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## Predatory Pricing under the Areeda-Turner Test

Herbert Hovenkamp\*

### I. Introduction

Few works of legal scholarship have had the impact enjoyed by Areeda and Turner's 1975 article on predatory and strategic pricing (Areeda and Turner, 1975). Every federal circuit court except the Eleventh has embraced some variation of the test that Areeda and Turner proposed.<sup>1</sup> The Supreme Court has come very close to adopting it as well.

Proof of predatory pricing under the Areeda-Turner test requires two things; the sequence is not important, and most decisions focus on whichever element is disputed or easier to resolve: First, the plaintiff must show a market structure and arrangement of firms such that the predator could rationally have predicted that the predatory pricing strategy would be profitable. This requirement, typically called "recoupment," requires the plaintiff to show that, looking from the beginning of the predation campaign, the predator can reasonably anticipate that the present costs of predation will be more than offset by the present value of a future period of monopoly profits, thus making the strategy a sound investment. Second, the plaintiff must show that the defendant's prices over a significant number of sales were below a relevant measure of cost, presumptively average variable cost (AVC) or, in some cases, marginal costs over a relatively short run.

While Areeda's and Turner's original 1975 article is generally associated with the second point, on price/cost relationships, it stated the recoupment requirement as well. Writing in response to the excessively subjective, intent-based tests that courts had been applying, they (1975, p. 698) concluded that:

These vague formulations of the offense overlook the fact that predation in any meaningful sense cannot exist unless there is a temporary sacrifice of net revenues in the expectation of greater future gains. Indeed, the classically-feared case of predation has been the deliberate sacrifice of present revenues for the purpose of driving rivals out of the market and then recouping the losses through higher profits earned in the absence of competition. Thus, predatory pricing would make little economic sense to a potential predator unless he had (1) greater financial staying power than his rivals, and (2) a very substantial prospect that the losses he incurs in the predatory campaign will be exceeded by the profits to be earned after his rivals have been destroyed.

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<sup>1</sup> On the Eleventh Circuit's position adopting an average total cost test see *McGahee v. Northern Propane Gas Co.*, 858 F.2d 1487, 1496 (11th Cir. 1988), cert. denied, 490 U.S. 1084 (1989). On individual variations in the other Circuits, see Areeda and Hovenkamp (2015, ¶724c3).

Later, in developing this recoupment requirement, Areeda and Turner (1975, pp. 698–699) wrote:

attention must also be given to the second prerequisite, which is less likely to occur. Although a predator may drive competitors into bankruptcy, their durable assets may remain in the market in the hands of others. Moreover, a firm can anticipate monopoly profits for only so long as its monopoly prices do not attract new entry. Losses incurred through predation could be regained in markets with very high barriers to entry. In many markets, however, and especially in those having a number of small rivals, entry barriers may be nonexistent or at least too low to preclude entry. Admittedly, a demonstrated willingness to indulge in predatory pricing might itself deter some smaller potential entrants, but it is unlikely to inhibit firms with resources comparable to those of the predator. Repeated predation in the same market, moreover, is not only costly but is likely to be easily detectable and thus the occasion for severe antitrust sanctions. The prospects of an adequate future payoff, therefore, will seldom be sufficient to motivate predation. Indeed, proven cases of predatory pricing have been extremely rare.

Nearly the entire balance of Areeda and Turner's article was devoted to the proper price-cost test. For that reason the recoupment requirement is often not considered to be a part of the Areeda-Turner test, although it was clearly there. This view was exacerbated by the fact that nearly all of the early controversy surrounding Areeda's and Turner's article swirled around the average variable cost (AVC) test, not the structural recoupment requirement. Further, although the courts almost immediately began citing Areeda and Turner in predatory pricing cases, nearly all of the early citations were to issues that involved price-cost relationships, not to structure and recoupment.<sup>2</sup> Indeed, one characteristic of many of these early decisions was that they addressed predatory pricing claims in markets where monopolization of any kind, let alone by predatory pricing, would have been impossible to achieve.

The first serious judicial discussion of the recoupment requirement appeared in the Supreme Court's 1986 *Matsushita* decision, where the Supreme Court observed that predatory pricing's success, and thus its rationality, was unlikely in the market at hand because there was no reasonable prospect of profitable recoupment. The Court cited the Areeda-Turner article for that proposition.<sup>3</sup> Judge Easterbrook's 1989 decision in the *A.A. Poultry* case then elaborated the requirement more fully, citing both the Areeda-Turner article and the *Antitrust Law* treatise (Areeda and Hovenkamp, 2015).<sup>4</sup> Judge Easterbrook noted the difficulties inherent in measuring price/cost relationship and took the easier route of considering recoupment in a market (egg production) that

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<sup>2</sup> E.g., *International Air Indus., Inc. v. American Excelsior Co.*, 517 F.2d 714 (5th Cir. 1975); *Hanson v. Shell Oil Co.*, 541 F.2d 1352 (9th Cir. 1976); *Janich Bros., Inc. v. American Distilling Co.*, 570 F.2d 848 (9th Cir. 1977).

<sup>3</sup> *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 590-591 (1986).

<sup>4</sup> *A.A. Poultry Farms, Inc. v. Rose Acre Farms, Inc.*, 881 F.2d 1396 (7th Cir. 1989).

was competitively structured and where entry was easy. The Supreme Court then fully embraced this view in its 1993 *Brooke Group* decision, which focused almost entirely on the recoupment requirement and again cited both the Areeda-Turner article and the *Antitrust Law* treatise.<sup>5</sup> Subsequently, in its 2007 *Weyerhaeuser* decision involving claims of predatory purchasing, the Court held that under the Sherman Act a plaintiff must show both recoupment and prices below a relevant measure of cost,<sup>6</sup> implicitly adopting an argument that predatory pricing claims should be dismissed in situations where doing so made no economic sense (e.g., Werden, 2006; Melamud, 2006).

## II. Impact

The effect of Areeda and Turner's predation test has been devastating for predatory pricing plaintiffs. The effects occurred in two waves: For the first 15 years after 1975 the courts focused overwhelmingly on the price-cost relationship, and it quickly became clear that proving predatory pricing under an AVC test is extremely difficult. At the same time, the test produced a significant number of critiques in both the economic and legal literature. The second wave of devastation occurred after the Supreme Court's formulation of the recoupment requirement in the *Brooke Group* case. Since then, few plaintiffs have won a case, and the incidence of classical predatory pricing claims has declined dramatically.<sup>7</sup>

The test has also been harsh on plaintiffs that have challenged more complex pricing practices, including such things as quantity or market-share discounts or bundled discounts. Quantity or market share discounts are tied to either the volume of goods or the share of one's needs that the buyer purchases. Bundled discounts are reduced prices or rebates conditioned on the purchaser's taking some combination of two or more different goods from the seller. While the cases in these areas, which are discussed below are less unanimous and the Supreme Court has had little to say, the majority apply some form of price/cost test in these situations as well.<sup>8</sup>

Whether this harshness is good or bad depends on the frequency of successful predatory pricing and the economic harm that it causes. If anticompetitive predatory

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<sup>5</sup> *Brooke Group v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 226 (1993).

<sup>6</sup> *Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co., Inc.*, 549 U.S. 312 (2007).

<sup>7</sup> One exception is *Spirit Airlines, Inc. v. Northwest Airlines, Inc.*, 431 F.3d 917 (6<sup>th</sup> Cir. 2005).

<sup>8</sup> E.g., *Concord Boat Corp. v. Brunswick Corp.*, 207 F.3d 1039, 1059 (8<sup>th</sup> Cir. 2000), cert denied, 531 U.S. 979 (2000) (market share discounts not unlawful unless the fully discounted price is below cost); *Cascade Health Solutions v. PeaceHealth*, 515 F.3d 883 (9<sup>th</sup> Cir. 2008) (bundled discount not unlawful unless the incremental price for taking the second good is less than average variable cost); *Virgin Atlantic Airways Ltd. v. British Airways PLC*, 69 F. Supp. 2d 571, 580 n.8 (S.D.N.Y. 1999), aff'd on other grounds, 257 F.3d 256 (2<sup>d</sup> Cir. 2001) (similar). One exception is *LePage's Inc. v. 3M*, 324 F.3d 141 (3<sup>d</sup> Cir. 2003) (en banc), cert. denied, 542 U.S. 953 (2004), which condemned bundled discounts without requiring proof of any price below cost. See Areeda and Hovenkamp (2015, ¶749).

pricing is nonexistent or extremely rare, then we need not worry about false negatives. However, if it is more common, then the Areeda-Turner formulation clearly underdeters.

### III. The AVC Test

Areeda and Turner made their predatory pricing proposal as a critique of vague and unsatisfactory formulations in federal court decisions prior to that time. Some courts had permitted predation claims on fully sustainable, profitable prices -- that is, prices above any measure of the defendant's costs -- invariably leading to costly fishing expeditions for evidence of bad intent.<sup>9</sup> Some decisions, including the Supreme Court's *Utah Pie* case, had described predatory pricing as "below cost" pricing,<sup>10</sup> or pricing that made competition "ruinous."<sup>11</sup> While most of these cases spoke of pricing as having something to do with "cost," they said nothing about the relevant measure of cost or how costs should be classified when analyzing predation claims. For example, *Utah Pie* spoke of "persistent unprofitable sales below cost," and of the legal requirement as "direct cost plus an allocation for overhead." The reference to "overhead" suggests that the Court was thinking of average total cost as the standard.<sup>12</sup>

Areeda and Turner responded by applying the simplest tools of microeconomic analysis. First, they reasoned that, in a perfectly competitive market, prices are driven to short-run marginal cost. Further, given that competition is an important goal of antitrust policy it seemed perverse to condemn prices that are above marginal cost as predatory, for this would force firms to hold a price umbrella over their competitors' heads and even act irrationally, in the sense that they would not be maximizing profits. Second, they observed, short-run marginal cost is difficult to measure from data that are collected in the ordinary course of business. What accountants actually measure is past averages -- typically, a set of expenses that are divided by the number of units sold over a defined time period. As a result, average variable cost is much easier to compute from accounting records than is short-run marginal cost.

Areeda and Turner then observed that in a competitive market in equilibrium, and with modest fixed costs, short run marginal cost and average variable cost are quite close together, so using AVC as a surrogate for MC would not produce significant errors. They also observed an independent reason for an AVC test -- namely, that AVC ordinarily defines the "shut down" point. A loss minimizing firm will no longer produce when prices are so low that it cannot recover its average variable costs (Areeda and Turner, 1975, p. 702 & n. 18). As a result, prices persistently below AVC require an explanation.

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<sup>9</sup>*Lloyd A. Fry Roofing Co. v. FTC*, 371 F.2d 277 (7<sup>th</sup> Cir. 1966) (finding predatory pricing without prices below cost); *E.B. Muller & Co. v. FTC*, 142 F.2d 511 (6<sup>th</sup> Cir. 1944) (at or slightly below cost).

<sup>10</sup> *Utah Pie Co. v. Continental Baking Co.*, 386 U.S. 685, 703 & n.14 (1967).

<sup>11</sup> *Porto Rican Am. Tobacco Co. v. American Tobacco Co.*, 30 F.2d 234, 236 (2d Cir. 1929), cert. denied, 279 U.S. 858 (1929).

<sup>12</sup> *Utah Pie*, 386 U.S. at 696-699 & n.12.

## IV. Critiques

That so many courts embraced the Areeda-Turner AVC test might seem surprising, given that contemporary assessments from economists were quite negative. The criticisms can be very roughly grouped into three categories: (1) AVC is a poor surrogate for short-run marginal cost; (2) the test seriously underdeters in markets with high fixed costs; and (3) short run measures such as AVC and SRMC are poor measures of strategic predatory pricing.

### 1. *AVC as a Surrogate for Short-Run Marginal Cost*

Even with the assumption that short-run marginal cost is a useful legal test for predatory pricing, AVC is a reasonable surrogate for marginal cost only in equilibrium. When average variable costs are minimized, AVC and short run marginal cost are the same, and a fully profitable price requires an increment to cover fixed costs.

"Classic" predatory pricing is not an equilibrium strategy, however, but rather a nonsustainable high-output strategy. During the predation period it typically leads to output in an area where AVC is sloping upward. To be sure, the results vary with the situation.<sup>13</sup> Because predation strategies are not sustainable we do not ordinarily expect a predator to add structural capacity or build an additional plant simply to engage in below-cost predatory pricing. The plant would be costly, and output will be reduced again during the recoupment period. Also, in some situations the predator may have large amounts of excess capacity going into the strategy, with the result that the higher output that results from predation occurs in the downward-sloping portion of its AVC curve.

In what we think of as the more common case, however, the predator increases output from the equilibrium level, meaning that it moves into the upward sloping portion of its AVC curve. In this range AVC and MC diverge, with MC being increasingly higher than AVC. In these circumstances the Areeda-Turner test is a "defendant's paradise," in Williamson's words (1977, p. 305), in precisely those situations where predation is likely to be occurring. Richard Posner echoed that sentiment a quarter century later, after the AVC test had largely swept the field, describing the formulation as "toothless" (Posner, 2001, pp. 218–219).

### 2. *High Fixed Costs; Price Discrimination*

The AVC test particularly underdeters in markets that are characterized by high fixed costs, which incidentally are the markets that are most conducive to exclusion by strategic pricing. Strictly defined AVC excludes fixed costs and thus means that in

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<sup>13</sup> For example, if the AVC curve has a flat bottom the predator will have a range of output choices at price = AVC. Areeda and Turner did not consider the possibility but assumed that the AVC curve was U-shaped. See Areeda and Hovenkamp, 2015, ¶740a.

many cases nonsustainable pricing strategies would be identified as legal, even though a significant subset of these might be considered anticompetitive under a more holistic approach. Areeda and Turner (1975) did not develop this problem at any length in their original article. They did suggest (p. 699), however, that an overly strict definition of variable costs (or short run marginal costs) would give defendants too much leeway, particularly if fixed costs were substantial.

In later years, after Turner was gone, Areeda and Hovenkamp (2015) attempted to correct for this problem by incorporating a broader range of costs into the definition of "variable." For example, the treatment of plant and equipment in the *Antitrust Law* treatise (§§ 723d3, 740) considers "use depreciation" to be a variable cost to the extent that it covers "depreciation of equipment whose wear and need for replacement depends on the number of units produced." That formulation has not met with much success in the case law, very likely because it greatly complicates fact finding, particularly for firms that have a complex array of durable equipment with differing lives. Indeed, multi-product firms with joint costs have been a severely complicating factor in all types of strategic pricing analysis, and such firms are in fact quite common.

Under the depreciation proposal durable productive assets that have finite use-based lives are to be considered as part of variable costs. For example, a truck or a machine that wears out or incurs maintenance expenses that vary with use must have these use-sensitive costs counted in as variable (Areeda and Hovenkamp, 2015, §740).

While this approach makes some theoretical sense, it also poses significant measurement problems. For example, while a truck or an airplane both depreciate and wear out with use, they also have capacity that is "lumpy," in the sense that increasing the load in the short term may cost no more than short-run marginal cost. In this context, putting an extra box of cargo on an already-scheduled truck or an additional passenger on an already-scheduled airplane may contribute little or nothing to use-based depreciation.

As a result it seems appropriate to revert to a strict short-run marginal cost (or AVC) assessment when talking about these incremental loads. However, this approach greatly complicates measurement, particularly when we are dealing with a defendant who made numerous transactions over a period of as long as four years in the past, which is the ordinary statute of limitation period in antitrust suits.

Fixed costs also encourage price discrimination. Once the train, truck, or airplane is scheduled, any price for remaining capacity that is above incremental cost is profitable. As a result, firms have a perfectly proper incentive to bid lower prices for the residual capacity (Areeda and Hovenkamp, 2015, §720). Areeda's and Turner's original discussion of price discrimination in this respect was unsatisfactory, although they were opposed to any rule that regarded price discrimination as inherently suspect. The problem was exacerbated by the long history of litigation under the Robinson-Patman Act, whose "primary line" provisions regarded price discrimination as almost inherently

exclusionary and anticompetitive. Areeda and Turner recommended (1975, pp. 726-727) that the same standards that apply to Sherman Act cases, including the AVC standard, be applied in Robinson-Patman Act cases. In its *Brooke Group* decision the Supreme Court agreed.

Many instances of price discrimination are both output increasing and sustainable, assuming that the lower price exceeds incremental cost. This indicates procompetitive behavior, even if the price excludes rivals. On the other side, if predatory prices can be discriminatorily "targeted" at a particular rival, the effect is to make predation much cheaper than if the price cut must be across the board. But this then leads to the problem that pricing above incremental cost is competitive behavior that benefits consumers (Areeda and Hovenkamp, 2015, ¶745).

For that reason most courts have rejected the proposition that "fully allocated" costs must be the cost-based measure of predation, even in the context of price discrimination. If that were the test, the defendant that prices selectively out of existing capacity would nevertheless be required to charge a price high enough to cover a *pro rata* portion of fixed costs.

Instead, the proper test in these situations is short-run marginal cost or perhaps "average incremental cost."<sup>14</sup> For example, if the cost of servicing an additional passenger on an already scheduled airplane is \$25, then any price above that is justified even if other passengers are paying more. However, it is difficult to justify a price below \$25. A fully allocated standard that requires the airline to attribute a *pro rata* share of fixed costs to the incremental passenger wastes resources and harms consumers in the short run.

To be sure, one airline's "incremental" passenger might be another carrier's "primary" passenger, and may lead to the exclusion of the second carrier. But this problem seems quite impossible to manage, at least if we assume that the defendant did not shift a large amount of capacity into the predation market in order to create this situation. The generic cigarettes that were the subject of the *Brooke Group* decision were produced from existing capacity or from overruns. Any price above short-run marginal cost would be profitable. The Court stated that prices were in fact below average variable cost, and in such a case average variable cost (or incremental cost) seems to be the right test.<sup>15</sup>

Finally, the fixed-cost problem in many information technology markets, including IP licensing, cannot readily be controlled by imputing use-based depreciation. For example, how does one apply AVC rules to pricing in products such as iTunes or eBooks, where incremental cost of an additional unit is about zero and the digital code

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<sup>14</sup>Cf. *MCI Communic. Corp. v. AT&T*, 708 F.2d 1081, 1118 (7th Cir. 1981), cert. denied, 464 U.S. 891 (1983), which adopted long-run incremental cost as a test for a communication utility with high fixed costs.

<sup>15</sup> *Brooke Group*, 509 U.S. 209, 217 (1993).

lasts indefinitely with no use based deterioration? This is likely to be true, for example, under copyright law's protection for life of the author plus 70 years. Typically, of course, copyrighted goods have sufficient alternatives that predation is not a promising strategy for creating a monopoly. However, at least a few of these markets may be structurally susceptible to monopolization. Perhaps cost-based tests should simply be abandoned in such cases.

### 3. Longer-Run Considerations; the "Equally Efficient" Rival

The most fundamental critique of the Areeda-Turner test is that, whether or not AVC is a workable surrogate for short-run marginal cost, short-run measures are deficient because they exclude other types of strategic pricing behavior. Longer run strategies may involve fully sustainable pricing.

One example, illustrated by Williamson (1977, p. 305), is the strategic construction of excess capacity in markets where entry barriers are high because so many developmental costs are sunk and specialized. Effectively, this critique was that the AVC test simply carved out large areas of strategic pricing and output behavior and made them immune from antitrust challenge. Scherer (1976) made a similar claim, referring mainly to limit pricing.

Those arguments invited an extensive debate about whether "profit maximizing" pricing by the dominant firm must be defined with or without regard to the impact of the pricing decision on rivals (Kreps and Wilson, 1981; Milgrom and Roberts, 1982a, b, 1990; Klevorick, 1993; Edlin, 2002). Baumol (1979, pp. 4–5) and later Edlin (2002, p. 945) objected that the AVC test would permit selective, temporary price cuts pointed at new entrants. Baumol proposed that such price reductions be legally required to be permanent for a substantial length of time (Baumol, 1979). Tirole (1988, pp. 368–370) complained that a dominant firm could exclude by deceiving rivals about its true costs.

The two sets of critiques described previously are largely technical, in that they deal with measurement shortcomings in the AVC test. The complaint that the Areeda-Turner test ignores longer-run business strategies by dominant firms is much more foundational. The questions are three: First, do such strategies exist? Second, can they be welfare reducing? Third, can antitrust policy do anything meaningful about them? The Areeda-Turner answers, fully reflected today in the *Antitrust Law* treatise, are either "yes," or "probably" to the first two questions, but a somewhat qualified "no" to the third, at least when the plaintiff's complaint is entirely about the defendant's *price*.

On the first two questions, the textbook microeconomics literature for decades has discussed such strategies as limit pricing, strategic entry deterrence, price responses to threatened entry, strategic construction of excess capacity, and the like (e.g., Bain, 1959, pp. 243-253). Many of these strategies involve dominant firms that have cost advantages over rivals. For others the firms may have similar costs, but the dominant firm's commitment and incumbency gives it effective cost advantages over rivals: it has incurred costs that they must still face (Areeda and Hovenkamp, 2015,

¶¶736-737, 741). One impact of the Areeda-Turner formulation has been to limit the reach of the antitrust laws to conduct that is capable of injuring a hypothetical "equally efficient" rival -- a formulation that Areeda and Turner included in their original 1975 article (p. 709), and that is emphasized repeatedly in the *Antitrust Law* treatise today, as well as in the case law.<sup>16</sup> Indeed, the concept of the equally efficient rival is inherent in the premise that only prices below the defendant's own costs are vulnerable to antitrust attack.

The "equally efficient rival" limitation is a severe one, particularly when one considers that predatory pricing is a plausible strategy only in markets that are structurally conducive to monopolization. These markets are typically characterized by significant fixed costs and, accordingly, substantial economies of scale. As a result one might well presume that in most markets that contain a durable dominant firm, that firm will have at least some cost advantages over its rivals. Particularly when one considers the possibility of price discrimination, this means that a dominant firm can price in such a way as either to exclude rivals or to limit their output without ever seeing its own prices fall below short run marginal cost or average variable cost.

One interesting question is whether an "equally efficient rival" limitation and the requirement that only below-cost prices can be predatory are simply two ways of stating the same thing. Clearly, if two firms produce identical products with identical costs in all respects, then only a price below the predator's cost can drive the rival out of the market: What is sustainable for one will be sustainable for the other. As soon as the firms are differentiated, however, the concept becomes harder to apply. For example, two firms may have identical technologies and supply prices. They may even have identical plants. But if production is subject to scale economies, then an established firm with a large output may have a significant cost advantage over a newcomer with a small output. The fact that the two firms have identical costs in the *same range* of output does not entail that they have the same costs in all output ranges. The other side of the coin, of course, is that predation rules should never require a firm to keep its own prices above its rivals' costs. For one thing, a dominant firm should not be presumed or required to know its rivals' costs. For another, such a rule would harm consumers to the extent it requires a dominant firm to keep its own profits high for the protection of rivals.

A related efficiency problem concerns the dominant firm with "lumpy" excess capacity, as previously discussed. For excess capacity that is already in place (such as the scheduled truck or airplane or the previously constructed plant), any additional sales above short-run marginal cost are sustainable and tend to be maximizing. But these may compete with a rival's "core" business in which recovery of a portion of fixed costs is essential.

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<sup>16</sup> E.g., *Cascade Health Solutions v. PeaceHealth*, 515 F.3d 883, 899-900 (9th Cir. 2008); *Barry Wright Corp. v. ITT Grinnell Corp.*, 724 F.2d 227, 232 (1st Cir. 1983). See Areeda and Hovenkamp (2015, ¶736).

Bundled discounts also pose a problem for characterizations of equal efficiency. A firm that produces only product Y may have exactly the same costs for that product as another firm that produces both X and Y. The first firm is equally efficient over the output that it produces, but it makes only one of the two products. If there are joint costs, which are efficiencies that accrue to joint production or distribution of the bundled products, then the two firms cannot be characterized as equally efficient (Hovenkamp and Hovenkamp, 2009, pp. 1234–1235).

For example, in *PeaceHealth* the defendant was accused of anticompetitive discounting of a bundle of primary, secondary, and tertiary health services.<sup>17</sup> However the provision of these three levels of health services out of a common facility would almost certainly involve a great many common costs, both for durable equipment such as scanning machines and also of administrative personnel. In that case a firm that offered the three services together could almost certainly undersell a firm that sold only one.

Even with the assumption of no joint costs, however, sustainable exclusionary pricing is possible. For example, suppose that the larger firm makes X and Y with costs of 10 and 5. The smaller firm makes only Y, with costs of 5. Current prices for X and Y are 13 and 6, respectively. The larger firm now offers an XY fixed proportion bundle<sup>18</sup> at a price of 17. The price for the larger firm is fully sustainable ( $17 > 15$ ). However, the only way the smaller firm can sell its Y is at a price of 4, which is less than its costs. The dominant firm might even facilitate this result by increasing the price of its noncompeting product and then offering a bundled discount back to the pre-bundled price (Greenlee, Reitman, and Sibley, 2006; Elhauge, 2009). As developed below, bundled discounts can present significant computational difficulties that the case law has not yet addressed.

Problematically, any attempt to condemn above-cost prices as predatory requires the court to identify an appropriate standard. Some mechanism must be designed to inform the defendant about how far above costs its prices must be. Requiring the dominant firm to charge a price at least as high as a rival's costs is silly, for it would benefit inefficient firms at the expense of consumers. Requiring a firm to charge its "profit-maximizing" price presents intractable problems of both definition and measurement. On the definition point, if "profit-maximizing" means that the firm must equate short-run marginal cost and short-run marginal revenue without regard to competitor responses, then the law would be requiring it to behave irrationally, even ceding its market share to rivals. By contrast, if "profit-maximizing" simply means maximization of profits over any foreseeable time period, then the strategic pricing is lawful.

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<sup>17</sup> *Cascade Health Solutions v. PeaceHealth*, 515 F.3d 883 (9th Cir. 2007).

<sup>18</sup> Permitting the proportions to be changed, as they can be in most of the cases, vastly complicates the cost analysis. See Hovenkamp and Hovenkamp (2009).

As to measurement, a maximization test would require a jury to identify the firm's marginal cost and marginal revenue functions with sufficient precision to determine the price level at which they intersect. The *Antitrust Law* treatise (Areeda and Hovenkamp, 2015, ¶736c1) concludes that the practical difficulties in making this determination are "insurmountable," suggesting that it would ultimately require "ongoing price regulation of firms found to have the capacity for engaging in long run anticompetitive pricing strategies," particularly as costs and market structure change over time.

## V. Litigating Under the Areeda-Turner Test

The principal advantage offered by Areeda's and Turner's AVC proposal was administrability. Pretty much everyone (outside of some courts) agreed that average total cost was not a good rule for predation. Most instances of selling at a loss have much more to do with firm struggle or failure than with monopolization. Measuring marginal cost imposes significant evidentiary problems, particularly when one is referencing a period in the past, purely historical data, and multiproduct firms that have numerous joint costs.

### 1. Administrability

What Areeda/Turner promised was a mechanism for testing predation by using accounting ledgers. One simply needs to agree about which costs are to be considered as variable, and then divide costs by output during a given time period. This promise proved to be very captivating to earlier courts and undoubtedly explains why so many embraced the Areeda-Turner AVC test.

In fact, ease of administration quickly proved to be elusive. First, as noted previously, in order to avoid the problem of serious underdeterrence in markets with significant capital costs, some way had to be developed for including depreciation of exhaustible plant and equipment in the calculus. But such equipment operates on different lifecycles, including obsolescence cycles. Further, tax code depreciation is a poor measure of depreciated cost, largely because of its indifference to actual product lifecycles.

The administrative advantages of the AVC test are clearest if we imagine a firm that produces a single product, or one with no joint costs, with clear categories of fixed and variable costs, and with durable equipment whose use cannot be varied. The case law has seldom presented such situations.

Of course, not every case presents these problems. In some, prices are clearly above any relevant measure of cost. In others, prices are below even direct inventory cost. For example, if a retailer is paying \$2 a gallon for milk and reselling it for \$1.80, then the price must be below AVC no matter how other costs are classified or calculated.

Nevertheless, the numerous difficulties that the courts have encountered in implementing an AVC test lead to an important issue: The Areeda/Turner test requires

antitrust enforcers to surrender a great deal of territory on the promise of a rational test that is more capable of being administered. But if ease of administration is in fact elusive, then perhaps we are giving up too much and should develop a price/cost rule (or a non-cost-based rule) that is more receptive to plaintiffs and comes closer to dealing with our concerns about strategic pricing.

A great deal of Areeda's and Turner's caution, and that of the *Antitrust Law* treatise today, derives from the fact that the vast majority of predatory pricing cases are brought by private plaintiffs under circumstances where a trial will entail fact findings by a jury. The cases are both very technical and contain a great deal of pricing and cost information that jurors are not likely to find engaging and is typically beyond their competence.

As a result there is a fairly widespread belief that jurors are highly susceptible to evidence about "bad intent," while they are not good at assessing complex information. In that setting predatory pricing claims are likely to generate many false positives, and this in turn can have a harmful impact on aggressive competition. One value of the AVC test is that it provides a test that judges can readily administer at the summary judgment stage. A high percentage of federal predatory pricing cases are disposed of before ever going to trial.

## 2. Cost Classification Problems

The previously mentioned problem of lumpiness of fixed costs proved to be enormously complicated in the early litigation under the Areeda-Turner test. For example, the prolonged *Inglis* litigation in the Ninth Circuit, which involved alleged predatory pricing of bread, turned into a battle of how to compute the cost of oven space, given the facts that ovens are durable goods, that the industry contained significant excess capacity, and that it cost no more to heat a 1000-loaf oven that was full than it cost to heat one that was only partially full.<sup>19</sup> If the defendant bidding against a rival for an additional sale had to use the oven an additional time, then the cost of heating it should be counted in variable costs. But if the sale was to come simply by putting more loaves into an already heated oven, then heating costs should be excluded. This question might have to be asked about thousands of transactions over a multi-year period, and accounting ledgers would not necessarily provide an answer.

A related problem concerned joint costs and multiproduct firms. Consider, for example, the retail grocer that adds an additional item to its store -- say, cigars sold in a wire rack from the counter. Average variable costs would include utilities and employee wages, as well as inventory and perhaps some other things. However, adding the cigars to a space that is currently vacant probably does not increase the load on utilities, and the amount of additional employee time would likely be so small as to make measurement impossible.

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<sup>19</sup>*William Inglis & Sons Baking Co. v. ITT Continental Baking Co.*, 668 F.2d 1014, 1035 (9th Cir. 1981), cert. denied, 459 U.S. 825 (1982).

Multiproduct defendants also invite complaints about "cross-subsidization," which have been around since before the Sherman Act was passed (Stimson, 1887, p. 134). The complaints generally reduce to an assertion that a defendant with joint costs allocates them in such a way as to permit selective predatory pricing that is sustainable because the firm is recovering its costs from other products. The term "price discrimination" does not always capture what the defendant is doing, because it may be earning differential rates of return on entirely different products.<sup>20</sup>

Further, to the extent that costs are common there may be no nonarbitrary way of assigning them to one product rather than another. The Federal Trade Commission's *General Foods* case involved alleged predatory pricing of coffee by a firm that made multiple products. The FTC noted the difficulty of measuring the cost of one product when the "firm produces several brands of a product from the same plants, with the same workers and with some of the same raw materials...." In such cases "the precise allocation among brands or even the variable production costs can be arbitrary." Indeed, even promotion costs had to be allocated, for 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.<sup>21</sup>

While the original Areeda-Turner article did not consider the problem, the current view in the *Antitrust Law* treatise, generally followed by the courts, is that in cases involving multiproduct defendants and the likelihood of significant common costs, predation must be shown across the entire product line, rather than just on a single item. This rule very likely produces some false negatives, but it avoids the absolutely intractable problem of cost classification.

One problem here is that even sales of individual products at prices that are below stripped-down incremental costs might be legitimately promotional rather than predatory. For example, a firm might offer one product at less than incremental cost in order to get customers in the door where they are then likely to buy additional, high-margin products. Or alternatively, a firm selling a product technologically tied to a different product (such as printers and ink cartridges) might price the first product at less than incremental or variable cost in order to induce sales of the second.

The cost of micromanaging every firm's attempt to make more sales by shifting its price among different components of a transaction would be incalculable, with little or no benefit and very likely a great deal of harm. Further, these strategies are nearly always sustainable. That is, they do not depend on short-run use of the strategy in order to earn monopoly profits in the future.<sup>22</sup>

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<sup>20</sup> E.g., *Fiberglass Insulators, Inc. v. Dupuy*, 856 F.2d 652 (4th Cir. 1988) (alleged predatory pricing of insulation, but not of storm windows, fireplaces, and doors). See Areeda and Hovenkamp (2015, ¶742d).

<sup>21</sup> In re *General Foods Corp.*, 103 F.T.C. 204, 343 (1984).

<sup>22</sup> Following this approach is *Stitt Spark Plug Co. v. Champion Spark Plug Co.*, 840 F.2d 1253, 1256 (5th Cir. 1988).

### 3. Average Avoidable Cost

As noted above, Baumol was initially quite critical of the AVC test. He later qualified his views, however, and became more favorable to an AVC test defined as average avoidable cost (AAC) (Baumol, 1996; Bolton et al., 2000; Elzinga and Mills, 2001). An avoidable cost is one that the predator could have avoided by deploying its assets in a different way.

The idea has a history in the case law that stretches all the way back to the time when Areeda and Turner wrote. In the *Transamerica Computer* case the plaintiff argued that IBM anticompetitively introduced a new line of lower priced computer equipment, in the process abandoning an income stream from the older line, which became prematurely obsolete. The plaintiff unsuccessfully attempted to convince the court that part of the cost of predation was the cost of forgone revenue from the abandoned line.<sup>23</sup> One problem with using AAC in a situation such as this is that the innovation market might be competitive. If IBM did not develop its new line of computers, someone else might.

In other situations, however, AAC may be a more realistic way of assessing cost by including the opportunity cost that the dominant firm incurs by not committing an asset to an alternative use. For example, we typically think of an aircraft as a fixed cost good, given that it lasts many years and its costs show little variation with the number of people it is carrying. However, the aircraft *could* be deployed profitably along a different route. In that case the true "cost" of using the airline on the predation route is the foregone profits that it might have earned on the alternate route. The government made this argument, once again without success, in the *American Airlines* case.<sup>24</sup>

The court's rejection was an important opportunity lost, because AAC provides a tool for identifying nominally above-cost behavior that is non-maximizing in the short run. Rather than computing marginal cost and revenue in the abstract, the AAC inquiry looks to a specific source of profit that the defendant relinquished in order to charge a low price. Additionally, the AAC test provides a tool for evaluating behavior in situations where fixed cost assets are readily transferable from one market to another. Geographically, this could be an airplane or truck. But it could just as easily be a plant with the capacity to switch back and forth between different products.

Importantly, predation is a high output strategy, and the capacity to support that output must come from somewhere, with the assumption that the predation market does not already contain excess capacity. As a result the ability to switch assets operates as a lower-cost alternative to constructing new capacity for the predation campaign.

## VI. Long-Run "Compound" Strategies

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<sup>23</sup> *Transamerica Computer Co. v. IBM*, 459 F. Supp. 626 (N.D. Cal. 1978), aff'd, 698 F.2d 1377 (9th Cir.), cert. denied, 464 U.S. 955 (1983).

<sup>24</sup> *United States v. AMR Corp.*, 140 F. Supp. 2d 1141 (D. Kan. 2001), aff'd, 335 F.3d 1109 (10th Cir. 2003).

One way to approach the long-run strategic problem is to shift the focus away from the "price" as such to a larger "broth" of anticompetitive behavior. That is largely the approach that has been followed by the courts that have been willing to condemn above cost discounting practices. These courts have for the most part not identified any particular above cost "price" as predatory. Rather, they have considered pricing as one component of a behavioral pattern, often drawing on analogies that are taken from the law of exclusive dealing or tying.

A good recent example is the *ZF Meritor* case, which held that the defendant's market share and related discounts and rebates violated the antitrust laws even though no price was ever shown to be below cost. For example, one large customer was promised significant rebates over a five year contract period if it purchased at least 92% of its needs from the defendant.<sup>25</sup>

Bundled discounts have provoked similar responses, with some courts applying a cost-based test loosely modeled after Areeda-Turner,<sup>26</sup> while others have analogized the practice to tying rather than predatory pricing and permitted condemnation without a showing of prices that are below cost.<sup>27</sup> Once again, it appears that the great majority of bundled discount strategies are sustainable. Bundling immediately increases the bundler's sales and revenue. One might suppose that there are some counterexamples. For example, one reading of the *LePage's* case is that the defendant (the 3M Company) strategically included office tape in multiproduct sales to office supply stores in order to create a package price that single-product LePages could not compete with. If revenue from other products was sufficiently high, then the price of the bundle could be above cost.

The so-called "attribution" test for bundled discount prices asks whether the incremental price that the defendant charges when it adds an additional good to the bundle is sufficient to cover the incremental cost (Areeda and Hovenkamp, 2015, ¶749d3). That test addresses the question whether an equally efficient firm making only the second product can compete with the bundle. Notably, however, it does not consider whether the defendant's behavior is unsustainable, output decreasing in either the short or long run, or profitable to the defendant whether or not it excludes any rivals. It also raises the difficult problem that before one can determine whether a price is "below" cost one must be able to identify which price and which cost one is referencing. If one looks only at the incremental price of the second good, the price is below cost; but if one looks at the price of the bundle, it typically is not.

If the bundled products are subject to joint costs of production or any part of distribution, then the attribution test yields false positives. Suppose, for example, that

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<sup>25</sup>*ZF Meritor, LLC v. Eaton Corp.*, 696 F.3d 254 (3d Cir. 2012).

<sup>26</sup>E.g., *Cascade Health Solutions v. PeaceHealth*, 515 F.3d 883 (9th Cir. 2008).

<sup>27</sup>E.g., *LePage's Inc. v. 3M*, 324 F.3d 141 (3d Cir. 2003) (en banc), cert. denied, 542 U.S. 953 (2004).

the dominant firm makes X and Y with costs of 10 and 5 if produced separately. But suppose further that economies of scope permit the two products to be produced together at a cost of 13. That was very likely the case in *PeaceHealth* to the extent that the different levels of medical care shared common facilities or equipment with significant fixed costs. For example, a durable piece of equipment such as a CT scanner might be shared for all three levels of health care that were bundled in that case.

Suppose that a firm makes and delivers laundry washers and dryers. The cost of delivery is \$100, but once the truck is scheduled the cost of adding a second unit is zero. In that case the firm that delivers both a washer and dryer will be able profitably to undersell a firm that sells only one or the other. Charging a competitive price for each unit plus a \$100 delivery charge for the pair will exclude a rival with the same costs that makes and delivers only the washer or only the dryer. But that is an instance of purely competitive behavior. In any event, a rival unable to attain otherwise available economies of scope should not be regarded as equally efficient.

Variable proportions also complicate the bundling analysis, sometimes significantly. For example, suppose that good A costs \$5 to produce, while good B costs \$7. The dominant firm sells them for \$10 each, with a 20% discount on a bundle that contains one unit of each, or \$16. A rival with the same costs for product B could not compete with the bundle. It would have to charge a price of \$6 in order to match the dominant firm's package price; this is \$1 below the rival's costs.

But now suppose that the dominant firm offers the same 20% discount on A and B taken together in any proportion. The customer wants one unit of A and three units of B. In that case the bundled price would be \$32 (\$40 less a 20% discount). The firm making only B could compete with this bundle. The buyer would pay the dominant firm the unbundled price of \$10 for product A, and might pay the competitor three times \$7 for product B, for a total of \$31 (Hovenkamp & Hovenkamp, 2009, pp. 1247-1253).

The example exposes a significant problem in the analysis of bundled discounts, because many or most of them involve products where the quantities in the bundle are not fixed by the seller. That was certainly true in *PeaceHealth*, as well as the cases involving Group Purchasing Organization sales of medical devices and supplies, which hospitals use on demand and in variable proportions (Hovenkamp and Hovenkamp, 2009). Whether a rival with the same product B costs is excluded depends on the proportion of the two goods that the customer wants to purchase.

Alternatively, a customer might be able to deal with a rival by changing the proportion of its purchases. The greater is the proportion of the secondary product, the more able the buyer will be to purchase from a rival. A similar analysis applies when the bundle contains a large number of products, and the customer is able to choose which among them it wants to purchase.

In general, the more products the customer wants that are sold by a rival, the more profitable it will be for that rival to stay in the market (Hovenkamp & Hovenkamp, 2009, pp. 1238-1243). Of course, there are limits on a customer's ability to vary its proportions. A hospital's proportions are based on its patient load, and other purchasers' proportions are largely based on consumer demand over which it may have little control.

Given the strictness of the Supreme Court case law on predatory pricing as such, the future of antitrust exclusionary pricing litigation will lie in complaints that de-emphasize the "price" component of the defendant's conduct. In order to win plaintiffs must seek to avoid the Areeda-Turner test and focus on other elements that can be analogized to tying, exclusive dealing, or perhaps some other practice. Quantity, market share, and bundled discounts are providing the litigation arena for this battle. For their part, defendants continue to argue that these practices should be legal so long as the prices are sustainable, or a hypothetical "equally efficient" rival can meet them. That brings the practice back into the predatory pricing set, where defendants virtually always win (Areeda and Hovenkamp, 2015, ¶749).

## VII. Recoupment

As noted previously, Areeda's and Turner's original formulation of their predatory pricing test included a recoupment requirement, but it was not elaborated; and the earliest literature and case law on the Areeda/Turner article paid relatively little attention to it prior to the Supreme Court's decisions in *Matsushita* and *Brooke Group*.

Once the costs of predation have been computed, the predator must also be able to expect a sufficient level of post-predation monopoly profits during a "recoupment" period. Here the problems are also manifold: *First*, during the recoupment period prices will be at monopoly levels, thus attracting new entrants. *Second*, in a market that is structurally conducive to predation the merger laws would very likely prevent the defendant from controlling the disposition of the victim's assets.

The predator's nightmare scenario goes something like this: After a predation campaign the target goes bankrupt, but the predator will not be able to purchase it. Instead it or its assets are sold to a different firm at a price of (say) 10 cents on the dollar. The result will be to give the predator a new rival, but one with much lower fixed costs to be amortized. If the market really is conducive to prolonged post-predation monopoly, such an acquisition seems likely.

No one questions that predatory pricing is a risky strategy. In order to assess recoupment the costs of predation must be measured with tolerable accuracy, meaning that an assessment must be made of the target's staying power. In the *Matsushita* case, for example, the alleged predation had been going on for decades, making almost any period of recoupment unprofitable.<sup>28</sup>

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<sup>28</sup>*Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574 (1986).

By contrast, in *Spirit Airlines* the target of a dominant carrier's strategy was a small airline with few resources. It was very quickly driven from the market, making the cost of predation low.<sup>29</sup> The Sixth Circuit was willing to deny summary judgment on the predatory pricing claim, aided in part by Kenneth Elzinga, an expert for the plaintiff and the author of influential papers on the necessity for and measurement of recoupment, which the Supreme Court had relied on in the *Brooke Group* case (see, e.g., Elzinga and Mills, 1989). In the *Spirit* case, Elzinga concluded, the low cost of predation made it a much more attractive investment. Indeed, recoupment occurred “within months” after the plaintiff had exited from the market.

*Spirit Airlines* is a good object lesson for identifying the types of markets conducive to predation. First, the overall size disparity between the plaintiff and defendant was enormous, but competition occurred only in the airports where Spirit operated. Second, the ready transferability of durable assets (airplanes) meant that Northwest could easily flood the markets that were in play with additional capacity. Further, Spirit's exit costs were probably low for the same reason; it was able to relocate its aircraft to less hostile territory and continues to operate to this day. Finally, because fixed costs were so high, margins were also high, enabling recoupment to occur in a short time.

Predation can provide benefits to the predator quite aside from the power to recoup losses in the post-predation market. A well publicized period of predation can give the predator a reputation for aggressive pricing that will serve to warn rivals against future competition that is too aggressive. In addition, these benefits can occur in markets other than the one in which the predation occurs. For example, the predator who operates in a dozen markets might be able to intimidate competitors in all of them while paying for predation in only one. Areeda and Turner never considered this possibility in their original article, although it is addressed today in the *Antitrust Law* treatise (Areeda and Hovenkamp, 2015, ¶727g). The *Brooke Group* decision never considered the possibility either. As a result most courts have ignored it. One court did consider a claim that American Airlines engaged in predatory pricing on one route in order to enjoy recoupment benefits in multiple routes, but it then found that below cost pricing was not established in the allegedly predatory route.<sup>30</sup>

As currently formulated, the recoupment requirement goes far beyond anything that Areeda and Turner advocated and imposes unreasonable burdens on plaintiffs, principally because it requires just the sort of speculation about the long run that the Supreme Court has been unwilling to accept in other contexts, such as proof of causation or damages. This makes predation impossible to prove any time the recoupment period is greater than a very short period of time (Areeda and Hovenkamp,

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<sup>29</sup> *Spirit Airlines, Inc. v. Northwest Airlines, Inc.*, 431 F.3d 917 (6th Cir. 2005).

<sup>30</sup> *United States v. AMR Corp.*, 140 F. Supp. 2d 1141 (D. Kan. 2001), aff'd, 335 F.3d 1109 (10th Cir. 2003). See also *Beech-Nut Nutrition Corp. v. Gerber Products Co.*, 69 Fed. Appx. 350, 2003 WL 21317277 (9th Cir. June 4, 2003, unpub.), which sustained a complaint that the predator charged below cost prices in the market for baby cereals but obtained recoupment in that market in addition to a market for jarred baby food.

2015, ¶¶725-728). For that reason the *Antitrust Law* treatise takes the position that the ordinary structural requirements for the monopolization offense should suffice. These include a dominant firm, high entry barriers, and customers who are sufficiently insensitive to price increases (Areeda & Hovenkamp, 2015, ¶726; see also Leslie, 2013).

### **VIII. Predatory Pricing in Oligopoly or Cartelized Markets**

In their 1975 article Areeda and Turner had virtually nothing to say about strategic pricing by a single firm in an oligopoly or cartelized market. They were concerned with dominant firms and strategies of destruction. In fact, however, anticompetitive strategic pricing may be a more plausible strategy in an oligopoly market or cartel than in a monopolized market, particularly when the purpose is not to destroy a rival but rather to give it an incentive to change its behavior. The point of the predation is to induce the price cutter to realize that conforming to the cartel's or oligopoly's terms will be more profitable than attempting to undercut it. In that case, many of the problems of assessing recoupment could go away.

Nevertheless, it is also not clear that short-run marginal cost or average variable cost is a good measure of anticompetitive disciplinary pricing in an oligopoly. Indeed, a price cut from cartel/oligopoly levels down to the competitive level or even above it might work quite effectively. The whole point of the exercise is to convince the cutter that other members of the cartel or oligopoly are willing to experience short-run losses rather than ceding their market share to the cutter.

To that end, the Supreme Court's 1993 *Brooke Group* decision, which Areeda unsuccessfully argued for the plaintiff (against Robert H. Bork), seems like an opportunity lost.

One other thing worth noting is that Section 2 of the Sherman Act reaches conduct that either "monopolizes" or constitutes an "attempt" to create a monopoly, which means that dominant firm status is threatened. Predation intended to discipline an oligopoly typically does not fall within this category, and no monopoly was threatened in *Brooke Group*. EU competition law uses different terminology – "abuse of a dominant position" – that is more amenable to such disciplinary predation. For that reason *Brooke Group* and similar cases have generally not relied on the Sherman Act, but rather on the Robinson-Patman Act, which requires only that the conduct "may substantially lessen competition."

### **IX. Conclusion**

There is a great deal not to like about the Areeda-Turner test for predatory and strategic pricing. The test nonetheless survives, mainly for two reasons: First, it tends to keep predatory pricing cases out of court and away from juries; these are two properties that make it attractive to judges. Second, and more important, no one has been able to come up with something better. A superior test would have to correct for

the Areeda-Turner test's false negatives without going in the other direction and producing excessive false positives. In addition, it would have to be administrable by the full range of tribunals that are authorized to hear predatory pricing cases, which today includes jury trials.

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