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ROUNDTABLE ON VERTICAL MERGERS

-- Note by the United States --

This note is submitted by the delegation of the United States to the Competition Committee FOR DISCUSSION at its forthcoming meeting to be held on 21-22 Feruary 2007.

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1. Vertical mergers continue to command the attention of competition authorities and economic researchers. In their enforcement posture toward mergers, both vertical and horizontal, the U.S. Department of Justice and Federal Trade Commission (hereafter "the Agencies") pursue the overarching goal of economic efficiency. Vertical mergers differ in fundamental respects from horizontal mergers, however, and these differences are reflected in the Agencies' differing treatment of these two classes of merger. For reasons discussed herein, vertical mergers merit a stronger presumption of being efficient than do horizontal mergers, and should be allowed to proceed except in those few cases where convincing, fact-based evidence relating to the specific circumstances of the vertical merger indicates likely competitive harm.

1. Theory of the Firm

2. The spur to any merger, whether horizontal or vertical, is an anticipated improvement in coordination between the merging parties, insofar as this raises joint profit over the alternatives to integration. Improved coordination frequently, although not invariably, also serves the broader interests of efficiency. Assessing the likely effects of a given merger requires an understanding of the contractual alternatives to integration the parties face.

3. Ronald Coase was the first to address integration issues in the economics literature, in his classic study of the nature of the firm.[1] Coase posed the fundamental question of why some economic activities are organized within firms, while others are transacted across markets. In principle, parties prefer to organize an economic activity within a firm when doing so would entail lower transaction costs (or higher joint profit) than would a market transaction. Firm boundaries are determined by the scope of economic activity that, by being withdrawn from the market and organized within the firm, maximizes the parties' joint profit.[2]

4. Contractual incompleteness poses a key impediment to joint profit maximization, especially for transactions conducted at arm's length.[3] Contracts are typically incomplete, in part because it would be prohibitively costly to enumerate the appropriate rights and obligations of the parties in every conceivable contingency. Moreover, some important features of the parties' economic relationship may not be amenable to verification by a third party, such as a court or arbitrator, and so may not be contractually enforceable.

2. Imperfect Coordination

5. The incompleteness of contracts gives rise to problems of coordination between parties dealing at arm's length. When coordination is imperfect, neither party takes fully into account the effects that its actions have on the other party's profit. The policy implications of imperfect coordination differ sharply, however, according to whether the coordination involves goods that are substitutes or complements.

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1 Ronald H. Coase, *The Nature of the Firm*, 4 Economica, 386-405 (1937).

2 There are costs as well as benefits to organizing economic activity within a firm. For example, diseconomies of scope in managerial control limit the extent of firms.

3 *Id*. at 390-391. Among other factors, Coase discusses the costs of discovering relevant prices and of negotiating repeatedly when transactions are conducted at arm's length. For evidence on how costs of price determination affect contracts, see Francine Lafontaine and Scott E. Masten, *Contracting in the Absence of Specific Investments and Moral Hazard: Understanding Carrier-Driver Relations in U.S. Trucking*, NBER Working Paper 8859 (2002). For evidence on how costs of repeated negotiation affect contracts, see Keith J. Crocker & Scott E. Masten, *Pretia ex Machina? Prices and Process in Long Term Contracts*, 34 Journal of Law & Economics, 64-69 (1991).

2.1 Horizontal Coordination

6. Horizontal relationships involve substitute goods. Two goods are substitutes if a change that increases the quantity demanded of one, such as a reduction in the good's price or an improvement in its quality, leads to a fall in demand for the other. Imperfect coordination between suppliers of substitute goods implies that neither party fully internalizes the adverse effect that a reduction in its price or improvement in its quality has on the other party's profit.

7. Lack of coordination between suppliers of *substitute* goods is an essential aspect of competition. While uncoordinated behavior depresses the horizontal parties' joint profits, it tends to increase overall efficiency, by spurring the parties to lower price and improve quality as each seeks to steal business from the other. This externality between the parties could be better internalized by their horizontal merger, which would tend to result in higher prices or a slackened pace of quality improvement.

8. The basic economic intuition that improved coordination between substitute goods, as through a horizontal merger, tends to raise price and lower efficiency can be overturned if there are also sufficiently large efficiencies created by the merger. These include merger-specific reductions in cost that come from combining complementary assets, eliminating duplicate activities, or achieving scale economies, as well as quality improvements specific to the merger.[4]

9. The incompleteness of contracting between horizontal parties that gives rise to coordination problems is partly by design, as a matter of public policy. For example, competitors are prohibited from reaching a naked agreement to fix prices, because such explicit coordination would harm efficiency. Competitors are allowed to reach other types of agreement (more vertical in character), such as tolling arrangements whereby a firm with a comparative disadvantage at one stage of the production process outsources this function to a more efficient rival.

2.2 Vertical Coordination

10. Vertical relationships differ fundamentally from horizontal ones, in that vertical relationships involve complementary goods. Two goods are complements if a change that increases the quantity demanded of one, such as a reduction in the good's price or an improvement in its quality, leads to a rise in demand for the other. Imperfect coordination between suppliers of complementary goods implies that neither party fully internalizes the salutary effect that a reduction in its price or improvement in its quality has on the other party's profit.

11. Improved coordination between suppliers of *complementary* goods is an essential aspect of efficiency. Such improved coordination not only raises the parties' joint profits, but tends to increase overall efficiency as well through lower prices or improved quality. This externality between the parties could be better internalized by their vertical merger, which would tend to result in lower prices or a quickened pace of quality improvement.

12. The basic economic intuition that improved coordination between complementary goods, as through vertical merger, tends to lower price and increase efficiency can be overturned if there is also a sufficiently large horizontal effect created by the merger, such as the substantial foreclosure of rivals or facilitation of explicit collusion at some vertical stage.

[4] Federal Trade Commission & U.S. Department of Justice, Commentary on the Horizontal Merger Guidelines (2006) at 49.

13. One class of coordination problems between vertically related parties is moral hazard, in which a party can benefit privately by taking a non-price action (or failing to take an action) that would lower joint profits. A classic example is the problem of holdup in specific investments. An asset is specific if its value within a given relationship exceeds its value when deployed elsewhere. For example, the supplier of an intermediate good may customize an asset to better serve the demands of a particular customer. The customer may thereafter hold up the supplier, by negotiating a price so low that the supplier cannot recover the investment costs it has sunk. As another example of moral hazard, a franchisee may free ride on a franchisor's investments in building a brand reputation for quality, by shirking on the effort necessary to maintain quality at the franchisee's outlet.[5] Anticipating opportunism by the other party, an investor will tend to curb investment in specific assets, to the detriment of joint profit.

14. Holdup problems may be mitigated within a firm. If a supplier and customer vertically merge, the combined firm can wield considerable authority over how resources are allocated internally. Empirical studies have generally found that vertical integration is more prevalent where asset specificity is more important.[6] These studies indicate that mitigating holdup is an important source of efficiency flowing from vertical mergers. Other potential sources of efficiency from vertical merger over vertical contracting include improvements in the incentives for agents to exert effort and reductions in monitoring costs.

15. The incompleteness of contracting also tends to impede the maximization of joint profits because of the classic problem of double (or successive) markups. When a supplier of an intermediate good and a customer deal at arm's length, each may incorporate a markup over marginal cost into its pricing. Successive markups reduce joint profits because of a pricing externality. In setting its price, neither party internalizes the depressive effect its markup has on the other party's sales. Double markups thus tend to restrict output.

16. The parties might be able to solve a double-markup problem through negotiation, for example by agreeing to a two-part tariff in which the upstream firm's per-unit price is set at marginal cost. However, such a solution typically is not reached. Positive markups are ubiquitous, even in very competitive markets. In franchising, for example, royalty rates are a common contracting feature.[7] Franchisees are typically at some risk of moral hazard by the franchisor. Franchisee revenues could be undermined by the franchisor shirking on efforts to maintain franchise quality. Royalty rates can mitigate such moral hazard, by delivering to the franchisor a stream of royalties contingent on franchisee sales that the franchisor would

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5 While it is the upstream firm that is subject to holdup in both of these examples, specific investments by downstream firms may likewise run the risk of opportunism. For a detailed discussion of franchising issues, see Roger D. Blair & Francine Lafontaine, The Economics of Franchising (2005).

6 For a recent survey and discussion that emphasizes the role of asset specifity, see Paul L. Joskow, *Vertical Integration*, in Handbook of the New Institutional Economics (2005). In the context of franchising, franchisors with higher brand-name value tend to manage a larger proportion of company-owned units, relying less on franchisee units. For evidence on this relationship among franchisors in the United States, see Francine Lafontaine & Kathryn L. Shaw, *Targeting Managerial Control: Evidence from Franchising*, NBER Working Paper 8416 (2001). Similar results have been found for franchisors in France and Brazil. See Thierry Penard, Emmanuel Raynaud & Stephane Saussier, *Dual Distribution in Franchised Chains: An Empirical Analysis Using French Data*, working paper, Centre ATOM, University of Paris I (2002) , and Paulo F. Azevedo & Vivian L. dos Santos Silva, *Contractual Mix in Brazilian Franchising*, mimeo, Federal University of Sao Carlos, SP, Brazil (2002).

7 Blair & Fontaine, *supra* note 3.

stand to lose by shirking on quality.[8] More generally, positive markups received by both upstream and downstream firms can assure the recipients' mutual performance of their no verifiable duties.[9]

17. A double markup may thus reflect an efficient contractual response to a problem of two-sided moral hazard. It may also reflect the successive exercise of market power by the contracting parties. In either case, vertical merger can improve efficiency by mitigating the double markup. Importantly, the greater the market power in each successive market, the more severe the double-markup problem under arms-length contracting and the greater the potential for vertical merger to achieve efficiencies by eliminating this problem.

3. Merger Enforcement

18. The goal of U.S. antitrust enforcement with regard to vertical mergers is the same as for horizontal mergers: to promote efficiency by deterring only those mergers that are likely to substantially lessen competition. To the extent that vertical mergers differ in fundamental respects from horizontal mergers, merger analysis appropriately takes these differences into account.

3.1 Horizontal Mergers

19. In the case of horizontal mergers, the Agencies apply an analysis described in the Horizontal Merger Guidelines ("HMG").[10] Under the HMG,[11] the Agency delineates relevant markets, identifying participants in those markets and calculating their market shares.[12] If post-merger concentration in the relevant market would fall below a certain threshold, the market is considered unconcentrated and the merger is unlikely to have adverse competitive effects. In this case, no further analysis is ordinarily required.[13] A horizontal merger's potential for adverse effects tends to be greater the more post-merger concentration exceeds the threshold.[14] The Agency investigates the merger's potential for unilateral or coordinated competitive effects.[15] A horizontal merger's potential for harm is undermined, however, if

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[8] Lafontaine & Shaw, *supra* note 4, at 22.

[9] See Benjamin Klein & Keith Leffler, *The Role of Market Forces in Assuring Contractual Performance*, 89 Journal of Political Economy, 615-641 (1981), and Klein, *The Economics of Franchise Contracts*, 2 Journal of Corporate Finance, 9-37 (1995).

[10] U.S. Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines* (issued April 2, 1992; revised April 8, 1997) available at:

http://www.usdoj.gov/atr/public/guidelines/hmg.htm.

[11] The order of analytical elements in the listing that follows has no analytical significance. See Federal Trade Commission & U.S. Department of Justice, *Commentary on the Horizontal Merger Guidelines* (March 2006), available at:
http://www.ftc.gov/os/2006/03/CommentaryontheHorizontalMergerGuidelinesMarch2006.pdf.
Commentary at 2: "Each of the Guidelines' sections identifies a distinct analytical element that the Agencies apply in an integrated approach to merger review. The ordering of these elements in the Guidelines, however, is not itself analytically significant, because the Agencies do not apply the Guidelines as a linear, step-by-step progression that invariably starts with market definition and ends with efficiencies or failing assets." See also the discussion *infra* note 20.

[12] *Guidelines*, *supra* note 10, Sections 1.0-1.4.

[13] *Id.*, Section 1.51.

[14] *Id.*, Section 1.51.

[15] *Id.*, Section 2.

entry is easy. The Agency examines the timeliness, likelihood and sufficiency of the entry alternatives a potential entrant might practically employ.[16]

20. Where the analysis of a horizontal merger raises substantial concerns regarding the merger's potential for creating or enhancing market power, the Agency considers the merger's cognizable (merger-specific and verifiable) efficiencies. The Agency will not challenge a merger if cognizable efficiencies are of such a character and magnitude that the merger is not likely to be anticompetitive.[17]

21. Both the concentration thresholds and the treatment of market power and efficiency issues in horizontal merger analysis are policy responses to the problem of inference in merger enforcement.[18] These features reflect aspects of the relationship between market power and efficiency that are particular to horizontal mergers. Insofar as vertical mergers differ in relevant respects from horizontal mergers, an economic analysis of vertical mergers and efficient enforcement policy towards them will appropriately reflect these differences.

22. All horizontal mergers have at least some potential to realize efficiencies, if only by eliminating redundant overhead costs. When the relevant markets are unconcentrated, the risk of adverse competitive effects from a horizontal merger is small. The threshold below which markets are considered unconcentrated strikes a balance such that the generic efficiencies typically achievable through merger outweigh the small risk of competitive harm posed by horizontal mergers falling below this threshold. From the Agency's perspective, the threshold economizes on scarce enforcement resources, allowing the Agency to better deploy these resources to the investigation of mergers whose risk of competitive harm is more substantial.[19] From the perspective of the business community, the threshold provides clarity on the Agency's enforcement posture with regard to the large majority of horizontal mergers, removing a potential stumbling block to business planning.

23. The market characteristics that are indicative of whether a horizontal merger is likely to substantially create or enhance market power, such as concentration, elasticities of demand, the nature of competitive interactions among market participants, and ease of entry, provide no information on the merger's potential to achieve efficiencies. This independence has two consequences for horizontal merger enforcement. First, it allows many horizontal merger investigations to be terminated at an early phase based on the likely absence of market power post-merger, without the need to consider cognizable efficiencies.[20] This economizes on enforcement resources, as the Agency undertakes a detailed

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16 *Id*., Section 3.

17 *Id*., Section 4.

18 For a general discussion of inference issues in merger enforcement, see Ken Heyer, *A World of Uncertainty: Economics and the Globalization of Antitrust*, 72 Antitrust Law Journal, 375-422 (2005); see also Dennis W. Carlton, *Does Antitrust Need to be Modernized?*, Economic Analysis Group Discussion Paper 07-3 (2007), at 3. For discussions within the context of vertical restraints and/or vertical mergers, see Michael W. Klass & Michael A. Salinger, *Do New Theories of Vertical Foreclosure Provide Sound Guidance for Consent Agreements in Vertical Merger Cases?*, 40 Antitrust Bulletin, 667-698 (1995); James C. Cooper, Luke M. Froeb, Dan O'Brien & Michael G. Vita, *Vertical Antitrust as a Problem of Inference*, 23 International Journal of Industrial Organization, 639-664 (2005); Michael A. Salinger, *Is it Live or is it Memorex? Models of Vertical Mergers and Antitrust Enforcement*, presentation to the Association of Competition Economics Seminar on Non-Horizontal Mergers (2005).

19 The threshold also limits the risk that the parties to a procompetitive horizontal merger are burdened by additional costs of investigative compliance (Type I error). For a general discussion of Type I and II errors see Heyer and Cooper et al., *supra* note 17.

20 *Commentary* , *supra* note 10, at 1: "For more than 95% of the transactions reported under HSR [the Hart-Scott-Rodino Antitrust Improvement Act of 1976, 15 U.S.C. 18a], the Agencies promptly determine—i.e.,

consideration of cognizable efficiencies only in the minority of cases in which a horizontal merger would otherwise have the potential to substantially lessen competition. Second, the more substantial a horizontal merger's potential for lessening competition, the greater must its cognizable efficiencies be for the Agency to conclude that the merger is not likely to be anticompetitive.

3.2. Vertical Mergers[21]

24. Vertical mergers have a stronger claim to being efficient than do horizontal mergers, given the fundamentally different effects of improved coordination between complements versus substitutes, as discussed above. This basic intuition can be overturned, however, if a vertical merger is shown to have a substantial horizontal effect of adversely affecting competition. Theories of competitive harm arising from vertical merger typically require the presence of market power, which is absent in unconcentrated markets. Thus vertical mergers, like horizontal mergers, merit having an unconcentrated-market threshold in their assessment.[22]

25. Vertical mergers also differ from horizontal mergers, however, in that market power and efficiency issues are typically closely linked for vertical mergers, given the pervasiveness of double-markup problems in arm's-length dealings between vertically related parties. The greater the market power (in its respective market) of each party to a vertical merger, the greater the potential for their merger to increase efficiency by eliminating the double markup between them. It is not necessarily the case that a vertical merger poses greater risk of competitive harm the greater is the market power of each merging party. This counsels that great care be taken when analyzing vertical mergers.

26. By improving coordination between the merging parties and thereby mitigating problems such as double markup and moral hazard, the overwhelming majority of vertical mergers increase efficiency.

27. Not all improvements in coordination between the parties to a vertical merger are efficiency-increasing, however. For example,[23] an upstream firm dealing at arm's length may not take into account the effect on its downstream contracting partner of the prices the upstream firm charges to downstream rivals. The higher the input price that downstream rivals face, the more easily could the downstream partner steal business from rivals and also profitably raise its own price. Vertical merger could internalize

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within the initial fifteen or thirty day statutory waiting period that immediately follows HSR filings—that a substantial lessening of competition is unlikely." *Commentary* , *supra* note 10, at 2: "If the conditions necessary for an anticompetitive effect are not present…the Agencies terminate their review because it would be unnecessary to address all of the analytical elements" enumerated in the HMG. For a history of the evolution of the treatment of efficiencies, see William J. Kolasky & Andrew R. Dick, *The Merger Guidelines and the Integration of Efficiencies into Antitrust Review of Horizontal Mergers*, 71 Antitrust Law Journal, 207-251.

21 The Non-Horizontal Merger Guidelines from Section 4 of the Department's 1984 *Merger Guidelines*, available at http://www.usdoj.gov/atr/public/guidelines/2614.htm, remain in effect, although developments in economic understanding over the last 23 years have refined the Agencies' enforcement policy in various respects. See 1 ABA Section of Antitrust Law, Antitrust Law Developments (5th ed. 2002) 362-68.

22 Vertical mergers, like horizontal ones, typically allow some elimination of redundant overhead costs. In addition, problems of moral hazard and double markup are pervasive in arm's length dealings between suppliers and their customers. The mitigation of these problems is a typical source of efficiency for vertical mergers, but not for horizontal mergers.

23 Note also that if an industry's price is regulated, a vertical merger by a regulated firm into an unregulated industry could allow the merged firm to evade the price regulation by requiring customers to purchase an unregulated product at high prices. Presumably the industry's regulators would attempt to prevent this type of regulatory evasion.

this pricing externality, resulting in the upstream affiliate raising price to the downstream affiliate's rivals, thereby raising the rival's costs and rendering them less effective competitors. This is a source of competitive harm that could result in higher output prices. The risk of such a price squeeze is low, however, if the upstream market is unconcentrated or entry into the market is easy, so that downstream rivals have alternative sources of supply competing for their input purchases.

28. A closely related competitive concern is that vertical merger could lead to the outright foreclosure of unintegrated rivals either upstream or downstream, by withdrawing capacity from the market to deploy it internally. This withdrawal of capacity from rivals could cause those rivals to face higher costs and so ultimately lead to higher output prices. However, to the extent that the merging parties deal with other firms pre-merger, ending such trade in favor of internal supply will typically free up capacity elsewhere in the market, so that unintegrated rivals may be able to realign their supply relationships post-merger to avoid foreclosure.

29. A vertical merger may also affect the stability of explicit collusion. For example, a vertical merger might facilitate explicit collusion by making some prices more transparent, so possibly lowering the costs of monitoring compliance with a horizontal price-fixing agreement.[24] Vertical merger may also destabilize a cartel, however. For example, the elimination of a double markup may render an integrated firm more disruptive to a cartel, by sharpening the firm's incentive to lower price and expand output.

30. A growing theoretical economics literature has explored circumstances under which a vertical merger may cause competitive harm.[25] Theoretical models of vertical merger typically reach ambiguous conclusions about competitive effects, or reach conclusions that exemplify the potential for competitive harm from vertical merger but are not robust to plausible changes in the models' underlying assumptions. Given the fragility of these theoretical results, they offer no sound general guidance to vertical merger enforcement policy.

31. Two Federal Trade Commission cases decided in 2002 underscore the fact that any vertical enforcement action should have a strong empirical basis.

32. In the Commission's *Cytyc/Digene* case, Digene was the only company in the U.S. selling a DNA-based test for the human papillomavirus (HPV), which is believed to cause nearly all cervical cancer cases. Cytyc's products account for 93% of U.S. liquid-based Pap tests, which are the most widely used sensitive primary screening tool for the detection of cervical cancer. It is vitally important for manufacturers of liquid Pap tests to have viable access to Digene's HPV test. By purchasing Digene, Cytyc would have been in a position to limit its only existing competitor by limiting access to Digene's HPV test. In a similar manner, it could also have thwarted the entry of other firms that had planned to begin selling liquid Pap tests in the near future. The proposed acquisition would have eliminated future competition from Digene's HPV test itself, both in conjunction with Pap testing and later on a stand-alone basis to test for cervical cancer. Moreover, for years into the future, TriPath (the other liquid pap test competitor) and other potential new entrants would have been substantially impeded from competing without the merged

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[24] Similarly, vertical integration may sometimes lead to elevated prices in an oligopoly setting in which firms recognize the interdependence of their unilateral pricing decisions on their profits.

[25] For surveys and analyses of this literature, see Klass & Salinger and Cooper et al., *supra* note 16, Patrick Rey & Jean Tirole, *A Primer on Foreclosure*, IDEI working paper (2003), Jeffrey Church, *The Impact of Vertical and Conglomerate Mergers on Competition,* Final Report to the Directorate General for Competition, European Commission (2004), and Simon Bishop, Andrea Lofaro, Francesco Rosati & Juliet Young, *The Efficiency-Enhancing Effects of Non-Horizontal Mergers*, Report to the Enterprise and Industry Directorate General, European Commission (2005).

firm's cooperation. Therefore, the Commission concluded that the potential for consumer harm was very real, and the Commission voted to block the merger.[26]

33. In the *Synopsys/Avant!* merger, the situation was quite different. The merger involved software that is used in the design of computer chips. Synopsys had a nearly 90% share of "logical synthesis" or "front-end" tools for chip design, and Avant! had a share of about 40% of so-called "place and route" or "back-end" tools. The major issue was whether the merger would give Synopsys the ability and incentive to enhance the back-end competitive position of the formerly independent Avant!, by making it harder for competing back-end products to communicate with Synopsys's dominant front-end product. In contrast to *Cytyc/Digene,* customers supported the *Synopsys* merger because it was viewed as an important potential solution to a pressing industry need. Customers hoped it would speed the development of a relatively seamless integration between the front-end and back-end tools, resulting in a vastly improved product. Such integration is required in order to develop ever-shrinking chips economically. Moreover, although there were several theories of potential competitive harm, the facts did not suggest that Synopsys would have either the incentive or the ability to foreclose competitive products sufficiently to harm consumers. After considering all the facts, the Commission voted unanimously to allow the merger.[27]

34. In 2001, the U.S. Department of Justice (DOJ) challenged the merger of Premdor and Masonite. Premdor was the world's largest producer of interior molded doors, while Masonite was a major producer of interior molded doorskins, a key input into the production of interior molded doors. Although the merger was primarily vertical, it also had a significant horizontal component, as Premdor had recently acquired some capacity to produce doorskins in competition with Masonite. While Premdor's presence upstream in the doorskin market was small, the firm had the potential to expand doorskin production in response to any explicit collusion between Masonite and the other major doorskins supplier. Doorskins are homogeneous products, concentration in this market was high and entry was difficult—characteristics that tend to make explicit collusion possible. DOJ concluded that the merger of Premdor and Masonite would remove a substantial impediment to explicit collusion in doorskins. Pursuant to a consent decree, the merged entity divested a doorskins production facility and other assets to restore competition in the doorskins market.[28]

4. Conclusion

35. In a dynamic economy, changing economic conditions continually shift the boundaries of firms that best coordinate the allocation of economic resources. Assessing the likely effects of a given merger requires an understanding of the contractual alternatives to integration. Given the incompleteness of contracts, parties typically face coordination problems that integration tends to mitigate. The policy implications of improved coordination differ sharply, however, according to whether substitutes or complements are involved. While horizontal and vertical mergers both typically (although not invariably) increase efficiency, vertical mergers have a stronger claim to being efficient, because coordination between complements tends to lowers prices, while coordination among substitutes tends to raise prices.

36. Vertical mergers, like horizontal mergers, merit having an unconcentrated-markets threshold in their assessment. Assessment of vertical mergers differs from that of horizontal mergers, however, in that

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26 *See* Press Release, Federal Trade Commission Seeks to Block Cytyc' Corporation's acquisition of Digene Corporation, FTC File No. 021-0098 (June 24, 2002), *available at:* http://www.ftc.gov/opa/2002/06/cytyc_digene.htm.

27 *See* Press Release, Federal Trade Commission Votes to Close Investigation of Acquisition of Avant! Corporation by Synopsys, Inc., FTC File No. 021-0049 (July 26, 2002), *available at:* <http://www.ftc.gov/opa/2002/07/avant.htm>.

28 *See* U.S. v. Premdor, Inc., No. 1:01CV01696 (D.D.C. 2001).

market power and efficiency issues are typically closely linked for vertical mergers, given the pervasiveness of double-markup problems among vertical relationships at arm's length. A vertical merger's potential for creating efficiencies by eliminating a double markup tends to increase with the market power of each merging party. Even when a vertical merger has the potential for anticompetitive effects, these effects are often offset by the inherent efficiency of mitigating double marginalization.

37. For these reasons vertical mergers generally raise fewer competitive concerns than do horizontal mergers. An overly aggressive enforcement posture toward vertical mergers would run the risk of hindering the ongoing realignment of firm boundaries that is necessary to maintaining an efficient allocation of resources in a dynamic economy.