

THE VIABILITY OF ANTITRUST PRICE SQUEEZE CLAIMS

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A price squeeze occurs when a vertically integrated firm “squeezes” a rival’s margins between a high wholesale price for an essential input sold to the rival and a low output price to consumers for whom the two firms compete. Price squeezes have been a recognized but controversial antitrust violation for two-thirds of a century. We examine the law and economics of the price squeeze, beginning with Judge Hand’s famous discussion in the Alcoa case in 1945, and concluding with the Supreme Court’s 2009 Linkline decision, which applied a strict cost-based test to price squeeze claims. While Alcoa has been widely portrayed as creating a “fairness” or “fair profit” test for unlawful price squeezes, Judge Hand actually adopted a cost-based test, although a somewhat different one than most courts and scholars would adopt today. We conclude that strictly cost-based predatory pricing tests such as the one the Supreme Court developed in its 1993 Brooke Group decision are not always appropriate to the concerns being raised in a price squeeze. We also consider several efficiency explanations, the importance of joint costs, situations in which the dominant firm uses a squeeze to appropriate the fixed-cost portion of the rival’s investment, as well as those where the shared input is a fixed rather than variable cost for the rival. Ultimately, we find little room for antitrust liability except in one circumstance: where a squeeze is used to restrain the rival’s vertical integration into the monopolized market. That situation is not captured by the Linkline’s cost-based rule.

I. INTRODUCTION

A. Vertical Integration and the “Price Squeeze”

A price or margin “squeeze” occurs when a vertically integrated firm sells an input to unintegrated rivals who also compete with the vertically integrated firm in a downstream market. The claim is that the large firm “squeezes” the rival between a high wholesale price for the input and its own low price in the downstream market. In its *Linkline* decision the Supreme Court went a long way

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toward shutting the door on price squeeze claims.¹ While the Court did not expressly overrule Judge Hand's famous decision in *United States v. Alcoa*, it did so in fact.² Judge Hand had condemned the defendant for selling raw aluminum ingot to unintegrated "rollers," a type of fabricator that formed aluminum into sheets of various gauges for use by manufacturers further downstream.³ Alcoa also made its own rolled sheet. The Government claimed that Alcoa charged the independent fabricators a high price for ingot but resold its own rolled sheet to customers at such a low price that the independent, unintegrated fabricators could not make a living on the margin that was left.

In assessing this claim Judge Hand looked at Alcoa's own costs for producing rolled sheet from raw ingot and assumed that the rivals' costs were the same as Alcoa's. He also assumed that the independents needed to sell their sheet at the same price that Alcoa sold sheet in order to survive in the market. He concluded on these numbers that the independent sheet rollers could not survive under Alcoa's pricing.⁴ While Judge Hand wrote of the independent fabricator's

1. See *Pac. Bell Tel. Co. v. Linkline Commc'ns, Inc.*, 129 S. Ct. 1109 (2009) (reversing *Linkline Commc'ns, Inc. v. SBC Cal., Inc.*, 503 F.3d 876 (9th Cir. 2007)). The Supreme Court granted certiorari after the Solicitor General recommended review, while the FTC recommended against review. See Debra Cassens Weiss, *High Court to Hear 'Price Squeeze' Antitrust Case that Split FTC and SG*, A.B.A. J., June 23, 2008, available at http://abajournal.com/news/high_court_to_hear_price_squeeze_antitrust_case_that_split_ftc_and_sg/. Compare *Covad Commc'ns Co. v. BellSouth Corp.*, 374 F.3d 1044, 1050 (11th Cir. 2004) (accepting a version of price squeeze which meets predatory pricing test, requiring prices below cost and likelihood of recoupment), with *Covad Commc'ns Co. v. Bell Atl. Corp.*, 398 F.3d 666, 673–74 (D.C. Cir. 2005) (rejecting price squeeze claim where defendant—who was free to refuse to deal—was not engaging in orthodox predatory pricing in downstream market), and *Cavalier Tel., LLC v. Verizon Va., Inc.* 330 F.3d 176, 190 (4th Cir. 2003) (same).

By contrast to a "price squeeze," a "supply squeeze" occurs when a vertically related monopolist denies or limits its unintegrated rivals' access to some source of supply. See 3B PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 767b (3d ed. 2008) [hereinafter ANTITRUST LAW]. The Supreme Court's decision in *Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co.*, 549 U.S. 312 (2007), involved allegations of a kind of supply squeeze in which a firm that lacked power in the downstream market allegedly bid the price of an essential input up, thus squeezing rivals between input costs and the market price. *Id.* at 316. The Supreme Court held that such a claim required a showing of predatory pricing—namely, that the dominant firm bid the price up so high that it was required to resell at a loss, and that the market structure indicated that it would be in a position to recoup these losses once the rivals had exited from the market. *Id.* at 318–20. Cf. *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 224 (1993). On *Weyerhaeuser*, see 3A ANTITRUST LAW, *supra*, ¶ 747. On the predatory pricing recoupment requirement, see *id.* ¶¶ 725–26. On the requirement of prices below cost, see *id.* ¶¶ 739–40.

2. See *Linkline*, 129 S. Ct. at 1120 n.3 (purporting to distinguish *United States v. Alcoa*, 148 F.2d 416 (2d Cir. 1945)).

3. *Alcoa*, 148 F.2d at 437–38.

4. See *id.* at 436–37.

Between the years 1925 and 1937 inclusive "Alcoa's" books show the price of all these kinds of "sheet" for the "gauges" in question, together with the cost of making it from ingot. They also show the price of ingot, which was of course the same for all "gauges" and for all kinds of

legal entitlement to a “fair price”⁵ from Alcoa, he in fact employed a cost-based test. The test was that the margin between the price at which Alcoa sold sheet to the independent rollers and its own resale price for rolled aluminum must be at least sufficient to cover the costs that Alcoa itself incurred for the same set of processes. In other words, Judge Hand applied a somewhat primitive version of an “equally efficient rival” test, such as the one that Judge Posner has advocated for unlawful exclusionary conduct assessed under Section 2 of the Sherman Act.⁶

Judge Hand’s test for a price squeeze was not technical about the cost measure it was employing. One cannot tell from the opinion whether he included fixed costs, and thus gave an average total cost measure, or included only variable costs.⁷ All we know from the opinion is that he pulled the data from various tables

“sheet,” as it was the same for all uses of aluminum other than “sheet.” .

.. The plaintiff’s theory is that “Alcoa” consistently sold ingot at so high a price that the “sheet rollers,” who were forced to buy from it, could not pay the expenses of “rolling” the “sheet” and make a living profit out of the price at which “Alcoa” itself sold “sheet.” To establish this the plaintiff asks us to take “Alcoa’s” costs of “rolling” as a fair measure of its competitors’ costs, and to assume that they had to meet “Alcoa’s” price for all grades of “sheet,” and could not buy ingot elsewhere. It seems to us altogether reasonable, in the absence of proof to the contrary, to suppose that “Alcoa’s” “rolling” costs were not higher than those of other “sheet rollers” . . .

Id.

One contemporary critic complained of the fact that Judge Hand took the cost data directly from Alcoa’s account books and did not require the Government to establish the costs directly. See G. E. Hale, *Vertical Integration: Impact of the Antitrust Laws upon Combinations of Successive Stages of Production and Distribution*, 49 COLUM. L. REV. 921, 929–31 (1949).

5. *Alcoa*, 148 F.2d at 438 (“[O]n this record the price of ingot must be regarded as higher than a ‘fair price.’”).

6. Judge Posner’s definition of exclusionary conduct requires the plaintiff to show:

that the defendant has monopoly power and . . . that the challenged practice is likely in the circumstances to exclude from the defendant’s market an equally or more efficient competitor. The defendant can rebut by proving that although it is a monopolist and the challenged practice exclusionary, the practice is, on balance, efficient.

RICHARD A. POSNER, *ANTITRUST LAW* 194–95 (2d ed. 2001); see also 3 *ANTITRUST LAW*, *supra* note 1, ¶ 651b4 (arguing that this test is a good one for pricing practices, although not for all practices that might be challenged under Section 2).

7. A variable cost is a cost that varies with the amount of output a firm produces, such as employed ingredients, production utilities and labor; further, these costs can be avoided if the firm ceases producing. A fixed cost is constant over a large range of production and must be paid whether or not the firm produces. For example, a mortgage payment on the plant must be paid even if the plant is shut down and the size of the payment typically does not vary with the amount the plant is producing. In order to make a profit over the long run, a firm must set a price high enough to cover its average total costs. However, it will continue to produce as long as it is covering average variable cost, for any contribution to fixed costs is better than nothing. If a firm cannot even cover its average

that Alcoa had submitted during the course of the litigation. The most likely measures are these: first, if the spread between Alcoa's wholesale price for raw ingot and its resale price of rolled aluminum was sufficient to cover its average total cost of rolling aluminum, then an equally efficient rival should have been able to earn a profit rolling Alcoa's ingot into sheet. Second, if the spread sufficiently covered the smaller firm's variable costs⁸ of rolling, but not its fixed costs, then the smaller firm would likely continue producing, but it would probably not rebuild the rolling mill when it wore out. Third, if the squeeze did not even give the smaller firm a margin sufficiently wide to cover its variable cost of rolling, then it would be most profitable to shut down.⁹ This latter option is tantamount to a refusal to deal.

High fixed costs create more room for a squeeze in which the independent firm can cover its variable costs but not its fixed costs. A typical attribute of industries with high fixed costs is that a vertically integrated firm can profitably increase output by engaging in price discrimination, and this can lead to situations in which a large firm actually charges a lower "retail" price to its own customers than it charges its rival for the requisite input. For example, suppose I am a vertically integrated firm with a monopoly in an upstream market for Alpha, an input into the production of Beta, which is sold downstream to consumers. A downstream entrant wishes to buy Alpha from me. Because the inputs used in producing Beta are not homogenous, this rival invests in the specific production technologies required to make Beta from my Alpha. Suppose that every unit of Beta is sold downstream for \$100, and that it costs \$20 to fabricate Beta from Alpha. I sell Alpha to my rival for \$70, which includes a \$20 markup. At this price my rival earns a \$10 profit on each unit of Beta sold downstream. However, I learn that I can profit by offering a quantity discount of ten units of Beta for \$650. This package price of \$65 per unit is \$5 less than the price I charge my rival for Alpha. However, it is profitable for me because I still earn a profit of \$150 on the bundle; I have simply used this bundle as a way of appealing to large-scale consumers that were not otherwise willing to buy my product. At this per-unit price level, my rival clearly faces a price squeeze, yet I have every reason to impose it. The squeeze (which exists only with respect to customers of ten or more units) is merely the result of an independently profitable price-discrimination strategy.

Controlling price discrimination in regulated industries subject to high fixed costs is a highly complex regulatory task. On the one hand, price discrimination in such cases clearly increases output and thus enables the regulated firm to charge less to everyone. That is, price discrimination enables a seller in such an industry to capture additional sales in a range where the contribution of a price to fixed cost is quite low but nevertheless positive.¹⁰ On the other hand, price

variable costs it will ordinarily shut down. See HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE § 8.2 (3d ed. 2005).

8. Presumably the price of the ingot itself, plus the labor, utilities, and other costs that varied with output.

9. For a detailed explanation, see *infra* Appendix A.

10. See 1 ALFRED E. KAHN, THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS 130 (4th ed. 1991); Martin K. Perry, *Price Discrimination and Forward Integration*, 9 BELL J. ECON. 209, 210 (1978); see also Alexander C. Larson & Steve G.

discrimination often entails that the marginal sale is made at a much lower price than much more inframarginal sales to long-term customers.

B. The Price Squeeze and the Refusal to Deal

Should the antitrust laws ever impose liability for a price squeeze if the defendant had no duty to deal with the plaintiff to begin with? Under the Supreme Court's *Trinko* decision,¹¹ if such a duty to deal exists it is an extraordinarily narrow one. However, *Trinko* itself suggested some exceptions—namely, where the two firms had established a previous course of dealing,¹² and where the dominant firm was dealing with others on a regular basis.¹³

Price squeeze claims encounter all the problems that serve to limit antitrust liability for unilateral refusals to deal. The main problem is that forcing a dominant firm to share an input with a rival does not benefit consumers unless a court is also willing to regulate the price at which sharing occurs. If forced to sell an input to a rival, a monopolist can be expected to charge the rival a price such that the full monopoly markup stays with the monopolist and the rival gets no more than a sufficient return to keep it in production.¹⁴ Further, such an order to deal has the perverse effect of removing that rival's incentive to innovate, as it receives the same returns regardless of any improvements.¹⁵

One simple way of disposing of price squeeze claims is to regard them as completely encompassed within the law of refusal to deal. As this argument goes, a firm should never be condemned for selling to a rival at an unfavorable price when an absolute refusal to deal would have been lawful. If the input really is essential to the smaller firm's business then it could not survive at all under a refusal to deal. Except for loss of investment, the smaller firm cannot do any worse and consumers cannot be harmed any more by the dominant firm's willingness to sell, but only at an oppressively high price in relation to output prices.

Such an approach would not necessarily eliminate all price squeeze claims. After all, *Trinko* placed very severe restrictions on the antitrust law of refusal to deal, but it did not explicitly abolish the cause of action altogether. The Court qualified but did not overrule its earlier *Aspen* decision.¹⁶ *Aspen* may still have some life in situations where the defendant voluntarily developed a course of

Parsons, *Telecommunications Regulation, Imputation Policies and Competition*, 16 HASTINGS COMM. & ENT. L.J. 1, 12 (1993) (defending price-discrimination policies that can lead to price squeezes).

11. See *Verizon Commc'nns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 415 (2004); 3B ANTITRUST LAW, *supra* note 1, ¶¶ 771–74, 787 (discussing unilateral refusals to deal and the essential facilities doctrine).

12. See *Trinko*, 540 U.S. at 409.

13. *Id.* at 410.

14. See 3B ANTITRUST LAW, *supra* note 1, ¶ 771.

15. See *infra* Appendix B.3.

16. *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 610–11 (1985); see 3B ANTITRUST LAW, *supra* note 1, ¶ 772c.

dealing with its smaller rival and then changed the terms in a way that disadvantaged its rival.¹⁷

Nevertheless, it is very difficult to find an antitrust rationale for condemning price squeezes in situations where the defendant has no obligation to deal under *Trinko*'s restrictive reading of *Aspen*. The Supreme Court thought as much in *Linkline*.¹⁸ The discussion below considers some possible exceptions, and some of them might require a remedy of some sort. For example, the dominant firm might have somehow induced the smaller firm to make a significant specialized investment in the dominant firm's technology. This investment would be based on the dominant firm's promise to provide an essential but specialized input. Later on, when the dominant firm's own production capacity increased, it might decide to starve out the smaller firm by reducing its margin to an amount sufficient to cover variable costs but insufficient to pay off fixed costs. In this scenario the dominant firm might effectively "rob" the smaller firm's shareholders and creditors of the smaller firm's fixed-cost assets.¹⁹ It would ordinarily do this by raising the price of the input being supplied to the rival. While such conduct might be regarded as reprehensible, one struggles to find a justification for condemning it in the antitrust laws. Indeed, consumer injury is not in prospect and antitrust creates no abstract duty on the part of firms to refrain from injuring their rivals, even by devious means.

In one instance consumer harm may be possible. Suppose that after supplying a smaller rival for some time the dominant firm realizes that the smaller rival is developing the capability to integrate into upstream competition with the dominant firm. If that were to happen, the dominant firm would lose its monopoly position in the upstream market and would forgo profits resulting from upstream sales. Further, by integrating into upstream production the rival avoids double marginalization by obtaining the input at production cost. As a result, it will be able to produce at a lower cost and will capture a greater portion of the downstream market.²⁰ To prevent this, the integrated firm may impose a squeeze calculated to rob the smaller firm of the resources needed to develop independence in the upstream market. Such a scenario would injure consumers in the long run, as they would be denied the benefits of a more competitive overall market structure.

In its *Linkline* decision the Supreme Court held that if a monopolist has no duty to deal with a rival in the wholesale, or upstream, market its price squeeze would not be unlawful unless prices in the retail, or downstream, market were

17. 3B ANTITRUST LAW, *supra* note 1, ¶ 772e.

18. *Pac. Bell Tel. Co. v. Linkline Commc'nns, Inc.*, 129 S. Ct. 1109 (2009). See discussion *infra*, text at notes 21–47.

19. See *infra* Appendix B.1–2.

20. Double marginalization occurs when a firm's variable costs include an above-cost markup set by another firm. The elimination of double marginalization greatly reduces costs and allows lower retail prices to be set. As a result, the foreclosure of one firm need not have an adverse impact on consumers if it allows another firm to avoid double marginalization. In fact, it is possible that consumers would benefit from such an occurrence. See 3B ANTITRUST LAW, *supra* note 1, ¶ 758. In the context of price squeeze claims, see Dennis W. Carlton, *Should "Price Squeeze" Be a Recognized Form of Anticompetitive Conduct?*, 4 J. COMPETITION L. & ECON. 271, 276 (2008).

predatory under *Brooke Group* standards.²¹ The defendant AT&T²² was a vertically integrated monopolist which wholesaled digital subscriber line (DSL) service to rival internet service providers (ISPs) and also provided its own DSL-based internet service to its own customers.²³ The plaintiffs alleged that the defendant charged such a high price for its wholesale DSL service and such a low price on its retail service that the rivals could not make a reasonable profit on the spread between what they had to pay and what they received from their own customers.

The defendant had no antitrust-imposed duty to deal with plaintiffs in the upstream market, as had been established in *Trinko*.²⁴ The Ninth Circuit had permitted the claim to go forward, however, concluding that *Trinko* did not apply to price squeezes because they had existed prior to that decision and the Court had not purported to reject them.²⁵ Judge Gould dissented from that decision, arguing that price squeeze claims should be dismissed when the defendant (1) has no antitrust duty to deal in the upstream market and (2) the claim does not satisfy the standards imposed by *Brooke Group* for predatory pricing in the downstream market—namely, prices below a relevant measure of cost and a dangerous likelihood of recoupment.²⁶

While the case was pending before the Supreme Court the plaintiffs changed their theory, concluding that the Ninth Circuit majority was wrong and the dissent correct, and that *Brooke Group* standards should judge their claim. They claimed that the dispute was thus moot, but the Supreme Court disagreed, observing that the parties wanted different relief. The defendant wanted the case dismissed but the plaintiff wanted a remand to replead under *Brooke Group* standards.²⁷ The Court also observed that the plaintiffs spoke repeatedly in their brief of a “price squeeze” claim rather than a “predatory pricing” claim, indicating that they were ambiguous about abandonment of their earlier theory of action.²⁸

Going to the merits, the Court observed that while a monopolist might in rare instances have an antitrust-imposed duty to deal with a rival, this was not such

21. *Linkline*, 129 S. Ct. 1109. The Opinion of the Court was delivered by Chief Justice Roberts, joined by Justices Scalia, Kennedy, Thomas, and Alito. Justice Breyer filed an opinion concurring in the judgment, joined by Justices Stevens, Souter, and Ginsburg.

22. The case was styled “Pacific Bell Co.,” although as a result of a merger AT&T became the controlling party.

23. *Linkline*, the named plaintiff, was one of four ISP plaintiffs in the case.

24. *Verizon Commc’ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 410 (2004).

25. *Linkline*, 129 S. Ct. at 1116 (citing the Ninth Circuit’s opinion, 503 F.3d 876, 883 (9th Cir. 2008)).

26. 503 F.3d at 886–87 (citing *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 222–24 (1993)). On the pricing and recoupment standards imposed by *Brooke Group*, see 3A ANTITRUST LAW, *supra* note 1, ¶¶ 735–42 (pricing), and *id.* ¶¶ 725–30 (recoupment).

27. *Linkline*, 129 S. Ct. at 1117.

28. *Id.*

a case.²⁹ In this case, as in *Trinko*, the only duty to deal that the defendant had was imposed by FCC regulations enacted under the Telecommunications Act.³⁰ The Court noted the Ninth Circuit's observation that *Trinko* did not discuss price squeeze claims, but found that *Trinko* applied in this situation with equal force:

AT&T could have squeezed its competitors' profits just as effectively by providing poor-quality interconnection service to the plaintiffs, as Verizon allegedly did in *Trinko*. But a firm with no duty to deal in the wholesale market has no obligation to deal under terms and conditions favorable to its competitors. If AT&T had simply stopped providing DSL transport service to the plaintiffs, it would not have run afoul of the Sherman Act. Under these circumstances, AT&T was not required to offer this service at the wholesale prices the plaintiffs would have preferred.³¹

As to the downstream prices, the principal assertion in the plaintiff's complaint was that they were "too low," but without reference to cost. But the Court had addressed this issue in *Brooke Group* as well as its *Cargill* decision, and concluded that "too low" is meaningless unless it is understood in relation to some objective standard, such as cost.³² The Court elaborated:

Recognizing a price squeeze claim where the defendant's retail price remains above cost would invite the precise harm we sought to avoid in *Brooke Group*: Firms might raise their retail prices or refrain from aggressive price competition to avoid potential antitrust liability. See 509 U.S., at 223 ("As a general rule, the exclusionary effect of prices above a relevant measure of cost either reflects the lower cost structure of the alleged predator, and so represents competition on the merits, or is beyond the practical ability of a judicial tribunal to control without courting intolerable risks of chilling legitimate price cutting").³³

As a result, the plaintiff's case amounted to nothing more than:

an amalgamation of a meritless claim at the retail level and a meritless claim at the wholesale level. If there is no duty to deal at the wholesale level and no predatory pricing at the retail level, then a firm is certainly not required to price *both* of these services in a manner that preserves its rivals' profit margins.³⁴

29. *Id.* at 1118 (citing *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 608–11 (1985)).

30. *Id.* at 1118 n.2.

31. *Id.* at 1119.

32. *Id.* at 1120 (citing *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 226 (1993)); *Cargill, Inc. v. Monfort of Colo., Inc.*, 479 U.S. 104, 121–22 n.17 (1986); and *Atlantic Richfield Co. v. USA Petroleum Co.*, 495 U.S. 328, 340 (1990)).

33. *Id.*

34. *Id.*

On this issue the Supreme Court did not quite explicitly overrule Judge Hand's decision in *Alcoa*.³⁵ However, “[g]iven developments in economic theory and antitrust jurisprudence since *Alcoa*, we find our recent decisions in *Trinko* and *Brooke Group* more pertinent to the question before us.”³⁶ Nevertheless, it is difficult to read the majority opinion as doing anything other than overruling *Alcoa*, which never insisted on a showing that downstream prices were lower than cost. Further, as discussed *infra*, the Supreme Court expressly rejected the theory that Judge Hand adopted that an unlawful price squeeze could be found if the margin between the upstream and downstream prices was so small that even the defendant itself could sell profitably if it were paying the same upstream price as the plaintiff—that is, the defendant was imposing a margin so low that it was below its own intermediate costs as well as those of the plaintiff.³⁷

Finally, the Court warned that “institutional concerns” counseled against recognizing price squeeze claims without an objective cost-based test.³⁸ Administering antitrust predatory-pricing claims involving a single level of sales had proven to be difficult enough. But, “[r]ecognizing price-squeeze claims would require courts simultaneously to police both the wholesale and retail prices to ensure that rival firms are not being squeezed. And courts would be aiming at a moving target, since it is the *interaction* between these two prices that may result in a squeeze.”³⁹

Further, a test that did not require a cost basis would not provide a safe harbor for defendants to compete aggressively; they would always be left wondering if their prices cross a line that was not clearly identified.⁴⁰ The Court then quoted this passage from Justice Breyer's *Concord* decision, written when he was on the First Circuit:

[H]ow is a judge or jury to determine a ‘fair price?’ Is it the price charged by other suppliers of the primary product? None exist. Is it the price that competition ‘would have set’ were the primary level not monopolized? How can the court determine this price without examining costs and demands, indeed without acting like a rate-setting regulatory agency, the rate-setting proceedings of which often last for several years? Further, how is the court to decide the

35. See *id.* at 1120 n.3 (discussing United States v. Alcoa, 148 F.2d 416, 438 (2d Cir. 1945)).

36. *Id.*

37. The problem arises when the defendant sells in the upstream market at a price higher than its own costs. To illustrate, suppose that the defendant has upstream costs of five to produce the DSL lines, and additional distribution costs of four. If it sells DSL to its customers at a price of ten, that is higher than its own costs. But suppose it charges rivals seven for the upstream DSL lines while forcing the rivals to compete with its downstream price of nine. They could not compete on a markup of three, but neither could the defendant itself. See *Alcoa*, 148 F.2d at 438 (accepting this reasoning); see also *supra* Part I.A.

38. *Linkline*, 129 S. Ct. at 1120–21 (citing *Town of Concord v. Boston Edison Co.*, 915 F.2d 17, 25 (1st Cir. 1990) and Phillip E. Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 ANTITRUST L.J. 841, 853 (1989)).

39. *Id.* at 1121.

40. *Id.* (citing 3B ANTITRUST LAW, *supra* note 1, ¶ 767c).

proper size of the price ‘gap?’ Must it be large enough for all independent competing firms to make a ‘living profit,’ no matter how inefficient they may be? . . . And how should the court respond when costs or demands change over time, as they inevitably will?⁴¹

The Court also rejected a test proposed by the American Antitrust Institute that would condemn even an above-cost price squeeze if the defendant itself could not compete on the margin between its upstream wholesale price to a rival and its downstream price to customers—or perhaps even in cases where the wholesale price was actually higher than the retail price, forcing the plaintiff to accept negative margins: “If both the wholesale price and the retail price are independently lawful, there is no basis for imposing antitrust liability simply because a vertically integrated firm’s wholesale price happens to be greater than or equal to its retail price.”⁴²

The Court also rejected alternative theories, such as the one that price squeezes might raise entry barriers, thus “fortifying” the monopolist’s position, or that they might impair nonprice competition or innovation in the downstream market. In this case the plaintiffs had not identified any such harms.⁴³

In his concurring opinion Justice Breyer largely agreed with the majority about the ultimate disposition—namely, that the district court should determine whether the complaint stated a cause of action for predatory pricing under *Brooke Group* standards. He emphasized mainly that a “regulatory structure” existed in this case, and that it was the FCC’s obligation to see to it that the wholesale transfer prices were “just and reasonable,” taking all relevant factors into account. And “[w]hen a regulatory structure exists to deter and remedy anticompetitive harm, the costs of antitrust enforcement are likely to be greater than the benefits.”⁴⁴ Further,

[u]nlike *Town of Concord*, the regulators here controlled prices only at the wholesale level.⁴⁵ But respondents do not claim that that regulatory fact makes any difference; and rightly so, for as far as I can tell, respondents could have gone to the regulators and asked for petitioners’ wholesale prices to be lowered in light of the alleged price squeeze.⁴⁶

Although he did not say so explicitly, Justice Breyer’s concurrence seems to leave the way open for a price squeeze claim outside of the regulatory context even when the *Brooke Group* standard cannot be met.

II. STRUCTURAL PREREQUISITES

The balance of this Essay explores the structural conditions for any viable claim of an anticompetitive price squeeze actionable under the antitrust laws. Then

41. *Id.* (quoting *Town of Concord*, 915 F.2d at 25).

42. *Id.* at 1122 (citing briefs by two amici).

43. *Linkline*, 129 S. Ct. at 1122 (citing 3A ANTITRUST LAW, *supra* note 1, ¶ 767c).

44. *Id.* at 1124.

45. See *Town of Concord*, 915 F.2d at 29.

46. *Linkline*, 129 S. Ct. at 1124.

it examines the issue of price-cost relations and the well-nigh-universal assumption, confirmed by the Supreme Court in *Linkline*, that a useful test for an unlawful price squeeze must be “cost-based.” Finally, it examines the problems of consumer injury and administrable remedies.

A. Conventional Power Lacking: Pre-Existing Relationships and the “Committed” Rival

Antitrust laws require proof of substantial market power before unilateral conduct can be condemned. Section 2 of the Sherman Act⁴⁷ applies only to “monopolists,” which generally requires a firm with a market share of at least 70% or so of a well defined market.⁴⁸ By contrast, Section 1 of the Sherman Act requires only that there be a contract “in restraint of trade.”⁴⁹ A purely vertical agreement must be assessed under the rule of reason.⁵⁰ However, the market power requirements are still considerably less than they are for unilateral conduct.

The ability to impose narrow margins that are harmful to unintegrated rivals does not require market power in the classic sense at all. Indeed, price squeezes can occur in at least somewhat competitive markets where the smaller firm has made a substantial investment in a specific location or asset that inexorably links itself to the vertically integrated firm. For example, suppose that an aluminum fabricator locates its fabrication plant adjacent a vertically integrated aluminum ingot producer’s plant.⁵¹ While fabricated aluminum parts are costly in relation to transportation costs, aluminum ingot is not, so proximity between the ingot producer and the fabricator is valuable. At that point, the adjacent vertically integrated firm has a significant transportation cost advantage and can raise the price of aluminum ingot to the small firm accordingly. Whether a true squeeze can be created is another matter. If the market is undifferentiated, the small fabricator has the option of purchasing ingot elsewhere, so the dominant firm can increase its ingot price only up to the transportation cost difference of the second-best-placed rival. If the smaller firm’s location does not prevent it from dealing profitably with other fabricators, then there cannot be a squeeze; the vertically integrated firm would simply be taking advantage of the transport cost difference, allowing it to capture some of its rival’s rents. Indeed, depending on the circumstances, including the extent of the vertically integrated firm’s ability to fabricate its own aluminum, the smaller firm might be in a good position to take advantage of the vertically integrated firm; that is, the firms might be involved in a bilateral monopoly.

47. 15 U.S.C. § 2 (2006).

48. 3B ANTITRUST LAW, *supra* note 1, ¶ 801a.

49. 15 U.S.C. § 1 (2006).

50. See *NYNEX Corp. v. Discon, Inc.*, 525 U.S. 128, 135–36 (1998) (purely vertical agreement, even if intended to hurt a rival and deceive customers, must be assessed under rule of reason); 11 HERBERT HOVENKAMP, ANTITRUST LAW ¶ 1902d (2d ed. 2005).

51. See, e.g., *Bonjorno v. Kaiser Aluminum & Chem. Corp.*, 752 F.2d 802, 805, 815 (3d Cir. 1984) (affirming a judgment for the plaintiff); *Columbia Metal Culvert Co. v. Kaiser Aluminum & Chem. Corp.*, 579 F.2d 20, 23–24, 37 (3d Cir. 1978) (reversing a directed verdict for the defendant).

If the smaller firm's commitment derives from its investment in a specific technology that is unique to the vertically integrated firm, then a form of price squeeze can also occur. For example, suppose that Kodak licenses a small firm to make aftermarket parts for its photocopiers.⁵² Kodak also manufactures the same parts and sells them to service technicians. The parts are unique to Kodak copy machines, and the small firm makes a significant investment in the technology needed to produce Kodak's parts. At that point, suppose Kodak either: (1) increases the patent-license fees to the smaller rival significantly; (2) reduces the price of its own parts; or (3) some combination of the two. As a result the smaller firm is squeezed between the price of a costly input (the patent license) and Kodak's output price of parts. In this case, if the squeeze is so significant that the smaller firm cannot recover its variable costs, it will either have to shut down or abandon its Kodak-specific technology. If the squeeze permits the small firm to recover variable costs but not amortize its fixed costs, then Kodak might be in a position to appropriate the value of the fixed-cost investment to itself.⁵³

One is tempted to say that this case resembles market power derived from "lock-in," as the Supreme Court recognized in its *Kodak* decision in 1992.⁵⁴ There the Court held that a firm with a market share of less than 25% in the market for high-speed photocopiers might have market power in its own parts if there was an installed base of buyers who were "locked in" to those parts and who were not in a position to calculate ownership costs over the life of the product at the time they made the initial purchase. This failure could occur because the buyers were "myopic," or more likely, because Kodak raised its parts prices after this installed base of buyers made their purchase.

But there may be important disanalogies to the *Kodak* case. Whatever one thinks about the "lock-in" theory under which the Court found power in *Kodak*,⁵⁵ the endgame included higher purchase prices for parts, or at least for a combination of parts and service. In our price squeeze example that is not necessarily the case, although it could be. For example, suppose the small licensee ends up being a more efficient producer of parts than Kodak itself. In that case it might be able to sell parts at a lower price. By raising the license fee Kodak might appropriate to itself the efficiency savings of its rival. Injury to consumers is doubtful.⁵⁶ However, if no such price change occurs, then the vertically integrated firm cannot be held responsible for its rival's inability to cover its own costs.

Finally, in the franchise context an open-ended franchise provision requiring the franchisee to accept goods supplied by the franchisor at an undetermined price can lead to a squeeze. Suppose that a franchise agreement

52. The facts are loosely adopted from *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451 (1992). On market power in derivative markets and aftermarkets, see 2B PHILLIP E. AREEDA et al., ANTITRUST LAW ¶ 564 (3d ed. 2007).

53. See *infra* Appendix B.1–2.

54. See *supra* note 52 and accompanying text.

55. See Herbert Hovenkamp, *Post-Chicago Antitrust: A Review and Critique*, 2001 COLUM. BUS. L. REV. 257, 288 (2001) (arguing that *Kodak* should be overruled); see also 10 PHILLIP E. AREEDA et al., ANTITRUST LAW ¶ 1740 (2d ed. 2004) (arguing for severe limitations on *Kodak*).

56. See *infra* Appendix B.1–2.

between Domino's Pizza and a franchisee requires the franchisee to accept the franchisor's pizza dough at an unspecified price. Such a contract may give the franchisor an incentive to set the price of the tied dough so high as to limit the franchisee's returns to a level insufficient to amortize fixed costs. In particular, this might occur if the franchisor also stipulates a maximum price for the franchisee's pizzas.⁵⁷ That would create a situation in which the franchisee would be forced to accept infracompetitive margins or face termination of its franchise.

Significantly, these opportunities to take advantage of vertically related firms' irreversible investments⁵⁸ might be the result of a pre-existing understanding and the dominant firm's subsequent change of practice. But this need not be the case. For example, Kodak may have induced a smaller firm to invest in brand-specific technology for making Kodak aftermarket parts and then subsequently raised input prices. But the smaller firm might have made the investment without relying on any arrangements made between the firms. This difference was regarded as relevant in both *Aspen* and *Trinko*.⁵⁹ While misleading one's rivals might be tortious, it cannot be the basis of antitrust liability without a showing of consumer harm.

The best view of *Aspen* is that destination ski passes on the Aspen slopes were a natural monopoly in the sense that Aspen consumers preferred the "all-Aspen" ticket supplied by the joint venture between the plaintiff and defendant. Further, consumers could make only a finite number of ski runs on a given visit, so only that ticket maximized consumers' surplus. One way to achieve the monopoly would have been for the companies to merge—something that actually happened eight years after the Supreme Court's decision.⁶⁰ Another way would have been for them to develop the natural monopoly input—the "all-Aspen" ticket—jointly but to maintain the competitive portions of their business, such as ski lodges, instructors, equipment rental and the like, separately. Under this view the defendant's unilateral termination of the joint venture injured consumers by depriving them of the all-Aspen ticket, thus making the overall market smaller.

57. See, e.g., Queen City Pizza, Inc. v. Domino's Pizza, Inc., 922 F. Supp. 1055, 1062 (E.D. Pa. 1996), *aff'd*, 124 F.3d 430 (3d Cir. 1997) (rejecting this contract lock-in theory of power on claim of unlawful franchise/pizza dough tie); Little Caesar Enters. v. Smith, 34 F. Supp. 2d 459, 510 (E.D. Mich. 1998) (same); see also State Oil Co. v. Khan, 522 U.S. 3, 8 (1997) (stating that oil company may have used a combination of high wholesale prices plus maximum resale price maintenance to impose a squeeze on retail dealers); PHILLIP E. AREEDA et al., *supra* note 55, ¶ 519. But see Benjamin Klein, *Market Power in Franchise Cases in the Wake of Kodak: Applying Post-Contract Hold-up Analysis to Vertical Relationships*, 67 ANTITRUST L.J. 283, 317 (1999) (disputing this theory).

58. The classic treatment of the subject is Benjamin Klein, Robert G. Crawford & Armen A. Alchian, *Vertical Integration, Appropriable Rents, and the Competitive Contracting Process*, 21 J.L. & ECON. 297, 298–99, 302–04 (1978), which observes the threat of opportunistic behavior when trading partners have made specific investments linking them to one another, the excessive transaction costs that may result, and arguing that in most cases ownership vertical integration is an efficient alternative.

59. See Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 410 (2004) (distinguishing *Aspen* on this point).

60. See Kenneth L. Glazer & Abbott B. Lipsky, Jr., *Unilateral Refusals to Deal Under Section 2 of the Sherman Act*, 63 ANTITRUST L.J. 749, 799 n.192 (1995).

However, it benefitted the defendant by giving it a larger share of the market as a result of the termination. This interpretation of *Aspen* is probably most consistent with a finding of consumer harm.

In all events, consumer harm requires a showing of either higher prices or of reduced output, quality, or variety in the downstream market. Whatever impact Kodak has in the future, pure technological lock-in will not create this kind of power as long as consumers are free to substitute from one supplier to another.⁶¹ Significantly, in the typical price squeeze case the smaller firm's injury accrues from the very fact that consumers are able to substitute readily from the smaller firm's output to that of its larger supplier. That is, the premise of the cases is that the smaller rival will lose too many sales because it is unable to match the larger firm's resale price.

Perhaps consumers can switch, but only between the smaller firm and its vertically integrated supplier. This could happen in a Kodak-style lock-in case in which a large installed base of locked-in consumers exists and the dominant firm supplies aftermarket parts to independent service firms, but only at an unreasonably high price in relation to the service prices that the smaller firm is able to charge.⁶² Once again, simply squeezing the independent firm's margins will not harm consumers in the short run any more than would an outright refusal to deal. Perhaps the dominant firm is attempting to deny the smaller firm the resources necessary to expand into production of its own aftermarket parts. If proven, that particular claim may involve long-run consumer injury.

B. Price Squeezes by Vertically Integrated Monopolists' Appropriation of Rivals' Fixed-Cost Investment

A vertically integrated monopolist can be a firm with monopoly power at either level or both. The assumption in most price squeezes is monopoly power in the upstream market. Otherwise the unintegrated rival would be able to procure the input in question from a rival. At the same time, the price squeeze requires consumer harm in the downstream market, and this is unlikely to occur unless the integrated firm has substantial market power there. So we are presumably looking for a firm that controls a dominant share of relevant markets at both levels.

The *Linkline* dissent and the Eleventh Circuit's *Covad* decision both compared consumer harm in the downstream market to predatory pricing. They reasoned that harm could occur if the defendant used a price squeeze that incorporated a below-cost downstream price, which was presumably intended to drive the rival out of business and then permit the dominant firm to raise prices in

61. See *Roy B. Taylor Sales, Inc., v. Hollymatic Corp.*, 28 F.3d 1379, 1385 (5th Cir. 1994) (finding no consumer injury when tie is imposed on intermediary but customers are free to purchase the tying and tied items wherever they please).

62. This was one of the claims in similar litigation that involved Xerox. See *In re Indep. Serv. Orgs. Antitrust Litig.*, 989 F. Supp. 1131, 1133 (D. Kan. 1997) (claim that Xerox charged independent service technicians a very high price for product-specific aftermarket parts). The Federal Circuit ultimately concluded that Xerox had no duty to deal under the circumstances and that a patentee may charge any price that the market will bear. See *In re Indep. Serv. Orgs. Antitrust Litig.*, 203 F.3d 1322, 1328 (Fed. Cir. 2000).

that market to recoupment levels.⁶³ The obvious question that arises is: why would the dominant firm undergo a costly period of predatory pricing when it could destroy the rival simply by refusing to deal? In virtually every scenario the simple refusal to deal would terminate the rival immediately and at lower cost and risk. One can imagine idiosyncratic exceptions. Perhaps the dominant firm has a ten-year supply contract at a fixed price for the upstream input and thus cannot simply refuse to deal without paying a heavy penalty; however it could use downstream predatory pricing to shut the rival down. Furthermore, if a court has reason to believe that a firm set downstream prices below cost, such a scenario should simply be treated as a standard case of predatory pricing.

Suppose the monopolist wishes to stop supplying an input to its rival and could lawfully do so immediately; or perhaps it plans to do so in the foreseeable future when its own downstream capacity has increased. However, the rival has a costly, dedicated facility with many useful years remaining. The dominant firm might then pursue a strategy of squeezing the rival's margins so that they cover only variable costs, in effect appropriating its fixed-cost investment.⁶⁴ While the dominant firm could do this by cutting its downstream price, the more promising strategy would very likely be to raise the upstream transfer price. This allows the integrated firm to keep the downstream price at its profit-maximizing level, which may or may not change after the rival exits the market. During the time that this squeeze occurs the dominant firm would in effect be obtaining the use of the rivals fixed-cost assets without paying for them. Eventually, of course, the smaller firm would go into bankruptcy or exit the market by some other means.

Assuming that the refusal to deal and "instant" termination of the smaller firm were legal to begin with, is there any incremental consumer harm that might serve to turn this price squeeze into an antitrust violation? Of course, there might be harm to the creditors or shareholders of the smaller firm, but this is hardly clear. An abrupt refusal to deal might result in the immediate closure of the plant and have the same effect or worse on shareholders and creditors. But in any event, consumer injury would not obviously be any more severe when the small firm died a gradual death by squeezing rather than a sudden death caused by a refusal to deal.

C. Long-Run Exclusion: Threat of Integration into the Primary Market

In the long run consumer harm could result from a price squeeze that was reasonably calculated to deny a rival the opportunity to integrate upstream into the dominant firm's primary market. Indeed, one of the purposes of the 1996 Telecommunications Act was to facilitate the expansion of small firms into more

63. *Linkline Commc'ns, Inc. v. SBC Cal., Inc.*, 503 F.3d 876, 886 (9th Cir. 2007) (Gould, J., dissenting); *Covad Commc'ns Co. v. BellSouth Corp.*, 374 F.3d 1044, 1052 (11th Cir. 2004).

64. See *supra* text accompanying notes 17–19; *infra* Appendix B; see also *Bonjorno v. Kaiser Aluminum & Chem. Corp.*, 752 F.2d 802, 808–11 (3d Cir. 1984); *Columbia Metal Culvert Co. v. Kaiser Aluminum & Chem. Corp.*, 579 F.2d 20, 24 (3d Cir. 1978).

“facilities-based” production.⁶⁵ For example, a firm might interconnect with an incumbent exchange carrier at a time when it has only the limited technology needed to purchase bundles of long-distance minutes and repackage them for retail sale. However, it might use this market position as a base from which to purchase or develop additional backbone and eventually it might be able to deliver standalone service on its own. Thus, for example, the aluminum fabricator, once established, might integrate vertically into aluminum ingot production. Should it occur, such a development would surely benefit consumers.

Suppose that the unintegrated aluminum fabricator purchases its ingot from Alcoa. The fabricator has three elements of cost. C1 is its variable costs of fabrication, which includes the price it pays Alcoa for ingot. C2 consists of fixed costs necessary to maintain investment in plant and durable equipment. C3 consists of research and developmental costs associated with its long-run plans to integrate vertically into ingot production. A price squeeze that gave the small firm enough margin to recover C1 and C2 might enable it to stay in production indefinitely, but deny it the resources needed to integrate vertically. The long-run result might be to forestall the rise of competition in the monopolized ingot market, and this clearly could constitute consumer harm.

Conceding that long-run anticompetitive strategies are possible does not necessarily entail that antitrust can do anything about it. For example, the antitrust law of predatory pricing manifestly does not rest on the premise that long-run, or “sustainable” predatory pricing strategies such as limit pricing are implausible. Such strategies are easily modeled and perhaps some have been historically observed.⁶⁶ The antitrust problem is administrative. There is no way to condemn such strategies without chilling pro-competitive behavior.⁶⁷

The problem in the price squeeze case may be a little more manageable. Importantly, in order to decide whether an unlawful squeeze occurred, the antitrust tribunal would not have to determine how much margin between wholesale and retail prices would be necessary to create the appropriate incentives to innovate and how much would be just enough to cover existing production. It might have to determine only that (1) the smaller firm had made a realistic threat to integrate into the dominant firm’s upstream market, and (2) knowing this, the dominant firm squeezed the smaller firm’s margins to the point that it could no longer recover its fixed cost investment.

65. See H.R. REP. NO. 104-458, at 113 (1996) (Conf. Rep.), as reprinted in 1996 U.S.C.C.A.N. 10; *In re Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, 15 F.C.C.R. 3696, 3714 (1999); James B. Speta, *Antitrust and Local Competition Under the Telecommunications Act*, 71 ANTITRUST L.J. 99, 128-30 (2003).

66. See Herbert Hovenkamp, *The Law of Exclusionary Pricing*, 2 COMPETITION POL’Y INT’L 21 (2006). See generally ALFRED D. CHANDLER, JR., *SCALE AND SCOPE: THE DYNAMICS OF INDUSTRIAL CAPITALISM* 127-40 (1990) (arguing that U.S. Steel used limit pricing as a device for limiting the growth of rivals).

67. See HERBERT HOVENKAMP, *THE ANTITRUST ENTERPRISE: PRINCIPLE AND EXECUTION* 159-70 (2005).

The *Microsoft* case provides an analogy.⁶⁸ If Microsoft feared that Netscape might eventually develop a computer operating system in competition with Microsoft's Windows, it might impose higher costs on Netscape in order to restrain its growth by squeezing its margins. In the real case, Microsoft was not a supplier to Netscape. Rather it imposed other types of restraints that increased Netscape's distribution costs and which may have prevented Netscape from integrating into the operating-system market.

D. Long-Run Exclusion and Efficiency Gains in the Secondary Market

The availability of a price squeeze might also limit the smaller firm's incentive to innovate within the *secondary* market.⁶⁹ In particular, there will be no incentive to reduce costs if the dominant firm can immediately capture the difference by squeezing the smaller firm's margins. For example, if the aluminum fabricator developed a process that reduced fabrication costs by 10 cents per unit, its supplier might respond by simply pricing ingot at 10 cents more per unit. In that case the full value of the efficiency gains would accrue to the vertically integrated supplier rather than the innovator. In the end, the total profits observed by the recipient of the squeeze are the same as before. By the same token, a quality gain that draws in more customers (but leaves price unchanged) also permits a price squeeze to intensify. In this case, the rival's margin can be reduced further so as to leave its total profits just as they were before the improvement. The vertically integrated firm, and not the rival, receives the benefits of the rival's progress. It may seem that the appropriation of a rival's efficiency gains would prevent prices from falling and would harm consumers, but this is not generally the case. By appropriating the smaller firm's efficiency gains the integrated firm will very likely be prompted to lower its own retail price. In the end, assuming equal efficiency, prices may fall by the same amount whether or not the rival's efficiency gains are appropriated.⁷⁰ The consumer injury results not from the appropriation of efficiency gains, but rather from the reduced incentive that the smaller firm has to create efficiencies whose value will immediately be appropriated by another.

Hence, despite the somewhat malicious nature of this sort of price squeeze, it is not clear that it constitutes anticompetitive behavior. If we assume that the vertically integrated firm has no responsibility to deal with its rival, such condemnation would in effect require firms to ensure the well-being of their own competitors. First, it would require that firms be able to estimate the cost structures of their competitors. Second, it would require that firms forgo potential profits and set sub-optimal prices in order to ensure that their competitors are able to sustain production. And even if these requirements are deemed acceptable, such policies do not seem likely to provide potential entrants with an incentive to innovate.⁷¹ That is, if a vertically integrated firm is prohibited from imposing an overall

68. United States v. Microsoft Corp., 84 F. Supp. 2d 9, 12–14 (D.D.C. 1999) (findings of fact); United States v. Microsoft Corp., 87 F. Supp. 2d 30, 38–39 (D.D.C. 2000), *aff'd in part, rev'd in part*, 253 F.3d 34 (D.C. Cir. 2001); *see* 3 ANTITRUST LAW, *supra* note 1, ¶ 617.

69. See *infra* Appendix B.3.

70. See *infra* Appendix C.

71. See *infra* Appendix B.3 (discussing Averch-Johnson-like effects).

unprofitable margin on its rival, it will still be permitted to impose a margin that merely results in little or no positive profits. Hence, any above-zero profits that could be earned by potential entrants could still be captured. As a result, firms would still have little incentive to innovate, as any increase in profits likely to result will still be captured by the rival. The only difference is that, in this case, the recipient of the price squeeze can sustain production.⁷²

III. IDENTIFYING THE ANTICOMPETITIVE PRICE SQUEEZE: PRICE-COST RELATIONSHIPS, EFFICIENCIES, AND CONDUCT

In his *Linkline* dissent Judge Gould objected that proof of an unlawful predatory price squeeze should require a showing of below-cost pricing in the downstream market. He would have dismissed the complaint because there was no allegation that the defendant priced below cost in the downstream market or had downstream market power.⁷³ The Eleventh Circuit assessed a similar requirement in *Covad Communications*.⁷⁴ In that case it is not precisely clear how the predatory price would have been measured. The court required both prices below cost and a likelihood of recoupment but did not specify whether these requirements applied to the upstream or the downstream market.⁷⁵

In *Brooke Group* the Supreme Court required that in an orthodox predatory pricing case, which involved selling a single product below cost in order to destroy or discipline a rival, the plaintiff must show that the defendant's prices were below a relevant measure of cost (typically marginal cost or average variable cost) and that the predator had a reasonable prospect of recouping its predatory investment during a subsequent period of monopoly pricing.⁷⁶ In its 2007 *Weyerhaeuser* decision the Supreme Court reiterated these requirements and applied them to a claim of exclusionary purchasing.⁷⁷

One problem with applying orthodox *Brooke Group*-style predatory pricing law in the downstream market is that in the price squeeze case the dominant firm typically controls a significant element of the rival's costs, as was almost certainly the case in *Linkline* itself, as well as in *Alcoa*. An important rationale of the *Brooke Group* approach to predatory pricing is that one uses the defendant's costs as a reference point to see if the prices in question are capable of

72. Cf. Joseph Farrell & Michael L. Katz, *Innovation, Rent Extraction, and Integration in Systems Markets*, 48 J. INDUS. ECON. 413, 423–24 (2000).

73. *Linkline Commc'nns, Inc. v. SBC Cal., Inc.*, 503 F.3d 876, 885–86 (9th Cir. 2007) (Gould, J., dissenting). The district court had assessed a similar requirement. See J. Gregory Sidak, *Abolishing the Price Squeeze as a Theory of Antitrust Liability*, 4 J. COMPETITION L. & ECON. 279, 290 (2008).

74. *Covad Commc'nns Co. v. BellSouth Corp.*, 374 F.3d 1044, 1050 (11th Cir. 2004).

75. See *id.*

76. *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 224 (1993). On determining whether prices are below cost, see 3A ANTITRUST LAW, *supra* note 1, ¶¶ 739–40. On assessing recoupment, see *id.* ¶¶ 725–26.

77. *Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co.*, 549 U.S. 312, 318 (2007).

excluding an equally efficient rival.⁷⁸ But because the integrated firm forces its rival into double marginalization, the equally efficient rival standard does not provide a suitable baseline. Indeed, the test is perverse because the dominant firm effectively controls the unintegrated rival's costs. Of course, this difference could be offset by a difference in the firms' production efficiencies, but in that case the dominant firm would simply appropriate that difference as well. Any positive price-cost margin in the upstream market entails, *ceteris paribus*, that the rival will have higher costs than the dominant firm.

To illustrate, suppose Alcoa manufactures and self-supplies ingot at a cost of \$10 per unit but sells the same ingot to an unintegrated rival sheet roller at \$13 per unit. Presumably, the cost of the aluminum ingot is a significant component in the cost of sheet-rolled aluminum. Further, the basis of the price squeeze claim is that the rival cannot obtain the ingot elsewhere. As a result, the rival's input costs are \$3 per unit higher than the dominant firm's.

By contrast, Judge Hand's "predatory margin" test in *Alcoa* would effectively have added \$3 to the dominant firm's "costs" in the above example by asking whether the dominant firm itself could profitably sustain production at the margin that it was imposing on the unintegrated rival.⁷⁹

Both tests have severe shortcomings. The predatory-pricing test analysis given by the Supreme Court in *Linkline* properly identifies predatory pricing as based on a nonsustainable pricing strategy that requires some kind of explanation, given that prices are below cost. However, it creates the wrong set of incentives: a vertically integrated dominant firm bent on excluding its rival will simply raise the upstream price rather than lowering the downstream price. By contrast, Judge Hand's "predatory margin" test condemns an output price as predatory even though it is completely profitable to the defendant, provided that the upstream price is sufficiently high as well. Indeed, in the case of a dominant firm with market power in both the upstream and the downstream market, both prices could be well above cost, and yet there would not be enough margin between them to permit an independent fabricator to survive, even based on the larger firm's fabrication costs.

Judge Hand's test does give a potential defendant a basis for measuring whether it is guilty of a price squeeze claim: either do not sell your upstream product to a rival at all or, if you do, make sure that the margin between your wholesale price and your own downstream resale price is equal to your own costs

78. Cf. *Cascade Health Solutions v. PeaceHealth*, 515 F.3d 883, 906–07 (9th Cir. 2008) (bundled discounts case; applying predatory-pricing logic and concluding that test is whether the pricing is capable of excluding an equally efficient rival); *MCI Commc'n Corp. v. AT&T Co.*, 708 F.2d 1081, 1113–14 (7th Cir. 1983) (explaining that the purpose of cost-based predation tests is to determine whether the price is capable of excluding equally efficient rivals); *Meijer, Inc. v. Abbott Labs.*, 544 F. Supp. 2d 995, 1003 (N.D. Cal. 2008) (similar to *Cascade*). On the price standard for bundled discounts, see Erik N. Hovenkamp & Herbert J. Hovenkamp, *Exclusionary Bundled Discounts and the Antitrust Modernization Commission*, 53 ANTITRUST BULL. 517 (2008).

79. See *United States v. Alcoa*, 148 F.2d 416, 437–38 (2d Cir. 1945); *supra* text accompanying notes 4–5.

for the intervening production. But that test tends to undermine the basis for the dominant firm's wish to sell to a rival to begin with. If the vertically integrated firm can produce just as efficiently as the rival can, it might as well produce internally. On the other hand, if the rival has lower costs, the vertically integrated firm can profit by selling to the rival; the sale is profitable precisely because the vertically integrated firm can capture a portion of these cost savings for itself. So Judge Hand's rule has the perverse effect of making it unlawful for the vertically integrated firm to sell to a rival in precisely those situations where it would have an incentive to do so.

One reason why the vertically integrated firm might voluntarily sell to the rival in the downstream market is that it lacks its own production capacity in that market. Suppose Alcoa has a production capacity of fifty units of aluminum ingot but fabrication capacity of only thirty units. Then it might wish to sell twenty units of ingot to an independent fabricator, charging a price just sufficient to give the independent a competitive rate of return. In such a case it would have no incentive to force the independent fabricator out of business. To be sure, consumers would be harmed if the output of fabricated aluminum fell back to Alcoa's own thirty units, but this would not be an output reduction that would benefit Alcoa.

Once again, if Alcoa was in the process of bringing twenty additional units of its own fabrication capacity on line, then during the time this capacity was being developed it might have an incentive to squeeze the independent by reducing its margin to variable costs, thus effectively appropriating the fixed-cost portion of its investment. But it is not obvious that consumer harm results from this practice.

A. An Average Variable Cost Test for Price Squeeze Claims?

As noted previously, Judge Hand condemned Alcoa's price squeeze after concluding that the margin between Alcoa's wholesale ingot price to sheet rollers and its own resale price for rolled sheet was lower than Alcoa's sheet-rolling costs. Judge Hand did not specify what measure of cost he had in mind, and *Alcoa* was decided thirty years prior to the formulation of the average-variable-cost, or marginal cost, test for predatory pricing, as Areeda and Turner formulated it in 1975.⁸⁰ In *Linkline* the Supreme Court made below-cost pricing in the downstream market dispositive.⁸¹

Both *Linkline* and much of the literature have concluded that price squeezes should be condemned, if at all, only under a strict cost-based test. There are important differences between Judge Hand's test and the *Brooke Group* test for predatory pricing. First and foremost, in an orthodox predatory pricing case the price below cost is "nonsustainable," which means that the defendant loses money on each sale. A vertically integrated firm can impose a price squeeze by either lowering its resale price, raising its wholesale price to unintegrated rivals, or some combination of both. As a consequence, a price squeeze that flunks Judge Hand's

80. Phillip Areeda & Donald F. Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 HARV. L. REV. 697, 700–03 (1975). On the price-cost tests for predation, see 3A ANTITRUST LAW, *supra* note 1, ¶¶ 739–42.

81. Pac. Bell Tel. Co. v. Linkline Commc'ns, Inc., 129 S. Ct. 1109 (2009). See *supra* text accompanying notes 21–47.

test can be fully sustainable. For example, suppose the cost of ingot is \$10 per unit and rolling costs are \$3 per unit, yielding a minimum cost price for rolled sheet of \$13. Alcoa might charge customers of rolled sheet a price of \$14 and charge a rival \$12 for the raw ingot. In that case both the downstream price for the sheet and the upstream price for the ingot are above Alcoa's costs, but the \$2 margin between them is too small to permit the independent sheet roller to survive.⁸²

A guiding principle of predatory-pricing law is that a price below either marginal cost or average variable cost is highly suspicious and requires an explanation, given that such prices are unprofitable in the short run as well as the long run.⁸³ By contrast, there is nothing inherently suspicious about a firm charging a high price to an unintegrated rival for an input.

In an orthodox predatory-pricing case we presume that the victim is a free-standing firm able to procure its own inputs and survive as an independent rival in the market, but for the predatory pricing. In the price squeeze case, by contrast, the claim is that the rival cannot survive at all unless it can procure the input from the vertically integrated dominant firm. While that firm is in fact supplying the input, it will claim that it does so on terms that make it impossible for the smaller rival to survive. Moreover, in contrast with price squeezing, the potential for price predation exists in any concentrated market, making it nearly impossible for potential entrants to distinguish and avoid those commitments which are likely to result in predation. For these reasons we conclude that price squeezes are fundamentally not about predatory pricing in the *Brooke Group* sense. The only strategy that seems both rational and socially harmful to us is not price predation, but rather a squeeze that effectively deprives a firm of the fixed-cost portion of its investment or restrains the rival's ability to integrate vertically so as to compete at both market levels with the dominant firm.⁸⁴

B. Joint Costs

Joint costs, or economies of scope, occur anytime it is cheaper to produce two goods together than separately. Common costs are ubiquitous and can occur in the simplest situations. For example, a small grocery store adding a new product to its inventory, such as chocolate-covered macadamia nuts, will certainly have to incur the cost of wholesale purchase, stocking, the opportunity cost of the lost shelf space, and some sales expenses. However, it very likely costs no more to light and heat the store with the macadamia nuts than without them, and the incremental cost of the clerk's time is undoubtedly far, far less than the cost of hiring an additional clerk.

Joint costs often complicate predatory-pricing claims when the plaintiff sells only a subset of the goods or services that the defendant sells. Plaintiffs invariably prefer that costs be "fully allocated," which means that a pro rata share of all relevant costs be assigned to the good upon which predatory pricing is

82. See *infra* Appendix B.1–2.

83. There may be a very few exceptions, such as where "shut down" costs are very high—but these can generally be taken into account by computing them as part of variable costs.

84. See *supra* text accompanying note 63.

claimed. In that case, the defendant's joint cost savings are ignored because the plaintiff does not observe them. But this has the perverse effect of condemning behavior that is profitable at the margin without regard to the impact on any rival. In any event, full allocation is not a sensible way for a multi-product firm to assign costs. For example, the grocery store manager considering whether to add macadamia nuts to her inventory will consider only the *incremental* costs of doing so, against the incremental revenues that their sale will produce. A firm that enjoys joint cost savings in the combined production of *A* and *B* will very likely have a profit-maximizing price that leaves rival producers of *A* alone unable to compete.⁸⁵

In the *Covad* decision, the plaintiff claimed that the defendant had an obligation to allocate fully the cost of loops it was selling to the plaintiff for provision of DSL service, and if it did so it could not itself make a profit on the difference between the cost of the loop and the price it was charging to consumers. The Eleventh Circuit held that the allegations were sufficient to survive the defendant's motion for failure to state a claim.⁸⁶

But the issue is critical in a situation where the vertically integrated firm produces multiple products subject to joint costs while the rival produces only one.⁸⁷ For example, suppose a vertically integrated airline company rents aircraft to rivals who organize tours, but also offers tour packages on its own scheduled flights. The airplane rental to the rival must be at a price sufficient to cover the cost of providing the plane, its fuel, its crew, and other associated costs. This might be \$40,000 for a 100 seat plane, or \$400 per seat per trip. But the airline sells tour packages that contemplate the use of otherwise unused seats on flights that are already scheduled. The incremental cost of filling an empty seat under these circumstances is much less than the fully allocated cost of a single seat on a plane that has not yet been committed. Suppose that the incremental cost of filling the empty seat on the already scheduled plane is \$40, and the airline responds by offering a tour ticket for \$50—a fully profitable transaction. In this case the small tour company would claim a squeeze and would even be able to show that the

85. The law of single product predatory pricing generally adopts this approach. See 3A ANTITRUST LAW, *supra* note 1, ¶ 742; see also *Morgan v. Ponder*, 892 F.2d 1355, 1362 (8th Cir. 1989) (concluding that pricing designed to capture only the incremental cost of special advertising for lawyers not predatory); *Marsann Co. v. Brammall, Inc.*, 788 F.2d 611, 614 (9th Cir. 1986); *In re Gen. Foods Corp.*, 103 F.T.C. 204, 343 (1984) (noting the difficulty of measuring the cost of one product where the "firm produces several brands of a product from the same plants, with the same workers and with some of the same raw materials" and explaining that in such cases, "the precise allocation among brands of even the variable production costs can be arbitrary"). Indeed, even promotion costs had to be allocated because promoting Maxwell House Coffee resulted in higher sales of both Maxwell House regular and instant coffee, but predation was alleged only with respect to the former.

86. *Covad Commc'n Co. v. BellSouth Corp.*, 374 F.3d 1044, 1051 (11th Cir. 2004) (citing Complaint ¶¶ 93–95).

87. In the context of regulated industries, see Daniel F. Spulber & Christopher S. Yoo, *Mandating Access to Telecom and the Internet: The Hidden Side of Trinko*, 107 COLUM. L. REV. 1822, 1841–42 (2007).

wholesale price it was being charged for a seat was significantly greater than the retail price that the airline was charging for its own tour packages.⁸⁸

For purposes of regulatory policy, joint costs may have to be allocated, and perhaps under very complex regulatory formulas.⁸⁹ But allocation formulas of this sort are not the business of antitrust law.⁹⁰ A firm necessarily earns profits from an additional sale whenever the incremental revenue exceeds the incremental cost. Antitrust policy cannot ask for more, whether or not regulatory policy sees it differently. In the above airline example, any incremental price above \$40 for a seat on an already scheduled flight is profitable to the dominant firm without regard to impact on rivals, and it certainly benefits consumers. This could also occur, for example, in the telecommunications industry, where a single hard wire “loop” may serve as a joint cost for both internet and phone service.⁹¹

C. Other Production and Transaction Cost Savings

The other kinds of cost savings that can accrue to the vertically integrated firm arise when some aspect of intrafirm production is cheaper than the same production that requires two firms plus a market transaction. In general, these savings involve either production costs or transaction costs.

Production cost savings occur most frequently when intraplant production costs are less than the costs of production in two different plants. For example, suppose that aluminum ingot must be hot before it can be rolled into aluminum sheet, and ingot is very hot when it is initially produced. Further, it must be transported from the refiner’s plant to the fabricator’s plant. By rolling its own aluminum ingot fresh off the line, the vertically integrated firm can save the very considerable cost of reheating, as well as the additional cost of shipping the ingot by truck or rail to the sheet fabricator. Even in a competitive market a vertically integrated firm that sold ingot at its marginal cost and also fabricated sheet at its marginal cost would impose a squeeze on an un-integrated fabricator, who would face the additional costs of transporting and reheating the aluminum. Ronald Coase

88. Such a claim was alleged in the *Linkline* case. *Linkline Commc’ns, Inc. v. SBC Cal., Inc.*, No. 03-5265, 2004 WL 5503772, at *3 (C.D. Cal. Oct. 20, 2004); *see Sidak, supra* note 73, at 288.

89. See Alexander C. Larson, *Pricing Principles in Telecommunications*, in *TELECOMMUNICATIONS, LAW, REGULATION, AND POLICY* 127, 130–45 (Walt Sapronov & William H. Read eds., 1998); Alexander C. Larson & Steve G. Parsons, “Building Block” Cost Methods for Pricing and Unbundling Telecommunications Services: Implications for the Law and Regulatory Policy, 36 JURIMETRICS J. 59, 60–62 (1995); Steve G. Parsons, Seven Years After Kahn and Shew: Lingering Myths on Costs and Pricing Telephone Service, 11 YALE J. ON REG. 149, 166 n.70 (1994).

90. See Carlton, *supra* note 20, at 273; Sidak, *supra* note 73, at 296 (“[T]he judge’s job as de facto rate regulator would never end because external forces will compel wholesale and retail prices to change over time . . .”). Cf. *Town of Concord v. Boston Edison Co.*, 915 F.2d 17, 25 (1st Cir. 1990) (stating that price squeeze claim requires court to behave “like a rate-setting regulatory agency”).

91. See John E. Lopatka, *The Electric Utility Price Squeeze as an Antitrust Cause of Action*, 31 UCLA L. REV. 563, 578–81, 600 (1984) (noting extreme technical difficulty in allocating joint costs in context of regulated electric power markets).

once famously observed that in fact two “firms”—the refiner and the fabricator—could share a common building. The refiner could sell the ingot to the fabricator as it rolled off the line and the fabricator could then roll it hot, saving both the reheating costs and the transport costs.⁹² But there are typically good reasons why the two firms would not want to be placed into such a situation—mainly because it could create a bilateral monopoly between them.

Transaction costs are the costs of using the market,⁹³ and these can also be substantial, particularly when the good in question is made to specification or the market is not competitively structured. For example, ingot might be sold in an oligopoly market at a price significantly above cost. However, the firm that produces its own ingot necessarily receives it at its cost of production. So assuming that the vertically integrated producer is efficient it will obtain ingot at a lower cost than the firm that must purchase it. Again, this is the problem of double marginalization, which is inherent in price squeeze situations.

Judge Hand’s price squeeze test in *Alcoa* should take both production cost savings and transaction cost savings into account by computing the allowable margin with respect to the defendant’s rather than the plaintiff’s costs.⁹⁴ An ordinary predatory-pricing rule such as the one the Supreme Court required in *Linkline*,⁹⁵ which identifies predation on the basis of the predator’s incremental or variable costs, does the same thing.⁹⁶ The important thing is that courts avoid penalizing a firm for having lower costs than its rival.

D. Upstream Transaction as Fixed Cost

The Alpha/Beta example in the previous section illustrates the most commonly used example of a price squeeze: the upstream transactions are variable costs for the un-integrated firm; each unit sold upstream corresponds to one unit sold downstream; and the firm does not incur the cost unless it produces a unit. This situation provides an integrated firm with the greatest control over its rival’s margin. Price squeezes undoubtedly have the greatest potential for harm when the upstream transactions constitute variable costs to the un-integrated rival. However, this is not the only possibility.

The upstream transaction may constitute a fixed cost of the un-integrated firm. Suppose I am a vertically integrated firm operating in the market for GPS devices, and am the sole supplier of GPS satellites. My rivals in the market for GPS devices must pay me for satellite service, which I price at \$100,000 for ten years of access. This price is a fixed cost to my rivals over the ten-year period, because it does not change with the number of customers that the rival has or with

92. See Ronald H. Coase, *The Nature of the Firm*, 4 ECONOMICA (n.s.) 386, 388 (1937) (giving example of Lancashire cotton industry where participants in the various stages of cotton production rent space and purchase and sell the product from one production stage to the next).

93. *Id.* at 390.

94. See United States v. Alcoa, 148 F.2d 416, 437–38 (2d Cir. 1945); see *supra* text accompanying notes 4–5.

95. See *supra* text accompanying notes 21–47.

96. See 3A ANTITRUST LAW, *supra* note 1, ¶ 739–40.

usage rates. The average variable cost of producing the device itself is \$50 per unit for both me and my rivals. Assume that the market price for GPS devices is \$100, and that this price includes unlimited satellite service to customers. Also assume that my rival will determine whether to enter the market based on this information. Suppose I later decide that this new competition is more trouble than it is worth. I have already provided rivals with ten years of service, but even after the upstream transaction I am free to lower downstream prices. Depending on my rival's production level, this has the potential to result in a price squeeze. However, I cannot manipulate my rival's margin with the same fluidity that is possible when upstream transactions occur on a per-unit basis. For example, suppose my rival increases its efficiency, allowing it to sell at a downstream price of \$50. I could not hope to appropriate any of my rival's new gains until the next upstream transaction occurs, at which time I could again raise the price of satellite usage. In this situation, my rival need not worry that I will immediately appropriate the benefits of its various innovations. As a result, the potential for both competitive and consumer harm is much less, if indeed any occurs otherwise.

This example tells us two things: First, the ability to impose a price squeeze depends on the integrated firm's ability to manipulate the margin of one's rival. Second, the ability to manipulate the margin of one's rival is greater when transactions occur frequently in both the upstream and downstream market.

IV. REMEDY PROBLEMS

Antitrust rules that give small firms guaranteed margins are sure to be counterproductive. Greg Sidak speaks of one particularly perverse result of judicial recognition of price squeeze claims, which is that they could encourage price fixing.⁹⁷ If anything, he understates the problem. In order to comply with such a duty in a regulatory context, a firm would file a tariff with an agency which, to the extent of its jurisdiction and competence, would assess any potential for a price squeeze that would harm competitors. But outside of the regulatory context there is no relevant agency, so the smaller firm would have to "file" its information with the dominant firm so that the dominant firm would know the minimum resale price it could charge to avoid the squeeze. That is to say, recognition of such claims, if based on a rule that entitles the smaller firm to a profitable margin, would virtually require price fixing by the two firms. It is no answer to say that the margin depends on both the downstream price, where both firms sell, and the upstream price, where the two firms are in a buyer-seller relationship. Once the upstream price is established, the existence of a squeeze depends on the size of the downstream price. This fact alone counsels strongly against an expansive price squeeze rule and forms the basis of Justice Breyer's concurring opinion in *Linkline*.⁹⁸

Beyond that, the most commonly given objection to judicial recognition of price squeeze claims is an administrative one: assessing such claims requires a court to predict the "correct" price, and doing so places it in the position of a public utility regulator. That objection was valid when Judge Breyer uttered it in

97. Sidak, *supra* note 73, at 297.

98. See *supra* text accompanying notes 21–47.

1990 in the Concord public utility price squeeze case, and it remains so today.⁹⁹ In the end, the plaintiff would be left with little or no incentive to innovate and, thus, the only real beneficiary of such a ruling would be the plaintiff itself. Consumers would not benefit and could be harmed in the long-run.¹⁰⁰

We find very little room for anticompetitive price squeeze claims generally when the dominant firm has no underlying duty to deal with the rival. We find some basis for liability in the unique situation where the dominant firm discovers that a rival, with an established dealing relationship with the defendant, is bent on integrating vertically into the monopolized input market, and the dominant firm responds with a price squeeze intended to deny the rival the resources necessary for such vertical expansion. In that very rare case, damages would presumably consist of the lost profits or loss of investment that the smaller firm suffered. Damages in such a case pose a significant problem, but it is not the kind of problem that Judge Breyer contemplated.¹⁰¹

V. ANTITRUST LIABILITY FOR UNILATERALLY IMPOSED PRICE SQUEEZES: TENTATIVE CONCLUSIONS AND RECOMMENDATIONS

All antitrust tests for price squeezes must be “cost-based” in the limited sense that there must be safe harbors for squeezes that fail to impose sufficiently small margins on rivals. Beyond that, however, cost-based tests are less useful for assessing price squeezes than for assessing other forms of pricing behavior. In any event, the *Brooke Group* test suggested in *Linkline*,¹⁰² which would look for prices below a relevant measure of cost and likelihood of recoupment in the downstream market is simply off point: it neither reflects likely anticompetitive strategies nor appreciates the impact of upstream price manipulation. Any rival that purchases the upstream output at a price above cost necessarily has higher costs than the dominant firm, assuming that it does not have offsetting efficiencies in other portions of its production.

Our tentative conclusions concerning the use of cost-based tests for price squeeze claims are these:

- Defendants should enjoy a safe harbor, or *per se* legality, when the margin between the wholesale price to the rival and the output price of the finished product is greater than the total (fixed + variable) processing costs that the defendant incurs for production between the two stages.
- The defendant’s downstream prices below marginal or average variable cost should be subject to ordinary predatory-pricing rules and assessed without regard to the upstream transaction—

99. Cf. *Town of Concord v. Boston Edison Co.*, 915 F.2d 17, 25 (1st Cir. 1990) (stating that price squeeze claim requires court to behave “like a rate-setting regulatory agency”).

100. See *infra* Appendix B.3.

101. On damages measurement for firms excluded by an antitrust violation, see 2A PHILLIP E. AREEDA, et al., *ANTITRUST LAW* ¶ 349 (3d ed. 2007) (standing issues); *id.* ¶¶ 392f2, 397 (damages issues).

102. *Id.*

that is, such claims are not of a price squeeze at all, but simply of predatory pricing. The Supreme Court made this clear in *Linkline*.

- If the margin between the defendant's price for the upstream input to the rival and the defendant's own second-stage output price is below either the defendant's average total or the average variable cost of intervening production, then some further inquiry may be necessary. The most likely explanations are joint costs (economies of scope) or price discrimination, in which cases we would not find liability, and we would not force an antitrust tribunal to assume the regulator's role of allocating fixed costs among multiple products. Liability is appropriate in the relatively uncommon situation when a margin squeeze has clearly been created by the dominant firm in order to prevent the smaller rival from integrating upstream into the defendant's monopolized primary market. In any event, the *Linkline* decision appears to foreclose liability in all such situations.
- If prices in both the upstream and downstream markets remain the same as before the plaintiff's entry, or if the plaintiff had good reason to expect the prices observed during the squeeze, there can be no antitrust violation. An integrated rival cannot be punished simply because the rival overestimated its ability to cover its own costs.
- Even if a firm appropriates the efficiency gains of its rival, we still expect prices to fall as a result. Thus, consumer harm is not likely to result from the fact that one firm has appropriated the gains of another.

APPENDIX

A. The General Case

We assume a scenario in which a vertically integrated firm has a monopoly in the upstream market for Alpha (α). Alpha is an input used in the production of Beta (β), which is sold in the downstream market. We assume there is an unintegrated rival who buys wholesale Alpha in the upstream market, only to compete in the downstream market for Beta thereafter. We assume that firms choose to halt production only when price falls below average variable cost.

Rival firms are assumed to face a total cost function of the form $TC = (W + C_f)Q_\beta + F$, where TC denotes total cost, W denotes the upstream wholesale price the firm pays for the input in question, and C_f is the per-unit cost of intermediate processing or fabrication, which is the net cost of fabricating Beta from Alpha and preparing it for retail, etc. Q_β is the number of units of Beta produced, and F is fixed costs.

We can then define the margin faced by the un-integrated rival and potential victim of a price or margin squeeze as:

$$Mg = P - W - C_f$$

Where Mg is the firm's margin and P is the downstream market price. In general, a price squeeze occurs if and only if the following condition holds:

$$AVC \leq P < ATC$$

Where AVC denotes average variable cost and ATC denotes average total cost. Explicitly, this says that:

$$W + C_f \leq P < W + C_f + F/Q_\beta$$

Where F is total fixed cost and Q_β is the quantity of Beta sold. From here it is straightforward to solve for the firm's margin:

$$0 \leq Mg < AFC$$

Where AFC is average fixed cost, which is equal to fixed costs over the quantity of Beta sold. Given explicitly, the condition for a price squeeze is as follows:

$$0 \leq P - W - C_f < F/Q_\beta$$

This condition tells us that marginal profitability is nonnegative, so the rival will continue producing (for our purposes, this is equivalent to saying the downstream price is no less than average variable cost). An important corollary of this is that if marginal profitability exceeds zero, then there necessarily exists some output level at which that margin exceeds average fixed cost. That is, if marginal profitability exceeds zero, then there necessarily exists some output level at which total profits are positive and thus no squeeze would occur (*ceteris paribus*).

B. Appropriating Fixed Costs, Rents, or Gains from Innovation

When we say that a vertically integrated firm has "appropriated" the gains of its rivals, we determine the extent of this appropriation by comparing to the zero-profit level. That is, we compare to that level of profits which is achieved at the lowest sustainable level of marginal profitability. Of course, in our case the lowest sustainable level of per-unit profitability is equal to average fixed cost, at which level total profits are equal to zero.

We define the total profit function faced by the unintegrated rival:

$$TP = Q_\beta(P - W - C_f) - F$$

1. Appropriating Fixed Costs

Using the condition found in Part A of this Appendix, we see that zero is the lowest margin at which the rival will sustain production. In reality, the rival is indifferent to production at this level, but we will assume it chooses to continue until marginal profits are negative. In this case we have that:

$$P - W - C_f = 0$$

And, accordingly:

$$TP = Q_\beta(0) - F = -F$$

Hence, to impose the most effective price squeeze possible is to appropriate an amount equal to the rival's fixed costs.

2. Appropriating Rents or Efficiency Gains

Let us suppose that, due to unmatched efficiency gains, perhaps resulting from a patent, the rival is able to reduce its per-unit fabrication cost (C_f). We assume this cost decreases by an amount equal to G . We will also assume that the integrated firm was already imposing a price squeeze which, before these new gains, allowed it to capture its rival's fixed costs. Accordingly, with the preceding squeeze in mind, we can define total profits as follows:

$$TP = Q_B(P - W - C_f + G) - F = Q_B(G) - F$$

Hence, if the integrated firm does not increase the intensity of the squeeze, the rival's total profits increase by $Q_B(G)$. However, under ideal conditions, the integrated firm can completely adjust for this by increasing W by G dollars. It should be noted that if the integrated firm simply reduced P by G dollars, consumers would appropriate the resulting amount; the integrated firm would likely lose profits in that case.

This has important policy implications. If a defendant is alleged to have imposed a price squeeze in order to appropriate fixed-cost investments or other gains, then it must have done so by increasing the upstream price, not by lowering the downstream one. The latter possibility would likely only be used maliciously by a defendant whose sole motivation was to force its rival into foreclosure. Of course, from the perspective of the unintegrated rival, it makes no difference; they are equally effective in reducing its marginal profitability.

There is a final possibility that should be mentioned. If the prevailing squeeze does not reduce marginal profits to zero, then the unintegrated rival would achieve greater total profits if it sold more units while its margin went unchanged. However, just as before, the integrated firm can adjust for this by further reducing its rival's margin. Under ideal conditions, the rival's total profits return to exactly the same level as before output increased.

3. Incentive Changes and Averch-Johnson-like Effects

The results in the above situations resemble somewhat those of the so-called Averch-Johnson effect in price-regulated industries.¹⁰³ Principally, if the firm's rate of return is fixed externally, as by a government agency, then it substantially loses the incentive to innovate because it will be unable to pocket the resulting gains. Even the phrase "somewhat resembles" may overstate the similarity. Under rate-of-return regulation, the agency presumably has the public interest in mind and may engage in significant adjustment in order to avoid Averch-Johnson effects by permitting the regulated firm to capture at least some of the returns to innovation. By contrast, the vertically integrated monopolist wishes to maximize its own profits and will presumably balance short-run returns from

103. See Harvey Averch & Leland L. Johnson, *Behavior of the Firm under Regulatory Constraint*, 52 AM. ECON. REV. 1052 (1962).

reduced margins against the long-run gains from allowing the smaller rival to innovate.

Suppose an antitrust tribunal orders a price-squeezing defendant to afford the plaintiff a margin that allows it to cover both its variable and fixed costs. In effect, this requires the integrated firm to ensure that its rival does not earn negative profits. As a result, it becomes the responsibility of this integrated firm to (1) estimate the cost structure of its rival and (2) forgo potential profits and set non-optimal prices in order to ensure that its rival does not earn negative profits.

In addition to these unreasonable requirements, such a ruling would have the perverse effect of eliminating the plaintiff's incentive to innovate. After all, the integrated firm can still capture any and all positive profits earned by its rival. Thus, the unintegrated rival is operating at a fixed level of return. It has no incentive to innovate and, thus, the court's decision has not helped consumers, nor has it truly improved competition. Rather, such a decision would do little more than allow a single firm to sustain production under circumstances that would otherwise prevent it from so doing.

C. Appropriating Efficiency Gains: Impact on Consumers

When a vertically integrated firm appropriates the efficiency gains of its rival, the effect on downstream prices is not obvious. To explore this, we apply a Bertrandian model of price competition in order to determine how such an efficiency gain would affect the optimal prices set by the two firms.

To begin, it will suffice to define total profit functions for both firms. Subscripts "1" and "2" refer to the integrated firm and the smaller rival, respectively. Profit functions are as follows:

$$\begin{aligned} TP_1 &= q_{\alpha,1}(W - C') + q_{\beta,1}(P_1 - C' - C_{f,1}) - F_1 \\ TP_2 &= q_{\beta,2}(P_2 - W - C_{f,2}) - F_2 \end{aligned}$$

Where, for any firm i (where "i" can denote either "1" or "2"), TP_i is the total profit earned by firm i, P_i is the downstream price set by firm i, $q_{\beta,i}$ is the quantity of Beta sold by the firm i, $q_{\alpha,i}$ is the quantity of Alpha sold by firm i, $C_{f,i}$ denotes the per-unit fabrication cost of firm i, and F_i denotes the total fixed costs of firm i. Finally, C' will denote the (constant) marginal cost of producing Alpha.

Moreover, we assume a downward-sloping demand function that is linear and equal to the following:

$$Q_\beta = A - BP$$

Where Q_β is the total quantity of Beta sold in the market and A and B are arbitrary constants. Given that there are two firms in the market for Beta, we have that:

$$Q_\beta = q_{\beta,1} + q_{\beta,2} = A - BP$$

We let $q_{\beta,2} = q_{\alpha,1}$, since we assume one unit of alpha is used for every unit of beta produced. Using this demand function, we can redefine total profits, allowing us to solve for the optimal price functions of each firm:

$$TP_1 = (A - BP_1 - q_{\beta 1})(W - C') + (A - BP_1 - q_{\beta 2})(P_1 - C' - C_{fl}) - F_1 = (A - q_{\beta 1})(W - C') - BP_1(W - C') + (A - q_{\beta 2})(P_1 - C' - C_{fl}) - BP_1(P_1 - C' - C_{fl}) - F_1 = (A - q_{\beta 1})(W - C') + (A - q_{\beta 2})(P_1 - C' - C_{fl}) - BP(P_1 + W - 2C' - C_{fl}) - F_1$$

By taking the derivative with respect to price, we can determine the optimal price for the vertically integrated firm. The first-order condition gives us that:

$$0 = -2BP - BW + 2BC' + BC_{fl} + A - q_{\beta 2}$$

$$2BP_1 = -BW + 2BC' + BC_{fl} + A - q_{\beta 2}$$

$$P_1^* = -(W/2) + C' + [(A + BC_{fl} - q_{\beta 2})/2B]$$

Following the same process for the unintegrated rival's profit function:

$$TP_2 = (A - BP_2 - q_{\beta 1})(P_2 - W - C_{fl}) - F_2 = (A - q_{\beta 1})(P_2 - W - C_{fl}) - BP_2(P_2 - W - C_{fl}) - F_2$$

This gives us the following first-order condition:

$$0 = A - q_{\beta 1} - 2BP + BW + BC_{fl} - 2BP_2 = A - q_{\beta 1} + BW + BC_{fl}$$

$$P_2^{**} = (C_{fl}/2) + [(A + BW - q_{\beta 1})/2B]$$

Now, suppose the unintegrated rival undergoes an efficiency gain that brings its per-unit fabrication cost to $C_{fl} - G$. Hence, the fabrication cost of each unit has decreased by G dollars. According to the rival's optimal price function, this will reduce its optimal price by $G/2$ dollars.

But how will the integrated firm react to these efficiency gains? Indeed, as has previously been described in detail, the integrated firm has only to increase the upstream price (W) by an amount equal to the per-unit efficiency gain. Hence, following the integrated firm's reaction, the new upstream price of Alpha is $W + G$ dollars per unit. According to its optimal price function, the integrated firm will reduce its price of Beta by $G/2$ dollars. This is the same amount by which the rival reduced its own optimal price.

Hence, in the short run, even if the integrated firm appropriates the efficiency gains of its rival, consumers will still receive the benefit of lower prices. Indeed, both firms would decrease their optimal price by exactly the same amount. Thus, we would expect consumer surplus to increase by the same amount as well.

Again, this has important policy implications. The appropriation of a rival's gains from innovation will not likely have an adverse effect on consumers. Hence, that a firm has appropriated such gains from its rival does not *prima facie* imply that consumers have been adversely affected as a result.