

Chapter 61

VERTICAL MERGERS

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This chapter provides an overview of the economics of vertical mergers. The overview strongly supports, on both theoretical and empirical grounds, a presumption that vertical mergers are welfare enhancing and good for consumers. However, vertical mergers can be anticompetitive if they result in either foreclosure or enhanced coordination. The difficult challenge for enforcement policy is effectively distinguishing between anticompetitive and procompetitive transactions. The economics of vertical mergers can provide a basis for this distinction and thus inform optimal enforcement policy and the nature of vertical merger enforcement guidelines.

1. Introduction

Unlike any consensus that might exist regarding horizontal mergers, there is not a consensus regarding appropriate enforcement policy with respect to vertical mergers. This is reflected in controversy over the merits of cases pursued by the Federal Trade Commission (FTC) and the Department of Justice (DOJ) in the United States and by the European Commission (EC) in the European Union over the last decade or so; the historical absence of official vertical merger guidelines or their apparent irrelevance to enforcement practice when they do exist; and concerns that the economics of vertical mergers is not yet sufficiently developed to allow identification of clear, bright-line principles that might form a consensus and underpin enforcement guidelines. Notwithstanding the controversy and policy uncertainty—or perhaps because of it—the EC, as part of its merger control reforms announced in 2002, released, after a public consultation process, its *Non-Horizontal Merger Guidelines* in 2007.¹ Around the same time, in the United States the Antitrust Modernization Commission recommended that the U.S. enforcement agencies update their merger guidelines to reflect changes in the understanding of the competitive effects of vertical mergers and to provide guidance on how these transactions are assessed.²

* University of Calgary. This chapter is drawn from and updates two previous studies: JEFFREY CHURCH, *THE IMPACT OF VERTICAL AND CONGLOMERATE MERGERS ON COMPETITION* (Final Report for the Directorate-General for Competition, Directorate B Merger Task Force, European Commission, 2004), and Jeffrey Church, *Vertical Mergers: Background Note*, in *VERTICAL MERGERS* (OECD Directorate for Financial and Enterprise Affairs Competition Committee, OECD Doc. No. DAF/COMP(2007)21, 2007). I would like to express my gratitude to Claes Bengtsson, Miguel de la Mano, Guillaume Lorient, and Jeremy West for comments. I am particularly grateful to Dale Collins and Vincent Verouden for their extensive comments.

1. See EUROPEAN COMMISSION, *GUIDELINES ON THE ASSESSMENT OF NON-HORIZONTAL MERGERS UNDER THE COUNCIL REGULATION ON THE CONTROL OF CONCENTRATIONS BETWEEN UNDERTAKINGS* (Nov. 28, 2007) [hereinafter *EU NON-HORIZONTAL MERGER GUIDELINES*], available at <http://ec.europa.eu/comm/competition/mergers/legislation/nonhorizontalguidelines.pdf>.
2. See ANTITRUST MODERNIZATION COMMISSION, *REPORT AND RECOMMENDATIONS 68* (2007), available at http://www.amc.gov/report_recommendation/toc.htm.

This chapter has two objectives. The first is to provide a review of the economics literature on the competitive effects of vertical mergers. To that end, the chapter considers the main theories relevant for an understanding of vertical mergers that will result in anticompetitive harm.³ The theories are assessed for their relevance and usefulness for informing welfare-enhancing antitrust enforcement. The second objective is to discuss the implications that the economics has for designing appropriate liability rules for vertical mergers, as well as the content, form, and usefulness of vertical merger guidelines.

To set the stage, Section 2 briefly reviews the history of vertical merger enforcement in the United States to illuminate some of the recurring themes and tensions in vertical merger policy. Section 3 explores how one might design an optimal vertical merger enforcement policy in light of some basic economic features that can make it difficult in practice to distinguish anticompetitive vertical mergers from competitively neutral or procompetitive mergers. The next three sections then consider the implications of particular economic models for the antitrust analysis of vertical mergers. Section 4 examines two contributions of the Chicago School—the successive monopoly model and the monopoly leverage model—that suggest that vertical mergers are likely welfare enhancing. These models assume monopoly upstream and either perfect competition or monopoly downstream. Section 5 considers more recent contributions that relax the assumptions of the Chicago School and instead assume imperfect competition in at least one stage of production after integration. The modern foreclosure literature considers whether, and when, a vertical merger either raises the costs of rivals (input foreclosure) or reduces the revenue of rivals (customer foreclosure). Section 6 explores the possibility that a vertical merger can result in a coordinated effect. Section 7 considers nonprice efficiencies that may arise from a vertical merger and summarizes the empirical literature on the effects of vertical mergers. Section 8 discusses the role, value, and nature of vertical merger guidelines, and Section 9 offers some conclusions.

2. U.S. vertical merger enforcement

A horizontal merger occurs when products of the merging firms are in the same relevant market. Nonhorizontal mergers occur when the products of the parties to the transaction are in separate antitrust markets. A useful taxonomy for nonhorizontal mergers is to distinguish between vertical and conglomerate mergers. Conglomerate mergers are neither horizontal nor vertical.

Prior to a vertical merger the two firms are either in, or there is a possibility that they might be in, a customer-supplier relationship. Pretransaction, the firms are located at different stages of production or distribution, with one producing an input used by the other. Postmerger, the two separate firms are replaced by a single firm that now performs both activities or stages of production. A vertical merger replaces an actual or potential market transaction, where an input is traded between firms, with a transfer within the same firm. While the replacement of a market transaction with internal exchange is the “observational content of vertical integration, it does not fully capture

3. Anticompetitive harm means harm to competition, not competitors. Under a consumer welfare standard, anticompetitive harm arises when consumer surplus is reduced. Under a total welfare standard, anticompetitive harm arises if conduct reduces total surplus.

the essence of vertical integration. Vertical integration also means the ownership and complete control over neighboring stages of production or distribution.”⁴ A vertical merger can involve integration forward, where the upstream firm acquires a downstream firm, or backwards integration, where the downstream firm acquires the upstream firm.

A conglomerate merger involving firms that produce complements is similar to a vertical merger. In vertical mergers, it is a downstream firm that buys complements from upstream producers and engages in activities that transform the inputs into output that is sold to consumers. In a complementary product merger, it is the consumer that buys the set of complements and assembles them for consumption. The distinction between whether the transaction is a vertical or complementary merger is based on the identity of the assembler. Because both vertical and complementary product transactions involve acquisition of complements—which the various stages in a production chain can be viewed as—the economics of mergers between producers of complements is often similar to that of vertical mergers.

The antitrust treatment of vertical mergers has been a subject of considerable controversy in the United States for over 50 years. The debate today over enforcement is similar to that in the 1970s and 1980s that arose as a response to aggressive enforcement policy in the 1960s and early 1970s.

In 1962, the U.S. Supreme Court in *Brown Shoe*⁵ prohibited a vertical merger between two shoe companies, Brown Shoe (the third largest retailer and the fourth largest shoe manufacturer, with a manufacturing share of 4 percent) and Kinney (the largest retailer, with a 1 to 2 percent share of national shoe sales, and the twelfth largest manufacturer, with a 0.5 percent manufacturing market share). As the *Brown Shoe* Court explained:

The primary vice of a vertical merger or other arrangement tying a customer to a supplier is that, by foreclosing the competitors of either party from a segment of the market otherwise open to them, the arrangement may act as a “clog on competition,” which “deprive(s) . . . rivals of a fair opportunity to compete.”⁶

The *Brown Shoe* approach was reflected in the DOJ’s 1968 *Merger Guidelines*, which stated that a merger between a supplier with a 10 percent market share and a purchaser who accounted for 6 percent of demand upstream would be challenged unless there were no barriers to entry.⁷ In 1972, the Supreme Court in *Autolite*⁸ provided implicit support for the 1968 *Merger Guidelines* in sustaining a challenge to a vertical acquisition of Autolite, a maker of ignition systems with a 15 percent share of spark plug production, by Ford, an automobile manufacturer with a 10 percent share of spark plug purchases.

4. Martin K. Perry, *Vertical Integration: Determinants and Effects*, in 1 HANDBOOK OF INDUSTRIAL ORGANIZATION 183, 186 (Richard Schmalensee & Robert Willig eds., 1989).

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

6. *Id.* at 323-24 (quoting *Standard Oil Co. v. United States*, 337 U.S. 293, 314 (1949), and H.R. REP. NO. 81-1191, at 8 (1949)).

7. U.S. DEP’T OF JUSTICE, MERGER GUIDELINES, 33 Fed. Reg. 23,442 (1968), reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13,101.

8. *Ford Motor Co. v. United States (Autolite)*, 405 U.S. 562 (1972).

The *Brown Shoe/Autolite* results were consistent with antitrust policy prevailing at the time regarding vertical arrangements. During the 1950s and 1960s, there was intense antitrust hostility toward all types of vertical arrangements. In 1958, the Supreme Court in *Northern Pacific Railway Co. v. United States*⁹ condemned tying arrangements in the strongest terms, while in 1967 the Court in *United States v. Arnold, Schwinn & Co.*¹⁰ declared nonprice vertical restraints (such as customer and territorial restrictions) per se unlawful. Courts held the view that the only purpose served by restrictive vertical arrangements was the foreclosure of competitors and that this was anticompetitive in its own right.¹¹ Given the permanence of vertical mergers, they were viewed in the harshest light, if not effectively per se unlawful.¹²

By the late 1970s, however, courts began moving in the direction of equating anticompetitive harm with harm to consumers and with this move started to recognize the procompetitive potential of many vertical arrangements. In 1977, in *Continental T.V., Inc. v. GTE Sylvania Inc.*,¹³ the Supreme Court recognized that nonprice vertical restraints could create more efficient distribution systems and hence overruled *Schwinn*. *GTE Sylvania* returned nonprice vertical restraints to a rule of reason standard under which a restraint must be affirmatively shown to be anticompetitive in order to be prohibited. This view quickly found its way into the antitrust analysis of vertical mergers. In *Fruehauf*,¹⁴ an influential Second Circuit case decided two years after *GTE Sylvania*, the court of appeals refused to enforce an FTC order blocking the acquisition of Kelsey, a wheel supplier with a 15 percent share, by Fruehauf, a trailer manufacturer, where Fruehauf's wheel purchases were less than 6 percent of the market. The court noted that "a vertical merger, unlike a horizontal one, does not eliminate a competing buyer or seller from the market" and "does not, therefore, automatically have an anticompetitive effect," and "may even operate to increase competition."¹⁵ In rejecting the FTC's analysis, the Second Circuit found that there was no evidence that Fruehauf's trailer competitors would be foreclosed from obtaining wheels from Kelsey "or its competitors" at competitive prices or that the foreclosure of Kelsey's competitors from the opportunity to supply wheels to Fruehauf would preclude any actual competitor from operating efficiently or any potential competitor from entering the market.¹⁶ Similarly, in *Alberta Gas*,¹⁷ Alberta Gas challenged the completed acquisition by DuPont of Conoco in part by alleging that the acquisition had foreclosed Alberta Gas from the opportunity of selling methanol to Conoco, which post-acquisition obtained its requirements from DuPont. In rejecting the

9. 356 U.S. 1, 6 (1958) ("tying arrangements serve hardly any purpose beyond the suppression of competition") (quoting *Standard Oil Co. v. United States*, 337 U.S. 293 (1949)).

10. 388 U.S. 365 (1967), overruled by *Continental T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36 (1977).

11. See Herbert Hovenkamp, *Post-Chicago Antitrust: A Review and Critique*, 2001 COLUM. BUS. L. REV. 257, 324 ("Foreclosure was largely thought of as an evil for its own sake.").

12. See J. Thomas Rosch, *The Challenge of Non-Horizontal Merger Enforcement*, in INTERNATIONAL ANTITRUST LAW AND POLICY (2007 Fordham Corp. L. Inst., Barry E. Hawk ed., 2008) ("Government challenges to nonhorizontal mergers—particularly vertical mergers—were fairly routine at one time.").

13. 433 U.S. 36 (1977).

14. *Fruehauf Corp. v. FTC*, 603 F.2d 345 (2d Cir. 1979).

15. *Id.* at 351.

16. *Id.* at 358-59.

17. *Alberta Gas Chems. v. E.I. du Pont de Nemours & Co.*, 826 F.2d 1235 (3d Cir. 1987).

challenge, the Third Circuit noted that “respected scholars question the anticompetitive effects of vertical mergers in general”¹⁸ and found in the circumstances of the case that Conoco purchased only about 1.8 percent of total merchant methanol sales, that the DuPont acquisition only realigned upstream and downstream buyers, and that, far from being foreclosed from the market, Alberta Gas’s sales in fact had significantly increased to other purchasers in the wake of the acquisition.¹⁹

The 1980s also saw very limited enforcement action by the U.S. antitrust agencies against vertical mergers.²⁰ The change in enforcement attitude was reflected in the marked reversal of the DOJ merger guidelines. When the DOJ revised the 1968 *Merger Guidelines*, the new 1982 *Merger Guidelines*²¹ did not explicitly consider foreclosure as a concern of antitrust enforcement policy. Rather, the 1982 *Merger Guidelines* and a further revision in the 1984 *Merger Guidelines*²² instead focus on the potential for a vertical merger to raise entry barriers by requiring entry both up- and downstream.²³ The change in enforcement reflects the influence of developments in the understanding of the economics of vertical integration, from both the Chicago School that questioned the extent to which the share of the market foreclosed was correlated with harm to consumers and increased market power, and transaction cost economics that recognized the potential for vertical integration and merger to be efficiency enhancing.²⁴

The number of vertical merger challenges in the United States increased, especially at the FTC, during the Clinton administration in the 1990s, largely on the basis of developments in the economics of vertical mergers that show how vertical mergers can have horizontal effects.²⁵ At best, many of these challenges were only loosely based on the two-stage entry theory contained in the 1984 *Merger Guidelines*, and many were

18. *Id.* at 1244.

19. *Id.* at 1246.

20. See M. Howard Morse, *Vertical Mergers: Recent Learning*, 53 BUS. LAW. 1217 (1998) (reporting two cases); Michael H. Riordan & Steven C. Salop, *Evaluating Vertical Mergers: A Post-Chicago Approach*, 63 ANTITRUST L.J. 513 (1995) (noting one DOJ case and one FTC case).

21. U.S. DEP’T OF JUSTICE, MERGER GUIDELINES, 47 Fed. Reg. 28,493 (1982), reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13,102.

22. U.S. DEP’T OF JUSTICE, MERGER GUIDELINES, 49 Fed. Reg. 26,823 (1984) [hereinafter 1984 MERGER GUIDELINES], reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13,103. Section 4 of the 1984 *Merger Guidelines* addresses nonhorizontal mergers and is usually called the U.S. *Non-Horizontal Merger Guidelines*. Commissioner Thomas Rosch reports that in total the enforcement agencies have challenged “approximately 23 matters based at least in part on nonhorizontal theories” since the issuance of the 1984 *Non-Horizontal Merger Guidelines*. Of these, a settlement allowing the transaction to proceed was reached in 20 instances, while in the other three the transaction was abandoned. See Rosch, *supra* note 12.

23. 1984 MERGER GUIDELINES, *supra* note 22, § 4.21. As Morse observes, the two-stage entry theory could be viewed as a “reconstituted foreclosure theory” with the U.S. *Non-Horizontal Merger Guidelines* emphasis on “sufficient unintegrated capacity in the secondary market.” Morse, *supra* note 20, at 1225. See also the discussion of the monopoly maintenance theories *infra* at Section 5.3.

24. See Paul L. Joskow, *The Role of Transaction Cost Economics in Antitrust and Public Utility Regulation*, 7 J.L. ECON. & ORG. 53 (1991).

25. See Thomas B. Leary, *The Essential Stability of Merger Policy in the United States*, 70 ANTITRUST L.J. 105 (2002); Morse, *supra* note 20; ABA SECTION OF ANTITRUST LAW, MERGERS AND ACQUISITIONS: UNDERSTANDING THE ANTITRUST ISSUES (2d ed. 2004).

resolved through consent requiring access on reasonable terms and conditions.²⁶ Others, however, were based on concern about how information gained through a vertical merger could facilitate collusion or result in a competitive advantage from acquisition of valuable information regarding the plans of competitors and were resolved through consent decrees restricting the transfer and use of information with the merged company rather than divestiture.²⁷ The case theories that identify how a vertical merger could result in a coordinated effect in the 1984 *Merger Guidelines* focused instead on enhanced monitoring and acquisition of a disruptive buyer. The Bush administration, however, has shown little interest in vertical mergers and has brought few cases.²⁸

3. Optimal enforcement policy for vertical mergers

Optimal enforcement policy depends on the welfare effects of changes in market structure resulting from a vertical merger. This section examines the main implications of the economics of vertical mergers, which are then used to inform optimal policy for vertical merger enforcement. The section concludes with a proposed structured rule of reason for vertical mergers.

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26. See, e.g., *United States v. Enova Corp.*, 107 F. Supp. 10 (D.D.C. 1999); *United States v. USA Waste Servs.*, 1998-1 Trade Cas. (CCH) ¶ 72,171 (W.D. Pa. 1997); *United States v. Allied Waste Indus.*, 1998-1 Trade Cas. (CCH) ¶ 72,156 (N.D. Tex. 1997); *United States v. Thomson Corp.*, 1997-1 Trade Cas. (CCH) ¶ 71,754 (D.D.C. 1996); *United States v. Sprint Corp.*, 1996-1 Trade Cas. (CCH) ¶ 71,300 (D.D.C. 1995); *United States v. Tele-Comm'ns*, 1996-2 Trade Cas. (CCH) ¶ 71,496 (D.D.C. 1994); *United States v. MCI Commc'ns*, 1994-2 Trade Cas. (CCH) ¶ 70,730 (D.D.C. 1994); *United States v. AT&T Corp.*, 59 Fed. Reg. 44,158 (D.D.C. 1994); *America Online, Inc.*, Docket No. C-3989 (FTC Apr. 17, 2001) (consent agreement), available at <http://www.ftc.gov/os/2000/12/aolconsent.pdf>; *Dominion Resources*, 128 F.T.C. 636 (1999); *Shell Oil Co.*, 125 F.T.C. 769 (1998); *Cadence Design Sys.*, 124 F.T.C. 131 (1997); *Time Warner Inc.*, 12 F.T.C. 171 (1997), modified, 2004 WL 3118877 (FTC 2004); *Silicon Graphics*, 120 F.T.C. 928 (1995); *Eli Lilly & Co.*, 120 F.T.C. 243 (1995); *Telecommunications*, 119 F.T.C. 593 (1995).
27. See, e.g., *United States v. Lockheed Martin Corp.*, No. 98-CV-00731 (D.D.C. Mar. 23 1998) (verified complaint); *United States v. MCI Commc'ns*, 1994-2 Trade Cas. (CCH) ¶ 70,730 (D.D.C. 1994); *Hughes Danbury Optical Sys.*, 121 F.T.C. 495 (1996); *Eli Lilly & Co.*, 120 F.T.C. 243 (1995); *TRW, Inc.*, 125 F.T.C. 496 (1998); *Lockheed Corp.*, 119 F.T.C. 618 (1995); *Alliant Techsystems Inc.*, 119 F.T.C. 440 (1995); *Martin Marietta Corp.*, 117 F.T.C. 1039 (1994); see also Richard G. Parker & David A. Balto, *The Evolving Approach to Merger Remedies* (Federal Trade Comm'n, May 2000), <http://www.ftc.gov/speeches/other/remedies.shtm> (discussing FTC challenge to the subsequently abandoned attempted acquisition in 1999 by Barnes & Noble, the nation's largest book retailer, of Ingram Book Group, the nation's largest wholesaler of books, on theories of raising rivals' costs and obtaining competitively sensitive information).
28. See, e.g., *United States v. Monsanto Co.*, 72 Fed. Reg. 33,336 (D.D.C. 2007); *United States v. Northrop Grumman Corp.*, 2003-1 Trade Cas. (CCH) ¶ 74,057 (D.D.C. 2002); *United States v. Premdor Inc.*, 2002-2 Trade Cas. (CCH) ¶ 73,737 (D.D.C. 2001); Press Release, Federal Trade Comm'n, *FTC Seeks to Block Cytyc Corp.'s Acquisition of Digene Corp.* (June 24, 2002), available at http://www.ftc.gov/opa/2002/06/cytyc_digene.shtm (transaction abandoned); see also Joseph J. Simons, Director, Bureau of Competition, Federal Trade Comm'n, *Merger Enforcement at the FTC*, Keynote Address at the Tenth Annual Golden State Antitrust and Unfair Competition Law Institute (Oct. 24, 2002) (discussing the *Cytyc* case), available at <http://www.ftc.gov/speeches/other/021024mergeenforcement.shtm>.

3.1. Complications in the design of vertical merger enforcement policy

The antitrust economics of vertical mergers, and hence enforcement policy, is substantially more complicated than for horizontal mergers for four reasons.

First, vertical mergers often lead to lower prices if, as a result of the transaction, double marginalization is eliminated. Double marginalization exists when there is market power up- and downstream premerger. Instead of paying a wholesale price that includes a markup over marginal cost, the integrated firm will transfer the input internally postmerger at only marginal cost. This gives it an incentive to increase output downstream, to the benefit of consumers. If there is market power in the upstream market before the transaction, the elimination of double marginalization will be a source of efficiency gains that is inherent to the vertical merger.

Second, any anticompetitive effect from a vertical merger must be indirect since the transaction itself does not eliminate a competitor. Instead, an anticompetitive effect can arise only if the competitive constraints imposed by competitors on the integrated firm are relaxed by the transaction, thereby raising its market power. A well-founded antitrust challenge to a vertical merger must establish that the transaction increases or maintains market power and harms welfare. In a unilateral effects case, it is necessary to establish that the transaction makes the products of other producers less attractive as substitutes than they were premerger, resulting in a decrease in the integrated firm's elasticity of demand, an increase in market power, and a negative effect on consumers or efficiency.²⁹ This might result because the products of competitors postmerger have a lower quality or higher prices. The literature on the anticompetitive rationales and effect of vertical mergers identifies how the transaction changes incentives and/or constraints on the merged firm, thereby enhancing its market power and reducing welfare.

The modern theories of anticompetitive harm from a vertical merger focus on how foreclosure either raises rivals' costs or reduces rivals' revenues, and how these negative effects on rivals result in anticompetitive harm. Input foreclosure occurs when the vertically integrated firm no longer sells, sells at a higher price, or offers a lower quality to downstream rivals. For an anticompetitive effect, however, not only must input foreclosure result in higher input prices or lower quality for downstream rivals, the effect of those higher input prices and/or reduced quality on the unintegrated rivals must also raise prices or otherwise harm consumers downstream.

Customer foreclosure occurs when the downstream division of the integrated firm no longer sources supply from independent upstream firms. If the resulting reduction in sales volume leads to an increase in the average cost or marginal cost of upstream competitors, then, to the extent there is exit (because of higher average costs) or reduced competitive vigor (because of increased marginal costs), the competitive constraint these firms exert on the upstream division of the integrated firm will be reduced, leading to greater market power upstream and higher input prices. For anticompetitive customer foreclosure, the increase in input prices must typically lead to an increase in prices in the *downstream* market.

29. The focus in this section is on unilateral effects from a vertical merger. The potential for a coordinated effect from a vertical merger is discussed in Section 6.

Third, identifying when foreclosure is anticompetitive is difficult when a vertical merger has these two inherent effects—internalization of double marginalization and foreclosure—since they have different implications for the effect of the transaction on prices in downstream markets. Both effects arise from the same source, the creation of a cost asymmetry between the integrating firm and its unintegrated rivals from the vertical merger. On the one hand, if the transaction results in the internalization of double marginalization for the integrating firm, it will have an incentive to increase its output, putting downward pressure on the prices in the downstream market. On the other hand, if the transaction creates market power in the upstream market and increases input prices, unintegrated downstream rivals will reduce their output, which would put upward pressure on prices in the downstream market. The net effect of the vertical merger and whether it is anticompetitive depends on which dominates, the market power or reduction in costs of the integrating firm (assuming, of course, that there are not other nonprice efficiencies that would lead to lower prices in the downstream market). Assessing which of these effects is stronger requires an integrated analysis of the transaction on downstream prices.

Fourth, the incentives for a vertical merger are *not* usually attributable to its effect on market power but instead arise because of nonprice efficiencies (as opposed to the efficiency of internalizing price effects such as double marginalization). Much of the controversy associated with vertical merger enforcement arises from the widely held view that anticompetitive harm from such a transaction is unlikely and that the motivation for a vertical merger is not to enhance or preserve market power but to realize efficiencies. Vertical mergers involve substituting an internal transfer for a market transaction. As Coase observed many years ago, such an expansion in the boundaries of a firm will arise if organizing the transaction internally is less costly than using the market.³⁰ The efficiency benefits from internalizing the transaction arise because of the potential for a vertical merger to enhance coordination. The competitive analysis of vertical mergers will therefore typically entail yet another trade-off between anticompetitive effect—if any—and the realization of nonprice efficiencies.

3.2. Considerations in designing an optimal enforcement policy

While the economics of vertical mergers suggests, as shown below, that they can be anticompetitive, the key to welfare-enhancing enforcement is identifying and distinguishing the few transactions that merit investigation and prohibition from the typical case where the effect is benign or positive. In considering an appropriate framework, the four difficulties identified above have two important implications for vertical merger policy.

First, there is the potential for enforcement mistakes, which can arise from three distinct sources: (1) the anticompetitive theory of harm cannot necessarily be distinguished, on the basis of the evidence, from explanations that suggest the rationale for the vertical merger is to realize nonprice efficiencies; (2) the anticompetitive theory of harm must not only be consistent with the facts, it must also be established that within that theory, the facts are consistent with an anticompetitive outcome (i.e., the raising

30. R.H. Coase, *The Nature of the Firm*, 4 *ECONOMICA* 386 (1937).

rivals' cost effect dominates the elimination of double marginalization); and (3) there are likely other nonprice efficiencies realized, requiring a trade-off between anticompetitive harm (if any) and the magnitude and effect of the nonprice efficiencies.

Second, on both theoretical and empirical grounds, the economic presumption is that vertical mergers are likely efficiency enhancing and good for consumers. The organization of transactions within a firm means that vertical integration is ubiquitous and this gives rise to the presumption that it is therefore efficiency enhancing. A vertical merger often has advantages over growth as a means to realize vertical integration.

These two considerations should inform the possibility and cost of decision errors associated with antitrust enforcement policy towards vertical mergers. The two types of decision errors are (1) an erroneous injunction when the merger is procompetitive, and (2) an erroneous clearance when the merger is anticompetitive. An optimal enforcement policy involves challenging a vertical merger if the expected loss from not challenging (false clearance) is greater than the expected loss from challenging (false injunction).³¹ A decision to challenge should then depend on the costs and the probability of each type of error. The assessment of the probability of an error should depend on both the presumption that a vertical merger is procompetitive and the facts of a particular case. The presumption that vertical mergers on average are procompetitive suggests a weak prior belief or view that a given transaction will be anticompetitive and a bias that the cost of false injunctions exceeds the cost of false clearances. The cost of false injunctions not only includes foregoing benefits to consumers in the case at hand but potentially casting a "chill" over other potentially procompetitive vertical mergers.

In terms of enforcement policy, these considerations imply that, to enjoin a vertical merger, the facts of the case must be particularly persuasive and supportive of the alleged theory of harm and, to the extent possible, rule out competing case theories.³² Moreover, the behavior alleged to give rise to anticompetitive harm must be profit maximizing for the integrated firm. The theory of anticompetitive harm must be both consistent (with the evidence) and coherent (profit maximizing).

The requirement of a specific theory of harm and a convincing demonstration of its relevance and coherence, rather than a presumption of anticompetitive harm based on market share or extent of the market foreclosed, is not easy, but it is consistent with a presumption that vertical mergers are efficient. Before denying a vertical merger, enforcement agencies and antitrust tribunals should be confident that the theory of anticompetitive harm is the correct theory of the case and that the facts of the case are consistent with when that theory indicates a vertical merger is anticompetitive.³³

31. See 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, 659 (2005). A false clearance or false negative is a type II error and indicates underdeterrence. A false injunction or false positive is a type I error and indicates overdeterrence.

32. Translated into a Bayesian framework for optimal decision making under uncertainty, the priors that a vertical merger is likely anticompetitive should be low and only a very informative signal should result in posteriors sufficient to warrant enforcement.

33. This is consistent with Winter's emphasis on the relevance of the facts of the case and the role that theory can play in providing the facts with coherence. See Ralph A. Winter, *Vertical Restraints and*

3.3. *A structured rule of reason for vertical mergers*

The preceding two sections imply that the appropriate analytical framework for assessing the competitive implications of a vertical merger is a structured rule of reason.³⁴ The three stages of the proposed structured rule of reason are (1) a market power screen, (2) a theory of the case and factual screen, and (3) an assessment of offsetting nonprice efficiencies realized by the vertical merger.

A structured rule of reason entails first identifying and assessing those necessary conditions that involve the least administrative cost. The other necessary conditions are only considered after those with lower administrative costs do not rule out the possibility of competitive harm from the transaction. Typically, under the proposed structured rule of reason, the assessment begins with a market power screen. The screen seeks to determine the likelihood that, postmerger, the integrated firm will have antitrust market power—market power that is both significant and durable (prices can be sustained above average cost in the long run).

The second stage of the structured rule of reason approach involves demonstrating an indirect link from the transaction to anticompetitive harm. The modern theories of input and customer foreclosure provide a template for ensuring that the theory of the case is coherent and consistent. These theories demonstrate that the indirect link from a vertical merger to an increase in market power and anticompetitive harm involves determining (1) the ability and incentive for foreclosure; (2) the effect of foreclosure on rivals and, in turn, how it affects their ability to compete; (3) how the vertical merger changes the incentives of the integrated firm to compete in the downstream market; and (4) the impact on the welfare of consumers, or efficiency, from the change in competition and the change in behavior of the vertically integrated firm.

The third stage involves an assessment of offsetting *nonprice* efficiencies realized because of the vertical merger. Antitrust enforcement is only warranted if the efficiencies do not offset the anticompetitive foreclosure effects of the vertical merger.

Stages one and two have been presented sequentially. In practice, at least in part, they are likely to constitute a simultaneous exercise. The theory hypothesized to be applicable will indicate the relevant markets in which to look for market power. While stage two is more difficult than stage one, the balancing exercise in stage three is likely to be the most costly and subject to error. Accordingly, the third stage should only be

Antitrust Policy: A Reaction to Cooper, Froeb, O'Brien, and Vita, 1 COMPETITION POL'Y INT'L 75 (Autumn 2005).

34. For proposed structured rules of reason for assessing vertical mergers, see JEFFREY CHURCH, THE IMPACT OF VERTICAL AND CONGLOMERATE MERGERS ON COMPETITION 8-10 (Final Report for the Directorate-General for Competition, Directorate B Merger Task Force, European Commission, 2004), available at http://ec.europa.eu/comm/competition/mergers/studies_reports/studies_reports.html; SIMON BISHOP, ANDREA LOFARO, FRANCESCO ROSATI & JULIET YOUNG, THE EFFICIENCY-ENHANCING EFFECTS OF NON-HORIZONTAL MERGERS (Report prepared for the European Commission, Enterprise and Industry Directorate-General 2005), available at http://ec.europa.eu/comm/competition/mergers/studies_reports/studies_reports.html; and Simon Bishop, Andrea Lofaro & Francesco Rosati, *Turning the Tables: Why Vertical and Conglomerate Mergers Are Different*, 27 EUR. COMPETITION L. REV. 403 (2006).

reached if both of the first two stages indicate the possibility of a concern. The second stage is only reached if the first indicates the potential for market power posttransaction.

A compelling case for enforcement action will arise when there is market power, a coherent and consistent theory of anticompetitive harm, and minimal nonprice, merger-specific efficiencies. A compelling case for not taking enforcement action arises when the integrated firm will not have market power, there is not a coherent and consistent theory of harm, and there are compelling nonprice, transaction-specific efficiencies.

3.4. *Merger enforcement versus monopolization*

A final policy consideration is whether, and when, merger enforcement is the optimal approach to deal with the anticompetitive effects of a vertical merger. The alternative to an ex ante approach is an ex post approach involving the use of legal provisions against monopolization (or abuse of dominance). Rather than challenge a vertical transaction, especially given the relatively high burden of proof and inherent uncertainty in predicting its effects, the alternative is to let the transaction proceed and monitor the market to see if anticompetitive concerns are in fact realized. The presence of monopolization/abuse of dominance provisions may constrain the incentives of the integrated firm to act anticompetitively yet allow for the realization of efficiencies specific to the transaction. The deterrence effect of monopolization provisions depends on whether the conduct that gives rise to the anticompetitive effect is reachable under those provisions and the probability of successful enforcement, the resources and time required for an enforcement action, and the nature of the remedies under those provisions.

There is a trade-off inherent in deciding which approach is optimal. While it is likely true that in many cases waiting will reduce uncertainties regarding the effects of the transaction, the remedies available under an ex post approach may not be as effective. It is clearly much easier to prevent the integration of assets than to implement an ex post structural remedy. Under the ex post approach, the remedies most likely available will be behavioral, involving regulation of conduct, something that most antitrust tribunals and enforcement agencies are ill equipped to implement. One implication of this is that the threshold for anticompetitive harm might well be higher under ex post provisions than under merger provisions. Finally, the conduct that gives rise to an anticompetitive effect from a vertical merger may not be reachable under monopolization or abuse of dominance provisions, or at least not easily, especially if that conduct is a unilateral refusal to deal (input foreclosure) or a unilateral refusal to buy (customer foreclosure).³⁵

4. Specific theories of harm: The Chicago School

The next several sections consider specific theories of harm identified in the economics literature. The objective of these theories is to identify situations and the

35. The EU *Non-Horizontal Merger Guidelines* state that the EC will consider the incentives to adopt a specific course of conduct, essential for foreclosure, including the effect of “factors liable to reduce, or even eliminate, those incentives, including the possibility that the conduct is unlawful.” On the basis of a “summary analysis,” the EC will consider the likelihood that the conduct is unlawful, the likelihood that it will be detected, and the nature of the penalties available. See EU NON-HORIZONTAL MERGER GUIDELINES, *supra* note 1, ¶ 46.

rationale for when vertical mergers result in anticompetitive harm. Critically, these theories seek to identify why a transaction changes incentives and results in anticompetitive harm, together with the nature of the relevant evidence for the theory to be applicable.

Before discussing the modern literature, this section considers two key contributions of the Chicago School. The contributions of the Chicago School were influential, along with the rise of transaction cost economics, in changing enforcement policy towards vertical mergers in the late 1970s and early 1980s.³⁶ Associated with the Chicago School are two models of the competitive implications of vertical mergers that suggest the rationale for a transaction cannot be to enhance market power, and hence the justification for the transaction must be efficiency considerations.³⁷ The single profit and the successive monopoly models remain important for identifying circumstances when vertical mergers are not harmful and, therefore, in challenging enforcement agencies to identify why they *do not* apply to a given transaction. The two Chicago School models assume a monopolist upstream and determine the effects if it integrates into the downstream market: they differ in that the monopoly leverage model assumes competition downstream premerger, while the successive monopoly analysis assumes a monopolist premerger downstream.

4.1. Double marginalization and successive monopoly

The successive monopoly model considers the effect of integration between an upstream monopolist and a downstream monopolist.³⁸ In these circumstances, the effect of a vertical merger is welfare improving because it eliminates double marginalization. Premerger, the upstream monopolist exercises its market power by raising its wholesale price P^w above its marginal cost c . The downstream monopolist, acting as a price-taker in the input market, takes P^w as a given. Assuming fixed proportions downstream, marginal cost of the downstream firm is $P^w + \gamma$, where γ is the cost of the other inputs used downstream. The profit-maximizing price P for the downstream monopolist equates the gain at the margin from an increase in price—increased revenues from its inframarginal sales—with the reduction in profits from the sales lost at the margin attributable to the higher price:

$$Q(P) + [P - (P^w + \gamma)] \frac{dQ}{dP} = 0 \quad (1)$$

The downstream firm ignores, however, the lost profits of the upstream firm on the reduction in quantity from raising the downstream price and hence reducing demand upstream. Instead, as is clear from Equation (1), the downstream firm marks up its price

36. See *supra* Section 2.

37. The complementary analysis of the literature on transaction cost economics is to understand the nature and extent of the efficiencies that justify vertical integration as an optimal governance mechanism. See discussion *infra* in Section 7.

38. The modern literature starts with Joseph J. Spengler, *Vertical Integration and Antitrust Policy*, 53 J. POL. ECON. 347 (1950). Scherer's most recent attribution of the insight is to Alexander Hamilton in Number 22 of *The Federalist*, published in 1787. See F.M. Scherer, *Comment on Cooper et al.'s "Vertical Restrictions and Antitrust Policy,"* 1 COMPETITION POL'Y INT'L 65, 67 (Autumn 2005).

over its marginal cost, which includes the margin of the upstream firm, and thus there is double marginalization.³⁹

If the two monopolists merge, then the wholesale market is eliminated and the input is transferred internally at marginal cost. The integrated firm maximizes its profits downstream by equating the costs and benefits of increasing its price at the margin. The profit-maximizing condition for its optimal price is not Equation (1), but rather

$$Q(P) + [P - (c + \gamma)] \frac{dQ}{dP} = 0 \quad (2)$$

Since the exercise of market power in the vertically separate case by the upstream firm means $P^w > c$, the margin for the integrated firm is greater, and hence the costs of increasing the downstream price are greater, leading the firm to reduce the downstream price after integration.

The decrease in the marginal cost downstream due to vertical integration provides the firm with a profit incentive to expand output and lower prices, making consumers better off. After the vertical merger, the firm internalizes the vertical pricing externality. In considering the lost profits from a price increase, the integrated firm will internalize the lost margins both upstream ($P^w - c$) and downstream ($P - (P^w + \gamma)$). The integrated margin is the sum of these ($P - (\gamma + c)$).

Efficient pricing and double marginalization. The internalization of double marginalization is an important *potential* efficiency associated with any vertical transaction where there is market power both up- and downstream premerger. The successive monopoly model allows for a very simple exposition of the gains from eliminating double marginalization. However, it assumes that the upstream firm has all of the bargaining power between the two firms and that the monopolist upstream uses uniform pricing and not non-linear pricing. If the upstream firm has sufficient vertical restraints available, it can achieve the integrated level of profits without having to integrate.⁴⁰ For instance, it could set its wholesale price equal to its marginal cost and then use a fixed franchise fee to extract the monopoly profits.

Moreover, if the upstream firm cannot credibly make take-it-or-leave-it offers, and bargaining is efficient, then the two firms will set the efficient transfer price but negotiate over the division of the monopoly profits when determining the franchise fee. If bargaining is inefficient, however, then even with nonlinear pricing the transfer price

39. To see that the marginal cost of the downstream firm includes the margin of the upstream monopolist, write the marginal cost of the downstream firm in Equation (1) as $P^w + \gamma = P^w - c + c + \gamma$, where the upstream margin is $P^w - c$. The true marginal cost of production is only $c + \gamma$. In the absence of integration, marginal cost is greater than the social or true marginal cost by the amount of the upstream firm's margin.

40. The single monopoly profit result can be extended if there is imperfect competition downstream provided that the upstream monopolist has sufficient instruments (i.e., vertical restraints). The role of the restraints is to (1) internalize both vertical and horizontal externalities so that firms downstream maximize industry profits when they maximize their profits, and (2) enable profit extraction by the upstream firm. See G.F. Mathewson & R.A. Winter, *An Economic Theory of Vertical Restraints*, 15 RAND J. ECON. 27 (1984).

might exceed marginal cost and double marginalization will exist and be eliminated by integration.⁴¹

Double moral hazard and double marginalization. Double marginalization may be a response to incomplete contracts when there is double moral hazard. Firms may not be able to contract on specific performance, typically because it is either too costly to monitor or it is not possible to verify performance. If both the upstream and downstream firm can undertake activities that increase demand and these activities are not contractible, then both the downstream and upstream firms will find it profit maximizing to provide the other with incentives to engage in the activity. Without such an incentive, each firm might well promise to undertake the given activity but not actually incur the costs to do so. Therein lies the moral hazard.

In general, the firms do not have the incentives to make the joint profit-maximizing expenditures since there is a vertical externality. Increasing demand benefits the firm making the investment and positively affects the profits of the other firm. Since the effect on the profits of the other firm is not internalized, each firm has an incentive to underinvest. For downstream firms the expenditure might be on service and sales effort. For upstream firms it might be product quality or advertising. If the activities are not contractible, then contracting directly on them is not possible. In circumstances where both the up- and downstream firms can make investments or expenditures that increase demand, but they are not contractible, there is double moral hazard.

To provide incentives for both firms to undertake expenditures that enhance demand, it is necessary that the profits of each vary with downstream sales. This can be done by giving each of them a margin, that is, by setting a wholesale price less than the downstream price but greater than marginal cost. Of course, doing so means that there will be double marginalization. Hence, while in theory the pricing externality associated with double marginalization could be solved by contract and a two-part tariff, in practice incomplete contracts often mean that double marginalization exists premerger to provide firms with incentives to make investments or expenditures that enhance demand.⁴² More generally, the existence of quasi-rents from continuing trade between the upstream and downstream firms can create a mechanism under which an agreement is self-enforcing. In this case, when performance is observable, it is the threat of termination that provides the firms with the incentive to make the promised investments/expenditures.⁴³

4.2. Monopoly leverage

The monopoly leverage model considers whether a monopolist upstream has an incentive to monopolize the downstream market. The model establishes the single profit

41. See Michael H. Riordan, *Competitive Effects of Vertical Mergers*, in HANDBOOK OF ANTITRUST ECONOMICS 145 (Paolo Buccirossi ed., 2008).

42. See Richard E. Romano, *Double Moral Hazard and Resale Price Maintenance*, 25 RAND J. ECON. 455 (1994); Sugato Bhattacharyya & Francine Lafontaine, *Double-Sided Moral Hazard and the Nature of Share Contracts*, 26 RAND J. ECON. 761 (1995).

43. See Benjamin Klein, *The Economics of Franchise Contracts*, 2 J. CORP. FIN. 9 (1995); Benjamin Klein & Keith B. Leffler, *The Role of Market Forces in Assuring Contractual Performance*, 89 J. POL. ECON. 615 (1981).

result: there is only one monopoly profit, and hence a monopolist upstream cannot increase its profits by leveraging its monopoly power into a competitive downstream market.⁴⁴ Provided the monopolist prices its monopoly-supplied input appropriately, whether it integrates or not, its profit will be the same. Indeed, the model suggests that integration will reduce its profits if it is a high-cost supplier downstream.

The single monopoly profit result is based on five assumptions: (1) the product downstream is homogeneous, and all downstream firms have the same costs of production; (2) production downstream is fixed proportions with cost per unit of $P^w + \gamma$; (3) there is an upstream monopolist who sets P^w and has unit cost c ; (4) the monopolist is not regulated; and (5) there is perfect competition downstream.

The single profit result is based on the observation that by appropriate choice of the wholesale price, the upstream monopolist can ensure the price in the competitive market downstream is identical to the price a vertically integrated monopolist would set, and its profits in the upstream market equal the profits of the vertically integrated monopolist. The vertically integrated monopolist can monopolize the downstream market by refusing to supply the input to the other downstream firms. If its monopoly price is P^m , then its integrated profit margin will be $P^m - c - \gamma$.

In the absence of vertical integration, the price in the perfectly competitive downstream market will equal the marginal cost of production downstream: $P^c = P^w + \gamma$. The unintegrated monopolist can earn the same profit as if it were vertically integrated by setting its wholesale or upstream price such that the downstream price under competition is the same as it would be if there were vertical integration: $P^m = P^c$. Consequently, $P^w = P^m - \gamma$. The assumption of fixed proportions ensures that sales of the upstream input equal sales of the downstream good, and hence the quantity demanded will be the same as the vertically integrated quantity. The upstream monopolist's profit margin will also be the same as if it were integrated ($P^m - c - \gamma$). The downstream price, quantity, and the profits of the monopolist are identical whether the monopolist integrates or not.

If the monopolist integrates, it provides the downstream services and incurs cost γ to do so. If there is vertical separation, competitive downstream firms provide the downstream services for the monopolist at a cost of γ . The monopolist earns the monopoly profit by realizing the monopoly markup in the wholesale market. Because of fixed proportions and competition downstream, this markup is simply passed on to final consumers by the downstream sector. Vertical integration does not increase profits, and a vertical merger is not required to realize monopoly profits.

Since increased profits and market power are not the reason for the vertical merger, the argument is that the rationale for the vertical merger must be based on realizing efficiencies that lead to lower per unit costs. Lower per unit costs, whether upstream or downstream, lead to an increase in the monopolist's profits on its prevailing sales. It can further increase its profits by increasing sales. It can only increase sales by lowering the price to consumers, thereby making them better off as well.

44. See ROBERT H. BORK, *THE ANTITRUST PARADOX* (1978); RICHARD A. POSNER, *ANTITRUST LAW* (1976).

Variable proportions and price discrimination. The single profit result does not continue to hold if some of its restrictive assumptions are relaxed. Suppose, instead of fixed proportions downstream, the competitive firms can substitute other inputs for the input of the monopolist. Then, when the upstream monopolist exercises its market power, the downstream firms will use its input less intensively and other inputs more intensively. Demand for the monopolist's input will decrease from both a substitution and an output effect. The output effect arises because substitution by the downstream firms typically only partially offsets the effect on their costs from the increase in price of the input. As a result of the increase in marginal costs downstream, the downstream price increases. The increase in price downstream reduces demand for the downstream good and, as a result, demand for the input by the monopolist also falls. The decrease in demand from both the substitution and output effects means that it will no longer be profit maximizing for the unintegrated monopolist to charge the same markup in the wholesale market as a vertically integrated firm would in the downstream market. Consequently, its profits under vertical integration will be greater than its profits when there is vertical separation.

Vertical integration and foreclosure of the other downstream firms—refusing to supply them with the input—has two effects. On the one hand, there is downward pressure on price since the vertically integrated firm will produce efficiently, choosing its inputs to cost minimize based on an internal transfer price of the monopolized input equal to marginal cost. On the other hand, it will be constrained in the exercise of its market power only by substitution to alternatives by downstream consumers, not downstream firms. Hence, its market power will increase. Consequently, prices downstream can either rise or fall, depending on whether the cost or market power effect of integration dominates. Even if prices downstream rise, the gains from producing efficiently might be such that total surplus rises.

Moreover, if there are heterogeneous uses for the input, then vertical integration might lead to an increase in profits because it prevents arbitrage. If there are high- (inelastic) and low- (elastic) value uses for the input and arbitrage is possible, the monopolist will not be able to price discriminate between the two uses and must charge both groups the same price. However, by integrating into the low-value use it can monopolize the low-value use by instituting a price squeeze. It sells the input at the profit-maximizing price based on the demand in the inelastic market (high-value uses). It competes in the low-value use by setting the price of the downstream good based on access to the input at marginal cost. In conjunction with the high price of the input, this low price for the final good puts a squeeze on the margins available to independent downstream firms that compete in the low-value market using the monopolist's input.

Neither variable proportions in production nor price discrimination provide a foundation for aggressive vertical merger enforcement. The welfare implications of price discrimination are ambiguous.⁴⁵ In the case of variable proportions, whether the price will rise or fall depends on the relative magnitude of the elasticities of substitution in production and demand elasticity downstream, the determinants respectively of the

45. See JEFFREY CHURCH & ROGER WARE, *INDUSTRIAL ORGANIZATION: A STRATEGIC APPROACH* ch. 5 (2000); JEAN TIROLE, *THE THEORY OF INDUSTRIAL ORGANIZATION* 137-39 (1988).

cost-reducing and market-power-increasing effects of integration. The traditional view has been that the relationship between the two is complex and measurement problems sufficiently formidable that the trade-off implied is likely subject to considerable error.⁴⁶ Moreover, given the incentive problems associated with internalizing transactions, a vertical merger, it is argued, is likely not the optimal response to what is primarily a pricing problem.⁴⁷ There are other less costly vertical restraints and alternative pricing schedules that prevent inefficient input substitution and avoid the costs of vertical integration. Hence, the motivation for vertical integration is unlikely to be the elimination of input substitution and enhancement of market power, but instead the transaction is intended to realize other efficiencies.

Evading price regulation. On the other hand, when an upstream monopolist's market power is controlled by price regulation, it will have an incentive to integrate to evade that regulation.⁴⁸ Integrating downstream provides an upstream monopolist with the ability to realize its monopoly profits in the downstream market, assuming the downstream market is unregulated, by either discriminating against other downstream firms in the provision of the input or engaging in cost misallocation. Similarly, a *downstream* monopolist that is subject to effective cost-based regulation could integrate backwards and use transfer pricing to evade its regulatory constraint and earn its monopoly profits in the upstream market.

In the case of a discrimination strategy, the integrated firm disadvantages its downstream rival by reducing the quality of the input and/or raising the cost of its rivals. Either of these actions relaxes the competitive constraint of its downstream rivals and enables it to raise the price of its downstream offering relative to its rivals. It is through its profit margin on sales of the downstream good that it exercises its upstream market power and earns monopoly profits.

Alternatively, if the regulated price upstream is cost-based, the integrated firm has an incentive to have its downstream costs attributed to its upstream division. Doing so relaxes the price constraint in the upstream market and increases its profits in the downstream market. The use of high transfer prices by a downstream monopolist that is regulated based on costs, paid to its unregulated upstream affiliate, has a similar effect. As with cost misallocation, the market power and profits are realized by the unregulated affiliate.

These types of strategies are typically inefficient: they result in a greater exercise of market power and, as well, productive inefficiencies if disadvantaged rivals downstream are more efficient in production and these strategies result in an increase in downstream market share for the integrated firm at the expense of its rivals. Accordingly, the use of a vertical merger to escape effective price regulation raises legitimate concerns. However, it is not clear that it is necessarily a legitimate concern on which to base antitrust enforcement. Presumably, concerns regarding the behavior of a firm to escape regulatory constraints on its market power can be more easily addressed by the

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

47. See Perry, *supra* note 4.

48. For discussion and references, see CHURCH & WARE, *supra* note 45, ch. 26.

regulatory agency. In some instances, however, this may not be within the agency's authority or, alternatively, this authority is not being exercised. In these instances antitrust action might be warranted.⁴⁹

5. Modern theories of foreclosure

The traditional antitrust concern with vertical mergers is foreclosure: postmerger, some buyers and some sellers are precluded from the market. The post-Chicago economics of foreclosure reconsiders the potential for foreclosure to harm consumers by inquiring into the effect of a vertical merger on competition, something that the Chicago models cannot address since they assume that postmerger there are not unintegrated firms (i.e., competitors) and premerger the upstream firm is a monopolist.

The modern theories of the anticompetitive effects of vertical mergers from foreclosure address the effect of a vertical merger on competition by typically considering imperfect competition up- and downstream, at least potentially. The modern, or post-Chicago, analysis of the foreclosure effects of a vertical merger focus on how foreclosure either raises rivals' costs or reduces their revenues, and how these negative effects on rivals result in an anticompetitive effect, that is, harm to consumers or efficiency. These theories demonstrate that the indirect link from a vertical merger to an increase in market power and anticompetitive harm involves determining (1) the ability and incentive for foreclosure; (2) the effect of foreclosure on rivals and, in turn, how that affects their ability to compete; (3) how the vertical merger changes the incentives of the integrated firm to compete in the downstream market; and (4) the impact on the welfare of consumers, or efficiency, from the change in competition and the change in behavior of the vertically integrated firm. Moreover, the modern theories also highlight the importance of counterstrategies, in particular whether the cost asymmetry created by a vertical merger can be undone and cost parity restored, to the benefit of consumers, by unintegrated firms also vertically integrating.

The hypothesis associated with raising rivals' costs typically involves input foreclosure. Input foreclosure occurs when, postmerger, the price of the upstream input rises, raising the costs of competing downstream firms. This might relax the competitive constraint on the integrated firm that has access to the input at marginal cost. The price of the input rises because the integrated firm either stops supplying competing downstream firms (complete foreclosure) or continues to supply them but at a higher price (partial foreclosure). The hypothesis is that the integrated firm has an incentive to change the behavior of its upstream division postmerger because it will internalize the effect on downstream prices when setting its optimal price in the market for the input. It will recognize that an additional benefit from raising the price of the input is higher downstream profits from an increase in prices and market power downstream. For an anticompetitive effect, however, not only must foreclosure result in

49. This appeared to be, at least at some point, the policy stance of the enforcement agencies in the United States. See U.S. NON-HORIZONTAL MERGER GUIDELINES, *supra* note 22, § 4.49. It is open to question whether the U.S. *Non-Horizontal Merger Guidelines* continue to represent the DOJ's enforcement policy. See *infra* Section 8.

higher input prices, the effect of those higher input prices on the unintegrated rivals must also raise prices, or otherwise harm consumers, downstream.

The hypothesis associated with reducing rivals' revenues typically involves customer foreclosure. Customer foreclosure occurs when, postmerger, the downstream division of the integrated firm no longer sources supply from independent upstream firms. If the resulting reduction in sales volume leads to an increase in the average cost or the marginal cost of upstream competitors, then, to the extent there is exit (because of higher average costs) or reduced competitive vigor (because of increased marginal costs), the competitive constraint these firms exert on the upstream division of the integrated firm will be reduced, leading to greater market power upstream and higher input prices. In turn, higher input prices could result in input foreclosure downstream.⁵⁰

5.1. Input foreclosure

Input foreclosure occurs when a vertically integrated firm no longer sells, or sells at a higher price, to downstream rivals. The modern theories of input foreclosure from a vertical merger assess the implications of a vertical merger when there is imperfect competition upstream and unintegrated competitors downstream.⁵¹ The effect of the vertical merger is to introduce a cost asymmetry between the integrated firm downstream and its unintegrated downstream rivals. The downstream marginal cost of

50. Normally we would expect the downstream price to increase, but in the case where input markets are local and the downstream market global, the effect of the increase in cost will be a reduction in output in the local market, not an increase in price. However, input foreclosure could lead to customer foreclosure. Input foreclosure gives the vertically integrated firm a cost advantage downstream, which leads to an expansion in its market share. This increase in market share reduces the demand for its unintegrated rivals upstream. If there are economies of scale upstream, this indirect demand effect, combined with a commitment by the integrated firm not to buy from upstream rivals, could induce their exit. For a monopoly maintenance model in which there is both customer and input foreclosure from a vertical merger that results in entry deterrence and preservation of monopoly power upstream, see Section 5.3 *infra*.

51. There are two major streams in the literature. The first starts with Salinger and assumes competition downstream involves homogeneous products and quantity competition (i.e., Cournot behavior). See Michael A. Salinger, *Vertical Mergers and Market Foreclosure*, 103 Q.J. ECON. 345 (1988). Extensions to this literature include Eric Avenel & Corinne Barlet, *Vertical Foreclosure, Technological Choice, and Entry on the Intermediate Market*, 9 J. ECON. & MGMT. STRATEGY 211 (2000); Gérard Gaudet & Ngo V. Long, *Vertical Integration, Foreclosure, and Profits in the Presence of Double Marginalization*, 5 J. ECON. & MGMT. STRATEGY 409 (1996); Richard S. Higgins, *Competitive Vertical Foreclosure*, 20 MANAGERIAL & DECISION ECON. 229 (1999); and Alexander Schrader & Stephen Martin, *Vertical Market Participation*, 13 REV. INDUS. ORG. 321 (1998). The second stream is similar, has many of the same implications, and assumes instead that downstream products are differentiated and competition in the downstream market is over price (i.e., Bertrand competition). This line of research begins with Janusz A. Ordover, Garth Saloner & Steven C. Salop, *Equilibrium Vertical Foreclosure*, 80 AM. ECON. REV. 127 (1990). Important subsequent contributions include Yongmin Chen, *On Vertical Mergers and Their Competitive Effects*, 32 RAND J. ECON. 667 (2001); Jay Pil Choi & Sang-Seung Yi, *Vertical Foreclosure with the Choice of Input Specifications*, 31 RAND J. ECON. 717 (2000); David Reiffen, *Equilibrium Vertical Foreclosure: Comment*, 82 AM. ECON. REV. 694 (1992); and David Reiffen & Michael Vita, *Comment: Is There New Thinking on Vertical Mergers?*, 63 ANTITRUST L.J. 917 (1995).

the integrated firm will be reduced because of the elimination of double marginalization: the firm now has access to the upstream good at marginal cost. How much of a cost advantage the integrated firm has relative to its unintegrated rivals depends on the change in the upstream price. The change in the upstream price depends on whether the integrated firm no longer participates in the upstream market, that is, whether the integrated firm no longer supplies what are now competing downstream firms.

If the integrated firm withdraws from the upstream market, the interplay of three effects determines whether the price of the input rises for the unintegrated firms in the downstream market.⁵² First, the withdrawal of the integrated firm's upstream division reduces competition upstream, raising the market power of the remaining input suppliers. This supply effect suggests that price should rise. Second, the withdrawal of the integrated firm's downstream division reduces demand for the input. Third, there is an induced fall in demand for the upstream input as well. The cost advantage of the integrated firm provides it with a competitive advantage downstream that translates into an increase in its quantity sold and a decrease in the quantity sold by its unintegrated rivals in the downstream market. These two demand effects put downward pressure on the upstream price. Whether the price of the input paid by unintegrated downstream firms rises or falls depends on whether the supply or demand effects dominate. The supply effect depends on the elasticity of derived demand for the input, the competitiveness of the upstream market, and the ability of unintegrated suppliers to increase their output. The less elastic derived demand, the greater the market power of unintegrated suppliers, and the greater the constraints on the extent to which unintegrated suppliers can increase output, the bigger the supply effect. The larger the demand of the integrating downstream firm and the greater the extent of double marginalization, the greater the demand effects.

Even if the upstream price increases, the downstream price might still fall if the output expansion of the integrated firm exceeds the reduction in output of its unintegrated rivals downstream.⁵³ Identifying when foreclosure is profitable and anticompetitive is difficult. It depends on the extent to which competition in the downstream market can be harmed. It is more likely that the downstream price will rise if the vertical merger involves the last independent supplier upstream and the exclusion of the unintegrated downstream firms from foreclosure creates a significant increase in

52. Salinger defines an increase in the upstream price as foreclosure. See Salinger, *supra* note 51.

53. Salinger demonstrates that for the downstream price to rise, the number of downstream firms must be sufficiently larger than the number of upstream firms and more than half of the upstream firms must already be integrated. Salinger, *supra* note 51. Häckner adopts a similar framework to Salinger, except that competition downstream is over price and the downstream products are differentiated. Häckner considers the effects of the creation by vertical merger of a single vertically integrated firm that can commit to not participate in the upstream market. He shows that a vertical merger harms consumers only if the number of downstream firms exceeds the number of upstream firms (as with Salinger) and the products downstream are sufficiently differentiated. The extent of the critical value of differentiation is increasing in the number of downstream firms and decreasing in the number of upstream firms. See Jonas Häckner, *Vertical Integration and Competition Policy*, 24 J. REG. ECON. 213 (2003).

market power for the remaining integrated firms.⁵⁴ This is more likely the larger the number of downstream firms supplied by the unintegrated supplier.

A key issue in assessing the welfare effects of a vertical merger is the credibility of nonparticipation by any and all of the integrated firms in the upstream market.⁵⁵ Salinger shows that nonparticipation is optimal if the vertically integrated firm assumes that the input price is invariant to its purchases and the output of other upstream firms is invariant to its sales in the upstream market. Given these assumptions and market power upstream, it is better for the integrated firm to produce another unit of the input itself than to buy a unit upstream. Rather than sell a unit upstream, it is better for the integrated firm to capture both upstream and downstream margins by using the unit of the input to produce and sell another unit downstream.

Alternative “vertical conjectures” suggest that integrated firms will find it profitable to participate in the upstream market.⁵⁶ On the one hand, the assumption that the integrated firm will not recognize that the upstream price will depend on its purchases is problematic. Given the assumption of market power, it is difficult to understand why an integrated firm that buys an additional unit of the input would not anticipate that the input price should rise. Moreover, while it is true that an integrated firm would prefer to capture both margins, the integrated firm may find it profitable to sell to downstream firms rather than relinquish those sales to its unintegrated upstream competitors. Given that sales to unintegrated downstream firms are going to occur, the integrated firm would like to make them.

If the vertically integrated firm sells one more unit upstream, it should recognize that the price will have to fall sufficiently so that an unintegrated downstream firm will be induced to buy it. If the firm buys an additional unit, the price of the upstream good will rise to clear the market, reducing supply downstream. The behavior of the vertically integrated firm when it participates as either a buyer or seller will affect the input price, and hence the costs of its unintegrated rivals downstream.

54. Salinger shows that in these circumstances a vertical merger is also likely to be profitable because of the market power effects. Salinger, *supra* note 51. Hombert, Pouyet, and Schutz in more recent work also identify the importance of the elimination of the last independent upstream supplier for an anticompetitive effect. See Johan Hombert, Jerome Pouyet & Nicolas Schutz, *Anticompetitive Vertical Mergers Waves* (École Polytechnique, Working Paper, 2007), available at <http://ceco.polytechnique.fr/schutz.pdf>.

55. Salinger argues that the credibility of foreclosure is not an antitrust issue but instead an uninformative debate about economic modeling. See Michael Salinger, Director, Bureau of Economics, Federal Trade Comm’n, *Is it Live or Is It Memorex? Models of Vertical Mergers and Antitrust Enforcement*, Prepared Remarks for the Association of Competition Economics Seminar on Non-Horizontal Mergers (Sept. 7, 2005), available at <http://www.ftc.gov/speeches/salinger/050927isitlive.pdf>.

56. A vertical conjecture pins down the vertically integrated firms’ beliefs regarding the behavior of other firms upstream and downstream when they transact in the upstream market. Schrader and Martin characterize the assumptions made by Salinger as Cournot conjectures by vertically integrated firms to their input sales and Bertrand conjectures by vertically integrated firms to their input purchases. The latter implies that the integrated firm acts like a perfectly competitive firm in the upstream market (i.e., as a price-taker). The Gaudet and Long, Schrader and Martin, and Higgins analyses assume Cournot conjectures by the vertically integrated firm to both upstream sales and purchases (i.e., that rivals will hold their output constant at each level). See Avenel & Barlet, Gaudet & Long, Higgins, and Schrader & Martin, all *supra* note 51.

Because of the link between the upstream price and the costs of unintegrated rivals, the incentives of an integrated firm in the upstream market will be different than the incentives of its unintegrated rivals. The integrated firm will internalize the effect that reducing supply in the upstream market will raise the price of the input, reducing the output and competitive constraint of its rivals in the downstream market. Moreover, if the effect on downstream profits is sufficiently large, the integrated firm will have an incentive to engage in strategic purchasing (i.e., become a net buyer upstream even though it can produce the input at lower cost than the upstream price).

The profits π_i^{VI} of vertically integrated firm i are

$$\pi_i^{VI} = [P - c - \gamma]q_i + [P^w - c]s_i \quad (3)$$

where s_i are its sales in the upstream market, P the price downstream, P^w the upstream or wholesale price, c upstream marginal cost, and γ additional downstream costs per unit beyond P^w . Note that s_i is not restricted to be positive: if it is negative, then the integrated firm is a net buyer of the input, realizing a loss of $[P^w - c]$ per unit bought in the upstream market.

By increasing s_i , the vertically integrated firm will increase supply in the upstream market, reducing P^w . If instead it buys the upstream good, it raises demand, leading to an increase in P^w .

In the upstream market, the choice variable for an integrated firm is the nature and extent of its participation in the upstream market s_i . It knows that it will choose q_i optimally downstream and that, in equilibrium, its downstream output q_i , the downstream market price (P) and quantity (Q) will depend on P^w . A vertically integrated firm's profit as a function of its participation upstream is

$$\pi_i^{VI} = \pi^{DS}(q_i(P^w), Q(P^w)) + [P^w - c]s_i \quad (4)$$

The optimal choice for s_i will depend not only the integrated firm's profit in the upstream market, the second term on the right of Equation (4). It will also depend on how changes in s_i will, through the equilibrium condition, affect P^w , and through it, the vertically integrated firm's profit in the downstream market, the first term on the right of Equation (4).

The profit-maximizing condition for a vertically integrated firm is

$$\frac{\partial \pi_i^{VI}}{\partial s_i} = P^w + \frac{dP^w}{ds_i} s_i - c + \frac{\partial \pi^{DS}}{\partial Q} \frac{\partial Q}{\partial P^w} \frac{\partial P^w}{\partial s_i} = 0 \quad (5)$$

The first two terms in Equation (5) are its marginal revenue in the upstream market, and the third term is the marginal cost in the upstream market. If it were unintegrated, it would set these three terms equal to zero to determine its optimum upstream market participation. The last term in Equation (5) is the effect increases in supply by the integrated firm have on its profits downstream. It is negative, since increases in s_i reduce P^w , increases in P^w reduce downstream market output, and increases in market output reduce downstream profits. The vertically integrated firm therefore has an incentive to produce less than an unintegrated firm upstream. In general, it is willing to forgo profits in the upstream market to increase its profits downstream. In the extreme,

it is willing to incur losses in the upstream market to increase its profits downstream. If the effect on downstream profits is significant enough, it has an incentive to be a buyer in the upstream market, even though this involves paying more for a unit of the upstream good than it would cost to produce the good for itself.

The effect of participation by the integrated firms in the upstream market is an increase in upstream output—either because they are buyers of the input or because they find it profitable to supply it—relative to complete foreclosure. In either case, total production of the input rises and, hence, so too does downstream output. The equilibrium effect on downstream prices is that they are likely to decrease as the number of firms that are integrated increases.⁵⁷ As the number of integrated firms increase, holding the number of downstream firms constant, the number of unintegrated rivals subject to double marginalization and the raising rivals' cost activities of the integrated firms declines, and so it is likely that the downstream price falls. The analysis of the effects of a vertical merger when integrated firms are unable to commit not to participate in the upstream market suggests that vertical mergers are good for consumers and that, if anything, there are too few vertical mergers.

There are two important implications of this analysis for assessing the competitive impact of a vertical merger. First, it points out the importance of distinguishing between the effects of the vertical merger on the incentives of the integrated firm and the equilibrium outcome. A first-order approach would infer an increase in the upstream price by simply looking at how the incentives of the integrated firm change as a result of the merger (i.e., from looking at the extra term in Equation (5) above). However, while necessary, this is not enough to infer either an increase in the input price or the price downstream. Consideration of the effect of the vertical merger on these two prices requires an assessment of the new equilibrium postmerger. This involves determining how the vertical merger changes the incentives and behavior of the integrated firm in the downstream market and how other firms will respond to its change in behavior. In particular, the integrated firm has an incentive to increase its output in the downstream market, an incentive that arises from the internalization of double marginalization. In response, its downstream rivals may well reduce their downstream output and hence demand for the input. Despite the indications of a first-order approach, the result of a vertical merger could be lower prices both up- and downstream.⁵⁸

Second, the welfare effects of a vertical merger depend critically on the credibility of nonparticipation in the upstream market by the integrated firms: increases in the downstream price are more likely if the integrated firm withdraws from the upstream market. Such commitment might be possible under vertical integration if integrated

57. See Jeffrey Church, *Vertical Mergers: Background Note*, in VERTICAL MERGERS 15, 40-41 (OECD Directorate for Financial and Enterprise Affairs Competition Committee, OECD Doc. No. DAF/COMP(2007)21, 2007), available at <http://www.oecd.org/dataoecd/25/49/39891031.pdf>.

58. Reiffen and Vita and Sibley and Doane explore how the input price upstream will rise or fall depending on the interplay of the demand effect and the changed incentives of the integrated firm when there is a differentiated duopoly downstream. See Reiffen & Vita, *supra* note 51; David S. Sibley & Michael J. Doane, *Raising the Costs of Unintegrated Rivals: An Analysis of Barnes & Noble's Proposed Acquisition of Ingram Book Company*, in ECONOMIC ISSUES IN MEASURING MARKET POWER 211 (Daniel J. Slottje ed., 2002).

firms can choose to use a different technology process that locks upstream and downstream production units together. The adoption of this “specific” technology makes the upstream production of the integrated firm incompatible with the production processes of the unintegrated downstream firms. A pair of up- and downstream firms that vertically integrate and adopt the specific technology instead of the “standard” technology will not only foreclose supplying the upstream market, they will also be foreclosed from buying in the upstream market.⁵⁹ Technological choice provides the basis for complete foreclosure to be credible. Adoption of the specific technology makes it impossible for the integrated firm to participate in the upstream market.⁶⁰

The profitability of foreclosure from adopting the specific technology depends on a trade-off. Foreclosure results in an increase in downstream profits for the integrated firm as it will have a cost advantage from both the elimination of double marginalization and, potentially, if the costs of its rivals are increased. On the other hand, it will involve an opportunity cost. The integrated firm will forgo sales and profits in the upstream market. The incentive of the vertically integrated firm to behave differently in the upstream market in order to raise rivals’ costs depends on its effectiveness. The more competitive postmerger the upstream or downstream markets, the less the incentive to change its behavior in the upstream market. The less that it can affect the price upstream or the price downstream by foreclosure, the less its incentive to raise rivals’ costs will be. The greater its output downstream, its downstream margin, and the increase in sales from raising the costs of its rivals, and the smaller its quantities and margin upstream, the more likely it will find foreclosure profitable.

The downstream benefits from the vertical merger depend on the cost asymmetry that the merger creates between the integrated firm and its unintegrated rivals. This asymmetry, however, will not be maintained if a countermerger results (i.e., the unintegrated downstream rivals also merge with an unintegrated upstream firm).⁶¹ In evaluating the competitive effects of a vertical merger, it is important to consider the possibility that the original merger will initiate countermergers that not only eliminate the advantage of the first mover, but rather than restore the status quo, result in an industry structure that is more competitive.⁶² A countermerger will not be a factor if it is not possible because an unintegrated upstream supplier is not available or entry barriers are too high, making sponsoring entry or integration by internal growth unprofitable.

However, if the vertical merger gives rise to external benefits, then those benefits might be lost by retaliation, in which case pairs of unintegrated firms might find it more

59. For this reason, utilization of the specific technology entails both input foreclosure and customer foreclosure. Nonvertically integrated firms are unlikely to adopt a specific technology since this exposes them to the threat of opportunistic behavior and expropriation of their investment. *See infra* Section 6.3.

60. A second advantage to the vertically integrated firm is that the costs of using the specific technology are likely less than the standard technology, reflecting that the assets required to support trade can be tailored to a specific trading partner.

61. Alternatively, rather than a vertical merger, the unintegrated downstream firms can enter the upstream market on their own.

62. Consumers will typically prefer an industry structure where all firms are vertically integrated since it results in the complete elimination of double marginalization. Firms, on the other hand, will typically prefer the vertical structure where none are integrated.

profitable to remain unintegrated than to merge. That is, a countermerger might not be profitable in response to an initial vertical merger if the profits of unintegrated upstream and downstream firms are greater if they do not retaliate than if they do even though (1) their aggregate profits have been reduced by the initial vertical merger, and (2) the vertical merger would restore cost parity downstream.⁶³

Alternatively, unintegrated downstream firms might protect themselves by adopting strategies that change the incentives of the integrated firm to act aggressively downstream.⁶⁴ For instance, if the unintegrated downstream firm must incur a switching cost (perhaps due to adoption of a specific technology), then it has an incentive to select the integrated firm as its supplier, locking it in to the integrated firm. The unintegrated downstream rival does this as a defensive measure. In the wholesale market the switching cost provides the integrated firm with room to raise the price at which it supplies the unintegrated downstream firm above competitive levels. The unintegrated firm realizes that this margin provides the integrated firm with an incentive to maintain sales in the wholesale market. The integrated firm can do this by pricing its downstream differentiated product less aggressively, offsetting its incentive to lower it from the elimination of double marginalization.

The value of maintaining volumes of the upstream good to the unintegrated rival depends on the cost to the unintegrated downstream firm of switching suppliers. The greater this cost, the higher the input price that can be charged by the unintegrated rival and the less competitive the integrated firm's downstream prices. If the switching cost is relatively small, then prices for both downstream products fall and consumers are made better off. If the switching cost associated with changing suppliers is relatively large, then the vertical merger increases the price of both downstream products. The size of the critical switching cost for which prices rise is decreasing in the extent to which the two downstream goods are substitutes. Hence, the countermeasure, while good for the unintegrated firms, can contribute to the anticompetitive harm of the vertical merger.

In recent unpublished work, Hombert, Pouyet, and Schutz have shown that the accommodation effect identified by Chen may solve the commitment problem.⁶⁵ The accommodation effect is that the integrated firm has an incentive to price less aggressively in the downstream market to maintain sales of the input upstream to its unintegrated rival. The situation considered involves three downstream firms and two upstream firms. Hombert and his colleagues show that if there are two vertical mergers, one of the integrated firms may have an incentive to withdraw from competing to supply the independent downstream firm, instead allowing it to be monopolized by the other integrated firm. Hence a merger wave, two in this case, results in the replacement of competition upstream with monopoly upstream that could harm consumers downstream.

The vertical merger wave does harm consumers in their formal model, but they assume Bertrand competition upstream premerger. With three firms and equal marginal

63. Choi and Yi show how uncertainty over cost as a function of technological choice when products downstream are differentiated could give rise to such a situation. *See* Choi & Yi, *supra* note 51.

64. *See* Chen, *supra* note 51.

65. *See* Hombert et al., *supra* note 54.

cost, there is not a double markup problem, and, therefore, no benefits to consumers from internalizing double marginalization from the vertical mergers. The commitment arises because rather than compete to be the supplier upstream, an integrated firm may find it profit maximizing to leave the upstream market to its integrated rival. The reason is that the accommodating response of its integrated rival benefits it in the downstream market. If this benefit is large enough, in terms of its effect on downstream profits, the nonsupplying integrated firm's profits will fall if it competes to supply the unintegrated downstream firm since, if it is the supplier, the accommodating response of its rival will be lost. The accommodation effect depends on downstream competition being Bertrand (over prices). Only if it is over prices can the integrated firm affect the sales of its input upstream by increasing sales of its downstream rival by raising its downstream price.

Finally, input foreclosure arises when upstream firms exercise market power, that is, raise the transfer price above marginal cost. If upstream pricing involves the use of two-part tariffs and bargaining and is efficient, then the input will be transferred at marginal cost, regardless of the extent of competition upstream. A vertical merger in these circumstances will not have an effect on variable costs downstream and cannot result in higher downstream prices. If the elimination of an upstream supplier increases the bargaining power of the remaining suppliers vis-à-vis the unintegrated downstream firms, then the possibility exists that if the unintegrated upstream firms do not have complete information or cannot set downstream specific fixed fees, that increases in bargaining power will result in fixed fees for some downstream firms that are too high.⁶⁶ Consequently, they will exit, reducing competition and raising downstream prices.

A different perspective: Commitment difficulties of a monopolist. An alternative perspective on foreclosure focuses on a potential commitment problem that an upstream monopolist may have when it sells to downstream firms, nonlinear pricing is possible, and its contracts are unobservable or unverifiable.⁶⁷ A contract is a menu of quantities and payments from which the downstream firms can choose. In the simplest case, the choice is between not being supplied or a quantity and a fixed fee payable for that quantity. The contracts do not allow for exclusivity.

If the contracts offered to other downstream firms are not observable or verifiable, then the monopolist upstream cannot credibly commit not to supply more than one downstream firm under these contracting conditions. If contracts were observable, then the monopolist would supply one firm with the monopoly quantity and charge a fixed fee equal to monopoly profits. If the contract is not observable or verifiable, then after entering into this contract with one downstream firm, the upstream monopolist has an incentive to supply other downstream firms. The reason is that the monopolist does not share in the loss of the first retailer from an increase in sales and instead it gets a share of the profits of the second retailer. Consequently, the monopolist's profits increase. Anticipating this, however, the first downstream firm will not enter into a contract under which it sells the monopoly quantity in return for a fixed fee equal to the monopoly

66. See Riordan, *supra* note 41.

67. Oliver D. Hart & Jean Tirole, *Vertical Integration and Market Foreclosure*, in BROOKINGS PAPERS ON ECONOMIC ACTIVITY: MICROECONOMICS 205 (1990). For further development, see Patrick Rey & Jean Tirole, *A Primer on Foreclosure*, in 3 HANDBOOK OF INDUSTRIAL ORGANIZATION 2145 (Mark Armstrong & Robert H. Porter eds., 2007).

profits—since it will not earn monopoly profits. The equilibrium involves the monopolist supplying the Cournot quantity to each downstream firm and extracting from each their Cournot profit through the fixed fee. Unable to commit to not expanding output, because it is profitable, the monopolist is not able to earn its monopoly profit. As a result, vertical integration can be a means for the upstream monopolist to commit to not supplying other competing downstream firms, thereby preserving its monopoly power upstream by monopolizing the downstream market.

The implications of this model for vertical merger policy may not be significant. It is difficult to see this monopoly commitment problem as a justification for vertical merger. It is much more likely that this commitment problem would be solved through exclusive contracts that presumably are verifiable and enforceable in court rather than by vertical merger. Moreover, the actions taken here by the monopolist to solve the commitment problem are designed to preserve its monopoly power, not by excluding competitors downstream but by placing constraints on its own behavior. While it is true that a vertical merger in these circumstances would preserve its market power, that preservation is not achieved by relaxing a constraint on its market power by reducing competition. Hence, it is not clear that this type of behavior is a legitimate target for antitrust enforcement, provided, of course, the monopoly upstream has been obtained legitimately, through superior competitive performance.⁶⁸

The model can be extended to consider situations in which there is a second, inferior, upstream supplier. In the unintegrated market structure the efficient firm supplies both of the downstream firms with their Cournot quantity in exchange for a fixed fee equal to the difference between Cournot profits when supplied by the monopolist and Cournot profits when supplied at cost by the inefficient upstream firm. Hence, the effect of the second upstream supplier is to reduce the fixed fees paid by the downstream firms, because with an outside option the downstream firms now have more bargaining power.

In the integrated structure, the integrated firm, unlike the case when there was not a second source of supply upstream, continues to supply its unintegrated downstream rival. The integrated firm would prefer to completely foreclose its downstream rival but is not able to since its downstream rival is always able to source supply from the inferior upstream supplier. Given that its rival is going to be present in the downstream market, it is profit maximizing for the integrated firm to supply the downstream rival rather than have it supplied by the inefficient upstream competitor. However, the integrated firm will try and minimize the participation of its downstream rival: in equilibrium its downstream rival will just be indifferent to supply from the integrated firm and the zero profit offer from the unintegrated rival. The equilibrium quantities therefore are identical to the Cournot equilibrium between two downstream firms, one (the integrated firm), which has access to the input at its marginal cost, and the other (its downstream rival) whose marginal cost is greater, that of the inefficient supplier upstream. The fixed fee the integrated firm charges equals the difference in upstream costs multiplied by the quantity of its downstream rival. Price in the downstream market increases relative to the no integration structure since total output falls.

68. See Cooper et al., *supra* note 31, at 645.

The anticompetitive effect of the vertical merger is attributable again, however, to the change in incentives of the efficient upstream supplier. The integrated firm internalizes the reduction in profits downstream from increasing supply to its downstream rivals. As in the monopoly case, this reduces its incentive to supply its unintegrated downstream rival.

Policy implications of the economics of input foreclosure. The economic models of how input foreclosure from a vertical merger can raise the costs of rivals provide the foundation for assessing how a vertical merger can harm competitors. In particular, they highlight the importance of assessing the market power of the unintegrated upstream firms postmerger and the effect of the increase in upstream prices on the downstream costs of unintegrated rivals. They also highlight the importance of the credibility of foreclosure by the integrated firms, the trade-off between upstream and downstream profits when foreclosure is credible, and the potential for countermeasures, in particular, countermergers. Finally, the literature makes clear the difficult assessment required in determining the impact of a vertical merger on downstream prices even when the integrated firms can commit not to participate in the upstream market: the trade-off between the output expanding effect of double marginalization and the output contracting effect of foreclosure, and this latter only if in fact the wholesale price rises. A key antitrust concern will be the elimination of the last unintegrated upstream supplier when the competition it enables downstream is significant.

5.2. *Customer foreclosure*

Customer foreclosure occurs when the integrated firm no longer sources supply from upstream competitors. The foreclosure effect of the transaction is to reduce demand for, and hence the revenues of, upstream rivals. The demand of the downstream firm that integrates is now captured by the upstream division of the integrated firm. The hypothesis of customer foreclosure is that this reduction in demand reduces volumes for the upstream competitors of the integrated firm, leading to an increase in either their marginal or average cost. In either case, the effect may be to reduce the competitive constraint the unintegrated upstream firms have on the upstream division of the integrated firm. This happens in the short run if the lost volume causes an increase in the marginal cost of the unintegrated firms, reducing their ability to compete, or in the long run if it increases their average cost and induces their exit. A key consideration is identifying how the harm to rivals ultimately harms consumers (or efficiency).

The profitability of customer foreclosure depends on continuing to supply competing downstream firms at higher prices postmerger. Notice that this concern is the exact opposite of the “input foreclosure” hypothesis. The concern with input foreclosure was that the integrated firm would no longer supply downstream firms, creating market power for its rivals upstream, which increases the market power downstream of the integrated firm. Under customer foreclosure, the objective is to create market power upstream for the integrated firm. Depending on competitive conditions downstream, this might also lead to increased prices downstream.⁶⁹

69. Normally we would expect the downstream price to increase, but in the case where input markets are local and the downstream market global, the effect of the increase in cost will be a reduction in output in the local market, not an increase in price.

The understanding of the potential for a vertical merger to result in anticompetitive foreclosure is based on considering the economics literature on exclusionary agreements. In the case of an exclusive dealing contract, the contract ensures that the buyer does not source from any other upstream supplier. For customer foreclosure to be credible in the case of a vertical merger either (1) technological reasons associated with integration create a credible commitment that the downstream division will not source from an independent supplier, or (2) it must be profit maximizing for the downstream division to forgo external supply. The theories suggesting harm from a vertical merger considered in this section assume a monopolist downstream and duopoly upstream.

The two upstream firms produce a differentiated input, with each input specific to an output good. If the downstream firm buys both inputs, then it will be a multiproduct firm downstream and sell two competing substitutes. If it purchases the input from only one of the upstream firms, then it produces and sells only the output product that uses that input.

The possibility and nature of foreclosure depends on whether there is efficient contracting.⁷⁰ If contracting is inefficient so that there is double marginalization, then foreclosure postmerger involves raising the price of the downstream unintegrated product in order to divert demand to the integrated product.⁷¹ If contracting is efficient, then the profitability of a vertical merger requires that foreclosure increase market power in a second, unrelated, market. Precluding sales to the downstream firm in an initial market because of the merger may allow the integrated firm to monopolize supply upstream to a second market.⁷² This will be the case if there is a fixed cost upstream and sales to the second downstream firm are insufficient to ensure their recovery. In these circumstances, an exclusive deal between an upstream firm and the first downstream firm precludes the second upstream firm from supplying the second downstream firm. As a result of the exclusionary agreement, the first upstream firm becomes a monopolist supplier of the second downstream firm/market.

Inefficient contracting. The question is whether, and when, the integrated firm would raise the downstream price of the unintegrated product downstream in order to increase the sales, and maybe even the price, of its own product.⁷³ In this situation, a

70. Efficient contracting means that the contracts between up- and downstream firms maximize their joint profits. It precludes, in particular, double marginalization. Joint profit maximization requires that input be transferred from the upstream firm to the downstream firm at the upstream marginal cost of production.

71. See Michael A. Salinger, *Vertical Mergers in Multi-Product Industries and Edgeworth's Paradox of Taxation*, 39 J. INDUS. ECON. 545 (1991).

72. See B. Douglas Bernheim & Michael D. Whinston, *Exclusive Dealing*, 106 J. POL. ECON. 64 (1998).

73. In this setting, with differentiated products downstream, the integrated firm is unlikely to find it profit maximizing to engage in complete foreclosure: the monopolist downstream will have incentives to carry or produce both products unless there are large product specific fixed costs or the marginal cost of one of the goods exceeds the willingness to pay of consumers. Instead, there is partial foreclosure; the vertical merger provides the integrated firm with an incentive to raise the price of its unintegrated rival's product. It is straightforward to see that complete foreclosure is not an equilibrium unless, even in its absence, the integrated firm would find it optimal not to sell any of the unintegrated competing, but differentiated, product. To see this, suppose that the integrated firm forecloses. Because the products are differentiated, the effect of this is to raise the demand for its downstream product as

vertical merger eliminates double marginalization on the upstream brand of the merging firm, reducing its cost to the monopolist downstream to marginal cost. This increases the margin on the integrated product, providing the integrated firm with an incentive to increase its sales. It can do this by lowering the price of its brand downstream and increasing the price of the unintegrated product.

The diversion effect is the profitability of raising the price of the unintegrated product. It is increasing in the extent to which demand diverts from the unintegrated to the integrated product as the price of the unintegrated product rises and in the margin of the integrated good. If the fall in marginal cost and the diversion effect are both small, then, holding the supply price of the unintegrated product constant, the downstream price of both products will decrease. If the fall in marginal cost is large and the diversion effect relatively small, then, holding the supply price of the unintegrated product constant, the price of the integrated good will fall, and the price of the unintegrated good will rise. If the diversion effect is large enough relative to the fall in marginal cost, then, holding the supply price of the unintegrated product constant, the prices of both goods will rise.

However, the upstream price of the unintegrated good is not fixed. Instead, the unintegrated firm will have an incentive to lower its price to create a larger margin for its product downstream, partially offsetting the incentives created by the elimination of double marginalization for the integrated product. This may or may not lead to lower downstream prices for the unintegrated product. The net impact on downstream prices depends in a complicated manner on the demand system (i.e., all own- and cross-price elasticities of demand), marginal costs, and the level of double marginalization premerger for the integrated good.

When integration results in a decrease in both prices, consumers benefit. Their welfare is harmed when both prices increase. In the aggregate their welfare may go up or down—as measured by consumer surplus—when the price of one product rises and the price of the other falls. If the two products are relatively close substitutes, then it is more likely that the prices of one or both products downstream will increase. Moreover, the profits of the independent upstream firm fall when the downstream price of its product rises: its price is reduced and so too is its volume. If it has avoidable fixed costs, this could result in its exit or preclude its entry, harming consumers.

Efficient contracting. In the case of efficient contracting and only a single downstream market, the two upstream firms and the downstream firm will be able to enter into bilateral contracts that set the transfer price at marginal cost for both upstream products and maximize industry profits. The downstream firm will set the profit-maximizing prices for the two goods based on marginal cost pricing and pay fixed fees

consumers substitute to its product and away from the (now unavailable) competing product. However, because the two goods are imperfect substitutes, some consumers will not substitute to the product of the integrated firm. Provided the willingness to pay of these consumers exceeds the marginal cost of the unintegrated product, the joint profits of the unintegrated supplier and the integrated firm will increase if they sell at least one unit of the rival's product. Moreover, if marginal consumers for the integrated product switch to the unintegrated product, profits will rise since the marginal profit on the integrated product is essentially zero, but it is positive on the unintegrated product.

to the upstream firms. There is no market power incentive for vertical integration if there is a single market and efficient contracting. The use of bilateral contracts between the downstream firm and the two upstream firms is sufficient to maximize industry profits.

However, if there is a second market, then vertical integration might make customer foreclosure profitable if its benefits are greater than its costs. The benefit is that it may relax the competitive constraint the upstream rival exerts on the vertically integrated firm in another market, increasing its market power and profits in that second market. For instance, if economies of scale in the upstream market are sufficient that without sales in both markets production is not profitable, foreclosure in the first market will induce exit in the second market. Foreclosure of the second manufacturer in the first market results in the monopolization of the second market. Alternatively, if the lost volumes from being foreclosed in the first market increase the marginal costs of the foreclosed firm in the second market, then its competitive constraint will be relaxed, though it is not completely foreclosed.

Unlike in the case of inefficient contracting where foreclosure was partial, here the foreclosure by integration is complete, with the integrated firm refusing to buy the input, and hence market the associated downstream good of its upstream rival. Antitrust harm to consumers from this model is consistent with the following circumstances: (1) efficient contracting between up- and downstream firms; (2) monopoly downstream, sustained by barriers to entry that preclude two-stage entry; (3) differentiated products upstream; (4) multiple unrelated downstream markets; (5) exclusion will be profitable—the gain in profits from monopolizing another market must exceed the loss in the market in which there is a vertical merger (from the lost sales from not handling/using the rival's product), which is more likely the less differentiated the products; and (6) exclusion will be effective—the vertical merger will result in an increase in market power in another market, either because it results in the exit of upstream competitors or because a reduction in volume raises the marginal cost of upstream competitors in those markets.

Other theories. There are two other classes of customer foreclosure applicable to a vertical merger that are based on the analysis of foreclosing complements by tying and the incentives and effects of foreclosure when there are portfolio effects.⁷⁴

To see the correspondence with the tying literature, suppose that consumers assemble systems composed of one unit of product A and one unit of product B, so that the two goods are perfect complements and consumed in fixed proportions. Suppose there is a dominant firm in the market for product A that also produces the component B, but there is competition in the production of product B from a second firm. The tying literature has considered the incentive of the monopolist to condition purchase of its monopoly good (the tying good, here product A) on purchase of the second good (the tied good, here product B). This literature has advanced three hypotheses under which tying by the

74. These two sets of theories are discussed in Jeffrey Church, *Conglomerate Mergers*, which appears as Chapter 62 in this book. The adaptation of them to vertical merger analysis is found in Church, *supra* note 57, §§ 2.4(c)-(d).

monopolist in product A to its product B increases market power and harms consumers: (1) tying by the monopolist of product A to its product B enhances the monopolist's market power in its primary good market (that is, the market for product A); (2) tying to a complement (product B) might prevent entry into the monopolist's primary market, thereby maintaining the monopolist's market power in that market; and (3) tying might allow the monopolist to leverage its monopoly power in product A into the market for product B.

These tying hypotheses can be transformed into hypotheses about the effect of a vertical merger by assuming that, instead of consumers assembling the systems themselves, the monopolist of product A does it for them. In this scenario, the monopolist is the downstream firm: it purchases B components upstream, combines these B components with its A components, and then sells the resulting systems to consumers. Suppose that two B products are available, B_1 and B_2 , so that in the absence of integration the downstream monopolist can produce two separate packages, AB_1 and AB_2 . Then the effects of the monopolist integrating into B_1 and no longer buying input B_2 are identical to the competitive effects of tying: only system AB_1 is available. Without access to the A component, the rival system AB_2 is foreclosed from the downstream market.

While providing insights into the incentives and effects of a vertical merger, the welfare implications are not necessarily obvious. The welfare implications will depend on the nature of the upstream market pretransaction. On the one hand, if contracts in the upstream market are efficient, that is, involve marginal cost pricing for the last unit, then the welfare effects of the tying models are applicable to a vertical merger. On the other hand, if the upstream market pretransaction involved prices at the margin that exceed marginal cost, then an efficiency effect not captured by the models attributable to a vertical merger is the elimination of double marginalization.

The models on foreclosure when there are portfolio or variety effects can also be adapted. The difference is that in a conglomerate context it is the consumer who assembles the system of complements, whereas in a vertical merger context the consumers purchase a bundle of complements from competing firms: the downstream firms acquire the complements from upstream firms and package and sell them as a bundle to final consumers.

A portfolio, or range, effect arises if consumer demand is responsive to variety differentials. If consumers value variety, then a variety differential, where one firm has a broader product range than another, raises the demand for the firm with the variety advantage and also reduces the demand and revenues of its rivals. An integrated firm could end up with a variety advantage if postmerger it forecloses. Foreclosure here means not supplying a rival with access to the complements controlled by the integrated firm: if consumers value variety, then a variety advantage can provide the integrated firm with market power or lead to monopolization.

Two situations have been considered in which a firm has a competitive advantage when it has a larger range, or portfolio, of products than its rivals. These are when the consumption good is a system that consists of a hardware good whose value is increasing in the variety of compatible software goods, and when consumers are uncertain *ex ante* which of a number of goods they will prefer.

5.3. *Monopoly maintenance*

Two situations are especially notable where a vertical merger by an incumbent monopolist upstream preserves its monopoly by deterring entry into the upstream market. The two situations are complementary in that they both demonstrate circumstances under which a vertical merger results in entry deterrence upstream from customer foreclosure. In one, technological specificity postmerger results in both customer and input foreclosure and products downstream are homogeneous. In the other, customer foreclosure is profitable and products downstream are differentiated.

Monopoly maintenance: Input foreclosure results in customer foreclosure. A vertical merger that maintains an upstream monopoly by deterring entry upstream and foreclosing input access corresponds to the following set of circumstances:⁷⁵ (1) a homogeneous downstream product, (2) an incumbent monopolist upstream threatened by entry, (3) a relatively concentrated downstream market, (4) vertical integration enables adoption of a specific technology that precludes participation by the integrated firm in the upstream market (i.e., input foreclosure), (5) integration and foreclosure reduce the entrant's profits such that it is deterred from entering, (6) uniform pricing upstream, and (7) neither entry into both the upstream and downstream market by the entrant is profitable nor is a countermerger involving the entrant and an unintegrated downstream firm.

The vertical merger is potentially anticompetitive because it deters entry upstream and forecloses *all* competition downstream, thereby potentially raising downstream prices relative to what they would have been had the upstream firm entered. While entry deterrence makes it more likely that the vertical merger will lead to higher downstream prices, the trade-off between the reduction in competition upstream and downstream from foreclosure versus the benefits of eliminating double marginalization still exists. It is possible that an integrated downstream monopolist with implicit marginal cost pricing results in lower downstream prices than an industry structure with unintegrated duopoly upstream. Paradoxically from an antitrust perspective, this is more likely the case when double marginalization is significant (i.e., the downstream market is very concentrated).⁷⁶

Foreclosure affects the profitability of entry. It increases the profitability of entry because it eliminates competition in the upstream market—the entrant will be a monopoly supplier of the unintegrated downstream firms. On the other hand, it reduces the profitability of entry by reducing demand in the upstream market. Demand is reduced for two reasons: (1) the downstream subsidiary of the vertically integrated firm

75. This scenario is modeled by Avenel and Barlet. Its usefulness for welfare-improving antitrust enforcement is discussed by Scheffman and Higgins. See Avenel & Barlet, *supra* note 51; David T. Scheffman & Richard S. Higgins, *Vertical Mergers: Theory and Policy*, 12 GEO. MASON L. REV. 967 (2004).

76. For Avenel and Barlet's specific parameterization, a vertical merger leads to lower downstream prices if the downstream market is a duopoly. Church's conclusions with regard to the welfare effects of this model are overstated. See CHURCH, *supra* note 34, at viii, 54; Jeffrey Church, *The Church Report's Analysis of Vertical and Conglomerate Mergers: A Reply to Cooper, Froeb, O'Brien and Vita*, 1 J. COMPETITION L. & ECON. 797, 799 (2005).

only sources from its upstream subsidiary,⁷⁷ and (2) the integrated firm has a cost advantage over its unintegrated rivals downstream. The extent to which foreclosure reduces demand upstream for an entrant depends on the number of downstream firms. If there are only a few, then the demand effect is more likely to be significant, but if there is extensive competition downstream, the demand effect will be minimal. There is a critical number of downstream firms, beyond which vertical integration and foreclosure results in greater profits for the entrant. That is, in these cases vertical integration does not raise barriers to entry but rather facilitates entry upstream. The greater economies of scale upstream, the more likely the reduction in the profits of an entrant attributable to foreclosure results in entry deterrence and maintenance of monopoly.

Monopoly maintenance: Customer foreclosure. A similar case theory is possible when a monopolist supplies a homogeneous input to a differentiated duopoly downstream when there are economies of scale upstream. In this situation, a vertical merger and customer foreclosure is potentially profitable because it deters entry upstream and maintains the incumbent's status as the monopoly supplier of the unintegrated downstream firm. If the entrant is more efficient and competition exists upstream over prices, then the effect on consumers of integration and foreclosure that leads to entry deterrence will be negative.⁷⁸ Absent any decrease in the cost of the incumbent upstream, the prices of both goods downstream will increase.

More generally, if there was quantity competition upstream after entry, the price upstream would likely be greater than the marginal cost of the incumbent. The welfare economics then involve a familiar trade-off: foreclosure and integration raises the input price of the unintegrated downstream firm relative to what it would have been if there were entry but eliminates double marginalization for the integrated firm. Then, depending on which has greater impact, the effect of integration and foreclosure can be to raise prices downstream relative to the downstream prices that would prevail if upstream entry occurred. The more competitive the upstream market postentry or the greater the cost advantage of the entrant, the more likely that the efficiency advantages from double marginalization will not dominate and downstream prices will rise if there is a vertical merger and foreclosure. Moreover, if the entrant has a cost advantage, productive efficiency is sacrificed if the entrant is deterred.

Integration downstream by the upstream monopolist that precludes entry, maintains market power, and harms consumers occurs when (1) economies of scale preclude entry if an entrant is not able to capture sufficient market share;⁷⁹ (2) vertical merger by the

77. The result of the technological choice by the integrated firm is therefore both input and customer foreclosure.

78. With entry, the more efficient entrant would price just equal to the cost of the incumbent. Hence whether there is entry or no entry and vertical integration, the cost of the input downstream for the integrated firm is unchanged. However, vertical integration and entry deterrence results in an increase in the price of the input for the unintegrated firm.

79. To the extent that the entrant and the unintegrated downstream firm can attract consumers through price competition, vertical merger and foreclosure will be more difficult. This suggests that if the products are relatively homogeneous, entry deterrence by vertical merger will be difficult. This case theory is an adaptation by Church of the work by Stefanadis on exclusive dealing. See Christodoulos Stefanadis, *Selective Contracts, Foreclosure, and the Chicago School View*, 41 J.L. & ECON. 429 (1998); CHURCH, *supra* note 34, at 123-27.

incumbent and foreclosure preclude the entrant from realizing economies of scale necessary for profitable entry; (3) foreclosure is credible, either because the integrated firm can design its downstream products to be incompatible with the upstream input of the entrant or it is profitable, in which case the gains from monopolization upstream and raising rivals' costs downstream are greater than the lost profits downstream from not sourcing supply from the low-cost entrant; and (4) the entrant is more efficient and competition upstream is over price. The entry-detering effects of vertical merger are reduced if the entrant expects that it will have a cost advantage postentry that it can use to make the threat of foreclosure noncredible through negotiations—this is facilitated if the entrant can price discriminate between the integrated and unintegrated downstream firms.⁸⁰

6. Coordinated effects

The collective exercise of market power occurs when a group of firms coordinate their price increases to reduce the extent of substitution by their customers to each other. A coordinated effect arises from a vertical merger if postmerger firms, either upstream or downstream, are able to more effectively coordinate, either because it makes reaching an agreement on the coordinated outcome easier, or it makes enforcement more effective.

A number of hypotheses have been advanced in the antitrust literature regarding the potential for a vertical merger to have a coordinated effect, including that the vertical merger might eliminate a disruptive buyer, enhance transparency of wholesale pricing, or facilitate information exchange.⁸¹ It is important to observe, however, that these theories all assume that, depending on the case theory, at least one of the upstream and downstream markets are conducive to coordination. If the relevant market is not, then the coordinated effects of a vertical merger are not likely to be significant.

6.1. Elimination of a disruptive buyer and enhanced incentives to coordinate

If a vertical merger eliminates a disruptive buyer, it could facilitate coordination upstream under two conditions: (1) sales to the buyer are particularly important to upstream suppliers, perhaps due to its volume; or (2) there is evidence that the buyer has been able to disrupt coordination by fostering price competition. In the case of a buyer with a very large volume, competition to supply this buyer may limit the extent to which

80. Renegotiation is an issue if the entrant would have lower costs than the incumbent and the integrated firm can use the input of the entrant. The question is whether the entrant can offer the incumbent a price for its input that makes the incumbent better off even though it loses its upstream monopoly and profits. The ability of the entrant to make an acceptable offer depends on whether it can price discriminate and charge a lower price to the integrated firm than its unintegrated rival. Integration with renegotiation or renegotiation that results in price discrimination can be beneficial for consumers. For a discussion of how anticipation by the entrant that the incumbent will renegotiate facilitates entry, see CHURCH, *supra* note 34, at 123-27.

81. The formal economics literature that considers the potential for a coordinated effect from a vertical merger is very small and very recent. It consists, as far as can be ascertained, of Volker Nocke & Lucy White, *Do Vertical Mergers Facilitate Upstream Collusion?*, 97 AM. ECON. REV. 1321 (2007).

upstream firms can coordinate. A buyer that is successful in obtaining a lower price premerger may also disrupt coordination. The lower price they receive may put pressure on other suppliers to match since other upstream customers will be disadvantaged in the downstream market because of the higher cost they pay for the input. As a result, their demand falls and upstream firms may find it unprofitable to maintain the higher upstream price.

In both cases, vertical integration between an upstream firm and the disruptive buyer is likely to make coordination easier. The vertically integrated firm is unlikely to have the same interest in reducing the extent of coordination upstream as the disruptive buyer. Rather than push for lower prices in the input market to provide it with a competitive advantage downstream (the behavior of the disruptive buyer), it will likely have an incentive to instead cooperate with the other upstream firms to raise input prices upstream.⁸²

The reason for the enhanced incentive to cooperate created by a vertical merger follows more generally from the fact that, postmerger, the integrated firm has more of an interest in raising the price upstream. Higher input prices raise the costs of its rivals downstream, relaxing their competitive constraint on its downstream division, leading to enhanced market power and profits downstream. Vertical integration provides it with less incentive to deviate since it benefits more from upstream coordination. A vertically integrated firm is more likely to incur the costs of coordinating—lost profits from not cheating on the coordinated outcome today—because its benefit from doing so in the long run is greater—higher profits both up- and downstream. While an unintegrated firm might not be willing to incur the costs of coordination (reduced output in the short run), an integrated firm might be willing to do so. Dynamic considerations might make coordination profitable for an integrated firm, even though it is not profitable for an unintegrated firm.⁸³ The greater the benefit of the downstream division from raising the costs of its rivals, the more a vertical merger will enhance the incentives of an integrated firm to cooperate with coordinated pricing upstream.

The possibility that a vertical merger may eliminate a disruptive buyer and facilitate an increase in coordination upstream is recognized in the U.S. *Non-Horizontal Merger Guidelines*.⁸⁴ The factual circumstances under which this concern is relevant are (1) the upstream market is sufficiently concentrated and has characteristics conducive to coordination; (2) sales to the buyer are particularly important to upstream suppliers,

82. Riordan and Salop comment not only on the impact of eliminating the disruptive buyer for coordination in the upstream market but also the downstream market. They observe that a vertical merger involving a maverick competitor in the downstream market will also facilitate coordination in the downstream market for similar reasons. Postmerger, the downstream division will have more of an incentive to coordinate higher downstream prices in order to “facilitate coordinated input pricing that benefits its upstream partner” than the unintegrated maverick. See Riordan & Salop, *supra* note 20, at 538, 542.

83. Alternatively, an integrated firm might be willing to build a reputation for not supplying its downstream rivals (i.e., foreclosure), even though an unintegrated firm would choose not to because the benefit to the unintegrated firm from doing so is less. See the discussion regarding the importance of the ability of the vertically integrated firm to commit not to participate in the upstream market for input foreclosure to have an anticompetitive effect.

84. See U.S. NON-HORIZONTAL MERGER GUIDELINES, *supra* note 22, § 4.222.

perhaps due to its volume; and (3) there is evidence that the buyer has been able to disrupt coordination by fostering price competition.

6.2. *Enhanced monitoring*

Increased vertical integration may contribute to the ability of upstream firms to monitor each others' pricing and identify deviations from coordinated outcomes. Coordination at the upstream level may be difficult because prices are not transparent. If transaction prices at the wholesale level (upstream market) are secret, then detection and punishment of deviations from the coordinated outcome will be difficult. Retail prices (prices in the downstream market), however, may be more visible. The U.S. *Non-Horizontal Merger Guidelines* argue that in these circumstances vertical integration becomes an important factor in enhancing monitoring of rivals' pricing.⁸⁵ If true, then a vertical merger that increases the extent of vertical integration in the market may contribute to a substantial lessening of competition because of an increase in the effectiveness of monitoring. The U.S. *Non-Horizontal Merger Guidelines* note that "[a]dverse competitive consequences are unlikely unless the upstream market is generally conducive to collusion and a large percentage of the products produced there are sold through vertically integrated retail outlets."⁸⁶

Retail prices could be used to detect cheating at the wholesale level *if* variations in the retail price are attributable to fluctuations in wholesale prices. However, retail price fluctuations could also be attributable to changes in the costs of retailing. Vertical integration presumably provides the integrated firm with information on the costs of retailing, allowing it to extract more information regarding wholesale prices from retail prices. Implicit in this argument are one of two assumptions: either the retail costs of different products/manufacturers differ or the costs of retailers differ and retailers are exclusive.

This is in fact a variant of a more general argument. If in general the conditions in the upstream market are not as conducive to coordination as those downstream, then a vertically integrated structure will be favored by upstream firms.⁸⁷ By establishing a vertically integrated structure for the industry and eliminating wholesale market transactions (which are subject to cheating), the firms are more likely able to coordinate pricing and collectively exercise market power at retail. On these grounds, a vertical merger that results in the elimination of a large buyer downstream, thereby insuring that postmerger market share of unintegrated downstream firms is small, raises concerns.

6.3. *Information exchange*

A vertical merger could enhance transparency by creating a conduit (the downstream subsidiary) for the exchange of information between upstream firms. Provided the downstream subsidiary postmerger continues to purchase from the upstream rivals of the vertically integrated firm, the potential exists for the downstream division to transfer

85. *Id.* § 4.221.

86. *Id.*

87. This more general argument is found in William S. Comanor, *Vertical Mergers, Market Powers, and the Antitrust Laws*, 57 AM. ECON. REV. 254 (1967).

information regarding the prices and offers of those rivals to its upstream division.⁸⁸ There are three necessary conditions for information exchange under these circumstances to facilitate coordination.⁸⁹ The information has to be projectable (believed to be an accurate indication of prices offered to other buyers); it must be unique (not readily and verifiably available from other sources); and the input market must be conducive to coordination. Even if these three conditions are satisfied, it is not clear how useful the information will be for coordinating upstream input suppliers if the conduit is one way—from rival upstream firms through the downstream subsidiary to the upstream subsidiary of the vertically integrated firms—and only the information set of the vertically integrated firm is enhanced.

6.4. *Maverick creation*

It has been suggested that in a relatively unintegrated vertical structure, a vertical merger can be destabilizing and reduce the extent of coordination upstream. The reason is that by creating asymmetries between upstream firms, a vertical merger creates a maverick. In particular, if integration is associated with a reduction in transparency, because the vertically integrated firm has an incentive and the ability to secretly expand its sales through its downstream subsidiary, a vertical merger can be procompetitive. The incentive to increase sales arises if the merger eliminates double marginalization.⁹⁰

7. Efficiencies and the empirical evidence

Much of the controversy associated with vertical merger enforcement arises from the widely held view that anticompetitive harm from such a transaction is unlikely and that the motivation for a vertical merger is not to enhance or preserve market power but to realize efficiencies. In general, efficiencies can arise because a vertical merger enhances coordination between the upstream and downstream firms. This enhanced coordination allows for (1) production efficiencies and cost savings; (2) internalization of vertical externalities and alignment of incentives; and (3) transaction cost savings, including mitigating opportunistic behavior.⁹¹

88. The focus here is on one-way communication from the rival upstream firm, through the downstream subsidiary, to the upstream subsidiary of the vertically integrated firm. The possibility exists that the downstream subsidiary acts as a two-way conduit that facilitates explicit collusion. This is not considered further since this type of behavior is directly reachable under the antitrust laws. The concern here is with the vertical merger creating conditions that facilitate coordination that is not reachable (typically) under laws prohibiting conspiracy to lessen competition.

89. This analysis originates with Riordan & Salop, *supra* note 20, at 557-61.

90. This is recognized in the U.S. DEP'T OF JUSTICE & FEDERAL TRADE COMM'N, HORIZONTAL MERGER GUIDELINES § 2.12 (1992) (with Apr. 8, 1997 revisions to Section 4 on efficiencies), *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,104. For further discussion, see Jonathan B. Baker, *Mavericks, Mergers, and Exclusion: Proving Coordinated Competitive Effects under the Antitrust Laws*, 77 N.Y.U. L. REV. 135, 176-77 (2002).

91. Some might argue that all of these efficiencies arise because the enhanced coordination alleged to follow from the merger reduces transaction costs. In a world of zero transaction costs, contracts would be complete and coordination to realize efficiencies achieved independent of patterns of ownership. Transaction costs are the costs incurred to negotiate, reach, and enforce agreements. Efficiencies are realized from a merger, from this perspective, because in a world of positive transaction costs,

7.1. *Production efficiencies and cost savings*

A number of different production efficiencies and cost savings can arise either from economies of scope or the enhanced coordination possible from a vertical merger.⁹² Economies of scope mean that costs are lower if both the upstream and downstream production activities are combined, rather than separate. Economies of scope will arise if the production of goods in the supply chain use the same inputs and those inputs are indivisible (i.e., not available below a minimum scale). Costs are lowered when the production upstream and downstream are combined because output levels can be maintained but less of the indivisible input, in total, used. Essentially excess capacity upstream (downstream) can be used downstream (upstream). Potential efficiencies from coordination in both design and production made possible by a vertical merger include lower costs, higher quality, shorter lead times, improved quality control, reduced costs of inventory from just-in-time production and distribution, optimized production runs, reduced costs of innovation, made to order customization, etc.⁹³

7.2. *Vertical externalities and exclusivity*

Externalities arise when the actions of one entity directly affect the welfare of another entity. The entities might be an upstream and a downstream firm, two downstream firms that both retail the products of the same manufacturers, or two manufacturers. The enhanced coordination enabled by a vertical merger can create efficiencies from (1) the alignment of incentives within the vertical structure, and (2) the prevention of free riding.

The potential for incentive effects to arise is most clearly seen in the case of a merger between a retailer and a manufacturer, leading to customer foreclosure. Incentive effects arise when retailers can invest in product quality and sales effort. The incentives by the retailer to invest in sales effort will not be “fragmented” across the products of different manufacturers when there is customer foreclosure. Furthermore, integration means that manufacturers can share information regarding market conditions and their promotional plans/activities with their retailer and be less concerned that it will be leaked intentionally, or inadvertently, to a competing manufacturer.⁹⁴ Exclusivity also curtails

different patterns of organization will have different transaction costs. A merger that reduces transaction costs will allow efficiencies to be realized since the reduction in transaction costs will make the activities required to realize these benefits profitable. In this chapter, I focus on the activities and outcomes that the decrease in transaction costs, postmerger, enables. For a comprehensive treatment of sources of the potential efficiencies from a vertical merger, see BISHOP ET AL., *supra* note 34.

92. The coordination possibility discussed here is between the units that were separate *ex ante* but postmerger are under common ownership. This is to be distinguished from the enhanced coordination between independent entities postmerger that gives rise to a coordinated effect.

93. See Riordan & Salop, *supra* note 20, at 523-24; BISHOP ET AL., *supra* note 34, § 3.3.

94. An anticompetitive effect of a vertical merger suggested by concerns over information leakage is that unintegrated downstream firms might be concerned that information on their strategic initiatives that require cooperation from an input supplier might benefit the downstream operations of the integrated firm. Fear of spillovers regarding marketing and product development might considerably reduce the incentives of the unintegrated firm to source inputs from an integrated competitor, making input foreclosure something that is a result of a refusal to buy rather than a refusal to supply.

any incentive the retailer might have to lower its costs and increase its profits by substituting lower quality products. This will be more difficult if the retailer is not able to carry lower quality brands from rival manufacturers. In general, a vertical merger more closely aligns the welfare of a downstream firm with that of the upstream firm. Investments by either that increase demand or quality will not take into account the benefit that the other derives when they are separate but will be internalized postmerger.

In the absence of an exclusive dealing arrangement or merger between a manufacturer and its retailer, the incentive for the manufacturer to invest in the retailer and its product are reduced because of potential free riding—benefiting from an activity without bearing any of the costs—by other manufacturers. Instances of free riding that can be eliminated through exclusivity from a vertical merger include:

1. Free riding by rivals on demand created through investments in product quality and promotion. In this case, the investments by the manufacturer create demand for the product category, on which the manufacturer's rivals attempt to capitalize by providing financial inducements (such as higher margins) to common retailers to switch customers to the rival products.
2. Free riding by rivals on product innovation and design. This case is possible when design and innovation are not completely protected by intellectual property rights. If rivals can easily copy and sell imitations, there will again be an incentive for them to induce retailers to switch customers to their lower priced imitations.
3. Free riding by rivals on investments in retailers. A manufacturer will have less of an incentive to make investments in its retailer network if the benefits to those investments are not specific to it. For instance, investments by the manufacturer in the sales force of the retailer (through technical education and training) or store fixtures likely benefit its rivals.

7.3. Transaction costs, bargaining costs, and the holdup problem

A nonhorizontal merger can reduce transaction costs and promote investment in specific assets by mitigating more effectively the holdup problem and minimizing bargaining costs.⁹⁵ An asset is specific to a trading relationship between a given buyer and a given seller if it has no value to either alternative buyers or sellers. More generally, there is some degree of asset specificity if the asset is less valuable when redeployed to another use (i.e., an alternative trading partner). The quasi-rents associated with a specific asset are the difference between its value in the transaction it is intended to support and its next best alternative use. The degree of asset specificity is related to the extent to which the cost of the asset is sunk (i.e., nonrecoverable if the trading relationship is terminated).

The incentive difficulty associated with investments in relationship-specific assets is known as the holdup problem. The holdup problem involves opportunistic behavior by

95. For summaries of the transaction cost economics of vertical integration, see CHURCH & WARE, *supra* note 45, ch. 3; Paul Joskow, *Vertical Integration*, in HANDBOOK OF NEW INSTITUTIONAL ECONOMICS 319 (Claude Ménard & Mary M. Shirley eds., 2005).

a buyer (lower price) or seller (higher price) who attempts to renegotiate the terms of trade after investment in the asset. For instance, a buyer may have agreed to pay average total cost preinvestment, but postinvestment, the seller will, if its capital costs are sunk, be just willing to supply even if it receives only its average variable costs. Anticipating that the buyer may take advantage of the change in the seller's incentives postinvestment and expropriate its capital costs, the seller will be reluctant to make the required investment. If the transaction costs associated with eliminating the risk of holdup through private contracts are too large, then one alternative is vertical integration, perhaps by vertical merger. In addition to mitigating the holdup problem and promoting incentives in investment, vertical integration eliminates or reduces the costs associated with adapting the terms of trade to changes in conditions and renegotiation (i.e., ex post bargaining costs).

The holdup problem and costs of bargaining arise because positive transaction costs mean that contracts will be incomplete. Incomplete contracts mean that for certain states of the world or contingencies, the contract will be silent and the terms of trade negotiated ex post; determining the state of the world, upon which the contractual obligations are contingent, is difficult or impossible; or using the courts to enforce the contract is not costless. Contractual incompleteness opens the door to the holdup problem and ex post bargaining when there are specific assets. The greater the extent of uncertainty, the more complex and durable the input, and the more difficult it is to measure and verify quality, the more important contractual incompleteness and the more likely that concern over expropriation of quasi-rents and the costs of ex post bargaining will result in vertical integration.

7.4. Empirical evidence

As discussed above, a key consideration in determining optimal vertical merger policy is the economic presumption, on both theoretical and economic grounds, that vertical mergers are likely efficiency enhancing and beneficial for consumers. The review of the theoretical literature on the anticompetitive harm from a vertical merger indicates that the internalization of double marginalization is typically inherent in a vertical merger and often offsets (if any) foreclosure effects. In addition, there are nonprice efficiencies often associated with, and which are the rationale for, vertical integration and merger. The organization of transactions within a firm means that vertical integration is ubiquitous and this gives rise to the presumption that it is therefore efficiency enhancing.

The empirical evidence supports this presumption. That evidence is consistent with two propositions: (1) that instances of vertical integration and merger are consistent with the hypotheses of transaction cost economics, and (2) that instances of vertical merger that are harmful for consumers are very infrequent.

Empirical evidence on the make-or-buy decision. Three recent surveys come to the same conclusion regarding the consistency of the hypotheses of the transaction cost explanation for vertical integration with observed patterns of integration.⁹⁶ This

96. See Francine Lafontaine & Margaret Slade, *Vertical Integration and Firm Boundaries: The Evidence*, 45 J. ECON. LITERATURE 629 (2007); Peter G. Klein, *The Make-or-Buy Decision: Lessons from*

conclusion implies that vertical integration and vertical mergers are a governance choice that minimizes the costs of organizing the transaction and are not intended to create market power. Lafontaine and Slade conclude in their comprehensive review of the evidence on the applicability of transaction cost explanations for vertical integration that there is a large literature which is “overwhelmingly” consistent with the three main predictions of the transaction cost explanation for vertical integration: the greater the asset specificity, the more complex the input, and the more uncertain the environment, the more likely the transaction will be organized internally.⁹⁷

In his review, Joskow concludes:

In the end, we become convinced about the validity of a theory based on the accumulation of evidence from many studies examining a wide range of transactions and governance arrangements. The accumulation of results provides the most important power of the hypothesis tests. The empirical studies of vertical integration and how the choice of this governance structure is influenced by the importance of specific investment and other variables that could lead to ex ante and ex post contractual inefficiencies overwhelmingly show that the importance of specific investments is both a statistically and economically important causal factor influencing the decision to vertically integrate. Indeed, it is hard to find many other areas in industrial organization where there is such an abundance of empirical work supporting a theory of firm or market structure. And it is the combination of compelling theoretical analysis combined with a large body of supporting evidence that makes the TCE [transaction cost economics] approach to understand vertical integration and alternative vertical governance arrangements so important.⁹⁸

Similarly, Klein observes:

The vast empirical literature on the make-or-buy decision, including the structure of long-term contracts and hybrid forms of organization, is largely consistent with the transaction cost theory of the firm: vertical arrangements are usually best understood as attempts to protect trading partners from hazards of exchange under incomplete contracting.⁹⁹

The consequences of vertical integration and merger. Lafontaine and Slade also summarize the empirical literature on the effects of vertical merger and integration. They consider three sets of studies. The first is a set of ten studies that consider the effects of vertical integration on rivals (the possibility of foreclosure) and on consumers. Lafontaine and Slade observe that these studies consider the effect of vertical mergers in industries that are concentrated and subject to prior antitrust investigations. Their review indicates that despite this bias, of the ten studies, only five found evidence of foreclosure or an increase in rivals' costs from vertical integration. Of those, only two consider the effect of vertical integration on the downstream market.¹⁰⁰ Both of these

Empirical Studies, in HANDBOOK OF NEW INSTITUTIONAL ECONOMICS 435 (Claude Ménard & Mary M. Shirley eds., 2005); Joskow, *supra* note 95.

97. Lafontaine & Slade, *supra* note 96, at 648.

98. Joskow, *supra* note 95, at 344.

99. Klein, *supra* note 96, at 450.

100. See Tasneem Chipty, *Vertical Integration, Market Foreclosure, and Consumer Welfare in the Cable Television Industry*, 91 AM. ECON. REV. 428 (2001); George S. Ford & John D. Jackson, *Horizontal Concentration and Vertical Integration in the Cable Television Industry*, 12 REV. INDUS. ORG. 501 (1997).

studies considered the effect of vertical integration between cable television distributors and programming and they come to opposite conclusions as to the effect of vertical integration on consumers of cable television.¹⁰¹

Lafontaine and Slade consider a second set of studies that consider the consequences of vertical integration but do not have a focus on the foreclosure effects of integration. Of the 15 studies considered, they suggest that the results in 13 of them are consistent with integration increasing the welfare of downstream consumers.¹⁰² In the other two cases, the effect on consumers is ambiguous.

The third set of studies reviewed by Lafontaine and Slade considers the effect of divorcement policies.¹⁰³ Divorcement occurs when government policy mandates vertical separation between the upstream and downstream firms. Three studies assess the effect of vertically separating gasoline refining and sales, a fourth beer brewing and sales. The gasoline studies find that under divorcement retail prices and costs were higher and the quality of service, as measured by hours of operation, less. The beer study considered the effect in the United Kingdom of divorcement between brewers and taverns. It found that divorcement created double marginalization and led to higher retail prices.

Lafontaine and Slade conclude by noting:

We are therefore somewhat surprised at what the weight of the evidence is telling us. It says that, under most circumstances, profit-maximizing vertical-integration and merger decisions are efficient, not just from the firms' but also from the consumers' points of view. Although there are isolated studies that contradict this claim, the vast majority support it. . . . We therefore conclude that, faced with a vertical merger, the burden of evidence should be placed on competition authorities to demonstrate that the merger is harmful before the practice is attacked.¹⁰⁴

The conclusion of Lafontaine and Slade is similar to that of Cooper, Froeb, O'Brien, and Vita. Their assessment from surveying the empirical literature on vertical restraints/vertical integration is that (1) most studies demonstrate that vertical restraints/vertical integration are procompetitive (result in lower prices and greater output), (2) the source of the procompetitive effect is likely the elimination of double marginalization or other cost saving, and (3) instances where the effect was unambiguously anticompetitive are rare.¹⁰⁵

101. Though the magnitude of the harm to consumers in the negative study is small, approximately \$1.49 per year for the average cable television subscriber. See Ford & Jackson, *supra* note 100, at 516.

102. Excluding the Ford and Jackson study, *supra* note 100, since it was included in the first set.

103. See John M. Barron & John R. Umbeck, *The Effects of Different Contractual Arrangements: The Case of Retail Gasoline Markets*, 27 J.L. & ECON. 313 (1984); Asher A. Blass & Dennis W. Carlton, *The Choice of Organizational Form in Gasoline Retailing and the Cost of Laws That Limit That Choice*, 44 J.L. & ECON. 511 (2001); Margaret E. Slade, *Beer and the Tie: Did Divestiture of Brewer-Owned Public Houses Lead to Higher Beer Prices?*, 108 ECON. J. 565 (1998); Michael G. Vita, *Regulatory Restrictions on Vertical Integration and Control: The Competitive Impact of Gasoline Divorcement Policies*, 18 J. REG. ECON. 217 (2000).

104. Lafontaine & Slade, *supra* note 96, at 680.

105. Cooper et al., *supra* note 31, at 658.

8. The debate over vertical merger guidelines

The U.S. *Non-Horizontal Merger Guidelines* were issued in 1984 by the DOJ. They identify the “principal theories under which the Department is likely to challenge” vertical mergers.¹⁰⁶ There are three concerns:

1. The vertical merger raises entry barriers by requiring entry to occur both up- and downstream. For this to be a concern, three conditions must hold: (a) the extent of integration that results posttransaction must be sufficiently extensive that entry into the primary market—that for which there are competitive concerns—would also require entry into the secondary market; (b) the additional requirement to enter into the secondary market must make entry into the primary market more difficult and less likely to occur; and (c) the increase in entry barriers to the primary market is likely to affect performance in the primary market negatively.¹⁰⁷
2. The vertical merger makes coordination easier or more effective, either because it makes it easier to monitor upstream prices or eliminates a disruptive buyer.¹⁰⁸
3. The vertical merger provides a means for a regulated utility to evade effective price regulation.¹⁰⁹

In the first two cases, the U.S. *Non-Horizontal Merger Guidelines* provide a (semi) safe harbor: if the Herfindahl Hirschman Index is less than 1800 in the primary market, a challenge is “unlikely.”

There is considerable debate over the merits and relevance of the U.S. *Non-Horizontal Merger Guidelines*¹¹⁰ and whether new vertical merger guidelines that reflect the advances in economic analysis discussed above are warranted or possible.¹¹¹ More

106. U.S. NON-HORIZONTAL MERGER GUIDELINES, *supra* note 22.

107. *Id.* § 4.21. Morse notes that the two-stage entry theory could be viewed as a “reconstituted foreclosure theory” with the *Guidelines* emphasis on “sufficient unintegrated capacity in the secondary market.” Morse, *supra* note 20, at 1225. See discussion of the monopoly maintenance theories *supra* at Section 5.3.

108. U.S. NON-HORIZONTAL MERGER GUIDELINES, *supra* note 22, § 4.22.

109. *Id.* § 4.23.

110. The merits and relevance of the existing U.S. *Non-Horizontal Merger Guidelines* are questioned by, among others, Leary, *supra* note 25; ABA Section of Antitrust Law, *The State of Federal Antitrust Enforcement—2004*, http://www.abanet.org/antitrust/at-comments/2005/02-05/state_of_fed_enforc.pdf; Timothy J. Muris, *Principles for a Successful Competition Agency*, 72 U. CHI. L. REV. 165 (2005); Robert Pitofsky, *Past, Present, and Future of Antitrust Enforcement at the Federal Trade Commission*, 72 U. CHI. L. REV. 209 (2005); and Thomas C. Willcox, *Behavioural Remedies in a Post-Chicago World: It's Time to Revise the Vertical Merger Guidelines*, 40 ANTITRUST BULL. 227 (1995). However, Rosch *supra* note 12, argues that almost without exception, “the descriptions of liability” in recent cases is “consistent with the theories of liability embraced by the 1984 *Non-Horizontal Guidelines*.”

111. See Leary, *supra* note 25; Reiffen & Vita, *supra* note 51; Scheffman & Higgins, *supra* note 75; ABA Section of Antitrust Law, *supra* note 110; Ilene Knable Gotts, David A. Schwartz, Damian G. Didden & Daniel E. Hemli, *Nature vs. Nurture and Reaching the Age of Reason: The U.S./E.U. Treatment of Transatlantic Mergers*, 61 N.Y.U. ANN. SURV. AM. L. 453 (2005); Paul Hofer & Mark Williams, *Non-Horizontal Mergers*, in 2007 EUROPEAN ANTITRUST REVIEW 6 (Global Competition Review 2006); Michael Klass & Michael A. Salinger, *Do New Theories of Vertical Foreclosure Provide Sound Guidance for Consent Agreements in Vertical Merger Cases?*, 40 ANTITRUST BULL. 667 (1995).

recently, the Antitrust Modernization Committee recommended that due to developments in the economics of vertical mergers and enforcement practice of the enforcement agencies in this area since 1984, businesses and the antitrust community would benefit from the transparency implied by updated guidelines on how the agencies presently evaluate vertical mergers.¹¹² The intent of guidelines is to enhance enforcement transparency by detailing when, why, and how a transaction might raise antitrust concerns. Guidelines are of value to the extent that they “contribute towards predictability and consistency.”¹¹³ Predictability and consistency reduce uncertainty and allow firms to assess, at least in broad terms, the risk of antitrust liability. Guidelines provide predictability and consistency by clarifying in advance the process and analysis that an enforcement agency will follow. For this to occur, the relevant enforcement agency must be willing to follow the analytical framework presented in its guidelines.

It is much easier to adopt guidelines when there is a consensus on the appropriate analytical framework and the evidence required. A perceived lack of intellectual consensus on the appropriate framework for the analysis of vertical mergers and the evidence required to support a case underlies some resistance to revised or new guidelines.¹¹⁴ Alternatively, some have suggested that it is simply not possible to provide guidance since “vertical merger analysis is necessarily both highly complex and highly fact and institution specific.”¹¹⁵ Because each case is sufficiently idiosyncratic, it is not possible to formulate guidelines that are generally applicable.

Ideally, the economics of vertical mergers would provide the foundation for structural guidelines. Structural guidelines encapsulate rules that define the circumstances when a vertical merger is presumed to raise antitrust concerns and when it is not. That is, the guidelines identify key variables that can be observed premerger, as well as what those variables imply about the effects of the merger on market power and consumer or total welfare. Unfortunately, it does not appear to be possible to provide such a mapping for vertical mergers. The difficulties with following such an approach are (1) the empirical relationships applicable to any situation are simply not available; (2) they are not likely to be available because the search for such regularities across markets is not a very active research agenda; and (3) the differences across markets likely matter for the implications of a vertical merger—the facts of a case matter!

The foundation provided by the economics of vertical mergers for vertical merger guidelines is much more circumscribed. Guidelines should follow a structured rule of reason, similar to that proposed above. Guidelines should indicate situations when a vertical merger would raise concerns and why, but they would not indicate the structural conditions premerger under which the enforcement agencies would be concerned. On the other hand, they would indicate the method of analysis that the enforcement agency would follow; in particular, the questions and evidence that are relevant.

112. ANTITRUST MODERNIZATION COMM'N, *supra* note 2, at 68.

113. See Economic Advisory Group for Competition Policy, EAGCP Merger Sub-Group, *Non-Horizontal Merger Guidelines: Ten Principles*, Principle 6 (European Commission, Directorate-General IV, 2006), available at http://ec.europa.eu/comm/competition/mergers/legislation/non_horizontal_guidelines.pdf.

114. See ABA Section of Antitrust Law, *supra* note 110; Gotts et al., *supra* note 111; Hofer & Williams, *supra* note 111.

115. See Scheffman & Higgins, *supra* note 75.

In the fall of 2007, the EC adopted nonhorizontal merger guidelines that include guidance on how the Commission will assess the competitive effects of a vertical merger.¹¹⁶ The EU *Non-Horizontal Merger Guidelines* are consistent with many, though not all, of the recommendations advocated here. The EU *Guidelines* observe that vertical mergers are much less likely to be problematic, both because they do not eliminate a potential source of competition and because of the potential for efficiencies, both price and nonprice.¹¹⁷ The consideration of efficiencies will entail a trade-off to determine whether substantiated benefits from the transaction will outweigh any anticompetitive effect.¹¹⁸ The EU *Guidelines* recognize the possibility of both input and customer foreclosure and that foreclosure is not harmful unless it adversely affects the welfare of consumers (anticompetitive foreclosure).¹¹⁹ The analytical framework adopted to assess the likelihood of anticompetitive foreclosure (input or customer) involves an evaluation of (1) the integrating firm's ability to foreclose, (2) its incentives to foreclose, and (3) the effect on the downstream market of foreclosure.¹²⁰ The EU *Guidelines* recognize that market power is a necessary, though not sufficient, condition for a vertical merger to be anticompetitive. This is recognized by safe harbors based on posttransaction market shares (below 30 percent in both up and downstream markets) and the Herfindahl-Hirschman Index (below 2000).¹²¹

9. Conclusion

This chapter has provided an overview of the economics of vertical mergers and its implications for appropriate enforcement policy. The economics and enforcement policy of vertical mergers are substantially more complicated than for horizontal mergers for four reasons: (1) vertical mergers are often inherently efficient because they eliminate double marginalization and lower the costs of the integrating firm, (2) any anticompetitive effect must be indirect since a vertical merger does not eliminate a horizontal competitor, (3) identifying when a vertical merger is anticompetitive (harms consumers or is inefficient) is often difficult since it typically depends on a trade-off between the negative effects on competitors from foreclosure (if any) and the positive effect from the internalization of double marginalization, and (4) the motivation and effect of vertical mergers is to realize nonprice efficiencies.

The survey of both the theoretical and empirical literatures suggests a presumption that vertical mergers are efficient and beneficial for consumers. As a result, the key policy issue is to institute an enforcement approach that identifies the few vertical mergers that are anticompetitive without casting a chill over vertical mergers that are beneficial. The approach suggested is a structured rule of reason that includes as a first step a market power screen in the downstream market.

116. See EU NON-HORIZONTAL MERGER GUIDELINES, *supra* note 1.

117. *Id.* ¶¶ 11-14.

118. *Id.* ¶ 21.

119. *Id.* ¶ 18.

120. *Id.* ¶¶ 32, 59.

121. *Id.* ¶¶ 23-25.

The second stage of the structured rule of reason approach involves demonstrating an indirect link from the transaction to anticompetitive harm. The modern theories of input and customer foreclosure provide a template for ensuring that the theory of the case is coherent and consistent. These theories demonstrate that the indirect link from a vertical merger to an increase in market power and anticompetitive harm involves determining (1) the ability and incentive for foreclosure; (2) the effect of foreclosure on rivals, including how it affects their ability to compete; (3) how the vertical merger changes the incentives of the integrated firm to compete in the downstream market; and (4) the impact on the welfare of consumers, or efficiency, from the change in competition and the change in behavior of the vertically integrated firm.

The third stage of the structured rule of reason involves an assessment of nonprice efficiencies specific to the transaction and their relative magnitude compared to any anticompetitive effect from foreclosure or enhanced coordination. The proposed structured rule of reason can provide the foundation for vertical merger enforcement guidelines that (1) enhance transparency and (2) commit enforcement agencies to a framework for analysis that promotes efficient competition policy analysis.