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NOTES

Antitrust Law—The Vertical Price Squeeze as Predatory Pricing Under Section 2 of the Sherman Act

Anticompetitive conduct is an essential element of the monopolization offense under section 2 of the Sherman Act. The monopolist’s pricing behavior may itself be sufficiently destructive of competition to constitute violative conduct. Price behavior has long been governed by vague standards under section 2, but more precise rules are being developed. In *Greyhound Computer Corp. v. International Business Machines Corp.*, the United States Court of Appeals for the Ninth Circuit overlooked the possibility of applying these developing rules to the price behavior of a vertically integrated monopolist. The court instead applied general definitions of monopolizing conduct and in effect held that evidence of the ill effects suffered by competitors as a result of a monopolist’s pricing policies is sufficient to support a finding of monopolization. Although the court did not discuss it as such, the price behavior involved in *Greyhound* was a vertical price squeeze. The case can, therefore, be used to illustrate

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2. See generally, Standard Oil Co. v. United States, 222 U.S. 1, 43, 72-74 (1911).


4. See text accompanying notes 50-66 infra.

5. 559 F.2d 488 (9th Cir. 1977), cert. denied, 98 S. Ct. 782 (1977).


7. It is noteworthy that the Ninth Circuit, which failed to see the relevance of precise predatory pricing rules in *Greyhound*, has elsewhere taken the lead in embracing these developing rules. See Hanson v. Shell Oil Co., 541 F.2d 1352, 1358-59 (9th Cir. 1976), cert. denied, 429 U.S. 1074 (1977).


9. See text accompanying notes 67-76 infra.
significant possibilities for applying precise predatory pricing rules\textsuperscript{10} to price behavior within a vertically integrated structure. Greyhound also illustrates the need for precise rules in such cases, for the Greyhound court, in applying general standards of conduct, failed to address adequately the important issues raised by the case.

Plaintiff in Greyhound, a computer leasing company, buys computers and leases them to users, competing at the leasing level with other leasing companies and with various manufacturers who lease and sell computers.\textsuperscript{11} Because customers generally prefer to lease computers from the International Business Machines Corporation (IBM), the leasing companies buy primarily from IBM.\textsuperscript{12} IBM, however, has traditionally preferred to lease its own computers rather than sell them, in order to minimize competition from IBM-manufactured computers owned by others.\textsuperscript{13} Therefore, when the

\begin{itemize}
\item 559 F.2d at 492; see Pantages, \textit{An Introduction to Leasing}, 14 DATAMATION, Aug. 1968, at 26. In order to compete with the manufacturer, a leasing company must generally underprice the manufacturer's lease price, because the leasing company's price often does not include support services such as maintenance and because some customers will prefer to deal directly with the manufacturer if the prices are equal. Leasing companies are able to underprice the manufacturer's prices because they lease the equipment for longer than its economic life expectancy as reflected in the manufacturer's rental rates. Leasing companies thus bear the risk of economic obsolescence, which is a function of the technological obsolescence and declining prices that result from rapid innovation. \textit{Id.} at 492 n.1; G. Brock, \textit{The U.S. Computer Industry: A Study of Market Power} 177 (1975); W. Sharpe, \textit{The Economics of Computers} 498 (1969); J. Soma, \textit{The Computer Industry} 60-61 (1976); Gardner, \textit{Leasing: A Phenomenon that Drains the Balance Sheets of All But IBM}, 21 DATAMATION, July 1975, at 78.
\item 559 F.2d at 503 n.35; G. Brock, \textit{supra} note 11, at 177; W. Sharpe, \textit{supra} note 11, at 494.
\item IBM can face competition from IBM-made computers in the hands of the leasing companies and in the sales market for used computers. This competition is potentially quite significant because computers are virtually indestructible. 559 F.2d at 491. They are, however, subject to obsolescence. IBM did not sell its equipment at all until it was required to do so under the terms of a 1956 consent decree, United States v. International Business Mach. Corp., 1956 Trade Cas. ¶ 68,245, at 71,123 (S.D.N.Y. 1956). In order to ensure the effectiveness of this requirement the consent decree contained a provision requiring sale terms to be "commercially reasonable" in relation to lease terms. \textit{Id.} In addition to preventing competition from IBM-made computers, IBM's leasing-only policy hindered competing manufacturers' efforts to copy IBM equipment and to design compatible equipment, efforts that are generally approved under a competitive policy. \textit{See} United States v. United Shoe Mach. Corp., 110 F. Supp. 295, 325, 350 (D. Mass. 1953), \textit{aff'd per curiam}, 347 U.S. 521 (1954).
\end{itemize}

In competing with leasing companies that deal in IBM computers, IBM can use two
leasing companies began to grow in importance in the mid-1960's,\textsuperscript{14} IBM became concerned about the resulting increase in sales and the proportionate decrease in its own leases.\textsuperscript{15} The actions taken by IBM in response to the growth of the leasing companies formed the basis of the \textit{Greyhound} complaint.

From the late 1960's to 1971, when IBM introduced its fourth generation of computers,\textsuperscript{16} IBM substantially increased the ratio of its purchase price to its lease price.\textsuperscript{17} This ratio, called the multiplier,\textsuperscript{18} determines the margin within which the leasing companies must operate because they must pay the IBM purchase price and must compete with the IBM lease price.\textsuperscript{19} Before the multiplier was increased, leasing companies had to lease a computer for approximately forty-two months to recover the purchase price;
after the multiplier was increased, they had to lease a computer for forty-eight months to recover the purchase price. The increase in the multiplier thus made it more difficult for the leasing companies to recover their costs on a new computer, and to this extent made the purchase of new computers unattractive to the leasing companies. Greyhound claimed that the result was a restriction of competition in the leasing market in violation of section 2.

IBM also increased the price at which it sold used computers. This was accomplished in 1963 and 1964 by substantially curtailing the technological discount that IBM had offered previously on the purchase price of used computers. This discount is a reflection of the rapidity with which computers become obsolescent in the face of frequent innovation. It had previously amounted to ten percent of the original purchase price per year, with seventy-five percent being the maximum possible reduction over time. In 1964, however, IBM set the discount at twelve percent for the first year, and eliminated the discount for succeeding years; this change applied to the third generation of IBM computers, which was introduced in that year. Greyhound presented evidence that this change ended the previously quite profitable practice of buying equipment late in a product cycle at a low price that could be quickly recovered. Instead, purchases were inhibited late in a product cycle because the leasing companies did not wish to pay relatively high prices for older equipment that might soon be devalued by the introduction of a new generation of computers; the leasing companies' inventory growth was therefore curtailed. Greyhound contended that the result was an unlawful restriction of competition in the leasing market.

The trial court granted IBM a directed verdict at the close of plaintiff’s case. The court of appeals reversed, holding that Greyhound had established a prima facie case of monopolization. The court concluded that

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20. 559 F.2d at 500-01.
21. Id. Greyhound claimed that as a result, its access to IBM computers had been virtually eliminated. Id. See also G. Brock, supra note 11, at 178.
22. 559 F.2d at 500-01.
23. Id. at 499-500. IBM sold used computers to both leasing and sales dealers and sold new computers to its lessees on purchase options. It did not, however, sell used computers generally, preferring to retire them in favor of newer models. W. Sharpe, supra note 11, at 500-01.
24. See note 16 supra.
25. 559 F.2d at 499-500. IBM had already reduced the discount in 1963, but not as drastically as with the 1964 change. Id.
26. Id.
27. 1972 Trade Cas. ¶ 74,205 (D. Ariz. 1972). The district judge found that Greyhound had not established that IBM had monopoly power in a relevant market and, apparently, alternatively found that IBM’s conduct did not meet the monopolization requirement. Id.
28. 559 F.2d at 503. The court also held that Greyhound had established a prima facie case.
there was sufficient evidence that a jury could reasonably conclude that IBM had monopoly power in the relevant market—computer leasing. It then found the evidence sufficient to support a finding that the increase in the multiplier had "severely restricted" leasing company access to new IBM computers and that the change in the technological discount had largely eliminated the leasing companies' purchases of older equipment. On the basis of these findings, the court held that a jury could find the IBM pricing policies were "unnecessarily exclusionary" and were thus an unlawful means of maintaining the IBM monopoly in the leasing market.

Greyhound relied on the contention that IBM's pricing policies had hindered Greyhound's purchase of IBM computers; this contention was based upon the assumption that IBM had monopoly power in the sales market. IBM contended in the court of appeals that Greyhound should therefore be required to prove the existence of this power, but the court held such proof to be unnecessary. Although it acknowledged that Greyhound could have proceeded on the theory that IBM had used monopoly power in the sales market to gain an advantage in the leasing market, the court held that Greyhound was also entitled to recover upon showing that "IBM employed exclusionary tactics to maintain an existing monopoly in the lease market," because of the exclusionary effects in the leasing market caused by the IBM pricing policies, the court held that Greyhound had presented a prima facie case of monopolization.

The modern view of monopolization stems from Judge Learned Hand's opinion in United States v. Aluminum Co. of America (Alcoa). Prior to Alcoa, abusive or coercive behavior was an essential element of attempt to monopolize. Id. at 505. This aspect of Greyhound is an illustration of the Ninth Circuit's unique attempt doctrine. See Blecher & Stegman, Hanson v. Shell Oil Co.: A Straw in the Wind?, 38 Ohio St. L.J. 269, 275-77, 275 nn.55 & 57 (1977); Cooper, Attempts and Monopolization: A Mildly Expansionary Answer to the Prophylactic Riddle of Section Two, 72 Mich. L. Rev. 373, 419-21 (1974).

29. 559 F.2d at 494-95. The court found this to be a close question, but "[c]onsidering the weighty presumption in favor of a jury determination" concluded that leasing was a relevant market. Id.

30. Id. at 496-97.

31. Id. at 501.

32. Id. at 499.

33. Id. at 502-03.

34. IBM allegedly raised its sales price relative to its lease price. To accomplish this, it must have had the power to raise its sales price. See text accompanying notes 81-87 infra.

35. 559 F.2d at 503.


38. Id.

39. 148 F.2d 416 (2d Cir. 1945). This case is commonly referred to simply as Alcoa.
monopolization. In *Alcoa*, the United States Court of Appeals for the Second Circuit decreased plaintiffs’ burden of proof by holding that a finding of monopolization could be based upon conduct that excluded competition from the market and was not economically “inevitable” to a well-run business. This general formulation is the basis for more recent definitions of monopolizing conduct, including several formulated by the Supreme Court.

These general definitions have sometimes been applied without great difficulty. Often, however, problems can arise in distinguishing unnecessarily exclusionary conduct from economically inevitable conduct. Such problems are particularly severe when the conduct under attack is simply the monopolist’s pricing behavior, as is the case in *Greyhound*. The monopolist is confronted with a continuous range of possible prices; most of these prices are exclusionary to some degree, and all of them can be said to be nonessential. Thus the general formulae of *Alcoa* and its successors offer the monopolist little guidance in choosing from the range of possible prices and offer the courts little guidance in judging the monopolist’s choice.

A recognition of this difficulty has led to debate concerning the proper predatory pricing standards. Professors Areeda and Turner have recently

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41. The court was sitting as a surrogate for the Supreme Court under Act of June 9, 1944, ch. 239, 58 Stat. 272 (current version at 28 U.S.C. § 2109 (1970)), when the Supreme Court could not muster its statutory quorum for the case. 148 F.2d at 421.

42. 148 F.2d at 129-30.

43. *Id.* at 431. It is possible to view Judge Hand’s opinion as holding that when monopoly is proved, the burden shifts to the defendant to show that its conduct cannot be condemned because it is merely the exercise of skill, foresight and industry. *See United States v. United Shoe Mach. Corp.*, 110 F. Supp. 295, 342 (D. Mass. 1953), *aff’d per curiam*, 347 U.S. 521 (1954). This view of monopolization has not, however, prevailed. *See United States v. Grinnell Corp.*, 384 U.S. 563, 576 n. 7 (1966).


45. *See, e.g.*, United States v. Grinnell Corp., 384 U.S. 563, 570-71 (1966) (monopolizing conduct is “the willful acquisition or maintenance of [monopoly] power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident”). This was the definition used by the *Greyhound* court. 559 F.2d at 492, 498. *See also* American Tobacco Co. v. United States, 328 U.S. 781, 811-15 (1946).

46. Where the challenged conduct is a discrete action with consequences that can be analytically isolated and evaluated, the general definition works well enough. The leasing-only policy of United Shoe Machinery Corporation is an example. United States v. United Shoe Mach. Corp., 110 F. Supp. 295, 325, 350 (D. Mass. 1953), *aff’d per curiam*, 347 U.S. 521 (1954).


48. Price behavior is thus sharply distinguished from the discrete actions discussed at note 46 *supra*.

49. Any price below the monopolist’s short-run profit maximization price will exclude the firms that would enter if those high profits were in fact being made.
offered a set of rules more clearly delineating the predatory pricing offense by defining it in terms of objective and quantifiable criteria.\textsuperscript{50} Areeda and Turner suggest that a monopolist's pricing practices should not be held to be predatory without proof that its price was below its marginal cost\textsuperscript{51} or, as a more easily ascertainable surrogate, average variable cost.\textsuperscript{52} Limit pricing, in which the monopolist maintains a price lower than its short-run profit maximizing price in order to discourage new entry but does not price below average variable cost,\textsuperscript{53} would be allowed on the ground that such behavior is a legitimate competitive strategy that excludes only less efficient rivals from the market.\textsuperscript{54} Furthermore, Areeda and Turner would allow temporary reductions to average variable cost (reductions that may significantly deter competition)\textsuperscript{55} on the same grounds.\textsuperscript{56}

Reaction to this proposal has been varied. The courts have increasingly cited the Areeda-Turner position,\textsuperscript{57} and they appear to welcome the

\textsuperscript{50} Areeda & Turner, \textit{supra} note 3.

\textsuperscript{51} \textit{Id.} at 709-16. Marginal cost is the incremental cost of producing an additional increment of output. \textit{Id.} at 700.

\textsuperscript{52} \textit{Id.} at 716-18. Variable costs are those that vary with output; they include costs for, among other things, supplies and labor; variable costs are distinguished from fixed costs, which do not in the short run vary with output. \textit{Id.} at 700. If marginal cost is below average total cost, pricing at marginal cost indefinitely is impossible, because the cost of overhead, including the cost of capital, is not recovered. Therefore, a monopolist's marginal cost pricing policy may drive an equally efficient competitor out of the market if that competitor has less "staying power" (that is, access to capital) than the monopolist. \textit{Id.} at 710. Areeda and Turner admit that this possibility is troublesome but for several reasons see "no satisfactory method of eliminating this risk." \textit{Id.} at 711. The equally efficient competitor bears losses at marginal cost pricing only to the extent that the monopolist does. Furthermore, if any price floor \textit{above} marginal cost is imposed, less efficient firms will also be allowed to survive. In addition, the administrative problems in determining and applying an appropriate price floor \textit{above} marginal cost would be insurmountable. \textit{Id.}

Professor Williamson believes that average total cost is the appropriate price floor. Williamson, \textit{supra} note 10, at 321-23. The courts, however, have increasingly followed the Turner and Areeda position, see cases cited note 57 \textit{infra}, so the following discussion will use marginal (or average variable) cost pricing rules.

\textsuperscript{53} See generally F. SCHERER, \textit{supra} note 6, at 219-34.

\textsuperscript{54} Areeda & Turner, \textit{supra} note 3, at 705-06. The potential competition from possible new entrants is valued precisely because it restrains the monopolist from reaping all possible profits. See, e.g., United States v. Penn-Olin Chem. Co., 378 U.S. 158, 173-74 (1964). Therefore, the monopolist should not be condemned for reacting to this competitive influence. Note, \textit{Telex v. IBM: Monopoly Pricing Under Section 2 of the Sherman Act}, 84 YALE L.J. 558, 562-63, 568-69, 576-83 (1975). Furthermore, actual competition from equally efficient firms remains possible. See note 52 \textit{supra}.

\textsuperscript{55} Temporary reductions can deter competition by teaching competitors, actual or potential, the lesson that future competition may be vigorously met by the monopolist. See Areeda & Turner, \textit{supra} note 3, at 706; Note, \textit{supra} note 54, at 564-65. See also Williamson, \textit{supra} note 10, at 290-93.

\textsuperscript{56} Areeda & Turner, \textit{supra} note 3, at 706-12.

increased certainty offered by purely cost-based rules. This judicial acceptance, however, has not been unreserved. Some courts may be willing to hold that a monopolist's pricing behavior is predatory even if its prices remain above average variable cost, if those prices are low enough to hurt competition and the other prerequisites for predation exist in the market. This approach to predatory pricing has been echoed by commentators who argue that the relationship between the monopolist's costs and its prices is but one factor among several to be considered in predatory pricing cases. Thus it is argued that some temporary or selective price cuts are predatory, even if the resulting prices are above average variable cost, if they significantly deter competition.

The arguments against purely cost-based predatory pricing rules do not fully answer the concerns of the Areeda-Turner position. If the effect of the monopolist's prices on its competitors rather than the relation of those prices to its own costs is seen as the crucial factor in the existence of predation, then the monopolist may be forced to overprice its product in order to protect less efficient competitors. If the short-run costs of the monopolist are rejected as a guide to decision in favor of a more comprehensive consideration of the long-range economic effects of the monopolist's pricing policies, then the courts are given the task of supervising prices on


59. See, e.g., id. at 724. The court did, however, express some doubt as to the validity of this approach, and in general praised the Areeda-Turner view highly. For an approach more antithetical to the Areeda-Turner view, see, e.g., Telex Corp. v. International Business Machs. Corp., 367 F. Supp. 258, 299 (N.D. Okla. 1973), rev'd and remanded, 510 F.2d 894, 926-28 (10th Cir. 1975).


61. Note, supra note 54, at 569-70, 579. See also Williamson, supra note 10, at 292-93, 334.

62. An exception is Professor Williamson's approach. Like Areeda and Turner, Williamson rejects a wide ranging consideration of the economic environment of price behavior. Williamson, supra note 10, at 288 n.16. He argues, however, that the monopolist's troublesome response to new entry is best dealt with by rules governing expansions of output rather than by rules governing price-cutting. He proposes a rule under which a monopolist would be prohibited from expanding its output in the short run after significant new entry. This grace period, Williamson contends, would give the entrant a fair start toward reaching economies of scale. After this period expires, cost-based predatory pricing rules would again be relevant. Id. at 331-37. Although it is a significant contribution to the predatory pricing debate, this approach is not helpful in Greyhound because Greyhound was an established company, having entered the industry in 1962. 559 F.2d at 500 n.27.

63. Areeda & Turner, supra note 3, at 705-06; see also F. Scherer, supra note 6, at 216-19; Note, supra note 54, at 576-79.

64. See Scherer, supra note 60, at 890 (rejecting short-run costs as crucial factor).
the basis of "intrinsically speculative and indeterminate" considerations, rather than on the basis of clear, bright-line rules. As a result, every price change by a monopolist may become the occasion for a massive antitrust suit. Ultimately, the courts may be catapulted into the task of ongoing price supervision.66

Predatory pricing analysis examines conduct in its horizontal context; that is, predatory prices are prohibited because of their effect on competition within a single market. If, however, a monopolist operates on successive market levels, as IBM does,67 then its behavior must be examined for vertical implications as well. The question of what behavior, including price behavior, within a vertically integrated structure is prohibited has been another problem area in the law of monopolization.68 If precise predatory


66. Although this problem is particularly acute in the context of private antitrust actions, it is certainly arguable that the adversary model is an inappropriate vehicle for choosing welfare-maximizing prices regardless of the identity of the plaintiff. See Williamson, supra note 10, at 288 n.16 (long-run welfare maximizing approach advocated by Scherer evidently contemplates supplanting antitrust enforcement with a price commission); cf. Areeda & Turner, supra note 65, at 896-97 (no "suitable, administrable rules" could be formulated to incorporate long-run welfare maximizing factors identified by Scherer).

67. One level is the manufacturing and sales market; another level is the leasing market for computers obtained from the sales division.

68. See Bork, Vertical Integration and the Sherman Act: The Legal History of an Economic Misconception, 22 U. CHI. L. REV. 157 (1954) [hereinafter cited as Bork, Vertical Integration and the Sherman Act]. Bork concludes that the antitrust laws should be entirely indifferent to vertical considerations. Id. at 200-01. Bork continues to adhere to this view. See Bork, Vertical Integration and Competitive Processes, in PUBLIC POLICY TOWARD MERGERS 139, 149 (J. Weston & S. Peltzman eds. 1969). Contra, P. AREEDA, supra note 6, at 675 ("neither the monopolist nor the law should be indifferent" to the extension of market power through vertical integration).

Vertical integration may exist to achieve increased efficiencies, see F. SCHERER, supra note 6, at 70, 86-87, or it may exist as a tool for the extension or protection of market power, see P. AREEDA, supra ¶ 609(a). A monopolist that is vertically integrated can always gain a monopoly at the second level if it wishes; for example, assuming no legal constraints, it may simply refuse to deal with anyone on the second level except its own second level division. See Note, Refusals to Deal by Vertically Integrated Monopolists, 87 HARV. L. REV. 1720 (1974) (discussing Otter Tail Power Co. v. United States, 410 U.S. 366 (1973)). It is often stated that this extension of market power is not socially detrimental because even a firm that has a monopoly at both levels can make only one monopoly profit. This is so because the monopolist has a single short-run profit maximization price for the product as it emerges from the second level and the monopolist can make the entire monopoly profit at either level or can split it up however the monopolist wishes. If the monopolist charges more than this price, output will drop, as will the total profits for both levels. See P. AREEDA, supra ¶ 609(a), at 675; Bork, Vertical Integration and the Sherman Act, supra at 172 n.65, 196. This analysis assumes that the product of the first level exists in a fixed proportion in the product of the second level. See id. at 172 n.65. It has been argued that if the product of the first level is used in variable proportions at the second level, vertical integration may increase monopoly profits. See McGee & Bassett, Vertical Integration Revisited, 19 J.L. ECON. 17, 22, 25-28 (1976) (discussing and refuting this contention, concluding that the increased monopoly profits result from the horizontal market
pricing rules can be applied to conduct at a single level of a vertically integrated firm, then some of the problems may be eliminated.

The pricing behavior at issue in *Greyhound* was a vertical price squeeze, although the court did not discuss it as such.69 The squeeze is a means by which a vertically integrated monopolist can control the profit margin of its unintegrated second level competitors who must buy its first level product. The monopolist's second level price puts a ceiling on the prices of its second level competitors, because they must compete with that price; its first level price puts a floor under the competitors' costs, because they presumably must purchase the first level product from the monopolist.70 Thus, by manipulating its prices at the first and second levels, the

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69. The absence of such a discussion seems strange, because the Greyhound allegation concerning the increase in the multiplier is explicitly an allegation of a squeeze; the Greyhound argument concerning the change in the technological discount is also a squeeze allegation, though less explicitly so.

70. They must purchase the first level product of the monopolist to the extent that that product is a fixed-proportional requirement for second level production and to the extent that the monopolist lacks competition that could supply second level needs. In other words, the monopolist's ability to put a floor under second level costs is limited by the elasticity of the demand curve facing the monopolist. See McGee & Bassett, *supra* note 68, at 25, 32 & n.37.
monopolist can squeeze the profit margin of its second level competitors to whatever level it wishes.\(^7\) Squeezing those profits merely to competitive levels is socially beneficial,\(^7\) and should therefore be lawful;\(^7\) however, by squeezing the profits to unremunerative levels, the monopolist can drive competitors out of the market and gain a monopoly at the second level. It seems clear that such a use of the squeeze to gain a second level monopoly would constitute a section 2 violation\(^7\) unless the squeeze were the result of efficiencies possessed by the monopolist at the second level\(^7\) or efficiencies resulting from vertical integration.\(^7\) Given that a squeeze to competitive

\(^{71}\) P. AREEDA, supra note 1, \(\S\) 609(c).
It has been argued that the vertical price squeeze is simply the use of a "deep pocket" from one market to subsidize predatory pricing in another market, and is thus possible only if the integrated firm is willing to forego a return on the capital that it has invested in the market in which it is underpricing. Bork, Vertical Integration and the Sherman Act, supra note 68, at 198-99; cf. Peltzman, Issues in Vertical Integration Policy, in PUBLIC POLICY TOWARD MERGERS, supra note 68, at 167, 172 ("price squeeze is simply another name for predatory price cutting"). This is incorrect, for the vertically integrated monopolist can set its second level price at the profit maximization level and can set its first level price to its competitors at a point at which they cannot meet its second level price. If the monopolist has sufficient capacity at the second level to meet the entire demand at the profit maximization price, then it can squeeze the unintegrated second level competitors while profit maximizing, thus making the maximum possible return on investment.

72. Profits at the second level may be above competitive levels if the second level competitors exercise market power, either singly or in collusion. The existence of this "remaximization" is not inconsistent with the fact that there is only one monopoly profit to be gained from integration across successive market levels, because there will be a smaller demand at this remaximizing price, and total industry profits will fall as output is further restricted. A squeeze to competitive profit margins at the second level prevents this result and is thus socially beneficial. See, e.g., P. AREEDA, supra note 1, \(\S\) 609(c); Note, supra note 68, at 1731. But cf. Albrecht v. Herald Co., 390 U.S. 145 (1968) (squeeze to competitive profit levels, effected by maximum price provision in contract, per se unlawful under Sherman Act \(\S\) 1 because of the inherent dangers in all price fixing). A squeeze to competitive profit levels can be viewed as simply a squeeze imposed by competition. An unintegrated second level firm could force second level profits down to competitive levels through vigorous price competition. Thus, if the monopolist forces second level prices only to competitive levels, its conduct may be viewed as simply legitimate price competition at the second level.

73. United States v. Aluminum Co. of Am., 148 F.2d at 437-38 (profit squeeze not unlawful if unintegrated second level competition can make a "living profit" at prevailing prices).

74. Id.; cf. Otter Tail Power Co. v. United States, 410 U.S. 366, 377-79 (1973) (refusal to deal with second level competitors violates \(\S\) 2); Eastman Kodak Co. v. Southern Photo Materials Corp., 273 U.S. 359, 375 (1927) (refusal to deal with second level competitors violates \(\S\) 2). See also Note, supra note 68, at 1754-61 (refusal to deal can be effected through vertical price squeeze).

75. Supplying a product at a lower price because of superior efficiencies would seem to be a variety of "growth ... as a consequence of a superior product [or] business acumen" allowed by the Sherman Act. United States v. Grinnell Corp., 384 U.S. 563, 570-71 (1966).

76. See id. But see Brown Shoe Co. v. United States, 370 U.S. 294, 344 (1962) (marketing efficiencies created by vertical merger would have deleterious effects on competitors; merger disallowed, in part for this reason). Conceding that such efficiencies are desirable, difficult questions remain concerning the burden of proof as to those efficiencies. See Areeda, Structure-Performance Assumptions in Recent Merger Cases, in PUBLIC POLICY TOWARD MERGERS, supra note 68, at 27, 36-39 (efficiency justification for merger under Clayton Act \(\S\) 7).
profit levels is permissible, however, the formulation of standards to determine when the squeeze has become predatory is difficult.

Judge Hand examined this problem in the *Alcoa* case and held that a prima facie case of a predatory squeeze had been established on the basis of evidence that unintegrated second level firms could not make a "living profit" by paying Alcoa's first level price and competing with its second level price. This holding would seem to permit a finding of predation on the basis of the effect of a monopolist's prices on its competitors. The holding, however, was premised explicitly on the assumption that Alcoa's second level costs were equal to its competitors' costs. Thus *Alcoa* may alternatively be read as holding that the existence of predation, even in the context of a vertical price squeeze, is in essence a function of the monopolist's prices and its costs.

This reading of *Alcoa* suggests that cost-based predatory pricing rules may be applied to allegations of a vertical price squeeze. The monopolist's second level prices can be examined to see if they would be predatory if the monopolist's second level division were to purchase the first level product at the same price that its competitors must pay. *Greyhound* offered the Ninth

Furthermore, any desirable efficiencies must be balanced against possible anticompetitive effects. See Note, supra note 68, at 1730-32.

77. 148 F.2d at 437-38.
78. Id. at 437.
79. The alternative reading of *Alcoa* is expressed in text following note 68 supra. This reading seems inconsistent with the remainder of *Alcoa*. If the monopolist is able to underprice its second level competitors and still recover its own second level costs, then the monopolist would seem to be operating more efficiently than those competitors. This efficiency would seem to be a variety of the "skill, foresight, and industry" that Hand viewed as acceptable conduct. See 148 F.2d at 430. Moreover, in his discussion of the squeeze, Hand apparently accepted the district court's position that a squeeze was impossible if Alcoa were not selling "below the cost of [second level] production, measuring ingot price as part of the cost." Id. at 437.
80. A somewhat similar approach is advocated in Note, supra note 68, at 1760. The analysis there advocated would also assume that the monopolist's second level division purchases the first level product at the same price that the second level competitors must pay. It would then compare the monopolist's "rate of profit from . . . sales of the final product," id., with the rate of profit gained from sales of the first level product to second level competitors; the monopolist would be allowed to charge any prices that did not cause the first figure to fall below the second.

This approach would not allow the monopolist to profit maximize at the first level while competing at the second level. Antitrust policy, however, does not discourage such behavior. See notes 72 & 73 and accompanying text supra. If "rate of profit from . . . sales of the final product" refers to simply the second level rate of profit, then a monopolist that profit-maximizes at the first level while competing at the second would almost always violate the rule, because the competitive second level rate of profit would almost always be below the rate of profit at the first level. If "rate of profit from . . . sales of the final product" means the rate of profit for both levels combined, then the monopolist would still be forbidden to profit maximize at the first level while competing at the second. The monopolist has some of its capital invested in its competitive second level subsidiary, which receives a lower rate of return than its first level monopoly. The total rate of profit will, therefore, be somewhat lower than the first level
Circuit the opportunity to take such an approach. The *Greyhound* court, however, did not recognize this possibility, perhaps because the court did not recognize the case as an instance of a vertical price squeeze.

Greyhound contended that IBM had hindered Greyhound’s purchase of IBM computers by raising the purchase price relative to the IBM lease price. Thus Greyhound’s case necessarily rested on the premise that IBM had the power to control price in the manufacturing and sales market. The court of appeals held, however, that Greyhound was not required to prove the existence of that power. Greyhound was instead allowed to rely simply on the theory, stemming from general definitions of monopolization, that IBM had used exclusionary practices to maintain an existing monopoly in the leasing market. The IBM leasing monopoly, however, is dependent on IBM dominance of the manufacturing and sales market, because the IBM leasing division leases only IBM computers. Moreover, the conduct challenged by Greyhound—specifically, the adjustment of the multiplier and technological discount—occurred at least partially in the sales market. Thus, IBM may be found to have monopolized the leasing market on the basis of conduct that occurred outside the leasing market. This approach to the analysis of a vertical squeeze is unusual, in that other cases have been based on proof of monopoly power at the first level. The *Greyhound* approach, dispensing with formal proof of first level power, seems acceptable so long as the factual existence of the squeeze is solidly proved.

It is important to recognize, however, that a necessary implication of the

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rate of profit. Thus, a monopolist’s profit maximization at the first level and competition at the second level would always violate the proposed rule.

The proposed rule goes astray in using rate of profit, rather than amount of monopoly profit, as a basis for comparison. If the dollar amount of monopoly profit earned at both levels from the monopolist’s sale of the final product (a figure that excludes the *competitive* profit made at the second level) were compared to the amount of monopoly profit made from first level sales to second level competitors, a rule prohibiting the first figure from falling below the second would be consistent with antitrust policy. Violation of the rule would indicate that the monopolist was charging its competitors more than it charged its subsidiary. See text accompanying notes 93 & 94 infra.

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81. See note 17 and accompanying text supra.

82. A vertical price squeeze cannot occur in the absence of market power at the first level. Without such power, a firm cannot raise its first level price without losing sales. Cf. Peltzman, supra note 71, at 172 (price squeeze impossible without market power of the first level or cheaper access to capital; the latter, however, is better analyzed as merely predatory pricing).

83. 559 F.2d at 503.


85. The court’s opinion does not make clear to what extent the sales price and the lease price, respectively, were changed to accomplish the change in the multiplier. See 559 F.2d at 500-01.

86. E.g., Alcoa, 148 F.2d at 438.

87. “Greyhound was not required to prove the source of IBM’s power to do what Greyhound’s evidence indicated IBM in fact did.” 559 F.2d at 503.
Greyhound ruling is that IBM had monopoly power in the sales market. The existence of such power, though Greyhound was not required to prove it, is a premise of further analysis of IBM's squeeze of the leasing companies.

Accepting that IBM was squeezing the leasing companies, the court was further required to decide whether the squeeze was predatory. The court held that Greyhound had established a prima facie case of predation on the basis of evidence that Greyhound had sharply reduced its purchases of new equipment when the multiplier was raised and largely ceased buying older equipment when the technological discount was reduced. Thus, the court relied entirely on evidence of the effect of IBM's pricing behavior on competitors in holding that behavior predatory.

Greyhound might be seen as simply an application of the Alcoa "living profit" principle. The Greyhound court's disregard of IBM's costs, however, is a disturbing departure from the Alcoa approach. The Greyhound court did not assume, as Judge Hand did in Alcoa, that IBM's second level costs were equal to those of its second level competitors. Nor did the Greyhound court state that IBM could rebut the inference of predation with evidence of its own costs. The failure of the court of appeals to mention this possibility raises the question whether the court realized that a determination of IBM's leasing division costs is central to the issue of predation. If the court did not recognize the existence of this crucial issue, there is a danger that in the future the court may permit even weaker evidence to constitute a prima facie case of monopolization. Thus, by relying on general definitions of monopolization, the court may overlook crucial issues and allow unmeritorious cases to reach the jury. This is the specter raised by Greyhound.

Despite the failure of the court to perceive it as such, Greyhound offers an opportunity for a rigorous approach to the analysis of a vertical price squeeze through the application of precise predatory pricing rules to a vertically integrated structure. The question raised by applying cost-based rules to the Greyhound vertical squeeze is whether the IBM lease price

88. See id. at 499-501.
89. In its holding on the technological discount, the court also relied to a degree on evidence, in the form of internal IBM memoranda, that IBM had a subjective intent to monopolize. Id. at 499. Intent has been a dead issue in the law of monopolization since Judge Hand laid it to rest in Alcoa. 148 F.2d at 431-32. The Greyhound court's resurrection of it may simply be a spillover from the court's discussion of the attempt claim, 559 F.2d at 504-05, since specific intent is relevant in attempt cases. See generally sources cited at note 28 supra.
90. See text accompanying notes 50-56 supra.
91. The court relied generally on the Grinnell definition of monopolizing conduct, United States v. Grinnell Corp., 384 U.S. 563, 570-71 (1966); see note 45 supra, finding that IBM's actions represented the willful maintenance of monopoly power. 559 F.2d at 498. As already noted, see text accompanying notes 47-49 supra, this definition is not useful as a guide to judging price behavior.
would be below the IBM leasing division’s average variable cost if that division’s cost for an IBM computer were the same as that of the leasing companies.\(^{92}\) If the IBM leasing division “pays” the same price as the leasing competitors and the IBM lease price is below the leasing division’s average variable cost, then Greyhound has established a clear case of predation. If the leasing division remains profitable because it “pays” less for computers than do the leasing companies, then IBM’s adjustment of the multiplier and technological discount emerges as an instance of systematic price discrimination that offers no welfare gain to society\(^{93}\) unless the discrimination reflects efficiencies of vertical integration.\(^{94}\) In the absence of such efficiencies, this discrimination should constitute a section 2 violation.\(^{95}\)

If the IBM sales division charges the same price to the IBM leasing division and the leasing companies, and the IBM lease price is not less than the leasing division’s average variable cost, then several possibilities remain. IBM may be squeezing the leasing companies only to competitive profit levels,\(^ {96}\) or IBM may be more efficient at the leasing level than the leasing companies and therefore able to underprice them.\(^ {97}\) In either event, IBM should not be held to have monopolized the leasing market.\(^ {98}\) A contrary conclusion would require IBM to adhere to an “umbrella price”\(^ {99}\) in order to give rivals a share of monopoly profits or to protect them from their own inefficiency. IBM may also be able to underprice its second level competitors because of efficiencies resulting from vertical integration. IBM should probably be allowed to reap the benefit of these efficiencies, as a primary goal of the antitrust laws is to promote the efficient allocation of resources.\(^ {100}\)

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92. This approach entails a difficult problem of attributing joint or common costs among the divisions of the monopolist. See Note, supra note 68, at 1760 & n.220. Nevertheless, despite its difficulties, this approach seems the most reliable way to analyze a vertical price squeeze. Id.

93. For a discussion of price discrimination through vertical integration, see note 68 supra.


95. See, e.g., United States v. Grinnell Corp., 236 F. Supp. 244, 256 (D.R.I. 1964), aff’d, 384 U.S. 563 (1966); Note, supra note 54, at 558 n.5. See also Note, supra note 68, at 1728 n.52.

96. Greyhound claimed damages based on a 30% profit margin. 559 F.2d at 507 & n.40 (derived).

97. There is no indication in the record to support this position.

98. See notes 75 & 76 and accompanying text supra.

99. An umbrella price is a price so high that it encourages entry even by less efficient firms. See Note, supra note 54, at 561-62.

100. See notes 75 & 76 supra.
If predatory pricing policy is not analyzed exclusively on the basis of cost-based rules, other factors may be relied upon to support Greyhound's prima facie case. The Greyhound court failed to examine adequately the market conditions that would make a predatory squeeze profitable for IBM, when such an examination would have strengthened its holding.

The squeeze in Greyhound was directed at one of the submarkets of the computer systems industry, the leasing market. The pattern of competition in the industry has been for IBM to compete vigorously when it is challenged in single submarkets while reaping greater profits in those submarkets in which it faces little competition. IBM has thereby gained a reputation as "hyperaggressive," which may have discouraged investment in IBM's competitors and deterred competition in all of the industry's submarkets.

Discouraging entry into single submarkets is important to IBM because a major barrier to entry into the manufacture of mainframe computers is the necessity of entering a number of other submarkets simultaneously in order to market a computer system. If strong, independent companies were to develop in the various submarkets, entry into mainframe manufacturing might well be easier. The leasing market is particularly important in this regard because in the absence of leasing companies to market the computers of various manufacturers a new manufacturer must make a large capital investment (entry barriers raised by dual entry requirement resulting from vertical integration).
investment in a stock of computers for leasing.109 This requirement is in fact the major capital entry barrier into the manufacturing market.110 Thus, by restricting the growth of strong leasing companies, IBM maintains significant capital entry barriers in the manufacturing market.

These additional and more subjective factors support the conclusion that IBM violated the antitrust laws by engaging in a socially undesirable price squeeze. It should be remembered, however, that when predatory pricing analysis is opened to considerations beyond the monopolist’s costs the advantages of the cost-based rules are diminished, and the analysis leans toward the "intrinsically speculative and indeterminate" approach such rules are designed to avoid.

The problem of determining standards for a monopolist’s price behavior is compounded when that behavior occurs on successive market levels, as in the *Greyhound* case. Clear and precise standards are needed to guide the monopolist and the courts. Such standards are available in the form of cost-based predatory pricing rules, which can be applied to the vertically integrated monopolist. The court of appeals in *Greyhound* overlooked the possibility of such an application, relying on general definitions of monopolization to find a prima facie case of monopolization. The court overlooked or ignored the crucial issue of IBM’s costs as a measure of the propriety of its prices; IBM’s potential defenses based on cost considerations went unnoticed, leaving open the unhappy possibility that even weaker cases will be approved in the future. The *Greyhound* court thus decided, for badly flawed reasons, to enter the economic thicket of judicial supervision of IBM’s pricing policies.

MICHAEL L. BALL

Criminal Procedure—Pen Registers: Compelling Third Party Assistance Under the All Writs Act

A pen register is a mechanical device that records the outgoing numbers dialed on a monitored telephone, but that does not overhear oral communications or record whether a call is actually completed.1 Because

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110. *Id.*; J. Soma, *supra* note 11, at 41.

1. A pen register is attached to a telephone line usually at a central telephone office. In