsourcing in Supply Chains: Implications for the Theory of the Firm*, 27 *PROD. & OPERATIONS MGMT.* 1177, 1179–80 (2018).

⁵² Oliver E. Williamson, *The Economics of Organization: The Transaction Cost Approach*, 87 *AM. J. SOC.* 548, 552 (1981).

⁵³ See Soon Ang & Detmar W. Straub, *Production and Transaction Economies and IS Outsourcing: A Study of the U.S. Banking Industry*, 22 *MIS Q.* 535, 537 (1998); Michael J. Leiblein & Douglas J. Miller, *An Empirical Examination of Transaction and Firm-Level Influences on the Vertical Boundaries of the Firm*, 24 *STRATEGIC MGMT. J.* 839, 848 (2003). Of course, a firm can pursue both strategies. See Anne Parmigiani, *Why Do Firms Both Make and Buy? An Investigation of Concurrent Sourcing*, 28 *STRATEGIC MGMT. J.* 285, 285 (2007).

⁵⁴ See WILLIAMSON, *supra* note 8.

⁵⁵ See Oliver E. Williamson, *Vertical Integration*, in 4 *THE NEW PALGRAVE: A DICTIONARY OF ECONOMICS* 807, 809 (John Eatwell et al. eds., 1987) (“Although this [TCE] conception of the firm-as-governance-structure was first advanced fifty years ago (Coase, 1937), it lacked operationality and languished for most of the next thirty-five years (Coase, 1972). The past fifteen years [1972–1987], by contrast, have witnessed renewed attention to and operational headway on transaction cost matters.”). See generally WILLIAMSON, *supra* note 8; R. H. Coase, *The Nature of the Firm*, 4 *ECONOMICA* 386 (1937); Paul Joskow, *Vertical Integration and Long-term Contracts: The Case of Coal-burning Electric Generating Plants*, 1 *J.L. ECON. & ORG.* 33 (1985); Klein et al., *supra* note 8; Oliver E. Williamson, *The Vertical Integration of Production: Market Failure Considerations*, 61 *AM. ECON. REV.* 112 (1971).

⁵⁶ See, e.g., Jeffery T. Macher & Barak D. Richman, *Transaction Cost Economics: An Assessment of Empirical Research in the Social Sciences*, 10 *BUS. & POL.* 1 (2008); Scott E. Masten, *Reaffirming*

focused on antitrust-related issues.⁵⁷ This literature identified that, under certain circumstances, vertical integration could eliminate transaction costs (particularly by addressing issues of specificity, uncertainty, and complexity) and thereby increase consumer welfare.⁵⁸

The premise behind the reduction of transaction costs through merger is that such integration is needed under a particular set of circumstances. Assume that assets are cospecialized. The more cospecialized the asset, the greater the need to have vertical integration. The more that a firm outsources cospecialized investments, the greater the likelihood of higher transaction costs due to holdup.⁵⁹ The possibility of such holdup may be factored into the pricing of contracts across firms or may cause a vertical partner to be chilled from making cospecialized investments. In contrast, outsourcing is more likely when transaction costs are lower.⁶⁰

b. *Reduction of Asymmetric Risk*

Vertical integration is a way to manage and mitigate risk, which may be asymmetric due to contractual incompleteness.⁶¹ Asymmetric risk also

Relationship-Specific Investments: Comments on Miwa and Ramseyer's 'Rethinking Relationship-Specific Investments', 98 MICH. L. REV. 2668, 2675 (2000) ("The empirical literature examining the determinants of organizational form and contract design is extensive, certainly far too large to review here. Suffice it to say, surveys of the literature have all come to virtually the same conclusion, namely, that transaction-cost economics has been profoundly successful empirically."); Howard A. Shelanski & Peter G. Klein, *Empirical Research in Transaction Cost Economics: A Review and Assessment*, 11 J. L. ECON. & ORG. 335 (1995).

⁵⁷ See, e.g., Lafontaine & Slade, *supra* note 28; Alan J. Meese, *Robert Bork's Forgotten Role in the Transaction Cost Revolution*, 79 ANTITRUST L.J. 953, 960–61 (2014) (providing an overview). For an empirical review, see *infra* note 227 (discussing the factors considered in determining vertical merger policy).

⁵⁸ See Lafontaine & Slade, *supra* note 28, at 649 (summarizing literature on transaction costs models).

⁵⁹ See Nicholas Argyres, Joseph T. Mahoney & Jackson Nickerson, *Strategic Responses to Shocks: Comparative Adjustment Costs, Transaction Costs, and Opportunity Costs*, 40 STRATEGIC MGMT. J. 357, 365 (2019).

⁶⁰ There are of course hybrid organizational forms as well. See, e.g., Janet E.L. Bercovitz, *The Option to Expand: The Use of Multi-Unit Opportunities to Support Self-Enforcing Agreements in Franchise Relationships*, 1 ACAD. MGMT. PROC. Y1 (2002); Bryan Borys & David B. Jemison, *Hybrid Arrangements As Strategic Alliances: Theoretical Issues in Organizational Combinations*, 14 ACAD. MGMT. REV. 234, 235 (1989).

⁶¹ See Sanford J. Grossman & Oliver D. Hart, *The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration*, 94 J. POL. ECON. 691, 717 (1986); Oliver D. Hart & John Moore, *Property Rights and the Nature of the Firm*, 98 J. POL. ECON. 1119, 1120 (1990).

impacts the possibility of holdup or contractual renegotiation.⁶² Due to the incompleteness of contracts, one party may be more risk averse with respect to contracting than the other. This risk is inherent in the supply chain process and is exacerbated by varying levels of ownership. Vertical integration by merger solves these asymmetric risk problems.⁶³

The risk uncertainty of a manufacturer may affect how it distributes its product downstream.⁶⁴ The chosen options will differ based on a firm's resources and strategy. Some firms may use distributors, an approach that creates various risks like principal-agent problems. Firms averse to these risks may want to mitigate them by vertically integrating forward. Financial vertical integration may improve a firm's ability to achieve sales targets or to reap the rewards of promotional activities.⁶⁵ Thus, downstream integration offers more control for a manufacturer over marketing practices, and increased control reduces uncertainty.

c. *Learning-by-Doing*

A knowledge-based view of the firm, a view used in the management literature, stresses the role that knowledge plays in firm performance. Knowledge develops via learning-by-doing—an approach based on experiential learning within the firm.⁶⁶ If used effectively, learning-by-doing improves firm outcomes.⁶⁷ Organizational design plays a role in

⁶² See George Baker, Robert Gibbons & Kevin J. Murphy, *Informal Authority in Organizations*, 15 J.L. ECON. & ORG. 56, 59 (1999); Eric Maskin & John Moore, *Implementation and Renegotiation*, 66 REV. ECON. STUD. 39, 52 (1999); Ilya Segal & Michael D. Whinston, *The Mirrlees Approach to Mechanism Design with Renegotiation (With Applications to Hold-Up and Risk Sharing)*, 70 ECONOMETRICA 1, 1 (2002).

⁶³ See René Aïd, Gilles Chemla, Arnaud Prochet & Nizar Touzi, *Hedging and Vertical Integration in Electricity Markets*, 57 MGMT. SCI. 1438, 1449–50 (2011) (discussing reduction of asymmetric risk).

⁶⁴ See V. Kasturi Rangan, E. Raymond Corey & Frank Cespedes, *Transaction Cost Theory: Inferences from Clinical Field Research on Downstream Vertical Integration*, 4 ORG. SCI. 454, 454 (1993) (“[C]hannel investments are influenced by a firm's uncertainty absorption mechanism . . .”).

⁶⁵ See Wei Guan & Jakob Rehme, *Vertical Integration in Supply Chains: Driving Forces and Consequences for a Manufacturer's Downstream Integration*, 17 SUPPLY CHAIN MGMT. 187, 189 (2012); George John & Barton A. Weitz, *Forward Integration into Distribution: An Empirical Test of Transaction Cost Analysis*, 4 J.L. ECON. & ORG. 337, 341 (1988).

⁶⁶ See, e.g., LINDA ARGOTE, ORGANIZATIONAL LEARNING: CREATING, RETAINING AND TRANSFERRING KNOWLEDGE 38 (2d ed. 2013); Olav Sorenson, *Interdependence and Adaptability: Organizational Learning and the Long-Term Effect of Integration*, 49 MGMT. SCI. 446, 446 (2003) (discussing “learning by doing” based on asset specificity).

⁶⁷ See Will Mitchell, J. Myles Shaver & Bernard Yeung, *Foreign Entrant Survival and Foreign Market Share: Canadian Companies' Experience in United States Medical Sector Markets*, 15 STRATEGIC MGMT. J. 555, 565 (1994).

these outcomes. Firms with greater internal knowledge can benefit from greater vertical integration because of this increased knowledge.⁶⁸

The intuition is that the more specialized a firm becomes, the more constrained it is in its ability to coordinate effectively across different interdependent stages of production in a supply chain.⁶⁹ In this context, something short of integration—like a joint venture that is vertical in nature⁷⁰ or perhaps a strategic alliance—may be less efficient than vertical integration. In these settings, vertical integration is superior because extensive knowledge sharing and the coordination of interdependent tasks enabled by higher levels of internal knowledge enable the extraction of greater benefits.⁷¹

d. *Knowledge Transfers*

Vertical mergers also may generate efficiencies by facilitating the transfer of knowledge.⁷² Knowledge-based hierarchies are increasingly

⁶⁸ See Rebecca Henderson & Ian Cockburn, *Scale, Scope, and Spillovers: The Determinants of Research Productivity in Drug Discovery*, 27 RAND J. ECON. 32, 33 (1996); Jeffrey T. Macher & Christopher Boerner, *Technological Development at the Boundaries of the Firm: A Knowledge-Based Examination in Drug Development*, 33 STRATEGIC MGMT. J. 1016, 1032 (2012) (“Holding firm experience constant, insourcing fosters control and facilitates communication in ways that outsourcing has difficulty matching.”); Jeffrey T. Macher, *Technological Development and the Boundaries of the Firm: A Knowledge-Based Examination in Semiconductor Manufacturing*, 52 MGMT. SCI. 826, 832 (2006).

⁶⁹ See David J. Teece, *Firm Organization, Industrial Structure, and Technological Innovation*, 31 J. ECON. BEHAV. & ORG. 193, 222 (1996) (identifying “firm organization . . . [as] an important determinant of innovation”).

⁷⁰ See JOHN ALAN STUCKEY, VERTICAL INTEGRATION AND JOINT VENTURES IN THE ALUMINUM INDUSTRY 149 (1983) (explaining a joint venture consists of “two or more separate groups [that] jointly participate as co-owners of a producing organization” while “each joint venturer continues to exist as . . . independent of the joint-venture firm”).

⁷¹ See Rahul Kapoor, *Persistence of Integration in the Face of Specialization: How Firms Navigated the Winds of Disintegration and Shaped the Architecture of the Semiconductor Industry*, 24 ORG. SCI. 1195, 1198 (2013).

⁷² See Fredrik Tell, *Knowledge Integration and Innovation: A Survey of the Field*, in KNOWLEDGE INTEGRATION AND INNOVATION: CRITICAL CHALLENGES FACING INTERNATIONAL TECHNOLOGY-BASED FIRMS 20 (Christian Berggren et al. eds., 2011); Enghin Atalay, Ali Hortaçsu & Chad Syverson, *Vertical Integration and Input Flows*, 104 AM. ECON. REV. 1120, 1146 (2014); Robert M. Grant, *Prospering in Dynamically-Competitive Environments: Organizational Capability as Knowledge Integration*, 7 ORG. SCI. 375, 380 (1996); Gabriel Natividad, *Integration and Productivity: Satellite-Tracked Evidence*, 60 MGMT. SCI. 1698, 1717 (2014); Zheng Jane Zhao & Jaideep Anand, *A Multilevel Perspective on Knowledge Transfer: Evidence From the Chinese Automotive Industry*, 30 STRATEGIC MGMT. J. 959 (2009).

understood to add value to firms.⁷³ A number of theoretical papers argue that hierarchies require the integration of knowledge to be effective.⁷⁴ Within an organizational setting, the firm must acquire, gather, and process information.⁷⁵ This body of work suggests that an acquisition is valuable only if the acquirer can internalize and integrate the knowledge of the target.⁷⁶

The ability to direct knowledge transfer depends on both intensity and location of the knowledge transfer. Knowledge creation and transfer will work differently if outsourced outside the firm or if undertaken within the firm.⁷⁷ Within the firm, knowledge transfer requires a different orientation, and it may be more difficult to replicate this set of relationships across organizations.

e. *Reduction of Information Leakage Due to the Use of Trade Secrets*

Firms may be unwilling to coordinate fully with upstream or downstream partners because of potential information leakage to competitors or would-be competitors. With vertical integration via merger, a firm need not be as concerned with information leakage and the

⁷³ See Luis Garicano, *Hierarchies and the Organization of Knowledge in Production*, 108 J. POL. ECON. 874, 875–76 (2000); Raaj K. Sah & Joseph E. Stiglitz, *The Quality of Managers in Centralized Versus Decentralized Organizations*, 106 Q.J. ECON. 289, 289 (1991).

⁷⁴ See, e.g., Yanhui Wu, *Organizational Structure and Product Choice in Knowledge-Intensive Firms*, 61 MGMT. SCI. 1830 (2015).

⁷⁵ See Masahiko Aoki, *The Contingent Governance of Teams: Analysis of Institutional Complementarity*, 35 INT'L ECON. REV. 657, 658–60 (1994); Patrick Bolton & Mathias Dewatripont, *The Firm as a Communication Network*, 109 Q.J. ECON. 809, 809 (1994); Garicano, *supra* note 73, at 874; Timothy Van Zandt, *Real-Time Decentralized Information Processing as a Model of Organizations with Boundedly Rational Agents*, 66 REV. ECON. STUD. 633, 633 (1999); Wu, *supra* note 74; Kevin Zheng Zhou & Caroline Bingxin Li, *How Knowledge Affects Radical Innovation: Knowledge Base, Market Knowledge Acquisition, and Internal Knowledge Sharing*, 33 STRATEGIC MGMT. J. 1090, 1092 (2012).

⁷⁶ See Bruno Cassiman, Massimo G. Colombo, Paola Garrone & Reinhilde Veugelers, *The Impact of M&A on the R&D Process: An Empirical Analysis of the Role of Technological- and Market-Relatedness*, 34 RES. POL'Y 195, 198 (2005); Marianna Makri, Michael A. Hitt & Peter J. Lane, *Complementary Technologies, Knowledge Relatedness, and Invention Outcomes in High Technology Mergers and Acquisitions*, 31 STRATEGIC MGMT. J. 602, 603 (2010).

⁷⁷ See generally GEORGE VON KROGH, KAZUO ICHIJIO & IKUJIRO NONAKA, ENABLING KNOWLEDGE CREATION: HOW TO UNLOCK THE MYSTERY OF TACIT KNOWLEDGE AND RELEASE THE POWER OF INNOVATION (2000); Riikka Mirja Sarala, Paulina Junni, Cary L. Cooper & Shlomo Yedidia Tarba, *A Sociocultural Perspective on Knowledge Transfer in Mergers and Acquisitions*, 42 J. MGMT. 1230 (2016); Henrik Bresman, Julian Birkinshaw & Robert Nobel, *Knowledge Transfer in International Acquisitions*, 41 J. INT'L BUS. STUD. 5 (2010).

loss of trade secrets. For this reason, vertical mergers may boost firm productivity with regard to critical high value products and processes.⁷⁸

f. *Reducing Inventory Costs*

Inventory costs can be an important driver of total costs.⁷⁹ Vertical integration may facilitate faster optimization and control over inventory,⁸⁰ and it also may reduce forecast bias.⁸¹ Empirical work suggests that vertical integration can improve operational performance through better inventory scheduling.⁸² Certainly some firms—like Walmart, Amazon, and Toyota—are very effective in creating complex supply chains for just-in-time delivery. However, other firms are less effective at creating a lean supply chain system. For these other firms, the use of an internal transport hub for both production and logistics would make inventory scheduling easier.⁸³ Indeed, internalization of the coordination functions may improve information flow or create efficiencies due to technological interdependencies in the production process.⁸⁴

Information sharing across firms in a supply chain may be valuable to reduce inventory costs and other related inefficiencies.⁸⁵ However, effective sharing must include effective management and coordination across information technology (“IT”) infrastructures.⁸⁶ The more difficult

⁷⁸ See Sharon Novak & Scott Stern, *Complementarity Among Vertical Integration Decisions: Evidence from Automobile Product Development*, 55 *MGMT. SCI.* 311, 312 (2009).

⁷⁹ See Timothy F. Bresnahan & Peter C. Reiss, *Dealer and Manufacturer Margins*, 16 *RAND J. ECON.* 253, 264 (1985).

⁸⁰ See Diane J. Reyniers, *The Effect of Vertical Integration on Consumer Price in the Presence of Inventory Costs*, 130 *EUR. J. OPERATIONAL RES.* 83, 88 (2001) (discussing how vertical integration may reduce inventory costs).

⁸¹ See Xiang Wan & Nadia R. Sanders, *The Negative Impact of Product Variety: Forecast Bias, Inventory Levels, and the Role of Vertical Integration*, 186 *INT'L J. PROD. ECON.* 123, 123–24 (2017).

⁸² See Hong Chen, Murray Z. Frank & Owen Q. Wu, *What Actually Happened to the Inventories of American Companies Between 1981 and 2000?*, 51 *MGMT. SCI.* 1015, 1015–17 (2005); John Stuckey & David White, *When and When Not to Vertically Integrate*, 34 *SLOAN MGMT. REV.* 71 (1993).

⁸³ See Richard A. D'Aveni & David J. Ravenscraft, *Economies of Integration versus Bureaucracy Costs: Does Vertical Integration Improve Performance?*, 37 *ACAD. MGMT. J.* 1167, 1170 (1994).

⁸⁴ See Abbie Griffin & John R. Hauser, *Patterns of Communication Among Marketing, Engineering, and Manufacturing—A Comparison Between Two Product Teams*, 38 *MGMT. SCI.* 360 (1992).

⁸⁵ See Hau L. Lee, Kut C. So & Christopher S. Tang, *The Value of Information Sharing in a Two-Level Supply Chain*, 46 *MGMT. SCI.* 626, 627 (2000).

⁸⁶ See Henk Akkermans, Paul Bogerd, Enver Yücesan & Luk N. van Wassenhove, *The Impact of ERP on Supply Chain Management: Exploratory Findings From a European Delphi Study*, 146 *EUR. J. OPERATIONAL RES.* 284, 300 (2003); Eric K. Clemons & Bruce W. Weber, *London's Big Bang: A Case*

it is to address disparate IT infrastructures, the more difficult it may be to achieve efficiencies in inventory management. These effects vary by firm IT due to the specific assets within a given firm. With the right set of assets, vertical integration—when a single firm has a more unified IT infrastructure—is efficient.⁸⁷ Thus, the effective use of IT infrastructure within the same firm allows for reallocating excess IT-related capacity within other units of the firm to reduce inventory and other costs.⁸⁸

g. *Research and Development and Innovation-Related Synergies*

One driver of vertical mergers may be research and development synergies. A series of finance papers suggests that complementary assets create efficiencies for merged firms.⁸⁹ This literature is premised on the important underlying assumption that contractual integration short of a merger—through a strategic alliance, bilateral contracting, or corporate venture capital—is insufficient to achieve such efficiencies.

The nature of knowledge transfer within a firm's boundaries partly explains why acquisitions and contractual arrangements accomplish different results.⁹⁰ For example, in a study on the pharmaceutical industry, internal knowledge coupled with external acquisition led to greater

Study of Information Technology, Competitive Impact, and Organizational Change, 6 J. MGMT. INFO. SYS. 41, 46–47 (1990).

⁸⁷ See Gautam Ray, Ling Xue & Jay B. Barney, *Impact of Information Technology Capital on Firm Scope and Performance: The Role of Asset Characteristics*, 56 ACAD. MGMT. J. 1125, 1142 (2013) (noting that “in firms with narrowly valuable assets, the electronic brokerage effect of IT capital is likely to dominate, and IT capital is likely to facilitate more vertical and product-market specialization, in ways that are consistent with transaction cost economics; and in firms with broadly valuable assets, the electronic integration effect of IT capital is likely to dominate, and IT capital is likely to facilitate more vertical integration and product-market diversification, in ways that are consistent with the resource-based view”).

⁸⁸ See Hüseyin Tanriverdi, *Performance Effects of Information Technology Synergies in Multibusiness Firms*, 30 MIS Q. 57, 58 (2006).

⁸⁹ See Jan Bena & Kai Li, *Corporate Innovations and Mergers and Acquisitions*, 69 J. FIN. 1923, 1955 (2014); Matthew J. Higgins & Daniel Rodriguez, *The Outsourcing of R&D Through Acquisition in the Pharmaceutical Industry*, 80 J. FIN. ECON. 351, 381 (2006); Gerard Hoberg & Gordon M. Phillips, *Product Market Synergies and Competition in Mergers and Acquisitions: A Text-Based Analysis*, 23 REV. FIN. STUD. 3773, 3808 (2010); Simi Kedia, S. Abraham Ravid & Vincente Pons, *When Do Vertical Mergers Create Value?*, 40 FIN. MGMT. 845, 872 (2011); Gordon M. Phillips & Alexei Zhdanov, *R&D and the Incentives from Merger and Acquisition Activity*, 26 REV. FIN. STUD. 34, 71–72 (2013).

⁹⁰ See DAVID J. TEECE, DYNAMIC CAPABILITIES AND STRATEGIC MANAGEMENT: ORGANIZING FOR INNOVATION AND GROWTH 171 (2009); Henry W. Chesbrough & David J. Teece, *When Is Virtual Virtuous? Organizing for Innovation*, 74 HARV. BUS. REV. 65 (1996); David J. Teece, Gary Pisano & Amy Shuen, *Dynamic Capabilities and Strategic Management*, 18 STRATEGIC MGMT. J. 509 (1997).

consumer welfare.⁹¹ Similarly, technological relatedness creates increased efficiencies.⁹²

We recognize that not all mergers lead to the anticipated efficiencies. As one article summarizes:

Building a new competitive capability via technology acquisitions is a multi-stage process in which the acquisition itself is simply the first step. Acquiring firms obtain valuable knowledge through acquisitions of target firms. Then, they must utilize the acquired knowledge for their subsequent services or products. Otherwise, the acquired knowledge is simply hoarded within the acquiring firms, and they fail to actualize the value of the acquired knowledge.⁹³

Overall, firm cultures differ, and the agility of startups is not always present in large firms.

h. *Investment Coordination*

Lack of information sharing creates the potential for a lack of coordination within a supply chain.⁹⁴ Investment coordination within a firm is a way to solve this information problem and may justify vertical integration.⁹⁵ Coordination risk stems from the fact that an individual firm's decisions contribute to a collective vertical outcome. Because those

⁹¹ See John Hagedoorn & Ning Wang, *Is There Complementarity or Substitutability Between Internal and External R&D Strategies?*, 41 RES. POL'Y 1072, 1073 (2012) ("[I]nternal R&D and external R&D, through either R&D alliances or R&D acquisitions, are complementary innovation activities at higher levels of in-house R&D investments, whereas at lower levels of in-house R&D efforts, internal and external R&D turn out to be substitutive strategic options."); Jaideep C. Prabhu, Rajesh K. Chandy & Mark E. Ellis, *The Impact of Acquisitions on Innovation: Poison Pill, Placebo, or Tonic?*, 69 J. MKTG. 114, 126-27 (2005) ("Acquisitions provide a means to access external knowledge that can be difficult or even impossible to create through internal sources."). *But see* Colleen Cunningham, Florian Ederer & Song Ma, *Killer Acquisitions 1-3* (April 22, 2020) (unpublished manuscript), <https://perma.cc/RUU8-LH6N> (identifying mechanisms by which mergers might kill off potential competitors in the pharmaceutical industry).

⁹² See Gautam Ahuja & Riitta Katila, *Technological Acquisitions and the Innovation Performance of Acquiring Firms: A Longitudinal Study*, 22 STRATEGIC MGMT. J. 197, 215 (2001); Cassiman et al., *supra* note 76, at 213; Panos Desyllas & Alan Hughes, *Do High Technology Acquirers Become More Innovative?*, 39 RES. POL'Y 1105, 1117 (2010); Joshua Sears & Glenn Hoetker, *Technological Overlap, Technological Capabilities, and Resource Recombination in Technological Acquisitions*, 35 STRATEGIC MGMT. J. 48, 49-51 (2014).

⁹³ Seungho Choi & Gerry McNamara, *Repeating a Familiar Pattern in a New Way: The Effect of Exploitation and Exploration on Knowledge Leverage Behaviors in Technology Acquisitions*, 39 STRATEGIC MGMT. J. 356, 357 (2018).

⁹⁴ See Chenyu Yang, *Vertical Structure and Innovation: A Study of the SoC and Smartphone Industries 1* (Sept. 1, 2019) (unpublished manuscript), <https://perma.cc/E8QT-E52Z> (studying vertical integration with chipset systems in smartphone industries).

⁹⁵ See Robert Gibbons, *Taking Coase Seriously*, 44 ADMIN. SCI. Q. 145 (1999).

individual firms may employ different decisional rules, and because the choice of decisional rule is frequently opaque, supply chain instability may result.

The classic business school “beer game”⁹⁶—known in academic literature as the “bullwhip effect”⁹⁷—exemplifies this phenomenon. The beer game explores how an entire supply chain (suppliers, manufacturers, and customers), purchasing agents, and marketing agents may have an incomplete view of actual demand for beer because of a lack of information. Each level within the supply chain can impact the entire supply chain if that level orders too much or too little beer. Thus, there is an interdependency of decision-making across each level of the vertical chain. Just so, intrafirm investment coordination may produce efficiencies because the agency costs of coordination within the firm may be reduced below the transaction costs of coordination across multiple actors in multiple firms.⁹⁸

3. Do Mergers and Contracts Produce the Same Benefits?

Three contractual alternatives to complete integration by merger may yield some or all of the same economic benefits as vertical mergers when successfully implemented by unintegrated, vertically related firms.⁹⁹

First, maximum resale prices may, in certain circumstances, allow unintegrated firms to eliminate double marginalization via contract. If such a contract is possible, the upstream firm would optimally set a maximum resale price equal to the price a vertically integrated firm would

⁹⁶ See, e.g., JAY W. FORRESTER, *INDUSTRIAL DYNAMICS* 357–58 (1961); Lisa Ellram, *Introduction to the Forum on the Bullwhip Effect in the Current Economic Climate*, 46 *J. SUPPLY CHAIN MGMT.* 3 (2010).

⁹⁷ See, e.g., Rachel Crosen, Karen Donohue, Elena Katok & John Sterman, *Order Stability in Supply Chains: Coordination Risk and the Role of Coordination Stock*, 23 *PROD. & OPERATIONS MGMT.* 176 (2014); Ellram, *supra* note 96, at 3; Kimberly M. Thompson & Nima D. Badizadegan, *Valuing Information in Complex Systems: An Integrated Analytical Approach to Achieve Optimal Performance in the Beer Distribution Game*, 3 *IEEE ACCESS* 2677, 2677–78 (2015).

⁹⁸ See Crosen et al., *supra* note 97, at 194 (“[T]he notion of ‘optimal’ behavior is contingent on people’s assumptions about the thinking and behavior of the other agents with whom they interact. If a person believes that their counterparts will behave in an unpredictable and capricious fashion, this may lead to further instability in the supply chain.”). One may assume from these findings that it is easier through incentive alignment within a single firm, such as through financial rewards, than alignment across firms.

⁹⁹ See Roger D. Blair & Amanda K. Esquibel, *Maximum Resale Price Restraints in Franchising*, 65 *ANTITRUST L.J.* 157, 176–77 (1996); see also Roger D. Blair & David L. Kaserman, *Optimal Franchising*, 49 *S. ECON. J.* 494 (1982); Roger D. Blair & David L. Kaserman, *Uncertainty and the Incentive for Vertical Integration*, 45 *S. ECON. J.* 266 (1978).

charge. At the same time, the upstream firm would compensate the downstream firm via lump-sum payment so that the downstream firm is no worse off than it would be absent the contract. Referring back to Figure 1,¹⁰⁰ a maximum resale price of P_2 would achieve the benefits of EDM. The downstream retailer would then sell Q_2 at P_2 . The upstream firm would earn a variable profit of $(w_1 - MC_p)Q_2$, while the downstream firm would earn a variable profit of zero; the upstream firm's profit can then be shared with the downstream firm via a lump-sum payment. The combined profit would equal the maximum profit that a vertically integrated firm could earn.¹⁰¹

A second, closely related contractual alternative is a sales quota. The upstream firm can sell its output to the downstream firm at a price of w_1 on the condition that the downstream firm purchases at least Q_2 units. Again, such a contract may require a lump-sum payment from the upstream firm to induce the downstream firm to agree to the contract. Referring again to Figure 1, the only way the downstream firm can sell Q_2 units is to set a price of P_2 . Under an optimal sales quota contract, the upstream firm's variable profits would be $(w_1 - MC_p)Q_2$, while the downstream firm would earn zero variable profit.

A third and final contractual alternative is a two-part tariff. The upstream and downstream firms could agree to a contract in which the downstream firm pays a lump-sum license fee no greater than $(P_2 - MC_R - MC_p)Q_2$ in exchange for the right to purchase as many units as it would like from the upstream firm at a price equal to the upstream firm's marginal cost, MC_p .

Maximum resale prices, sales quotas, and two-part tariffs partially replicate EDM's effects to the benefit of consumers. Hence, when any such contract is observed between two unintegrated firms, it is very likely to be efficient. Importantly, the inverse—that a lack of such contracting implies the inefficiency of vertical integration—is false. In practice, the obstacles that confront two unintegrated firms seeking to reach agreement on such a contract may often be significant.¹⁰² To take just one example, optimal implementation of a maximum resale price arrangement would require

¹⁰⁰ *Supra* Section I.A.1.

¹⁰¹ The integrated firm's profit is $(P_2 - MC_R - MC_p)Q_2$ while the unintegrated firms' profits sum to $(w_1 - MC_p)Q_2$. Since $P_2 = w_1 + MC_R$, these profits are identical. Of course, prior to *State Oil Co. v. Kahn*, 522 U.S. 3 (1997), maximum resale prices were per se illegal under *Albrecht v. Herald Co.*, 390 U.S. 145 (1968).

¹⁰² See Gregory J. Werden & Luke M. Froeb, Comment Letter on Proposed Vertical Merger Guidelines 1 (Feb. 6, 2020), <https://perma.cc/PW2P-5VNA> (“[I]t is essential to appreciate that vertical mergers solve coordination problems that are solved less well, or not at all, by contracts.”).

full knowledge of both the demand curve for the final good and both firms' cost curves to set the maximum price. Any antitrust practitioner knows how difficult it is to project costs and demand across a range of counterfactual scenarios, as would be required for complete contracting. Thus, it is likely that for many unintegrated firms, efficient contracting is either impossible or prohibitively costly.

Instead, some commentators seem to embrace the idea that a lack of contracting indicates that there is no conceivable gain to greater integration. For instance, Professors Baker, Rose, Salop, and Scott Morton state that "[i]f in advance of the merger the parties never considered contracting to eliminate double marginalization, that fact may suggest that EDM would not achieve substantial benefits."¹⁰³ This suggestion overlooks innocuous explanations for lack of premerger contracting, including insurmountable information asymmetries or contracting costs. In contrast, EDM is not difficult for a fully vertically integrated firm to realize: all that is required is for the upstream firm to sell its output to the downstream firm at cost.

Putting aside the minor question of how firms could possibly demonstrate the impossibility of achieving a certain type of contract, there appears to be no basis for an inference that because certain types of contracts are theoretically possible, EDM generated by merger is irrelevant.¹⁰⁴

In summary, while there is convincing theoretical and empirical evidence that vertical contracts can efficiently eliminate double marginalization, the inverse argument—that the absence of those contracts implies they are inefficient—is wrong. An alternative—and more likely—explanation for the inability to achieve EDM via contract is that implementing those contracts is difficult (e.g., because of informational asymmetries and contracting costs). Fortunately, the Vertical Merger Guidelines broadly endorse the merger specificity of EDM in saying that existing, premerger contracts are generally the appropriate baseline against which EDM must be measured.¹⁰⁵

¹⁰³ Baker et al., *supra* note 4, at 15.

¹⁰⁴ To do so would apply an even more stringent standard for merger specificity than the Horizontal Merger Guidelines, which state "[o]nly alternatives that are practical in the business situation faced by the merging firms are considered in making this determination [of merger specificity]. The Agencies do not insist upon a less restrictive alternative that is merely theoretical." HORIZONTAL MERGER GUIDELINES, *supra* note 31, at 30.

¹⁰⁵ See DEP'T OF JUSTICE & FED. TRADE COMM'N, *supra* note 3, at 11-12.

B. Anticompetitive Effects of Vertical Integration

The previous Section discussed how vertical mergers spur the merged firm to internalize a pricing externality, resulting in EDM. This Section discusses a related pricing externality: a higher price charged by the upstream firm to unintegrated downstream firms increases the profit of the integrated downstream firm. Once again, the upstream firm ignores this externality before merging, and it optimally accounts for it after merging. This incentive change creates the potential for anticompetitive effects to arise from vertical mergers. Potential anticompetitive effects include complete foreclosure, theories of two-level entry, and access to competitively sensitive information.

1. Raising Rivals' Costs

If an upstream firm sells to multiple downstream firms, then its pricing to any particular downstream firm affects the profits of each other downstream firm. Consider an upstream firm U selling to downstream firms D_1 and D_2 . Were U to increase the price it charges to D_2 , then D_2 would optimally increase its final good price, causing it to lose customers.¹⁰⁶ If at least some of these lost customers switch to D_1 , then D_1 will be more profitable than it was prior to U increasing the price it charged to D_2 .¹⁰⁷

When U and D_1 are separately owned, U ignores the effect of its prices on D_1 's profit, while a merger of U and D_1 spurs U to internalize the effect of its price to D_2 on the profits of D_1 . The result—higher prices to unintegrated downstream rivals—is often referred to as raising rivals' costs ("RRC"). Analysis of the RRC pricing externality is often associated

¹⁰⁶ The effect of input prices on a firm's optimal output price is well-studied in the economics literature. See, e.g., Sonia Jaffe & E. Glen Weyl, *The First-Order Approach to Merger Analysis*, 5 AM. ECON. J.: MICROECONOMICS 188 (2013) (developing a first order approximation of how upward pricing pressure generated by a horizontal merger is passed through to price); Nathan H. Miller, Marc Remer, Conor Ryan & Gloria Sheu, *Upward Pricing Pressure as a Predictor of Merger Price Effects*, 52 INT'L J. INDUS. ORG. 216 (2017) (finding that an own pass-through of one and cross pass-through of zero may reasonably approximate pass-through of incentives generated by horizontal mergers).

¹⁰⁷ To see this, note that D_1 could increase its price until it had the same demand as it did prior to D_2 's price increase, so that it would sell the same quantity at a greater margin. Of course, a smaller price increase may be even more profitable for D_1 .

with Professor Steven Salop, who, along with coauthors, developed the foundations for RRC theories of harm in the 1980s.¹⁰⁸

The particular mechanism through which a vertical merger may result in RRC depends on the nature of the interactions between upstream and downstream firms. For example, business-to-business transactions are commonly conducted via bargaining in which both sides attempt to reach a mutually agreeable price (e.g., by exchanging offers). Naturally, the party that has less to lose from a breakdown in negotiations may be in a stronger bargaining position and thus able to demand more concessions from the party that has more to lose from a breakdown. As Professor William Rogerson explains, a vertical merger in this setting may result in RRC because it “affects the disagreement payoff of the upstream firm when it negotiates with a rival downstream firm. Its disagreement payoff is increased because it takes into account the extra profit that its own downstream affiliate will earn” in the event of a bargaining breakdown.¹⁰⁹

Bargaining models have been prominent in antitrust analyses of several recent vertical mergers between upstream video content providers and downstream multichannel video programming distributors (“MVPDs”).¹¹⁰ In *AT&T*, the DOJ contended that owning AT&T’s DirecTV service would increase Time Warner’s bargaining leverage in negotiations for its content with unintegrated MVPDs, as “[t]he alternative to an agreement in every negotiation with a rival MVPD would be better for the merged firm because without a deal, DirecTV would steal valuable video subscribers away from that rival.”¹¹¹ In the DOJ’s view, this additional bargaining power would enable Time Warner to extract higher programming fees from unintegrated MVPDs, ultimately resulting in higher prices to consumers.

The Court found various flaws in the DOJ’s RRC theory of harm. These flaws included unrebutted findings that similar past vertical mergers did not result in price increases, disbelief that the improvement to AT&T’s bargaining leverage would be substantial, failure to account for AT&T’s long-term contract offers, and poor quality inputs to the DOJ’s

¹⁰⁸ See, e.g., Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals’ Costs to Achieve Power Over Price*, 96 YALE L.J. 209 (1986); Steven C. Salop & David T. Scheffman, *Raising Rivals’ Costs*, 73 AM. ECON. REV. 267 (1983).

¹⁰⁹ William P. Rogerson, *Modelling and Predicting the Competitive Effects of Vertical Mergers: The Bargaining Leverage Over Rivals (BLR) Effect*, 53 CANADIAN J. ECON. 407, 409 (2020).

¹¹⁰ *Id.* at 410–11.

¹¹¹ Post-Trial Brief of the United States at 1, *United States v. AT&T Inc.*, 310 F. Supp. 3d 161 (D.D.C. 2018).

expert's model.¹¹² Similar bargaining models have been successfully employed by the Agencies in horizontal health care mergers.¹¹³

RRC effects are likely to be of greatest concern when the merged firm has unintegrated downstream customers and when these customers sell products that are close substitutes for the merged firm's own downstream product and have limited comparable alternatives to purchasing inputs from the merged firm. Absent these conditions, concerns about potential RRC effects are appropriately diminished.

2. Foreclosure

Early vertical merger enforcement was often premised on the concern that the merged firm would not buy or sell from unintegrated firms and that this practice was facially anticompetitive.¹¹⁴ To take but one example, the Sixth Circuit upheld the FTC's administrative blocking of a vertical merger between a cement manufacturer and a ready mix concrete firm in part because the merger would have increased the fraction of northeastern US cement demand derived from vertically integrated concrete companies from 39.6% to 46.3%, which the FTC and the Sixth Circuit deemed "extremely significant" and "anti-competitive."¹¹⁵ In the court's view, "[t]he important consideration is that the acquired company would not be free to choose for itself who shall supply its needs solely on the basis of price, service and quality of goods because the acquiring company has the power to substitute its own suppliers."¹¹⁶ The court—and contemporary practitioners—referred to the putative closing of a vertically integrated firm to unintegrated competitors as "foreclosure."¹¹⁷

¹¹² See *AT&T*, 310 F. Supp. 3d at 216 (endorsing defendants' findings that three prior vertical transactions did not lead to price increases); *id.* at 224 ("[T]he lynchpin of Professor Shapiro's testimony . . . is the *assumption* that a post-merger Turner would gain increased leverage by wielding a blackout threat that will be only somewhat less incredible."); *id.* at 226 ("I agree with defendants, for the most part, that the inputs and assumptions of Professor's Shapiro's model are not sufficiently grounded in the evidence . . ."); *id.* at 239–40 (summarizing long-term contract offers).

¹¹³ See Findings of Fact and Conclusions of Law, *Saint Alphonsus Med. Ctr.–Namps, Inc. v. St. Luke's Health Sys.*, No. 1:12-CV-00560-BLW, 2013 WL 5410057, at *19 (D. Idaho Sept. 25, 2013) ("The Acquisition will increase substantially St. Luke's bargaining leverage with health plans.").

¹¹⁴ For a full discussion, see *infra* Section II.B.

¹¹⁵ *U.S. Steel Corp. v. Fed. Trade Comm'n*, 426 F.2d 592, 601 (6th Cir. 1970).

¹¹⁶ *Id.*

¹¹⁷ *Id.* Some texts distinguish between input foreclosure, or declining to sell to unintegrated downstream firms, and customer foreclosure, or declining to buy from unintegrated upstream firms. This Section addresses both.

The logic of foreclosure as an antitrust theory of harm in these early vertical cases often rested on two assumptions: first, that vertical integration precludes dealings with unintegrated firms, and second, that the result of two vertically related firms dealing exclusively with each other is necessarily anticompetitive. There is little support for either assumption.

First, as a general matter, vertical integration does not incentivize a firm to eliminate sales to or purchases from unintegrated firms. Profit-maximizing firms, regardless of whether they are vertically integrated, will sell to unintegrated rivals if the price paid by those rivals exceeds marginal cost and will purchase inputs from unintegrated rivals if the cost is lower than that of alternatives, including self-supply.¹¹⁸ Empirically, Professors Enghin Atalay, Ali Hortaçsu, and Chad Syverson find that within the set of vertically integrated firms, only 1.2% of upstream establishments ship exclusively to downstream establishments within the same firm.¹¹⁹ Indeed, they find that roughly half of these establishments do not ship to integrated downstream units at all, and “[e]ven the ninetieth percentile establishment ships over 60 percent of its output outside the firm.”¹²⁰ In a separate paper, Hortaçsu and Syverson study a wave of vertical integration between cement plants and ready mix concrete plants and find lower prices and greater output following the merger wave, which they characterize as “not consistent with foreclosure.”¹²¹

Of course, vertical mergers may incentivize the merged firm to offer less favorable terms to unintegrated rivals.¹²² As a theoretical matter, it is possible that RRC incentives could be so great as to rule out sales to or purchases from unintegrated firms altogether and thus to result in total foreclosure. It is also possible that certain firms may face a meaningful all-or-nothing decision about whether to supply unintegrated rivals. For example, Professors Jeffrey Church and Neil Gandal suggest that vertical integration between hardware and software providers may meaningfully

¹¹⁸ See, e.g., David Reiffen & Michael Vita, *Comment: Is There New Thinking on Vertical Mergers?*, 63 ANTITRUST L.J. 917, 918 (1995) (“The integrated firm will sell the input to nonintegrated firms downstream if the ‘open’ market price exceeds the integrated firm’s marginal cost of producing the input; it will buy the input from nonintegrated input suppliers if the market price is less than its marginal cost of producing the input.”).

¹¹⁹ See Enghin Atalay, Ali Hortaçsu & Chad Syverson, *Vertical Integration and Input Flows*, 104 AM. ECON. REV. 1120, 1127 (2014) (Table 1, column headed “Fraction = 1”).

¹²⁰ *Id.*

¹²¹ Ali Hortaçsu & Chad Syverson, *Cementing Relationships: Vertical Integration, Foreclosure, Productivity, and Prices*, 115 J. POL. ECON. 250, 262 (2007) (finding that vertical integration is empirically associated with lower concrete prices).

¹²² See *supra* Section I.B.1.

alter incentives to make software compatible with rivals' hardware as the software maker internalizes the effect of compatibility on the hardware maker's profits.¹²³ If the incompatibility decision would not be easily reversible, then a focus on whether (total) foreclosure would result from such a merger may be appropriate. However, whether foreclosure is contemplated as the result of a large RRC incentive or as the result of an all-or-nothing compatibility decision, a conclusion that foreclosure is likely should only be reached after careful factual scrutiny. In particular, given available empirical results suggesting that vertically integrated firms rarely forego interacting with unintegrated rivals,¹²⁴ foreclosure should not be assumed as an inevitable consequence of vertical integration. Even a determination that foreclosure would be more profitable than the status quo for the merging firms is insufficient to support a foreclosure theory if the alternative of continuing to sell to unintegrated rivals at higher prices remains most profitable. If this alternative is ignored in formulating a foreclosure theory, competitive harms may be overstated relative to an RRC theory, under which the merged firm would continue to sell to rivals.

Second, courts adjudicating early vertical cases seemed to treat foreclosure as self-evidently anticompetitive. For example, in *Brown Shoe Co. v. United States*,¹²⁵ the Court viewed foreclosure as the "primary vice of a vertical merger," because "the arrangement may act as a 'clog on competition'" by preventing rivals from competing for the business of the vertically integrated firm.¹²⁶ But a firm would withdraw from the open market only if it earned a higher profit from dealing exclusively with its vertically integrated counterpart than it would from any nonintegrated firm. True foreclosure, then, benefits both the foreclosing firm and its customers.¹²⁷ Whether customers of the remaining firms are harmed at all—much less to an extent that would cancel out the benefits accruing to customers of the foreclosing firm—necessarily requires fact finding and

¹²³ See Jeffrey Church & Neil Gandal, *Systems Competition, Vertical Merger, and Foreclosure*, 9 J. ECON. & MGMT. STRATEGY 25, 29 (2000) ("[F]oreclosure will be a credible threat if the fixed costs of eliminating compatibility, i.e., of foreclosure, are relatively small and the costs of reestablishing compatibility are relatively large (which is typically the case).").

¹²⁴ See *supra* note 35.

¹²⁵ 370 U.S. 294 (1962).

¹²⁶ *Id.* at 323–24 (quoting *Standard Oil Co. of California v. United States*, 337 U.S. 293, 314 (1949)).

¹²⁷ The mechanism through which the foreclosing firm would find it optimal to withdraw from the open market is the elimination of double marginalization, which benefits consumers as well as vertically integrated firms. See *supra* Section I.A.1 for a full discussion.

empirical analyses.¹²⁸ Indeed, in *The Antitrust Paradox*, Judge Robert Bork observed that a vertical merger may largely rearrange supplier-customer relationships with no real harm done.¹²⁹ While foreclosure resulting from vertical integration may, in certain circumstances, result in consumer harm, plaintiffs must bear the burden of explaining why a given merger falls into those circumstances; courts should not view consumer harm as an inexorable consequence of foreclosure.

While the Agencies have not fully litigated a merger under a foreclosure theory since 1977,¹³⁰ concerns about foreclosure appear to have formed the basis for several consents¹³¹ and one recent private lawsuit.¹³² Foreclosure appears prominently in the Vertical Merger Guidelines,¹³³ albeit alongside RRC. Although the economic literature has increasingly viewed foreclosure as a special case of RRC,¹³⁴ there are exceptions. To take one example, the influential paper of Professors Janusz Ordover, Garth Saloner, and Steven Salop models equilibrium foreclosure resulting from a vertical merger. They abstract from EDM by modelling perfect competition upstream to find that vertical foreclosure is often a profitable strategy for merging firms, resulting in higher prices and lower consumer welfare.¹³⁵ Importantly, the Ordover, Saloner, and Salop paper and other related papers assume that vertically integrated firms have the ability to commit to not selling to unintegrated firms, even if they could profitably do so because the price those firms would be willing to pay exceeds the integrated firm's marginal cost of production. Absent the ability to

¹²⁸ See Michael A. Salinger, *Vertical Mergers and Market Foreclosure*, 103 Q.J. ECON. 345, 355 (1988) (describing tradeoff between unintegrated producers having lower demand—resulting in lower prices—and higher concentration among these producers—resulting in higher prices— and concluding that “[a] vertical merger does not, therefore, necessarily result in market foreclosure of unintegrated producers”).

¹²⁹ See ROBERT H. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* 232 (1978).

¹³⁰ See *United States v. Hammermill Paper Co.*, 429 F. Supp. 1271 (W.D. Pa. 1977).

¹³¹ See generally Steven C. Salop & Daniel P. Culley, *Vertical Merger Enforcement Actions: 1994–April 2020* (Apr. 15, 2020) (unpublished manuscript), <https://perma.cc/UUW8-HZED> (summarizing sixty-six enforcement actions relating to vertical concerns).

¹³² See *Steves & Sons, Inc. v. Jeld-Wen, Inc.*, 345 F. Supp. 3d 614, 682 (E.D. Va. 2018) (ordering equitable remedies to cure an instance of input foreclosure), *appeal dismissed*, Case No. 19-2466, 2020 WL 3422366 (4th Cir. June 8, 2020).

¹³³ See DEP'T OF JUSTICE & FED. TRADE COMM'N, *supra* note 3, at 4.

¹³⁴ See, e.g., Baker et al., *supra* note 4, at 13 (“Foreclosure’ is broadly defined. For example, input foreclosure includes price increases, cost increases, and other disadvantages placed on downstream rivals, not just total denial of the relevant input.”).

¹³⁵ See, e.g., Janusz A. Ordover, Garth Saloner & Steven C. Salop, *Equilibrium Vertical Foreclosure*, 80 AM. ECON. REV. 127, 136 (1990).

commit to forego profitable sales, vertical integration need not result in foreclosure at all. As economist David Reiffen puts it, since the Ordovery, Saloner, and Salop result hinges on commitment—and not vertical integration per se—“it is difficult to see how the [Ordovery, Saloner, and Salop] results are related to vertical integration at all.”¹³⁶

While there are papers with foreclosure models that avoid Dr. Reiffen’s criticism,¹³⁷ no generally accepted approach to modelling foreclosure is available that can reliably “distinguish harmful from beneficial vertical mergers,” as Professor Michael Salinger suggested would be required for a rule of reason in a 1988 paper on foreclosure.¹³⁸

3. Two-Level Entry

Two-level entry refers to a theory that the presence of a vertically integrated firm in markets A and B may make entry into either market A or market B more difficult (e.g., the vertically integrated firm will decline to sell to or buy from a new entrant). Historically, two-level entry was a common theory of harm in vertical merger cases, and it received substantial discussion in the 1984 Non-Horizontal Merger Guidelines.¹³⁹ Two-level entry may also be used to consider vertical contracts—such as exclusive dealing—as a barrier to entry for the upstream market.¹⁴⁰ In the example of *Brown Shoe*, Brown’s exclusive dealing contracts with shoe stores could create a second barrier to entry for rival shoe manufacturers because entry would need to occur at two levels rather than a single level.¹⁴¹ This theory has faded from prominence, which Professors Phillip Areeda and Herbert Hovenkamp ascribe to a recognition that two-level entry barriers are rarely significant.¹⁴² The Vertical Merger Guidelines contain one example considering two-level entry, which states that the Agencies would weigh foreclosure of potential entrants against the benefits of EDM.¹⁴³

¹³⁶ David Reiffen, *Equilibrium Vertical Foreclosure: Comment*, 82 AM. ECON. REV. 694, 694 (1992).

¹³⁷ See, e.g., Church & Gandal, *supra* note 123.

¹³⁸ Salinger, *supra* note 128, at 355.

¹³⁹ See DEP’T OF JUSTICE, *supra* note 13, at 23–24.

¹⁴⁰ PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION ¶ 1802e (4th ed. 2018).

¹⁴¹ See *Brown Shoe Co., Inc. v. United States*, 370 U.S. 294, 302–03 (1962).

¹⁴² See AREEDA & HOVENKAMP, *supra* note 140, ¶ 1802e.

¹⁴³ See DEP’T OF JUSTICE & FED. TRADE COMM’N, *supra* note 3, at 4.

4. Misuse of Competitively Sensitive Information and Coordinated Effects

In some circumstances, vertical integration may give one firm access to sensitive information of the other firm's trading partners. If there is competitive overlap between one half of a vertically integrated pair of firms and the other half's trading partners, a merger may allow one firm to access and act upon sensitive information about its competitors in a way that harms competition. In the 2018 merger of Staples and Essendant, this concern about harming competition prompted the FTC to require Staples to firewall competitively sensitive information about Essendant's retailer customers.¹⁴⁴

The Agencies sometimes view the greater transparency created by accessing a vertical partner's competitive intelligence as a potential facilitator to coordination across horizontal competitors. For example, in the 2017 merger of Danone (yogurt) and WhiteWave (milk), the DOJ feared that Danone's prior commercial partnership with a competing milk manufacturer, CROPP, would facilitate post-merger collusion between WhiteWave and CROPP.¹⁴⁵ The DOJ ordered Danone to divest its Stonyfield brand, which severed the relationship between Danone and CROPP.¹⁴⁶

C. *Balancing Procompetitive and Anticompetitive Effects of Vertical Integration*

A vertical merger typically produces both procompetitive (e.g., EDM) and anticompetitive (e.g., RRC) unilateral effects in addition to efficiencies. In contrast, a problematic horizontal merger is likely to produce only harmful unilateral effects (e.g., upward pricing pressure) in addition to efficiencies.

In horizontal enforcement, the Agencies commonly assess the extent to which one merging firm constrains the other. If the Agencies determine that the merging firms' competitive overlap is significant, they may independently analyze any efficiency claims the parties present. Both as a

¹⁴⁴ See Press Release, Fed. Trade Comm'n, FTC Imposes Conditions on Staples' Acquisition of Office Supply Wholesaler Essendant Inc. (Jan. 28, 2019), <https://perma.cc/V2VH-D49R>.

¹⁴⁵ See Press Release, U.S. Dep't of Justice, Antitrust Div., Justice Department Requires Divestiture of Danone's Stonyfield Farms Business in Order for Danone to Proceed with WhiteWave Acquisition (Apr. 3, 2017), <https://perma.cc/BD5N-BE3H>.

¹⁴⁶ See *id.*

matter of practice and as a matter of law,¹⁴⁷ these assessments are separate: plaintiffs are responsible for harms and defendants are responsible for efficiencies. Literature¹⁴⁸ and our combined experience¹⁴⁹ suggest that efficiencies evidence rarely suffices to overcome an agency determination that the merging firms would, in combination, create likely anticompetitive effects. Thus, to a large extent, the Agencies attempt to block a merger upon a finding that it will likely produce harm.

Whatever the merits of the Agencies' approach to horizontal mergers, an analogous approach to vertical enforcement is indefensible. The same forces that could give rise to harm in vertical mergers also produce consumer benefits. Both EDM and RRC result from the merged firm's internalization of pricing externalities.¹⁵⁰ Moreover, the forces that are posited to give rise to harmful RRC effects are closely related to those that produce beneficial EDM effects, meaning that a determination that significant RRC is likely should lead one to suspect that significant EDM is likely as well. Consequently, EDM and RRC must be analyzed concurrently, and a determination that a vertical merger is likely to result in RRC or foreclosure is unavailing without a concurrent analysis of EDM effects.

For ease of exposition, this Section is confined to the discussion of RRC and not total foreclosure (which, in many cases, is essentially an extreme case of RRC). However, the Section applies with equal force to foreclosure theories of harm, which should not be analyzed independently of EDM for the same reasons.

1. EDM Is a Determinant of RRC

As a theoretical matter, it is not possible to determine the magnitude of a firm's RRC incentive without knowledge of its EDM incentive. As economists Gopal Das Varma and Martino De Stefano explain in a recent

¹⁴⁷ See *infra* Section II.C (discussing the *Baker Hughes* burden-shifting framework).

¹⁴⁸ See Malcolm B. Coate & Andrew J. Heimert, *Merger Efficiencies at the Federal Trade Commission 1997-2007*, at 3, 16-18 (2009) (unpublished manuscript), <https://perma.cc/WRT2-FAWY> (summarizing data collected from internal FTC memos written between 1997 and 2007 demonstrating that Bureau of Competition staff accepted 29 of 342 efficiency claims, and accepted at least one efficiency claim in "4.2 percent of settled matters, 6.9 percent of the PI matters, and 15.3 percent of the closed cases"); Daniel A. Crane, *Rethinking Merger Efficiencies*, 110 MICH. L. REV. 347, 358 & n.49 (2011) (summarizing evidence that "practitioners report that the agencies usually react with coolness to efficiencies arguments").

¹⁴⁹ See Wilson, *supra* note 49.

¹⁵⁰ See *supra* Section I.A.1.

paper, EDM generically results in lower prices for the final good sold by the integrated firm.¹⁵¹ This lower price will cause at least some substitution away from competing products—including those made by rival downstream firms—reducing these firms' demand for inputs. Since the optimal input price charged by any upstream firm (with or without RRC) depends on the demand for that firm's product, EDM, by itself, would generically lower the price charged to unintegrated downstream firms. Consequently, EDM both affects the RRC incentive (by lowering the unintegrated downstream firms' demand for the input) and lowers the amount of the total price increase relative to a counterfactual world in which, *arguendo*, the vertically integrated firm is prevented from obtaining EDM.

Given the link between the sizes of EDM and RRC effects, it is unsurprising that few, if any, structural screens reliably predict the net effects of mergers.¹⁵² For example, economists Gloria Sheu and Charles Taragin use simulated data to show that varying the number of upstream and downstream firms, and thus concentration, does not meaningfully affect the distribution of outcomes of vertical mergers.¹⁵³ Instead, the data contain both harmful and beneficial vertical mergers in both concentrated and unconcentrated upstream and downstream markets, suggesting that concentration levels are not correlated with the effect of vertical mergers on consumer welfare. Sheu and Taragin find that “EDM between the merging firms is a primary determinant of whether there is consumer harm overall.”¹⁵⁴

Finally, in a recent comment to the FTC, Salinger describes a numerical example in which a single upstream firm sells to two downstream firms producing differentiated products.¹⁵⁵ In the example, vertical integration between the upstream firm and one downstream firm not only lowers the final good price for the integrated downstream firm (because of EDM) but also lowers the final good price of the unintegrated downstream firm. This latter effect is the combination of an RRC effect (the integrated firm raises its price to the unintegrated firm to shift

¹⁵¹ See Das Varma & De Stefano, *supra* note 32, at 3 n.5.

¹⁵² *But see* Baker et al., *supra* note 4, at 16 (“If both markets are unconcentrated, it is less likely that a vertical merger would be anticompetitive.”).

¹⁵³ See Gloria Sheu & Charles Taragin, *Simulating Mergers in a Vertical Supply Chain with Bargaining* 24 (Apr. 15, 2020) (unpublished manuscript), <https://perma.cc/4M7V-LKD5>.

¹⁵⁴ *Id.* at 25 (describing also how variation in randomly drawn margins “drives nearly all the variation in harm”).

¹⁵⁵ See Michael A. Salinger, *Comment Letter on the Draft Vertical Merger Guidelines*, at 3 (Feb. 24, 2020), <https://perma.cc/TK3R-7YPW>.

demand to its downstream unit) and the unintegrated firm's lower demand (caused by the integrated firm's EDM and lower price). In the example, consumers are unambiguously better off because prices are lower and quantities are higher. While the example makes no claim to generality, it illustrates why RRC must be analyzed concurrently with EDM as described in the Vertical Merger Guidelines.¹⁵⁶

2. Anticompetitive Vertical Mergers Are Difficult to Distinguish from Procompetitive Mergers

When analyzing horizontal mergers, the Agencies and courts employ a number of heuristics that are likely to be somewhat predictive about true outcomes. Qualitatively, documentary evidence—including closeness of competition, customer concerns, and win-loss records—speaks to the central question of the strength of the competitive constraint that will be lost with a horizontal merger. Quantitatively, even simple metrics—including upward pricing pressure,¹⁵⁷ change in Herfindahl index,¹⁵⁸ and firm count¹⁵⁹—have at least some predictive power. Even relatively coarse or imprecise measures may suffice for horizontal merger enforcement when the enforcement is predicated on a claim that the loss in competition is large and efficiencies are small.

Tools used in horizontal merger analysis do not apply with equal force to vertical mergers. Without more, qualitative evidence showing RRC or foreclosure effects—such as concerns from rivals or documents indicating RRC is likely—is not outcome determinative on the question of whether the merger harms consumers because EDM and RRC must be analyzed concurrently.¹⁶⁰ Various flavors of pricing pressure indices for vertical

¹⁵⁶ See DEP'T OF JUSTICE & FED. TRADE COMM'N, *supra* note 3, at 5 (stating that the Agencies generally assess the “net effect” of “all changes to the merged firm’s unilateral incentives,” including both RRC and EDM).

¹⁵⁷ See Miller et al., *supra* note 106, at 238 tbl.8 (showing that a matrix of upward pricing pressure terms premultiplied by an identity passthrough matrix is a reasonable approximation of true merger price effects, across a dataset of simulated industries).

¹⁵⁸ See Volker Nocke & Michael D. Whinston, Concentration Screens for Horizontal Mergers 17, tbl.4 (Apr. 29, 2019) (unpublished manuscript), <https://perma.cc/3REE-74B3> (showing that as “delta HHI” increases much greater efficiencies are needed, on average, to offset merger price effects).

¹⁵⁹ See Charles Taragin & Margaret Loudermilk, Using Measures of Competitive Harm for Optimal Screening of Horizontal Mergers 16 (Oct. 2, 2019) (unpublished manuscript), <https://perma.cc/9YAQ-BUQQ> (“Taken together these observations suggest that a significant amount of information about potential price effects is conveyed by the Firm Count measure.”).

¹⁶⁰ See *supra* Section I.C.1.

mergers attempt to account for EDM.¹⁶¹ However, these indices perform poorly in simulations and are based on separate measurements of EDM and RRC that do not account for the effect of EDM on the size of RRC.¹⁶² As discussed previously, firm count and concentration measures do not appear to be useful predictors of the net unilateral effect. Notably, the Vertical Merger Guidelines state merely that the Agencies “may consider measures of market shares and market concentration” but do not state that share is likely to be outcome determinative.¹⁶³ The Vertical Merger Guidelines dropped a provision in earlier draft Guidelines that the Agencies would be unlikely to challenge a merger if both firms had market shares below twenty percent.¹⁶⁴

3. Evaluating EDM and RRC

If plaintiffs are to assume the task of concurrently measuring EDM and RRC effects—as DOJ did to some extent in *AT&T*—there will naturally be methodological questions about the best way to implement this analysis. Unfortunately, there are few clear answers to these questions at this time.

Merger simulation is one tool capable of concurrently and prospectively analyzing EDM and RRC, including the effect of the former on the size of the latter. DOJ used merger simulation in *AT&T*, although DOJ’s expert witness appears to have calculated EDM and RRC separately and then used them as inputs into a model of horizontal competition.¹⁶⁵

¹⁶¹ See Serge Moresi & Steven C. Salop, *vGUPPI: Scoring Unilateral Pricing Incentives in Vertical Mergers*, 79 ANTITRUST L.J. 185, 186 (2013).

¹⁶² See Gleb B. Domnenko & David S. Sibley, *Simulating Vertical Mergers and the Vertical GUPPI Approach* 16 (Jan. 1, 2019) (unpublished manuscript), <https://perma.cc/HZ9T-2QCN> (“Regarding the accuracy of the vertical GUPPI approach, our results are mostly negative.”); see also Gopal Das Varma & Martino DeStefano, *Comment Letter on the Draft Vertical Merger Guidelines*, at 8 (Feb. 26, 2020), <https://perma.cc/XGW2-ALWU> (“When we compare the predicted RRC effect using a price pressure analysis (that ignores change in output shares due to EDM) with that from an equilibrium simulation (that takes account of change in shares due to EDM), we find that the price pressure technique can significantly mis-predict the size of RRC.”).

¹⁶³ See DEP’T OF JUSTICE & FED. TRADE COMM’N, *supra* note 3, at 3.

¹⁶⁴ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, *DRAFT VERTICAL MERGER GUIDELINES* 8 (2020), <https://perma.cc/T9DJ-NRBB>.

¹⁶⁵ See Das Varma & De Stefano, *supra* note 32, at 11 n.13 (“Professor Shapiro’s expert report indicates that he first used the standard approach to separately estimate the magnitudes of wholesale price increase and EDM. Those estimates then served as inputs in an equilibrium model of horizontal competition between cable companies that generated estimates of the effect of the merger on retail

Even with this simplification, the DOJ's expert was unable to populate the model with credible inputs.¹⁶⁶ Nonetheless, it is very likely that the next litigated vertical merger challenge will rely in part on a merger simulation model. While these models are at least capable of capturing the interaction between EDM and RRC, this capability comes at the expense of relatively strong assumptions about the curvature of demand and cost curves and, depending on the model, relatively high input requirements. These assumptions are not innocuous,¹⁶⁷ and courts may struggle to understand the economic modelling required to concurrently weigh EDM and RRC.¹⁶⁸

An alternative approach, seemingly favored by proponents of a more interventionist policy towards vertical mergers, tasks plaintiffs only with measuring harmful effects of mergers and leaves it to defendants to measure procompetitive effects, including EDM.¹⁶⁹ This approach could, for example, block mergers that exceed certain thresholds for market share in the upstream and downstream markets. As market shares are relatively easy to measure, this approach would have the advantage of being implementable. However, the approach would have the significant disadvantage of basing merger enforcement on metrics that are not correlated with the effect of a merger on consumer welfare.

Vertical enforcement may be most feasible in the specialized circumstances where EDM is unlikely to result at all—for example, where the upstream and downstream firms make incompatible products.¹⁷⁰ Outside these special circumstances, the difficulty in distinguishing presumably rare anticompetitive vertical mergers from more common

cable prices. Needless to say, this augmented standard approach does not incorporate the equilibrium effect of EDM on RRC.”).

¹⁶⁶ See *id.*

¹⁶⁷ See Miller et al., *supra* note 106, at 228 (finding that the error from upward-pricing-pressure predictions are often less than that from mis-specified merger simulations, which assume too much or too little demand curvature, relative to the true state of the world).

¹⁶⁸ The number of times in which courts cite RRC is surprisingly small. We collected data from the Caselaw Access Project (“CAP”) of Harvard Law School. The CAP has a dataset that includes nearly 1.7 million federal cases. The CAP’s Historical Trends tool searches for specific words and phrases from this dataset and graphs their frequency throughout time. Using this tool, we identified those federal cases that cite “raising rival’s cost.” In any given year, the number of cases that uses the term raising rival’s cost appears either 0 or 1 time except for three years where the term appeared in two cases. This limited judicial experience with vertical mergers suggests courts may be hesitant to grapple with complex economic models, at least in this context.

¹⁶⁹ See, e.g., Baker et al., *supra* note 4, at 16–17 (summarizing various presumptions); Open Markets Institute, *supra* note 21, at 21–23.

¹⁷⁰ See *supra* Section I.A.I.

procompetitive vertical mergers should suggest caution to the Agencies. If the information gathered during an investigation or in litigation is insufficient to reliably predict which vertical mergers are likely to harm consumers, then it is all the more important to keep in mind the empirical work finding that most vertical mergers are likely to improve consumer welfare.¹⁷¹

4. Evaluating Efficiencies

Vertical mergers may be particularly likely to result in efficiencies that benefit consumers.¹⁷² Thus, once the Agencies have assessed the net effect of EDM and RRC, their attention must turn to whether the magnitude of the net effect, if positive, likely exceeds the magnitude of efficiencies.

As a general matter, there are practical impediments to quantifying efficiencies that may result from vertical mergers. Firms may not collect the necessary data for ex post measurement of efficiencies. Even if companies can quantify past merger efficiencies to show the ability to integrate post-merger, each quantification is fact-specific and includes other variables that may be hard to measure—for example, organizational structure, management and personnel issues, and cultural factors.

Even if the Agencies had the tools to measure these efficiencies accurately, they may lack the theoretical framework to properly evaluate and weigh them. While the Agencies use simple tools like compensating marginal cost reduction to evaluate the magnitude of efficiencies that would be required to offset upward pricing pressure resulting from a horizontal merger,¹⁷³ no comparable metric exists for vertical mergers. Since cognizable efficiencies, like EDM, incentivize the integrated firm to lower the price of its final good, the efficiencies may also affect the magnitude of any RRC effect.¹⁷⁴

The Vertical Merger Guidelines discuss EDM at length but state that efficiencies resulting from vertical mergers are analyzed under section 10 of the Horizontal Merger Guidelines, suggesting that holistic vertical merger efficiencies may not be given full consideration.¹⁷⁵ Given that firms may not collect detailed accounting and survey data on the long-term

¹⁷¹ See Cooper et al., *supra* note 29, at 658; Global Antitrust Institute, *supra* note 29, at 6–9.

¹⁷² See *supra* Section I.A.2.

¹⁷³ See Gregory J. Werden, *A Robust Test for Consumer Welfare Enhancing Mergers Among Sellers of Differentiated Products*, 44 J. INDUS. ECON. 409, 412–13 (1996).

¹⁷⁴ See *supra* Section I.C.1.

¹⁷⁵ See Wilson, *supra* note 49.

performance of prior acquisitions, the Agencies should incentivize better data collection by firms on past instances of vertical integration, by signaling that the Agencies will seriously consider such evidence in evaluating future mergers. The nature of vertical efficiencies suggests they may be, as a general matter, greater than those resulting from horizontal mergers.

Given the broader problem, more studies should be conducted about optimization within firms—both via contract and via merger.¹⁷⁶ Such studies could usefully identify additional types of efficiencies that vertically integrated firms may achieve. For example, it may be that increased digitization, artificial intelligence, and machine learning create new efficiencies not yet contemplated by many practitioners.

D. Summary

Part I outlines empirical results suggesting that many, if not most, vertical mergers benefit consumers, that harmful RRC effects depend on beneficial EDM effects, that these effects must be analyzed concurrently, and that it is likely that even most mergers that result in RRC increase consumer welfare. Against this backdrop, vertical merger enforcement should proceed cautiously, perhaps with a particular focus on special cases where EDM is likely to be zero or small. More generally, few reliable tools exist to distinguish *rare* anticompetitive mergers from *common* procompetitive vertical mergers.

II. Legal Background

Although the literature on potential anticompetitive effects reaches back decades—particularly in the case of foreclosure theories¹⁷⁷—vertical merger challenges that result in decided cases always have been rare. Indeed, there were no decided vertical merger challenges at all for the first thirty-five years of the Clayton Act because the Agencies believed—

¹⁷⁶ See FRANCINE LAFONTAINE & MARGARET SLADE, EXCLUSIVE CONTRACTS AND VERTICAL RESTRAINTS: EMPIRICAL EVIDENCE AND PUBLIC POLICY 20, app. 1-3 tbl.1-3 (2005) (providing a table summarizing “studies that assess the consequences of all types of vertical restraints and legal restrictions on vertical contracts” as “highlight[ing] how very few studies there really are in each category and in total” and concluding that “[c]learly, much more work is needed in this area”).

¹⁷⁷ See, e.g., *Brown Shoe Co., Inc. v. United States*, 370 U.S. 294, 328-34 (1962) (raising both input and customer foreclosure, which were already well-developed theories by 1962).

reasonably—that the original statute did not reach vertical mergers at all.¹⁷⁸

After an abortive attempt to use the Sherman Act instead,¹⁷⁹ Congress revised the Clayton Act in 1950 to “make it clear” that the Agencies had the authority to challenge anticompetitive vertical mergers under section 7.¹⁸⁰ Over the next thirty years, the Agencies brought a number of significant vertical merger enforcement actions, almost always winning. Over time, the courts developed a six-factor test—purportedly drawn from the then-current economic learning and the legislative history of section 7—that treated vertical mergers as highly suspect.¹⁸¹ The Agencies likewise cast a jaundiced eye; in the DOJ’s 1968 Merger Guidelines, the DOJ asserted that almost any “large vertical merger” likely violated section 7 because the likely procompetitive efficiencies would rarely, if ever, offset the likely anticompetitive harms.¹⁸²

During this period, the DOJ and FTC challenged twenty-seven vertical mergers.¹⁸³ The Supreme Court said that “[t]aken as a whole, the legislative history illuminates congressional concern with the protection of *competition*, not *competitors*, and its desire to restrain mergers only to the extent that such combinations may tend to lessen competition.”¹⁸⁴ Yet in an era when multiple goals of antitrust played a prominent role, the courts often interpreted section 7 to protect less efficient competitors.

Around the same time, however, new economic evidence began to emerge demonstrating the procompetitive benefits of vertical

¹⁷⁸ See *infra* Section II.A

¹⁷⁹ See *United States v. Columbia Steel Co.*, 334 U.S. 495, 522, 524–27 (1948).

¹⁸⁰ See *United States v. E.I. du Pont de Nemours & Co.*, 353 U.S. 586, 590 (1957).

¹⁸¹ See *Brown Shoe*, 370 U.S. at 328–29, 332; *E.I. du Pont de Nemours*, 353 U.S. at 591–95; *Miss. River Corp. v. Fed. Trade Comm’n*, 454 F.2d 1083, 1091 (8th Cir. 1972); *U.S. Steel Corp. v. Fed. Trade Comm’n*, 426 F.2d 593, 599 (1970).

¹⁸² See U.S. DEP’T OF JUSTICE, MERGER GUIDELINES 9–10 (1968), <https://perma.cc/VVP6-WEBE> (“While it is true that in some instances vertical integration may raise barriers to entry or disadvantage existing competitors only as the result of the achievement of significant economies of production or distribution (as, for example, where the increase in barriers is due to achievement of economies of integrated production through an alteration of the structure of the plant as well as of the firm), integration accomplished by a large vertical merger will usually raise entry barriers or disadvantage competitors to an extent not accounted for by, and wholly disproportionate to, such economies as may result from the merger.”).

¹⁸³ See Alan A. Fisher & Richard S. Sciacca, *An Economic Analysis of Vertical Merger Enforcement Policy*, 6 RES. L. & ECON. 1, 59 tbl.8 (1984).

¹⁸⁴ *Brown Shoe*, 370 U.S. at 320 (emphasis in original).

integration.¹⁸⁵ This economic learning did not immediately make its way to the Agencies or the courts.

At first, these efficiencies were treated as further evidence of anticompetitive harm. For example, in 1964 the DOJ convinced a district court that vertical mergers, although “[t]hey often lead to economic and efficient operation” and are therefore “desirable from an economic standpoint,” were nonetheless “undesirable from a social standpoint” and proscribed by section 7.¹⁸⁶ In its 1968 Merger Guidelines, the DOJ announced its intention to challenge a proposed vertical merger between a supplier with at least ten percent of sales and a purchaser with at least six percent.¹⁸⁷ Likewise, in the early 1970s, the FTC convinced two circuit courts that the presence of large vertical merger efficiencies harmed less efficient local rivals, making the underlying merger unlawful under section 7.¹⁸⁸

Yet soon thereafter, the Supreme Court reminded the lower courts that the antitrust laws were designed “for the protection of competition, not competitors,”¹⁸⁹ and meant it. A new set of cases suggested that there were plausible procompetitive reasons for many vertical contractual restraints.¹⁹⁰ The lower courts duly changed course. In 1979, the Second Circuit rejected an FTC vertical merger challenge, concluding that section 7 requires the plaintiff in a vertical merger challenge to show actual harm to competition, not simply foreclosure.¹⁹¹ It also recognized that, by combining complementary stages of production, vertical mergers “may

¹⁸⁵ See, e.g., Ward S. Bowman, Jr., *Tying Arrangements and the Leverage Problem*, 67 YALE L.J. 19, 33–34 (1957); Ward S. Bowman, Jr., *The Prerequisites and Effects of Resale Price Maintenance*, 22 U. CHI. L. REV. 825, 855–58 (1955); Aaron Director & Edward H. Levi, *Law and the Future: Trade Regulation*, 51 NW. U. L. REV. 281, 290 (1956); Lester G. Telser, *Why Should Manufacturers Want Fair Trade?*, 3 J.L. & ECON. 86, 104–05 (1960).

¹⁸⁶ *United States v. Kennecott Copper Corp.*, 231 F. Supp. 95, 103 (S.D.N.Y. 1964).

¹⁸⁷ See DEP’T OF JUSTICE, *supra* note 182, at 10.

¹⁸⁸ See *Miss. River Corp. v. Fed. Trade Comm’n*, 454 F.2d 1083, 1091–92 (8th Cir. 1972); *U.S. Steel Corp. v. Fed. Trade Comm’n*, 426 F.2d 593, 593, 601–03, 609–10 (1970).

¹⁸⁹ *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 488 (1977) (quoting *Brown Shoe*, 370 U.S. at 320).

¹⁹⁰ See *Continental T.V., Inc. v. GTE Sylvania, Inc.*, 433 U.S. 36, 58 (1977) (“Certainly, there has been no showing in this case, either generally or with respect to Sylvania’s agreements, that vertical restrictions have or are likely to have a pernicious effect on competition or that they lack [] any redeeming virtue. Accordingly, we conclude that the *per se* rule stated in *Schwinn* must be overruled.” (internal quotation marks omitted)); see also *State Oil Co. v. Khan*, 522 U.S. 3, 15 (1997); *Business Elecs. Corp. v. Sharp Elecs. Corp.*, 485 U.S. 717, 723–26 (1988).

¹⁹¹ See *Fruehauf Corp. v. Fed. Trade Comm’n*, 603 F.2d 345, 355 (2d Cir. 1979).

even operate to increase competition.”¹⁹² In 1984, the DOJ issued Non-Horizontal Merger Guidelines recognizing—in stark contrast to its 1968 statement—that vertical mergers “are less likely than horizontal mergers to create competitive problems[.]”¹⁹³

Since the Non-Horizontal Merger Guidelines, the Agencies have averaged a handful—typically two or three—of significant vertical merger matters each year.¹⁹⁴ The vast majority—all but AT&T’s acquisition of Time Warner—were abandoned, cleared without conditions, or cleared subject to a consent agreement. Although the pace of significant merger challenges has increased somewhat in the past couple of years, vertical merger challenges remain far rarer than those involving horizontal transactions.

This Part synthesizes the extant vertical merger law. In doing so, it illustrates the courts’ shift in thinking about vertical mergers. From an institutional standpoint, it also details how courts have applied economic concepts in vertical merger cases.

A. *The Early Application of Section 7 to Vertical Mergers (Pre-1980)*

As an “anti-trust” law, section 7 of the Clayton Act was originally aimed at prohibiting stock transactions that allowed horizontal competitors to form into large trusts—most notably, the Standard Oil trust.¹⁹⁵ Although vertical mergers were fairly common, the Agencies did not challenge any vertical mergers for many years because the original Act did not, as the Supreme Court later said, “appear to preclude the acquisition of stock in any corporation other than a direct competitor.”¹⁹⁶ Specifically, section 7 originally prohibited stock acquisitions “where the effect of such acquisition may be to substantially lessen competition *between the corporation whose stock is so acquired and the corporation making the acquisition*, or to restrain such commerce in any section or community, or tend to create a monopoly of any line of commerce.”¹⁹⁷

¹⁹² *Id.* at 352.

¹⁹³ DEP’T OF JUSTICE, *supra* note 13, at 23.

¹⁹⁴ See Salop & Culley, *supra* note 131, at 1; see also Chamber of Commerce of the United States of America, Comment Letter on the Draft Vertical Merger Guidelines, at 2 (Feb. 14, 2020), <https://perma.cc/P8ML-MPMS>.

¹⁹⁵ See, e.g., Barak Orbach & D. Daniel Sokol, *Antitrust Energy*, 85 S. CAL. L. REV. 429, 431, 445 (2012) (describing issues surrounding Standard Oil).

¹⁹⁶ *Brown Shoe Co., Inc. v. United States*, 370 U.S. 294, 313 (1962).

¹⁹⁷ Clayton Act § 7, 15 U.S.C. § 18 (1914) (emphasis added); see also *United States v. E.I. du Pont de Nemours & Co.*, 353 U.S. 586, 589 (1957) (quoting 15 U.S.C. § 18).

From the statute's passage, the FTC interpreted section 7—particularly the clause quoted above—to apply only to stock acquisitions involving horizontal competitors. For example, in its 1929 report to Congress, the Commission noted many vertical mergers—which it then called “integrated industries”—that it could not review:

During the year the commission's attention has been directed to a number of consolidations and combinations involving noncompeting products. Two or three of the largest involved concerns engaged in a nation-wide business in food products. Some of these inquiries are still pending. However, most of these consolidations and acquisitions were of corporations engaged in the distribution of allied but noncompetitive products. Preliminary inquiry disclosed that the commission could take no corrective action under the Clayton Act even though the consolidation was effected through the acquisition or exchange of capital stock. The trend toward consolidation of integrated industries was very pronounced at the close of the year.¹⁹⁸

Although the Commission believed it lacked legal authority to challenge vertical transactions, these deals were—and remain—commonplace. Altogether, the Commission determined that twenty-five percent (49 of 196 “inquiries”) of the merger investigations it completed in 1929 “were filed [closed] without action because of lack of competition, either because of the territory served *or that the products involved were not competitive.*”¹⁹⁹ In addition to “food products,”²⁰⁰ the Commission identified “[o]ther acquisitions or mergers of integrated lines involv[ing] aviation, radio, talking machines, rubber goods, motion pictures, oil, drugs, and chemicals.”²⁰¹

Given its perceived lack of legal authority, the Commission, for many years, urged Congress to revise the statute to encompass vertical transactions,²⁰² and Congress, for many years, did not act. Finally, as part of a much broader package of antitrust amendments in 1950, Congress altered section 7 so that it covered vertical transactions.²⁰³ As later explained by the Supreme Court:

[B]y the deletion [in the 1950 amendment] of the ‘acquiring-acquired’ language in the original text, [Congress] hoped to make plain that § 7 applied not only to mergers between

¹⁹⁸ FED. TRADE COMM'N, ANN. REP. 60 (1929), <https://perma.cc/K3EC-Q8Y6>.

¹⁹⁹ *Id.* (emphasis added).

²⁰⁰ *Id.*

²⁰¹ *Id.* at 7.

²⁰² *See, e.g.,* *Brown Shoe Co., Inc. v. United States*, 370 U.S. 294, 313 n.21 (1962) (“[The opinion that § 7 did not reach vertical transactions] was the manner in which the Federal Trade Commission had viewed the prohibitions of original § 7.”).

²⁰³ *See* Cellar-Kefauver Act, Pub. L. No. 81–899, § 7, 64 Stat. 1125, 1126 (1950).

actual competitors, but also to vertical and conglomerate mergers whose effect may tend to lessen competition in any line of commerce in any section of the country.²⁰⁴

The Supreme Court also noted that “the deletion of the ‘acquiring-acquired’ test was the direct result of an amendment offered by the Federal Trade Commission” and subsequently introduced by Congressman Estes Kefauver.²⁰⁵

The Supreme Court defined the contours of section 7 more precisely in the late 1950s and early 1960s. In *United States v. E.I. du Pont de Nemours & Co.*²⁰⁶—a case the DOJ brought in 1949 on the eve of the Cellar-Kefauver Amendments—the Court ignored the “acquired-acquiring” limitation in the original statute and ruled that section 7 reached vertical mergers even before its amendment.²⁰⁷ In *Brown Shoe Co. v. United States*, the Court condemned a vertical merger combining a shoe manufacturer that accounted for “about 4% of the Nation’s total footwear production” with a shoe retailer that made “about 1.2% of all national retail shoe sales.”²⁰⁸

Brown Shoe also established four foundational legal rules applicable to vertical mergers. First, the Court concluded from the legislative history and plain terms of section 7 that Congress “recognized the stimulation to competition that might flow from particular mergers” and therefore “sought to create an effective tool for preventing all mergers having demonstrable anti-competitive effects.”²⁰⁹ Consequently, the statute “would not impede, for example, a merger between two small companies to enable the combination to compete more effectively with larger corporations dominating the relevant market.”²¹⁰ The Court also recognized that, although “[e]very extended vertical arrangement by its very nature, for at least a time, denies to competitors of the supplier the

²⁰⁴ *Brown Shoe*, 370 U.S. at 317. Nevertheless, “[i]n short, the legislative history, like the statute, leaves the courts free to formulate, and to change, rules governing vertical mergers in light of the kind of economic analysis and administrative considerations that apply to horizontal mergers and antitrust issues generally.” AREEDA & HOVENKAMP, *supra* note 140, ¶ 1002.

²⁰⁵ *Brown Shoe*, 370 U.S. at 317 n.30.

²⁰⁶ 353 U.S. 586 (1957).

²⁰⁷ *Id.* at 592 (“We hold that any acquisition by one corporation of all or any part of the stock of another corporation, competitor or not, is within the reach of the section whenever the reasonable likelihood appears that the acquisition will result in a restraint of commerce or in the creation of a monopoly of any line of commerce.”). The dissent is also worth noting because it focuses on the “competitive merits” of the case. *See id.* at 628 (Burton, J., dissenting). This also came up in two cases from the 1970s. *United States v. Hammermill Paper Co.*, 429 F. Supp. 1271, 1288 (W.D. Pa. 1977); Findings of Fact, *United States v. IT&T*, No. 69 C 924, 1971 WL 541 at *36 (N.D. Ill. Jul. 2, 1971).

²⁰⁸ *Brown Shoe*, 370 U.S. at 303.

²⁰⁹ *Id.* at 319.

²¹⁰ *Id.*

opportunity to compete for part or all of the trade of the customer-party to the vertical arrangement,” the “Clayton Act does not render unlawful all such vertical arrangements,” but rather only those whose effect may be to substantially reduce competition.²¹¹

Second, the assessment of competitive effects—presumably both procompetitive and anticompetitive—was necessarily probabilistic. As the Court explained, “Congress used the words ‘*may* be substantially to lessen competition,’ . . . to indicate that its concern was with probabilities, not certainties.”²¹² The Court also said—presumably for the same reason—that “the tests for measuring the legality of any particular economic arrangement under the Clayton Act are to be less stringent than those used in applying the Sherman Act.”²¹³

Third, the Court reiterated that even in vertical mergers, “[d]etermination of the relevant market is a necessary predicate to a finding of a violation of the Clayton Act.”²¹⁴ As revised, section 7 prohibits only transactions whose effect “may be substantially to lessen competition, or to tend to create a monopoly” in “any line of commerce . . . in any section of the country.”²¹⁵ The statute therefore requires a plaintiff to define both “a product market (the ‘line of commerce’) and a geographic market (the ‘section of the country’)” in which the anticompetitive effects would be felt.²¹⁶

Fourth, the Court determined that both economic and noneconomic factors would determine whether the effect of the transaction “may be substantially to lessen competition, or to tend to create a monopoly.”²¹⁷ The Court specifically identified three factors: (1) “the size of the share of the market foreclosed”,²¹⁸ (2) “the very nature and purpose of the arrangement”,²¹⁹ the latter of which it clarified to mean “the *economic* purpose of[] the vertical arrangement”,²²⁰ and (3) “the trend toward

²¹¹ *Id.* at 324.

²¹² *Id.* at 323.

²¹³ *Id.* at 328–29.

²¹⁴ *Brown Shoe*, 370 U.S. at 324 (quoting *United States v. E.I. du Pont de Nemours*, 353 U.S. 586, 593 (1957)).

²¹⁵ 15 U.S.C. § 18.

²¹⁶ *Brown Shoe*, 370 U.S. at 324.

²¹⁷ 15 U.S.C. § 18.

²¹⁸ *Brown Shoe*, 370 U.S. at 328.

²¹⁹ *Id.* at 329.

²²⁰ *Id.*; see also *id.* at 331 (“The importance which Congress attached to economic purpose is further demonstrated by the Senate and House Reports on H.R. 2734 . . .”).

concentration in the industry,” which it curiously interpreted to include any “trend toward vertical integration.”²²¹

The Court ultimately found that both economic and noneconomic factors aligned against the merger of Brown Shoe and Kinney. Like the district court, the Court concluded that the merger foreclosed what it believed to be a significant share of the downstream market—“over 350 retail outlets,” or 1.2% of retail sales. It also concluded that the economic purpose of the merger was to allow Brown Shoe to vertically integrate, which it characterized as a form of tying—an offense per se unlawful at the time.²²² Finally, the court found “[t]he existence of a trend toward vertical integration,” which in turn produced “a tendency of the acquiring manufacturers to become increasingly important sources of supply for their acquired outlets.”²²³ This vertical integration would result in “the foreclosure of independent manufacturers from markets otherwise open to them. . . . without producing any countervailing competitive, economic, or social advantages.”²²⁴

From this mix of economic and noneconomic factors, the courts gradually distilled a disjunctive legal test under which a plaintiff could prevail if it showed that any of six factors—or more often, two or more factors—was present.²²⁵ The Sixth Circuit formulated the definitive list in 1970, which the Eighth Circuit echoed two years later:

In dealing with vertical acquisitions under Section 7, as amended, the United States Supreme Court has relied on several functional factors as indicia of the requisite anti-competitive effect: (1) foreclosing of the competitors of either party from a segment of the market otherwise open to them; (2) the “nature and purpose” of the vertical arrangement; (3) actual and reasonable likely adverse effects upon local industries and small business;

²²¹ *Id.* at 332. Yet, as the D.C. Circuit observed many years later, “vertical mergers produce no immediate change in the relevant market share.” *United States v. AT&T Corp.*, 916 F.3d 1029, 1032 (D.C. Cir. 2019).

²²² *Brown Shoe*, 370 U.S. at 332 (“[I]t is apparent both from past behavior of Brown and from the testimony of Brown’s President, that Brown would use its ownership of Kinney to force Brown shoes into Kinney stores. Thus, in operation this vertical arrangement would be quite analogous to one involving a tying clause.”).

The Court also relied upon a tying theory in a subsequent case, *Ford Motor Co. v. United States*, 405 U.S. 562, 568–69 (1972) (“[T]he district court concluded that] Ford’s acquisition of the Autolite assets, particularly when viewed in the context of the original equipment (OE) tie and of GM’s ownership of AC, has the result of transmitting the rigidity of the oligopolistic structure of the automobile industry to the spark plug industry We see no answer to that conclusion if the letter and spirit of the Celler-Kefauver Antimerger Act are to be honored.”).

²²³ *Brown Shoe*, 370 U.S. at 332.

²²⁴ *Id.* at 332, 334.

²²⁵ The development of this legal test mirrors the development of the law of vertical restraints, particularly tying and exclusive dealing, during this era.

(4) the level and trend of concentration in the market shares of the participating companies, including any trend towards domination by a few leaders; (5) the existence of a trend towards vertical integration and consolidation in previously independent industries; and (6) the ease with which potential entrants may readily overcome barriers to full entry and compete effectively with existing companies.²²⁶

In contrast, the DOJ limited its enforcement decisions to two economic factors: market shares and entry barriers.²²⁷ Reflecting the times and particularly the paltry market shares involved in cases like *Brown Shoe*, the DOJ set its enforcement thresholds quite low. It announced: “[T]he department will ordinarily challenge a merger or series of mergers between a supplying firm, accounting for approximately 10% or more of the sales in its market, and one or more purchasing firms, accounting in toto for approximately 6% or more of the total purchases in that market.”²²⁸

The courts, however, initially declined to limit their analysis to economic factors or misapplied the economic factors when they did consider them.²²⁹ The FTC’s cement enforcement program illustrates both approaches. In one case, *U.S. Steel Corp. v. FTC*,²³⁰ the Sixth Circuit enforced an FTC administrative order after finding that all six vertical merger factors were present.²³¹ The court was particularly concerned that the integration by merger of the upstream cement supplier (U.S. Steel subsidiary U.A.C.) and the downstream cement distributor “ha[d] decisive cost advantages over non-integrated competitors.”²³² The court explained that “[v]ertical integration creates a more assured level of plant utilization, an elimination of any significant sales and marketing expenses to ones’

²²⁶ *U.S. Steel Corp. v. Fed. Trade Comm’n*, 426 F.2d 592, 599 (6th Cir. 1970); *see also* *Miss. River Corp. v. Fed. Trade Comm’n*, 454 F.2d 1083, 1091 (8th Cir. 1972) (listing the same six factors).

²²⁷ *See* DEP’T OF JUSTICE, *supra* note 182, at 10 (“[T]he Department attaches primary significance to (i) the market share of the supplying firm, (ii) the market share of the purchasing firm or firms, and (iii) the conditions of entry in the purchasing firm’s market.”).

²²⁸ *Id.*

²²⁹ Although in keeping with some of the economics of the day, the Supreme Court’s decision in *FTC v. Consol. Foods Corp.*, 380 U.S. 592 (1965), is a special case within the vertical merger jurisprudence because it relied upon a theory—reciprocal buying—that has not been viewed as anticompetitive for many years. *See id.* at 594 (“We hold at the outset that the ‘reciprocity’ made possible by such an acquisition is one of the congeries of anticompetitive practices at which the antitrust laws are aimed.”); *see also* Edward D. Cavanagh, *Reciprocal Dealing: A Rebirth?*, 75 ST. JOHN’S L. REV. 633, 635 (2001) (In the 1970s, “[t]he Antitrust Division ceased initiating reciprocity cases. At about the same time, reciprocity as a theory of antitrust wrongdoing also came under heavy attack from antitrust scholars and, until recently, has remained largely dormant.”).

²³⁰ 426 F.2d 592 (6th Cir. 1970).

²³¹ *See id.* at 599.

²³² *Id.* at 603.

own ready-mix subsidiary, and the ability to integrate the storage and distribution facilities of the cement and ready-mix company into a single urban terminal.”²³³ Even worse (at least in the court’s view), these dynamics “forced [rivals] to expand or shift their sales territories to areas where there was less vertical integration because of the competitive forces in vertically integrating markets,”²³⁴ and “at least one” rival was forced to vertically integrate itself to meet the competition.²³⁵ It therefore found “very substantial evidence for each of the Commission’s findings that the ability [of] non-integrated cement producers (to compete) may be substantially impaired,” the merging parties “may have achieved a decisive competitive advantage over its competitors,” and the “trend towards vertical [integration] in the production and sale of cement and concrete has been aggravated” by the merger.²³⁶ For all these reasons, the court concluded that the merger violated section 7.

The Eighth Circuit repeated this approach two years later when it enforced an FTC administrative order in a second cement case, *Mississippi River Corp. v. FTC*.²³⁷ In that case, a series of vertical mergers foreclosed between 1.3% and 3.7% of the downstream market for ready-mix concrete in several midwestern cities.²³⁸ The FTC—and subsequently the Eighth Circuit—found these mergers anticompetitive²³⁹ in part because they had an “immediate[]” and “adverse” impact on a rival local business.²⁴⁰ Ironically, however, the local business there was U.S. Steel, which, fresh off its loss to the FTC in the Sixth Circuit, “was forced to close a Cincinnati terminal in 1967 after three years of operation because of the loss of [one of the acquired distributor’s] business.”²⁴¹

The FTC was not alone in this quest. For example, in *United States v. Ford Motor Co.*,²⁴² the DOJ sought, a district court granted, and the

²³³ *Id.* at 603.

²³⁴ *Id.* at 601–02.

²³⁵ *Id.* at 602 (“The [FTC Hearing] Examiner specifically found that at least one of the vertical acquisitions in the industry was caused, in part, by U.A.C.’s acquisition of Certified.”).

²³⁶ *U.S. Steel Corp.*, 426 F.2d at 604 (internal quotations omitted).

²³⁷ 454 F.2d 1083 (8th Cir. 1972).

²³⁸ *See id.* at 1091.

²³⁹ Downstream market shares were disputed, with the defendant arguing the shares amounted to 1.3 to 3.7 percent and the Commission fixing the figure at 25 percent. The court punted, finding “the foreclosure by Mississippi to fall into the prohibited zone even if the wider market lines were to be drawn.” *Id.*

²⁴⁰ *Id.* at 1092.

²⁴¹ *Id.*

²⁴² 405 U.S. 562 (1972).

Supreme Court affirmed a divestiture order on a mix of both social and economic grounds.²⁴³ In addition to unwinding the consummated vertical merger, the remedy *also* required Ford to include provisions in the divestiture sale that would “protect” the workers at the divested factory from job or wage cuts for several years.²⁴⁴

The underlying tension between economic and noneconomic factors broke in 1979, when the Second Circuit concluded that section 7 did not condemn procompetitive vertical mergers. The case, *Fruehauf Corp. v. FTC*,²⁴⁵ involved the vertical merger of Fruehauf, a truck trailer manufacturer, with Kelsey, an upstream manufacturer of truck parts. The FTC condemned the merger on two grounds: (1) the transaction foreclosed rival input suppliers from Fruehauf’s demand, which amounted to about five percent of the market, and (2) if a parts shortage arose, the merger would allow Fruehauf preferential access to those supplies.²⁴⁶

The Second Circuit disagreed; it explained that “[a] vertical merger, unlike a horizontal one, does not eliminate a competing buyer or seller from the market . . . does not, therefore, automatically have an anticompetitive effect . . . or reduce competition,” and “may even operate to increase competition.”²⁴⁷ Although the Second Circuit believed *du Pont* and *Brown Shoe* occasionally “appear[] to encourage” a legal rule proscribing “any vertical foreclosure,” it concluded that “[t]he Supreme Court’s insistence . . . that the Clayton Act protects ‘*competition*, not *competitors*,’ contravenes the notion that a significant level of foreclosure is itself the proscribed effect.”²⁴⁸ The court explained:

[W]e are unwilling to assume that any vertical foreclosure lessens competition. Absent very high market concentration or some other factor threatening a tangible anticompetitive effect, a vertical merger may simply realign sales patterns . . . [and] free up that much of the market . . . for new transactions between the merged firm’s competitors and the merging firm’s competitors.²⁴⁹

²⁴³ See *id.* at 571, 575.

²⁴⁴ See *id.* at 572 (affirming remedial provisions designed to “protect[] New Fostoria, the town where the Autolite plant is located” and “protect[] employees of the New Fostoria plant by ordering Ford to condition its divestiture sale on the purchaser’s assuming the existing wage and pension obligations”).

²⁴⁵ 603 F.2d 345 (2d Cir. 1979).

²⁴⁶ See *id.* at 349.

²⁴⁷ *Id.* at 351–52.

²⁴⁸ *Id.* at 352, 352 n.9.

²⁴⁹ *Id.* at 352 n.9.

The Second Circuit concluded that “[a] showing of some probable anticompetitive impact is still essential,”²⁵⁰ and the Commission’s case rested upon evidence “too ephemeral to sustain [its] decision.”²⁵¹

B. *The Consent Era (1980–2017)*

The FTC’s loss in *Fruehauf* ended the era of aggressive—and sometimes economically irrational—vertical merger enforcement. With the Agencies burdened by the requirement to demonstrate that a vertical merger would cause anticompetitive effects, not merely foreclosure, vertical merger litigation became more difficult.

This change in the legal regime was coupled with new agency leadership steeped in the new economic learning on vertical integration. At the DOJ, Bill Baxter withdrew the 1968 Guidelines, replacing them with both the 1982 Horizontal Merger Guidelines and the 1984 Non-Horizontal Merger Guidelines. Economist Jim Miller initiated similar changes as FTC Chairman.

Assistant Attorney General Baxter’s 1984 Non-Horizontal Merger Guidelines were particularly important. The Guidelines began by recognizing the same foundational concept the Second Circuit identified in *Fruehauf*: “non-horizontal mergers”—and particularly vertical mergers—“are less likely than horizontal mergers to create competitive problems.”²⁵²

The Guidelines therefore abandoned three core features of earlier cases. First, eschewing the amorphous and easily satisfied six-factor test, the Division instead developed separate legal tests for three different vertical theories of harm, when a vertical merger may (1) increase barriers to entry; (2) facilitate collusion; or (3) allow a regulated entity to evade rate regulation.²⁵³ Second, the Division abandoned the share thresholds it had set in 1968 (and the even lower thresholds endorsed in *Brown Shoe* and other cases), announcing that it was “unlikely to challenge a merger” that may increase barriers to entry or facilitate collusion “unless overall concentration of the upstream market is above 1800 HHI.”²⁵⁴ Third, the Guidelines emphatically rejected the view—as expressed, for example, in *U.S. Steel*—that efficiencies produced by vertical integration were

²⁵⁰ *Id.* at 353.

²⁵¹ *Fruehauf*, 603 F.2d at 360.

²⁵² DEP’T OF JUSTICE, *supra* note 13, at 24.

²⁵³ *See id.* at 30–32.

²⁵⁴ *Id.* at 31–32.

necessarily anticompetitive because they harmed competitors. Instead, the Guidelines stated that “[t]he primary benefit of mergers to the economy is their efficiency-enhancing potential, which can increase the competitiveness of firms and result in lower prices to consumers.”²⁵⁵ Therefore “[a]n extensive pattern of vertical integration may constitute evidence that substantial economies are afforded by vertical integration” and consequently the Division “will give relatively more weight to expected efficiencies in determining whether to challenge a vertical merger than in determining whether to challenge a horizontal merger.”²⁵⁶

The Division was not alone; many leading scholars and policymakers recognized that vertical mergers were inherently more likely to generate efficiencies—and inherently less likely to harm competition—than their horizontal counterparts.²⁵⁷ This remains the near-consensus view today.²⁵⁸

Updates to critical inputs (law and economics) significantly affected the Agencies’ outputs (enforcement decisions). As Steven Salop noted recently, the Commission has not litigated a purely vertical case since *Fruehauf*.²⁵⁹ Similarly, until *AT&T*, the Division had not litigated a vertical merger to a decision since 1977.²⁶⁰

Instead, the Agencies shifted to resolving vertical concerns through consent agreements.²⁶¹ Most of the time, the Agencies accepted a slate of standard behavioral remedies—for example firewalls, nondiscrimination requirements, and licensing obligations.²⁶² A minority (perhaps 20%–25%)

²⁵⁵ *Id.* at 23 (applicable to horizontal mergers); *see also id.* at 32 (endorsing the view that the efficiencies applicable to horizontal transactions equally apply to vertical mergers).

²⁵⁶ *Id.* at 32.

²⁵⁷ *See* Fisher & Sciacca, *supra* note 183, at 39.

²⁵⁸ *See, e.g.,* Comcast Cable Commc’ns, LLC v. FCC, 717 F.3d 982, 990 (D.C. Cir. 2013) (Kavanaugh, J., concurring) (noting that, in general, “vertical integration and vertical contracts are *procompetitive*”); Nat’l Fuel Gas Supply Corp. v. Fed. Energy Regulatory Comm’n, 468 F.3d 831, 840 (D.C. Cir. 2006) (“[V]ertical integration creates efficiencies for consumers.”); Hoffman, *supra* note 5, at 4 (noting the “broad consensus in competition policy and economic theory that the majority of vertical mergers are beneficial because they reduce costs and increase the intensity of interbrand competition”); Salop & Culley, *supra* note 14, at 15 (“[M]ost vertical mergers do not raise competitive concerns and likely are *procompetitive*.”).

²⁵⁹ *See* Salop, *supra* note 14, at 1964 (“The last vertical merger case litigated to conclusion by the Federal Trade Commission (FTC) dates back to 1979, which the FTC lost because it was unable to prove probable anticompetitive effects.” (citing *Fruehauf Corp. v. FTC*, 603 F.2d 345, 352–53 (2d Cir. 1979))).

²⁶⁰ *See* *United States v. Hammermill Paper Co.*, 429 F. Supp. 1271, 1278 (W.D. Pa. 1977).

²⁶¹ For a helpful summary, *see* Salop & Culley, *supra* note 131.

²⁶² *See, e.g.,* *United States v. Sprint Corp.*, No. 95-1304, 1995 WL 819147 (D.D.C. 1995) (acknowledging both firewall and non-discrimination requirements); *In re Merck & Co., Inc.*, FTC Docket No.

of these consents required the divestiture of a vertically related subsidiary, asset, or contract.²⁶³

Of course, not all vertical mergers required consents. For example, in the early 2000s the FTC analyzed two facially similar vertical mergers, (1) Cytac's acquisition of Digene and (2) Synopsis' acquisition of Avant!.²⁶⁴ The former involved the merger of two "complementary cervical cancer screening tests," whereas the latter involved the merger of two "complementary integrated circuit design software products."²⁶⁵ The Commission found that Cytac would have the ability and incentive to harm rivals with relatively few countervailing efficiencies.²⁶⁶ In contrast, the Commission found that Synopsis had little incentive to impede interoperability with its upstream rivals and would realize significant efficiencies from the transaction.²⁶⁷ Without divulging specifics, then-Chairman Tim Muris also intimated that customers generally supported the merger of Synopsis and Avant!.²⁶⁸ Given these different fact patterns, the Commission chose to challenge the merger of Cytac and Digene (which was subsequently abandoned) and clear the merger of Synopsis and Avant! without conditions.

On the other end of the spectrum, the Agencies have on occasion required unusual behavioral remedies.²⁶⁹ Some, particularly during President Obama's first term, resembled sectoral regulations. For example, the DOJ's consent decree resolving Comcast's acquisition of NBCU imposed a duty to deal with rivals, arbitrate disputes over the terms of dealing, and agree to net neutrality rules.²⁷⁰ Others, such as the FTC's

C-3853 (Feb. 18, 1999) (including both firewall and nondiscrimination requirements); *In re Raytheon Co.*, FTC Docket No. C-3681 (Sept. 3, 1996) (discussing firewall requirements).

²⁶³ See, e.g., *United States v. United Techs. Corp.*, 946 F. Supp. 2d 135, 140 (D.D.C. 2013) (discussing divestiture of shares in a joint venture and obligation to divest, upon request, select assets); *In re Dominion Res., Inc. & Consol. Nat. Gas Co.*, FTC Docket No. C-3901 (Nov. 4, 1999) (discussing divestiture of one downstream subsidiary); *In re TRW, Inc.*, FTC Docket No. C-3790 (Apr. 6, 1998) (discussing divestiture of a contract).

²⁶⁴ See Timothy J. Muris, *Principles for a Successful Competition Agency*, 72 U. CHI. L. REV. 165, 184-86 (2005) (providing a contemporaneous comparison of the two matters).

²⁶⁵ *Id.* at 185.

²⁶⁶ See Press Release, Fed. Trade Comm'n, FTC Seeks to Block Cytac Corp.'s Acquisition of Digene Corp. (June 24, 2002), <https://perma.cc/AQN7-WKQN>.

²⁶⁷ See Muris, *supra* note 264, at 185-86.

²⁶⁸ See *id.*

²⁶⁹ See Wilson & Klovers, *supra* note 15, at 2.

²⁷⁰ See Press Release, U.S. Dep't of Justice, Antitrust Div., Justice Department Allows Comcast-NBCU Joint Venture to Proceed with Conditions (Jan. 18, 2011), <https://perma.cc/CE97-9694> ("The Department of Justice announced today a settlement with Comcast Corp. and General Electric Co.'s

consent order in Bosch's acquisition of SPX, imposed compulsory royalty-free patent licensing regimes.²⁷¹

C. *Recent Developments (Post-2017)*

After almost forty years without a litigated vertical merger challenge, the DOJ finally broke the streak in 2017. In *United States v. AT&T Inc.*, the Division alleged that the vertical merger of AT&T and Time Warner—two firms in the cable industry—would allow the combined firm to raise rivals' costs of a critical input: cable programming.²⁷² After the DOJ filed suit, the parties issued irrevocable offers to arbitrate program carriage disputes, thereby removing AT&T's ability—if not incentive—to raise rivals' costs (or completely foreclose rivals).²⁷³ On this basis, the district court found the merger did not violate section 7 because it did not risk any anticompetitive effects but did promise procompetitive efficiencies.²⁷⁴ While the case identified both procompetitive and anticompetitive justifications for mergers, it did not break new ground in thinking about weighing these effects.

On appeal, the D.C. Circuit took the opportunity to restate and clarify the basic legal rules that apply to vertical mergers. Citing *Brown Shoe*, the district court noted that “the government must show that the proposed merger is likely to *substantially* lessen competition, which encompasses a concept of ‘reasonable probability.’”²⁷⁵ It also noted that “[n]either the government nor the defendants challenge application of the burden-shifting framework”²⁷⁶ used in *United States v. Baker Hughes*,²⁷⁷ under which the plaintiff bears the initial burden to establish a *prima facie* case, which the defendant may rebut.²⁷⁸ However, “unlike horizontal mergers,” the court explained that “the government cannot use a short cut to establish a presumption of anticompetitive effect through statistics about the change in market concentration, because vertical mergers produce no

subsidiary NBC Universal Inc. (NBCU) that allows their joint venture to proceed conditioned on the parties' agreement to license programming to online competitors to Comcast's cable TV services, subject themselves to anti-retaliation provisions and adhere to Open Internet requirements.”).

²⁷¹ See *In re Robert Bosch GmbH*, FTC Docket No. C-4377, at 13 (Apr. 23, 2013).

²⁷² *United States v. AT&T, Inc.*, 916 F.3d 1029, 1035 (D.C. Cir. 2019).

²⁷³ See *id.* at 1031.

²⁷⁴ See *id.* at 1037, 1041.

²⁷⁵ *Id.* at 1032.

²⁷⁶ *Id.*

²⁷⁷ 908 F.2d 981, 982–83 (D.C. Cir. 1980).

²⁷⁸ See *AT&T*, 916 F.3d at 1032.

immediate change in the relevant market share.”²⁷⁹ Rather, “the government must make a ‘fact-specific showing’ that the proposed merger is ‘likely to be anticompetitive.’”²⁸⁰ The D.C. Circuit found neither clear error in the district court’s findings of fact nor abuse of discretion in its decision to deny injunctive relief, and therefore it affirmed the district court’s judgment.²⁸¹

Most recently, the Agencies issued new Vertical Merger Guidelines.²⁸² A draft version of the Guidelines was extensively debated publicly and criticized as either too permissive or too stringent,²⁸³ while two FTC commissioners opposed the final Guidelines in part because they saw the document as overly accepting of EDM.²⁸⁴ From a purely historical perspective, two changes stand out. First, the Vertical Merger Guidelines endorse the “raising rivals’ cost” theory originally developed by Steve Salop and David Scheffman in the early 1980s and supported by others following the 1984 Non-Horizontal Merger Guidelines and pre-*AT&T* cases.²⁸⁵ Second, the Vertical Merger Guidelines substantially expand—at least relative to the spartan 1984 Guidelines—the discussion of procompetitive effects,²⁸⁶ albeit with some new qualifications.²⁸⁷

Although the economics has radically changed since *Brown Shoe* and the FTC’s cement cases, these precedents remain on the books. And while

²⁷⁹ *Id.* at 1032. (citing the 1984 Guidelines, albeit erroneously indicating that the document was authored jointly by both the DOJ and the FTC).

²⁸⁰ *Id.* (internal quotation marks omitted).

²⁸¹ *See id.* at 1032, 1047.

²⁸² *See* DEP’T OF JUSTICE & FED. TRADE COMM’N, *supra* note 3.

²⁸³ Compare Baker et al., *supra* note 38, at 18, (“[T]he dVMGs do not suggest applying any anti-competitive presumptions to the most worrisome market structures . . . [raising] concerns that the final VMGs could be biased toward under-enforcement.”), with Chamber of Commerce of the United States of America, Comment Letter on the Draft Vertical Merger Guidelines, at 1 (Feb. 14, 2020), <https://perma.cc/893M-NN9R> (“We do, however, have some comments and concerns about the draft Guidelines, as discussed below. Vertical mergers are a central element of efficient business organization, and they have been—for good reason—an infrequent subject of antitrust enforcement. It is important that the Guidelines avoid articulating policies that could, even unintentionally, unduly impede efficient mergers.”).

²⁸⁴ *See* Dissenting Statement of Commissioner Rohit Chopra, Regarding the Publication of Vertical Merger Guidelines, No. P810034, at 6 (June 30, 2020), <https://perma.cc/9G8P-YZNR>; Dissenting Statement of Commissioner Rebecca Kelly Slaughter, *In re* FTC-DOJ Vertical Merger Guidelines, No. P810034, at 4 (June 30, 2020), <https://perma.cc/6RUK-H5UR>.

²⁸⁵ *See, e.g.*, Salop & Scheffman, *supra* note 108.

²⁸⁶ *See* DEP’T OF JUSTICE & FED. TRADE COMM’N, *supra* note 3, at 11–12.

²⁸⁷ For example, the Guidelines note in an example that technological incompatibility may imply that a “merger is unlikely to generate any benefits due to the elimination of double marginalization.” *Id.* at 10.

Fruehauf and now *AT&T* provide more economically sound counterpoints, vertical merger law remains relatively undeveloped as compared to horizontal merger law. Therefore, as courts embrace the Agencies' guidelines as part of caselaw development,²⁸⁸ it is critically important that courts understand both the underlying economic principles and their legal implications for vertical mergers.

III. Proposed Legal Framework

We join the chorus who agree with the burden-shifting framework applied by the D.C. Circuit in *AT&T*.²⁸⁹ Yet unlike many commentators, we believe RRC and EDM theories are so “inextricably linked”—to borrow a phrase from the Horizontal Merger Guidelines²⁹⁰—that a plaintiff alleging an RRC theory must also demonstrate that the likely anticompetitive harm of RRC exceeds the likely procompetitive benefits of EDM. We also identify a few practical impediments to a full-blown *Baker Hughes* analysis.

A. *The Burden-Shifting Framework*

In *United States v. AT&T Inc.*, the court applied the burden-shifting framework announced in *United States v. Baker Hughes*, which has been used in the horizontal merger context, to the vertical merger context. The *Baker Hughes* formulation for a burden shift focuses on certain horizontal presumptions based on market shares. As articulated in *FTC v. H.J. Heinz Co.*,²⁹¹ the formulation works as follows:

First the government must show that the merger would produce a firm controlling an undue percentage share of the relevant market, and [would] result[] in a significant increase in the concentration of firms in that market. Such a showing establishes a presumption that the merger will substantially lessen competition. To rebut the presumption, the defendants must produce evidence that show[s] that the market-share statistics [give] an inaccurate account of the [merger's] probable effects on competition in the relevant market. If the defendant successfully rebuts the presumption [of illegality], the burden of producing additional evidence of anticompetitive effect shifts to the government, and merges with the ultimate burden of persuasion, which remains with the government at all times.²⁹²

²⁸⁸ See Hillary Greene & D. Daniel Sokol, *Judicial Treatment of the Antitrust Treatise*, 100 IOWA L. REV. 2039, 2056 (2015).

²⁸⁹ See, e.g., Jonathan M. Jacobson, *Vertical Mergers: Is It Time to Move the Ball?*, 33 ANTITRUST 6, 10 (2019).

²⁹⁰ DEP'T OF JUSTICE & FED. TRADE COMM'N, *supra* note 31, at 30 n.14.

²⁹¹ 246 F.3d 708 (D.C. Cir. 2001).

²⁹² *Id.* at 715 (internal quotation marks omitted).

A burden-shifting framework is applicable in the vertical merger context with certain important modifications. The primary modification is the need to account for the significant differences between vertical and horizontal mergers. First and foremost, as the court noted in *AT&T*, vertical mergers do not eliminate a competitor.²⁹³ Vertical mergers therefore lack the primary means of competitive harm found in horizontal merger cases and for this reason should be—all else equal—less likely to produce anticompetitive effects than horizontal mergers.²⁹⁴ Second, unlike horizontal mergers, vertical mergers enhance vertical integration, thereby generating both efficiencies and EDM. Thus, they may be more likely to produce procompetitive effects.²⁹⁵

1. Plaintiff's Prima Facie Case

In the initial stage of the inquiry and consistent with much of the theoretical and empirical literature, a vertical merger should be presumed lawful. A plaintiff bears the burden of rebutting this presumption by demonstrating that the merger is likely to cause a net anticompetitive effect in a relevant antitrust market. This approach is also required by the statute, which proscribes only those mergers—whether horizontal or vertical—that the plaintiff can prove “may be substantially to lessen competition.”²⁹⁶

As the Vertical Merger Guidelines recognize, plaintiffs today rely primarily upon either an RRC theory, a complete foreclosure theory, or both. Yet the economics literature demonstrates that a merger that allows the parties to raise their rivals' costs also typically allows them to eliminate a double margin—hence, an EDM-RRC tradeoff.²⁹⁷ Indeed, these two effects are essentially two sides of the same coin, just that one effect is

²⁹³ See *United States v. AT&T, Inc.*, 916 F.3d 1029, 1032 (D.C. Cir. 2019).

²⁹⁴ See *Guidelines on the Assessment of Non-Horizontal Mergers Under the Council Regulation on the Control of Concentrations Between Undertakings*, 265 OFFICIAL J. EUR. UNION 6, 7 (Oct. 18, 2008), <https://perma.cc/9RD9-E4C3> [hereinafter *Guidelines*] (“Non-horizontal mergers are generally less likely to significantly impede effective competition than horizontal mergers.”); U.K. Competition Comm'n, Off. of Fair Trading, *Merger Assessment Guidelines*, CC2 (Revised)/OFT1254, at 49 (2010), <https://perma.cc/Q7BK-WR3U> (“[I]t is a well-established principle that most are benign and do not raise competition concerns.”).

²⁹⁵ See AREEDA & HOVENKAMP, *supra* note 140, ¶ 1040a (“[T]he statutory and economic case for an efficiency defense is as strong or stronger for vertical mergers as for horizontal ones.”).

²⁹⁶ 15 U.S.C. § 18.

²⁹⁷ See *supra* Part I.

positive (procompetitive) and the other is negative (anticompetitive).²⁹⁸ Yet like matter and antimatter, the two effects are not necessarily always equal in magnitude;²⁹⁹ in most circumstances, the economic literature suggests that the procompetitive benefits of vertical mergers—including EDM—will be greater than any anticompetitive effects.³⁰⁰

Therefore, if a plaintiff brings an RRC case, it should be able to rebut the presumption of lawfulness and establish its *prima facie* case *only* if it can prove *both* that the merger is likely to raise rivals' costs *and* that this anticompetitive effect is probably greater than the likely offsetting procompetitive effect generated by EDM. We believe we are the first to argue that the plaintiff should account for EDM as part of its *prima facie* case.³⁰¹ In cases such as *AT&T*, the plaintiff may fail to prove RRC harm in the first place. In cases such as the 1970s-era cement cases (if they were decided today), the plaintiff may establish some anticompetitive effect associated with RRC but fail to demonstrate that these effects are greater than the offsetting procompetitive effects of EDM.

We see no reason why the same test should not apply to allegations of complete foreclosure. From an economic perspective, the incidence of EDM—a unilateral and essentially automatic effect—should not depend upon whether the combined firm decides to cut off rivals entirely or merely raise the price it charges them.³⁰² Others seem to agree; for example, the EC non-horizontal merger guidelines (“ENHMG”) identify both the potential for foreclosure as well as limits to EDM and the assumptions behind those limits.³⁰³

The question remains: How does a plaintiff carry the burden to address both sides of the vertical-merger coin (RRC and EDM)? Some

²⁹⁸ See, e.g., Christine S. Wilson, Comm'r, Fed. Trade Comm'n, Remarks on Reflections on the 2020 Draft Vertical Merger Guidelines and Comments from Stakeholders at the DOJ Workshop on Draft Vertical Merger Guidelines 6–7 (Mar. 11, 2020), <https://perma.cc/C92U-UMMG>.

²⁹⁹ See, e.g., Marco Gersabeck, *Why Is There More Matter Than Antimatter?*, SCL AM. (Mar. 21, 2019), <https://perma.cc/2JE6-B73B>.

³⁰⁰ See *supra* notes 27–29.

³⁰¹ Though some have come close. See, e.g., Kenneth Edelson & Jonathan Jacobson, Comment Letter on the Draft Vertical Merger Guidelines, at 3 (Feb. 4, 2020), <https://perma.cc/5VCT-KG4T> (“Our own view is that this efficiency is pervasive and significant in vertical mergers. The defense should therefore bear only a burden of producing evidence, and the agencies should bear the burden of disproving the significance of EDM where shown to exist. This would depart from the typical standard in a merger case, under which defendants must prove the reality, magnitude, and merger-specific character of the claimed efficiencies.”).

³⁰² See Salinger, *supra* note 128, at 354–55 (describing a model in which EDM may or may not dominate effects from foreclosure resulting from the vertical merger).

³⁰³ See *Guidelines*, *supra* note 294, at 12, 15.

economists have tackled this question by suggesting merger simulation may be sufficient.³⁰⁴ In contrast, the European Commission (“EC”) has suggested a more qualitative approach:

In its assessment of the likely incentives of the merged firm, the Commission may take into account various considerations such as the ownership structure of the merged entity, the type of strategies adopted on the market in the past or the content of internal strategic documents such as business plans.³⁰⁵

In the next paragraph, the ENHMG add “the Commission examines both the incentives to adopt such conduct and the factors liable to reduce, or even eliminate, those incentives, including the possibility that the conduct is unlawful.”³⁰⁶ How the EC could convert this qualitative analysis into a quantitative balancing test remains unclear.³⁰⁷ Understanding particular economic mechanisms is important, and we may have greater confidence in the explanatory power of a given model if its prediction aligns with other evidence, such as unequivocal internal documents.

Assuming a quantitative economic analysis is necessary, a reviewing court or agency must compare one estimate—the projected harms—to another—the projected benefits. Although this analysis is necessarily probabilistic (e.g., confidence intervals may suggest a ninety percent likelihood that a given transaction is net procompetitive), some inferences can be drawn from market structure. For example, if the upstream and downstream markets are highly competitive, then the anticompetitive harms are likely to be both (1) negligible and (2) smaller than the procompetitive benefits (including efficiencies assessed in the second step).³⁰⁸ Likewise, if the upstream and downstream markets are both

³⁰⁴ See *supra* Part I (discussing Das Varma et al. and other papers).

³⁰⁵ *Guidelines*, *supra* note 294, at 13 (citations omitted).

³⁰⁶ *Id.* at 14.

³⁰⁷ See *id.* 18, 18 n.1 (recognizing counterstrategies by other firms and citing Case COMP/M.1879 — Boeing/Hughes (2000)).

³⁰⁸ See Transcript of Federal Trade Commission: Competition and Consumer Protection in the 21st Century, at 14 (Nov. 1, 2018), <https://perma.cc/RG2M-FH2K> (statement of Prof. Steven Salop) (“But to start, by way of introduction, the key points I want to make are listed on the slide. That vertical mergers should be focused on oligopoly markets. A lot [of] the criticisms one hears about vertical merger enforcement, why vertical mergers are competitive[,] relate to vertical mergers in either perfect monopoly or perfectly competitive markets.”); *id.* at 19 (statement of Prof. Steven Salop) (“I think where there may be controversy is what is in the green font, which are my views, that enforcement should be focused on oligopoly markets, that only cognizable efficiencies should be credited, and that what you need to do is analyze the overall effect on consumers, using a fact-based analysis of both harms and efficiencies.”); *id.* at 116 (statement of Bruce Hoffman) (“So we need to update—I think Steve is right on target in focusing on oligopoly markets.”); *id.* at 141 (statement of Paul Yde) (advocating for “a page” of Guidelines that says “we are only going to look at vertical transactions where we are

monopolized, then the merger will eliminate double marginalization and foreclose zero firms (because there are no other firms in either market), so the transaction is likely procompetitive.

Between these outcomes lies most of the real world. Many upstream and downstream markets are imperfectly competitive (i.e., oligopolistic or monopolistically competitive). In those instances, the dominant tendency—procompetitive or anticompetitive—of a merger may be less clear, unlike in the horizontal context where the likelihood of anticompetitive effects increases, all else equal, as the level of concentration in the market increases.³⁰⁹ The cases with unclear vertical effects are the ones where it will be important for the plaintiff to prove that the merger “may [] substantially lessen competition”³¹⁰ by demonstrating that the harm from RRC likely exceeds the benefits of EDM.

2. Defendant’s Rebuttal

If the plaintiff makes the requisite showing (after accounting for any contrary arguments about RRC or EDM made by the defendant), then the burden shifts to the defendant, who must demonstrate that the transaction is net procompetitive.³¹¹ With the RRC-EDM doppelgänger already decided, the rebuttal argument will be limited to traditional efficiencies.³¹²

A number of former agency officials argue that most, if not all, of the procompetitive effects of vertical mergers, can be achieved by contract.³¹³

confident that we are looking at an oligopoly at both stages”); *id.* at 154 (statement of Gene Kimmelman) (describing “oligopolistic markets” as the ones “where we have substantial concerns”).

³⁰⁹ See *supra* notes 153, 157–159 and accompanying text.

³¹⁰ 15 U.S.C. § 18.

³¹¹ There is some disagreement about whether the burden is one of proof or persuasion. See Jacobson, *supra* note 289, at 10 (“There are steep differences, however, concerning step 2. *Philadelphia National Bank* has long been understood as saying that the defendant’s burden under step 2—i.e., after an anticompetitive effect has been established—is one of proof. *Baker Hughes*, however, states that the burden is one of production, not proof, which is consistent with the Supreme Court’s recent decision in *Ohio v. American Express* in the context of the rule of reason under Section 1 of the Sherman Act.”).

³¹² See, e.g., *supra* Section I.A.2.

³¹³ See, e.g., Baker et al., *supra* note 38, at 31 (“We also want to comment on the common assumptions that EDM merger benefits are inevitable, that a failure to achieve EDM benefits in the premerger market is sufficient proof that EDM would occur post-merger, and that EDM can be presumed to be merger-specific and otherwise cognizable. Economic reasoning does not support these assumptions and, therefore, we recommend that the final VMGs should make the point that they would be unwarranted.”); see also Baker et al., *supra* note 4, at 15 (arguing that “EDM might be eliminated through

Yet this view is not consistent with much of the theoretical economic literature, let alone much of the empirical work across economics, management, and operations literatures.³¹⁴

General Motors' ("GM") acquisition of Fisher is perhaps the best known real-world example of the limits of contractual mechanisms for vertical integration.³¹⁵ GM entered a ten-year requirements contract to purchase all of its automotive bodies from Fisher, which was designed to protect Fisher's investment in new production facilities.³¹⁶ As one might expect from sophisticated parties, the contract also fixed a "cost plus" price and included a most-favored nations clause.³¹⁷ Yet GM quickly became dissatisfied with the pricing terms and Fisher's refusal to collocate its production facilities.³¹⁸ So GM sought to acquire Fisher, initiating the process halfway through the contract and completing the transaction with three years remaining on the original ten-year agreement.³¹⁹ The example demonstrates how, even when firms actually strike a contract and that contract contains a fixed margin (approximately seventeen percent) and provisions designed to prevent holdup, contracting can still be far less efficient than vertically integrating by merger.

B. *Practical Impediments*

In practice, most cases will stand or fall on the plaintiff's prima facie case for three reasons. First, the Agencies rarely credit defendant's proffered efficiencies.³²⁰ Therefore, if an agency believes RRC likely exceeds EDM, that conclusion is usually sufficient to prompt a challenge. And because vertical merger litigation is incredibly rare, the vast majority of challenged vertical mergers are either abandoned or settled, making the agency merger review process the first *and* last step in the analysis.

negotiation of vertical contracts between independent firms" and listing a long set of circumstances—from various kinds of vertical contracts to the purported failure of not having "considered contracting" premerger at all).

³¹⁴ See O'Brien, *supra* note 41 and accompanying text (describing empirical literature on the efficacy of vertical contracts to achieve procompetitive effects of integration).

³¹⁵ See Klein et al., *supra* note 8, at 308–10; see also Benjamin Klein, *Vertical Integration as Organizational Ownership: The Fisher Body-General Motors Relationship Revisited*, 4 J. L. ECON. & ORG. 199 (1988).

³¹⁶ See Klein et al., *supra* note 8, at 308.

³¹⁷ *Id.* at 309.

³¹⁸ *Id.* at 309–10.

³¹⁹ *Id.* at 310.

³²⁰ See Coate & Heimert, *supra* note 148 and accompanying text.

Second, although the courts have acknowledged vertical merger efficiencies, vertical merger cases are rarely, if ever, decided on that basis. For example, although the *AT&T* court applied the *Baker Hughes* burden-shifting framework, it stopped at the first step after finding the plaintiff had failed to prove that the transaction would allow the merging parties to raise rivals' costs. The same was true in *Fruehauf*.³²¹

Third and relatedly, as noted previously, the Agencies' analysis of efficiencies raises a "chicken and egg" problem.³²² The Agencies frequently discount efficiencies claims either heavily or entirely, arguing that the merging parties have failed to substantiate and verify those claims. Because the Agencies see few efficiencies stories that meet their standards, they tend to approach efficiencies claims with significant skepticism. Against this backdrop and because the burden of proving the existence and magnitude of traditional efficiencies falls on the merging parties, the parties seldom bother to collect the data necessary to make a successful efficiencies defense. Solving this "chicken and egg" problem³²³ will require the Agencies to identify the ways in which merging parties can enhance their efficiencies advocacy and will require merging parties to invest the requisite time and effort in collecting the data and information necessary to satisfy the Agencies' standards.

Conclusion

Vertical merger law and policy remain a work in progress. Economists have long understood the benefits of vertical integration—including both EDM and a bevy of traditional efficiencies. Yet the law has not always followed the economics, and in a few infamous cases, the law has run directly counter to it. Building upon modern economic literature, a near-consensus holds that vertical—and other non-horizontal mergers—typically present fewer competitive concerns than horizontal mergers. On occasion, policymakers in the United States have taken this approach, including in the 1984 Non-Horizontal Merger Guidelines.

As the D.C. Circuit recognized in *AT&T*, courts and enforcers need an administrable test that integrates near-consensus economic theory. The

³²¹ See *Fruehauf Corp. v. FTC*, 603 F.2d 345, 353–361 (2d Cir. 1979).

³²² See *Wilson*, *supra* note 49.

³²³ See, e.g., Christine S. Wilson, Comm'r, Fed. Trade Comm'n, Remarks on Antitrust and Innovation: Still Not a Dynamic Duo? at the Standard Essential Patents Symposium, at 13–14 (Sept. 10, 2019), <https://perma.cc/RP2Z-5UP2>; see also Timothy J. Muris, Opening Remarks Before FTC Bureau of Economics Roundtable on Understanding Mergers: Strategy and Planning, Implementation, and Outcomes (Dec. 9, 2002), <https://perma.cc/E6FM-BBZT>.

Baker Hughes burden-shifting framework is useful and should be retained. At least until very recently, the discussion has missed the recognition that EDM and RRC are inextricably linked (if not necessarily of the same magnitude) and therefore must be assessed together in the first step. That is, if a plaintiff alleges an RRC theory of harm in a vertical merger case, then as part of its prima facie case, the plaintiff must also demonstrate that the likely anticompetitive harm of RRC exceeds the likely procompetitive benefits of EDM. In other words, the plaintiff needs to grapple with the unilateral effects tradeoff. Many participants in today's vertical-merger discussion unduly discount the procompetitive benefits that a defendant can show in the second step. Participants both ignore some classes of efficiencies altogether and impose an unrealistic merger-specificity requirement more stringent than the one used in horizontal mergers. By doing so, the participants ignore or under-emphasize what we term holistic efficiencies. We hope that this Article will facilitate further dialogue and analysis of these issues in the near term, leading to a firmer foundation for the treatment of vertical mergers by the Agencies and courts in the future.