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EXCLUSIONARY BUNDLED DISCOUNTS AND THE ANTITRUST MODERNIZATION COMMISSION

Erik Hovenkamp¹
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ABSTRACT

A bundled discount occurs when a seller charges less for a bundle of goods than for its components when sold separately. A characteristic of such discounting is that a rival who makes only one of the products in the bundle may have to give a larger per item discount in order to compensate the buyer for the foregone discount on goods that the rival does not sell. For example, if I sell *A* and *B* and offer a 20% discount only to customers who purchase one *A* and one *B* together, a rival in the *B* market might be able to match the discounted *B* price. But the rival must also compensate the customer for the loss of discount on *A*, given that the customer would still have to purchase *A* from the dominant firm at the undiscounted price. As a result, a rival who is equally efficient in other respects but who makes only product *B* may not be able to match the discount. The final Report of the Antitrust Modernization Commission (AMC) proposed a three part test for the illegality of a monopolist's bundling under Section 2 of the Sherman Act: (1) after allocating all discounts and rebates attributable to the entire bundle of products to the competitive product, the defendant sold the competitive product below its incremental cost for the competitive product; (2) the defendant is likely to recoup these short-term losses; and; (3) the bundled discount or rebate program has had or is likely to have an adverse effect on competition. We argue that the first of these three tests must be restated in order to take into account important possibilities, such as economies of scope; even so it is seriously overdeterrent particularly when bundling is used to facilitate price discrimination, where the secondary market is competitive, or where bundling is used to disguise price cuts in oligopolistic or cartelized markets. We also argue that the AMC's "recoupment" test is not

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helpful in most circumstances, but that its requirement of a separate showing of an adverse impact on competition is essential.

EXCLUSIONARY BUNDLED DISCOUNTS AND THE ANTITRUST MODERNIZATION COMMISSION

I. Introduction: Bundled Discounts and the AMC Test

A bundled discount occurs when a seller charges less for a bundle of goods than for its components when they are sold separately. A characteristic of such discounting is that a rival who makes only one of the products in the bundle (or a smaller subset of products than the dominant firm offers) may have to give a larger per item discount in order to compensate the buyer for the foregone discount on goods that the rival does not sell. For example, if I sell *A* and *B* and offer a 20% discount only to customers who purchase one *A* and one *B* together, a rival in the *B* market might be able to match the discounted *B* price. But the rival would also have to compensate the customer for the loss of discount on *A*, given that the customer would still have to purchase *A* from the dominant firm at the undiscounted price. As a result, a rival who is equally efficient in other respects but who makes only product *B* may not be able to match the discount.

So-called "mixed" bundling occurs when a firm sells at least one of the goods in the bundle separately, but also offers them at a discounted price if they are purchased as a bundle. "Pure" bundling, by contrast, occurs when a firm sells goods only in bundles.³

The final Report of the Antitrust Modernization Commission (AMC) proposed the following test for unilaterally imposed mixed bundling when challenged as an exclusionary practice:

Courts should adopt a three-part test to determine whether bundled discounts or rebates violate Section 2 of the Sherman Act. To prove a violation of Section 2, a plaintiff should be

3. See, e.g., David S. Evans & Michael Salinger, *Why Do Firms Bundle and Tie? Evidence from Competitive Markets and Implications for Tying Law*, 22 *YALE J. ON REG.* 37, 54 (2005); Daniel A. Crane, *Mixed Bundling, Profit Sacrifice, and Consumer Welfare*, 55 *EMORY L.J.* 423 (2006).

required to show each one of the following elements (as well as other elements of a Section 2 claim):

- (1) after allocating all discounts and rebates attributable to the entire bundle of products to the competitive product, the defendant sold the competitive product below its incremental cost for the competitive product;
- (2) the defendant is likely to recoup these short-term losses; and
- (3) the bundled discount or rebate program has had or is likely to have an adverse effect on competition.⁴

As a shorthand we term the three elements of this test (1) "attribution," (2) "recoupment," and (3) "anticompetitive effects."

Some portions of the AMC test are consistent with many of the decisions,⁵ although largely inconsistent with the Third Circuit's

4. Antitrust Modernization Commission, Report and Recommendation 99 (April 2007), available in full text at <http://govinfo.library.unt.edu/amc/>.

5. E.g., *Cascade Health Solutions v. PeaceHealth*, 515 F.3d 883 (9th Cir. 2008) (adopting attribution requirement but rejecting recoupment and anticompetitive effects requirement except insofar as latter is established under antitrust injury requirement). See also *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 (2d Cir. 2001), which read that same federal district court's earlier *Ortho* decision as requiring the plaintiff to show that "the competitive product in the bundle" was "sold for a price below average variable cost after the discounts on the monopoly items in the bundle were subtracted from the price of that competitive product" (emphasis added), referring to *Ortho Diagnostic Systems, Inc. v. Abbott Labs., Inc.*, 920 F. Supp. 455, 467-470 (S.D.N.Y. 1996). See also *Information Resources, Inc. (IRI) v. Dun & Bradstreet Corp.*, 359 F. Supp. 2d 307, 307-308 (S.D.N.Y. 2004), which concluded:

When price discounts in one market are bundled with the price charged in a second market, the discounts must be applied to the price in the second market in determining whether that price is below that product's average variable cost....

The claim in *IRI* was that the defendant operated in multiple countries and

important but much criticized *LePage's* decision.⁶

Here we explore each of the three elements of the AMC test. We generally agree that the first requirement is a sensible safe harbor but has the potential to sweep far too broadly, particularly if it becomes a de facto prima facie test of illegality.⁷ There are simply too many competitively benign or procompetitive instances of bundling that flunk the attribution test. We also observe that the attribution test as the AMC states it is incorrect in the presence of joint costs, or economies of scope. We generally disagree with the second element of the test, particularly if "recoupment" is used in its strict *Brooke Group* sense,⁸ but alternative definitions of recoupment might be acceptable. We generally agree with the anticompetitive effects test.

II. The "Attribution" Test for Mixed Bundling

The attribution test is a necessary ("safe harbor") but not a sufficient condition for unlawful bundled discounts. If a bundle passes the attribution test, an equally efficient rival who makes only

gave a discount for services delivered in multiple countries, while the plaintiff operated in only one of them. See *Information Resources, Inc. (IRI) v. Dun & Bradstreet Corp.*, 294 F.3d 447, 449 (2d Cir. 2002). By offering its services in more countries than could its rivals, the defendant constrained them in much the same way that results from exclusionary multi-product bundling. See 3A Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law* ¶749e (3d ed. 2008).

6. *LePage's Inc. v. 3M*, 324 F.3d 141 (3d Cir. 2003) (en banc), cert. denied, 542 U.S. 953 (2004). See also *Bradburn Parent/Teacher Store, Inc. v. 3M*, 2003-2 Trade Cas. ¶74,105 (E.D. Pa. July 25, 2003) (refusing to dismiss follow-on consumer action alleging that bundled rebates served to maintain defendant's monopoly in tape market). See generally 3A Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law* ¶749d (3d ed. 2008).

7. Part II.

8. See Part III, and *Brooke Group Ltd., v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993) (primary-line Robinson-Patman case), confirmed for Sherman Act §2 cases by *Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co., Inc.*, 127 S.Ct. 1069 (2007) (to the extent it is relevant, HH was consulted by the defendant).

one product in the bundle (or a subset) will be able to compete. However, giving excessive weight to the test results in far too many false positives. As a result, summary judgment should never be denied to a defendant merely on the basis that the defendant's pricing scheme failed the attribution test. Thus we quarrel with important parts of the Ninth Circuit's approach in the *Cascade* decision.⁹ Under the Ninth Circuit's formulation a plaintiff who shows that the defendant's pricing fails the attribution test need not make any showing of recoupment and, apparently, need not make any explicit demonstration of anticompetitive effects other than a general "antitrust injury" showing.¹⁰ Such a rule would lead to extreme overdeterrence.

The attribution test is frequently stated as it was by the Ninth Circuit:

To prove that a bundled discount was exclusionary or predatory for the purposes of a monopolization or attempted monopolization claim under § 2 of the Sherman Act, the plaintiff must establish that, after allocating the discount given by the defendant on the entire bundle of products to the competitive product or products, the defendant sold the competitive product or products below its average variable cost of producing them.¹¹

Except for the use of average variable rather than marginal cost, this is the same thing as asking whether the incremental price of the bundle over the price of the *A* product is sufficient to cover the incremental cost of including the *B* product in the bundle. That is, it asks if the marginal or per-unit profitability (price minus cost) of the bundle exceeds that of *A* alone.¹² If the answer is yes, then bundling

⁹. *Cascade Health Solutions v. PeaceHealth*, 515 F.3d 883 (9th Cir. 2008).

¹⁰. See *id.* at 909-910.

¹¹. *Cascade Health Solutions v. PeaceHealth*, 515 F.3d 883, 910 (9th Cir. 2008).

¹². Because we are considering marginal profit at a specific price level, we simply assume that marginal profit is equal to that price less the

in this situation cannot exclude an equally efficient rival. Further, only this marginal profit approach is accurate in the presence of joint costs.¹³

The Ninth Circuit's approach also serves to make the test for exclusionary bundling functionally similar to cost-based tests for predatory pricing, which refuse to condemn a price cut unless it is capable of excluding an equally efficient rival. This effectively means that antitrust law refuses to condemn a defendant's prices unless they are below an appropriate measure of cost.¹⁴

When a bundle fails the attribution test, the marginal or per-unit profitability of the bundle falls below that of the individual A good. In such cases the firm must earn its increased profits from increased sales of the primary product rather than increased margin.¹⁵ Of course, an increase in output is presumptively procompetitive and entails competitive injury only in narrowly defined circumstances.

Alternatively, the bundle might reduce total profits during some initial bundling period but nevertheless be profitable in the long run under a recoupment scheme such as the Supreme Court envisioned in *Brooke Group*. The defendant would use the bundling scheme to force a B product rival from the market and then raise its

marginal cost of production. See appendix iii.

13. Joint costs are generally what give rise to economies of scope. See Ivan Png & Dale Lehman, *Managerial Economics* 175 (2007).

14. See *Brooke Group Ltd., v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993) (primary-line Robinson-Patman case), confirmed for Sherman Act §2 cases by *Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co., Inc.*, 127 S.Ct. 1069 (2007); 3A Areeda and Hovenkamp, note 5 at ¶¶725-727.

A variation of this cost-based rule also applies to market share discounts and quantity discounts. See, e.g., *Concord Boat Corp. v. Brunswick Corp.*, 207 F.3d 1039, 1062 (8th Cir.), cert. denied, 531 U.S. 979 (2000) (cost standard for market share discounts); *Barry Wright Corp. v. ITT Grinnell Corp.*, 724 F.2d 227 (1st Cir. 1983) (cost standard for quantity discounts).

15. See appendix ii.

own *B* price after that exit occurred. This is generally not possible if the *B* market observes constant returns to scale.¹⁶

Whether "exclusion of an equally efficient rival" is the proper benchmark for a prima facie case of anticompetitive bundled discounts has been debated numerous times.¹⁷ One might object that such a rule ignores situations where the dominant firm increases its own output in order to saturate the market and deprive rivals of essential scale economies.¹⁸ However, while depriving a rival of scale will raise its average costs, it need not raise its marginal costs, which are more helpful in analyzing effects on competition. In any event, a rule condemning an otherwise rational output increase because it denies scale economies to a rival places courts in an untenable position. Measuring the relevant range of scale economies is usually impossible. Further, the shift of focus to the rival's scale economies places the defendant in the intolerable position of having to monitor its rivals' costs. Further, these are typically not variable cost items whose prices are readily observable on the market, but rather long term fixed cost investments often known only to a firm's own managers. The Ninth Circuit properly concluded in *Cascade* that a rule based on the defendant's own costs, as the orthodox predatory pricing rule is, was necessary to

16. Constant returns to scale prevent a firm from setting artificially high prices after its rivals are foreclosed. The threat of new entrants acts as a permanent barrier to monopoly pricing. Thus, consumers are generally not harmed by exclusionary bundling in these cases. See, e.g., Dennis W. Carlton and Michael Waldman, "Safe Harbors for Quantity Discounts and Bundling" (*Economic Analysis Group Discussion Paper, January 2008, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1089202*)

17. For a summary, see 3 Phillip E. Areeda and Herbert Hovenkamp, *Antitrust Law* ¶1651b2 (3d ed. 2008). See also Daniel A. Crane, *Mixed Bundling, Profit Sacrifice, and Consumer Welfare*, 55 *Emory L.J.* 423 (2006).

18. E.g., See Einer Elhauge, *The Exclusion of Competition for Hospital Sales Through Group Purchasing Organizations*, 18 *Qune* 25, 2002), at http://umw.law.harvard.edu/faculty/elhaugelpdf/gpo_report-june_02.pdf, and Einer Elhauge, *Defining Better Monopolization Standards*, 56 *Stan. L. Rev.* 253, 256, 283, 320-323 (2003). See also Einer Elhauge, *Loyalty Discounts and Naked Exclusion* (Harvard Law School Discussion Paper #608 (Feb. 2008), available at http://papers.ssrn.com/abstract_id=1093749).

provide clear guidance to dominant firms.¹⁹

While exclusion of an equally efficient rival might not be the appropriate baseline for assessing all types of allegedly exclusionary conduct,²⁰ it is clearly superior for evaluating *pricing* claims, where courts are typically in the precarious position of being asked to condemn a price because it is too low.

Necessary ("Safe Harbor") but not Sufficient Condition

The attribution test does appear to provide a manageable and rational minimum criterion for illegality and thus creates a "safe harbor" for bundled pricing that passes the test. But what about bundles that flunk the attribution test? In *Cascade* the Ninth Circuit appeared to assume that any bundled discount that flunks the attribution test is at least presumptively anticompetitive.²¹ First, the court adopted the AMC's attribution test.²² Second, it rejected the recoupment test after observing that single-product predatory pricing under the *Brooke Group* standard requires the defendant to lose money during the predatory period, while even a bundle that flunks the attribution test can nevertheless be profitable:

[B]ecause discounts on all products in the bundle have been allocated to the competitive product in issue, a conclusion of below-cost sales under the discount attribution standard may occur in some cases even where there is not an actual loss because the bundle is sold at a price exceeding incremental cost. In such a case, we do not think it is analytically helpful to think in terms of recoupment of a loss that did not occur.²³

As a matter of fact, the Ninth Circuit's view about recoupment is

19. See *Cascade*, note 11, 515 F.3d at 907-918.

20. See 3 Areeda & Hovenkamp, note 17 at ¶651b4.

21. *Cascade*, 515 F.3d at 910.

22. *Ibid.*

23. *Ibid.* See also Barry Nalebuff, *Exclusionary Bundling*, 50 *Antitrust Bull.* 321, 327-330 (2005).

incorrect. Whether an investment in predation needs to be "recouped" does not depend on whether the predation required prices below cost, but on whether it deprived the defendant of short run profits that it would otherwise have obtained.²⁴ Any price change is rational only if it results in higher profits. Those higher profits might result from higher output at the lower price, provided it is above cost, or a longer period of market exclusion. Alternatively, if the standalone price of A is increased the profit might be made through increased margin.

So while some type of recoupment is always relevant in a case involving price cutting, the type of recoupment differs depending on whether or not the price cut is sustainable and whether the strategy is immediately profitable. Under the *Brooke Group* rule for predatory pricing of a single product only a non-sustainable price cut is recognized as unlawful. Within that paradigm predatory pricing does in fact require the defendant to lose money during the predation period, and this loss must necessarily be made up later.²⁵

Making the attribution test the principal or prima facie determinant of anticompetitive conduct creates a serious problem of false positives. Many welfare increasing or competitively harmless instances of bundling flunk the attribution test. Many of them can be profitable without regard to whether any rival is excluded. Consider the following:

1. *Secondary good sold in competitive market*

When the secondary good is sold in a competitive market, at a

24. Predation is simply a type of investment in which the firm incurs costs today in the expectation of profits down the road. For example, if GM constructs a new production facility it reasonably intends to recoup these costs via increased output in some future time period, whether or not the construction costs are so high that GM incurs losses during the construction period.

25. In situations involving bundling, even a strictly exclusionary strategy will likely observe positive profits immediately, though they may be lower than those observed before bundling. In such cases it is the *relative* profit loss that requires recoupment in the long run.

price equal to or very close to cost, then virtually *any* discount fully attributed to the secondary good will flunk the attribution test.²⁶ For example, suppose I possess the manufacturing rights for a multipurpose cutting tool able to cut various types of materials. It uses blades intended for an assortment of different materials, all of which are sold at cost in a highly competitive market for \$3 each. However, it may be the case that my tool is less popular among carpenters than it is among those who work with other materials. Thus, to increase my tool's appeal to carpenters, I decide to offer my tool with 10 generic wood blades for an additional \$15. Because the total cost of producing these blades is \$30, the bundle fails the attribution test. But my profits increase overall because many more carpenters now choose to buy my cutting tool. Moreover, these blades are very simple and can be used in countless varieties of tools and equipment, so there is no chance of my bundle creating a monopoly in the market for wood cutting blades. Such cases are best analogized to nonforeclosing ties, which are ubiquitous.²⁷

The *Cascade* approach to mixed bundling, focusing almost exclusively on the attribution test, creates the perverse result that anticompetitive outcomes are suggested more often as the secondary market becomes more competitive, thus leaving less room for a discount that passes the attribution test. This fact makes it essential to have a separate analysis of competitive effects in the secondary market. Among the additional factors considered should be the degree of complementarity that exists between the goods, savings from reduction in joint costs, and the relationship between scale and average cost.

2. *Economies of scope and joint costs.*

When two products share a common process or input they may

26. Some models of anticompetitive bundled discounts assume that the secondary market is competitive. See, e.g., Patrick Greenlee, David Reitman, and David S. Sibley, *An Antitrust Analysis of Bundled Loyalty Discounts* (Oct. 30, 2006), available at

http://www.usdoj.gov/atr/public/hearings/single_firm/docs/220345.htm (discussing both types of models).

27. See 9 Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law* ¶¶1722-1728 (2d ed. 2005).

be subject to joint costs, or costs that are incurred only once when the two products are produced together. Such situations are a sufficient condition for economies of scope, which are average cost savings that result from the coupled (as opposed to separate) production of two goods. Significant savings in joint costs that accrue from bundling might result in efficient bundles that flunk the attribution test, depending on how the test is applied. Consider this example:

Colds are treated with medicines Alpha for congestion and Beta for coughs. Firm 1 has a dominant position in medicine Alpha which costs \$5 to manufacture. The process of inserting Alpha into a capsule and packaging it ("encapsulating") costs \$4. Firm 1 sells encapsulated Alpha for \$12, 3\$ above its costs. Firm 1 also has a less substantial position in a multi-firm market for Beta. Its Beta manufacturing costs are \$3 and it sells encapsulated Beta for \$8, which includes a \$1 markup. Finally, the firm offers an Alpha/Beta combination for \$16. Because it costs no more to encapsulate two drugs together than to encapsulate one alone, it earns exactly the same markup as it would earn on separate sales, but incurs the encapsulating costs only once.²⁸

The discount on the encapsulated Alpha/Beta Combination is \$4 off the price of purchasing two separate capsules. When that discount is fully attributed to the costs of producing Beta separately the price of encapsulated Beta drops to \$4, which is \$3 less than the costs of producing free standing encapsulated Beta. Note first, that this situation flunks the attribution test as the AMC states it. Second, however, when the dominant firm encapsulates Alpha and Beta together its incremental cost of adding Beta (\$3) is less than the incremental price (\$4), so this transaction is fully profitable to the dominant firm without regard to any output increase. In cases involving joint costs, the relevant test must look at the marginal profitability of bundling on a per unit basis. This alternative is superior to the attribution test as proposed by the AMC because it

28. The illustration is adapted from the much more elaborate discussion in David S. Evans & Michael Salinger, *Why Do Firms Bundle and Tie? Evidence from Competitive Markets and Implications for Tying Law*, 22 *Yale J. Reg.* 37 (2005).

takes joint costs into account:

To prove that a bundled discount was exclusionary or predatory the plaintiff must establish that the incremental price of the bundle (that is, the difference between the defendant's standalone price of *A* and its price of *A + B*) is less than the incremental cost that the seller incurs when adding the *B* good to the bundle.²⁹

In effect, this test asks whether the marginal profitability of the bundle exceeds that of the standalone good *A*. If it does, long run recoupment is not necessary. Indeed, bundling is profitable without regard to any output increase and thus does not depend on the exclusion of rivals. Furthermore, given our assumption that firms are equally efficient, this new test works equally well in cases of bundling that do not involve joint costs or economies of scope.

The concept of an "equally efficient rival" requires further explanation in the presence of joint costs. If a rival does not sell all goods within a firm's bundle, it cannot acquire the joint cost savings that result upon their combined production. Hence, the costs of standalone production will not be an appropriate measure of bundling efficiency. For example, suppose that the dominant firm makes products *A* and *B*, while the rival makes only *B*. The two firms are equally efficient with respect to all production and distribution costs covering product *B*, except that cost element *j* is a joint cost that someone producing *A* and *B* together need incur only once. In that case the marginal cost of producing *B* for the standalone firm would be $C(B)$, while that for the firm that is already producing *A* would be $C(B) - j$.

As a matter of policy one does not wish to prevent a dominant firm from taking advantage of joint production efficiencies and passing the savings on to consumers. But in the presence of joint costs of this type the *A* producer will always have a cost advantage in the *B* market over the standalone *B* producer whose production costs are otherwise the same. One way to express this is simply to say that in the presence of joint costs the standalone producer of *B* is simply not the equally efficient rival that the law seeks to protect.

29. See appendix iii.

In sum, the attribution test defined by the AMC is unreliable and yields false positives in the presence of joint costs or economies of scope. This fact is crucial because cost savings very likely explain a high percentage of bundled discounts. In the *Cascade* decision, for example, the Ninth Circuit concluded that the attribution test should apply even though the presence of joint costs was highly likely. The plaintiff and defendant were competing hospitals. The defendant offered primary, secondary, and tertiary medical care while the plaintiff offered only primary and secondary care. The dispute arose when the defendant sold its three types of care in a bundle for a substantial discount. While we are not familiar with the entire record in the *Cascade* decision, the literature on hospital care indicates that as a general matter primary, secondary, and tertiary care are subject to very significant joint costs.³⁰ For example, a piece of durable medical equipment such as a CT scanner might be used for both secondary and tertiary care, making the costs of combining the two types of care in a common facility significantly lower than the costs of separate provision. A hospital contains numerous facilities and technologies whose costs can be spread across all three types of care, and the cost savings from grouping primary, secondary and tertiary care could be very significant. In that case the Ninth Circuit should have asked whether the incremental price of the bundle that included tertiary care services was sufficient to cover the incremental costs of providing such services, given that many of the facilities necessary for their provision were already in place.³¹

30. Colin Preyra and George Pink, *Scale and Scope Efficiencies Through Hospital Consolidations*, 25 *J.Health Econ.* 1049 (2006); Deborah Haas-Wilson, *Managed Care and Monopoly Power* 146 (2003).

31. Cf. 10 Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law* ¶1758d (discount conditioned on defendant's acceptance of a tie is lawful if the discount does no more than pass on cost savings of joint provision).

A similar situation arises in orthodox predatory pricing cases when the defendant adds a product in a facility subject to joint costs. The correct question is whether the incremental cost of adding the product is fully covered by the price of that product. See 3A Areeda & Hovenkamp, *Antitrust Law* ¶742 (3d ed. 2008).

3. Price Discrimination

Price discrimination occurs when a seller receives differing ratios of price to marginal cost on different sales. Bundling creates opportunities for price discrimination when a buyer or group of buyers places a value on a particular bundle that differs from the value that other buyers may place on a different bundle containing the same primary good, or on the standalone primary good. A bundled discount can facilitate price discrimination, assuming that arbitrage is not possible.³²

For example suppose that for buyer 1, WTP ("willingness to pay") for $A = 10$ and WTP for $B = 0$. For buyer 2, WTP for $A = 8$ and WTP for $B = 6$. If we assume the cost of producing B is 4 and A is 5, then the firm will elect to set standalone prices of 8 for A and 6 for B , earning a total profit of \$8. Alternatively, it can charge standalone prices of 10 for A and 6 for B , but a bundled price of 14. In this case the firm earns a total profit of \$10. The difference in these profits represents the consumer surplus of buyer 1, which could only be extracted through bundling.³³ Notice that this bundle fails the attribution test. Nevertheless, the profitability of bundling in this case does not depend on the exclusion of any rival, although it may exclude one in fact.

32. Arbitrage occurs when the low price buyer is able to resell the good to the buyer asked to pay a higher price.

On price discrimination possibilities from bundling, see Dennis W. Carlton and Michael Waldman, *Safe Harbors for Quantity Discounts and Bundling* (Economic Analysis Group Discussion Paper, Antitrust Division, U.S. Dept. of Justice, Jan. 2008), available at <http://www.usdoj.gov/atr/public/eag/230712.htm>. See also Antitrust Modernization Commission, Report, Separate Statement of Commissioner Carlton (2007), available at http://govinfo.library.unt.edu/amc/report_recommendation/separate_statements.pdf. For more technical treatment see Dennis W. Carlton and Jeffrey Perloff, *Modern Industrial Organization*, ch. 10, at 324-330 (2005).

33. In order to sell the bundle, customers would need to receive at least as much consumer surplus for buying the bundle as they would receive for buying either standalone good. Hence we would often expect to see customers of the bundle retain some consumer surplus.

One significant factor in price discriminatory bundling is what changes if any are made in the price of *A* at the time bundling is imposed. Accordingly, we consider bundling strategies in both cases.

The price of A remains the same

If the price of *A* is unchanged and the bundle flunks the attribution test, then the firm must expand output in order for the strategy to be profitable.³⁴ This is true because this sort of bundling is effectively a price cut. It provides *A* at a discounted rate to customers who also want *B*. If the bundle fails the attribution test, the firm must earn its additional profit through increased volume.

This can have important implications. First, price discrimination that results in reduced output virtually never increases welfare.³⁵ Price discrimination that increases output can increase welfare and may do so most of the time, particularly if the output increase is substantial and costs are relatively unchanged.³⁶ It should be noted that output increasing price discrimination can exclude anyone from whom the discrimination strategy steals sufficient sales of the *B* good. In the presence of scale economies, this impact can be magnified by the reduction of competitor efficiency. In this case, the monopolist forces a decline in both the production and the efficiency of rivals, squeezing profit from two directions. However, such a strategy can be profitable regardless of its impact on rivals.

If the price of *A* is unchanged, one can conclude that (1) if the bundling in question is being used to facilitate price discrimination;

34. For a proof and explanation, see appendix ii.

35. See Marius Schwartz, Third-Degree Price Discrimination and Output: Generalizing a Welfare Result, 80 *Am.Econ.Rev.* 1259 (Dec. 1990); Richard Schmalensee, Output and Welfare Implications of Monopolistic Third-Degree Price Discrimination, 71 *Am.Econ.Rev.* 242 (1981); Hal R. Varian, Price Discrimination and Social Welfare, 75 *Am.Econ.Rev.* 870 (1985).

36. Varian, *ibid.*, proves this result where the reservation price is decreasing. See also J. A. Hausman and J. K. MacKie-Mason, Price discrimination and patent policy, 19 *RAND J. Econ.* 253-265 (1988).

then (2) it is likely to increase welfare; and (3) the failure of the attribution test is not a good indicator that a bundling strategy is an exclusionary practice. The strategy is likely to be profitable in the short run, with profits resulting from immediately increased output.

Price of A rises upon bundling

When the standalone price of *A* rises from the previous standalone price at the time a bundle is introduced the effect on social welfare can be more adverse. The bundle may not need to increase output in order to be profitable, as it may simply increase profitability at the margin.³⁷ This would most likely occur in markets where the demand for *A* is inelastic and the bundled good is a complement. In effect, bundling can be used to appeal to different consumer groups, making it possible for such a strategy to be overall profit increasing.

If the discounted price of *A* in the bundle is greater than its previous individual price, most consumers are worse off. This strategy is effectively a price hike, and will almost certainly restrict output. It should be noted that the price of *A* can be raised to any level, provided the bundled discount is increased accordingly.³⁸ In such situations, the standalone price of *A* may become so high that nearly everyone would rather buy the bundle. This is effectively an implied instance of pure bundling, or tying, as the only good being sold at a reasonable price is the bundle. The monopolist conditions the purchase of *B* on nearly all purchases of *A*. If enough of the market for *B* is satisfied by these bundles, the strategy may force rivals to exit.

For example, suppose I possess the sole manufacturing rights for a patented clothes dryer that works with twice the speed of most others. I begin by selling my dryer for \$1400, which is \$400 above cost. Washing machines are sold in a moderately competitive market at a price of \$1000, which includes a \$250 markup. I then decide to bundle my dryer with a generic washing machine at a price

37. See appendix ii.

38. See, e.g., Greenlee, Patrick, Reitman, David S. and Sibley, David S., "An Antitrust Analysis of Bundled Loyalty Discounts" (October 30, 2006). Economic Analysis Group Discussion Paper No. 04-13 (Revised)

of \$2500, which is now \$750 above cost. At the same time I raise the standalone price of the dryer to \$2000. Because the cost of producing a washer is \$750, the bundle fails the attribution test. But because washers and dryers are strongly complementary, most people will buy the bundle if they want my dryer. Thus, if there is a strong demand for my dryer, I would expect to see many of my rivals in the market for washing machines face foreclosure. However, I now make a greater profit on the bundle than I previously made on the dryer alone. As such, this strategy is profitable regardless of its impact on my competitors.³⁹ The fact that few consumers are likely to buy my standalone dryer is irrelevant.

Alternatively, we may observe a situation in which the bundle fails the attribution test relative even to the previous standalone price of *A*. Hence the bundle truly does discount the *A* good with respect to the price it retained before bundling. In such cases it may be necessary for a firm to expand output in order to increase total profit.⁴⁰

In sum, even in the case of a price increase in *A*, the profitability of price discriminatory bundling need not depend on the exclusion of a rival. The increased profits could just as easily come from higher revenues of the standalone dryers, or else from increased sales to buyers of the washer-dryer package.

That naturally invites the question of an appropriate antitrust rule. As a matter of competition policy, suppose the plaintiff can show that (1) a bundle fails the attribution test *and* (2) that the defendant increased the price of the *A* good significantly upon imposing bundling. Of course a private plaintiff would have to show market wide exclusion, which entails a showing that there are no other efficient producers of the bundle and that existing producers of the *B* good cannot compete effectively. Even this set of showings does not rule out the possibility of competitively harmless conduct. The lack of any significant number of standalone sales of the *A* product might mitigate in favor of liability by essentially establishing that the

39. If two goods are less complementary, this sort of bundling strategy is less effective.

40. For necessary conditions of increased output, see appendix ii.

defendant is tying.⁴¹ Additionally, insignificant complementarity between the goods may indicate that the bundling strategy would not be an effective means of price discrimination when standalone prices rise significantly.

Competitive Bundling under Oligopoly or Collusion

Many bundles that fail the attribution test are nothing more than price discrimination achieved by disguised price cuts in oligopolistic markets or those that are subject to collusion. For example, suppose that the cost of a car is \$20,000 and a car stereo costs \$500. The car sells in an oligopolistic market for \$25,000. The car seller is reluctant to cut the nominal price, which is readily observed by rivals, but agrees to throw in the stereo at an incremental price of \$100, for a package price of \$25,100.⁴² The deal flunks the attribution test because the incremental price of the bundle is less than incremental cost, but it is also a way of competing in oligopoly and even under explicit collusion that antitrust policy should encourage. Prohibiting deals of this sort simply stabilizes oligopolies. In fact, oligopolies often fall apart because firms engage in nonprice competition of this sort, and nonprice competition is an important characteristic of monopolistic competition.⁴³

For example, in *Multistate Legal Studies* the defendant offered a course intended for those about to take the "multistate" portion of a state bar exam (MBE). The defendant offered a "full service" course intended to cover the entire bar exam, as well as an MBE supplemental course, intended to improve students' performance only on the multistate portion of the exam. The antitrust dispute arose when the defendant bundled its full service and MBE courses

41. On package discounts treated as tying arrangements, see 10 Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law* ¶1758b (discussing decisions and suggesting that few than 10 percent of separate sales constitutes a de facto tie); see also *Cascade*, note 11, 515 F.3d at 915 (denying summary judgment on tying claim where roughly 14 percent of sales were separate). See appendix ii.

42. See 3A Areeda and Hovenkamp, *Antitrust Law*, note 6 at ¶749c.

43. The classic treatment is George J. Stigler, *Price and Non-Price Competition*, 76 *J.Pol.Econ.* 149 (1968).

and sold them at a package price less than the sum of the prices of the separate components -- indeed, initially the defendant included its MBE course "free" to all who purchased its full service course.⁴⁴ The Tenth Circuit found predatory pricing possible on the theory that, while the cost of offering the MBE materials separately was approximately \$15, they were priced predatorily when included "free" with the full service course.⁴⁵ But no MBE course was ever given away; it was "free" only to those who took the full service course, and the court cited no evidence that the *package* price was less than any measure of cost for the entire package. As a result, the package pricing could have been a completely profitable, or "sustainable," strategy, for which no recoupment is necessary and thus which is inappropriately condemned as predation.

Suppose the defendant sells 100 copies of its full service course for \$500, at a cost of \$400. The defendant then bundles a "free" MBE course, which costs \$15, and its sales increase to 150 copies. Before the bundling, the defendant sold 100 copies at \$100 profit, for \$10,000. After the bundling the defendant sold 150 copies at \$85 profit, for \$12,750. Even though the MBE course has been bundled for "free," there are no losses requiring recoupment. The bundling is profitable both in the short run and the long run. Or to state it differently, the bundling and effective price cut are profitable not because they are calculated to destroy or discipline rivals and permit subsequent monopoly pricing; they are profitable simply because they yield higher immediate output from higher immediate sales -- precisely what competitive, as opposed to predatory, price cuts do.

Ad Hoc Negotiation Among Customers with Varying Bundled Needs

Customers of an intermediate good may place differential values on it depending on how they use it in combination with some other good, *B*, *C*, or *D*, all of which sell in competitively or moderately competitive markets. The seller designs bundles of *A-B*, *A-C*, or *A-D*, each of which is designed to exploit the reservation price of various users by tracking them to the secondary product that they

⁴⁴. *Multistate Legal Studies, Inc. v. Harcourt Brace Jovanovich Prof'l. Pub'ns., Inc.*, 63 F.3d 1540 (10th Cir. 1995), cert. denied, 516 U.S. 1044 (1996).

⁴⁵. *Id.* at 1549, 1551 (reversing grant of summary judgment).

must use.

For example, suppose that the monopolist owns a patented mixing agent that keeps contents of various suspensions from "settling" into the bottom of the container. The cost of the mixing agent is \$5 per unit and it works with salad dressings, paint, and pharmaceutical suspensions, all of which are sold in competitive markets. The profit-maximizing standalone price is \$8.00, but the WTP of the salad dressing producers is \$6, of paint is \$8. and of pharmaceutical suspensions is \$10. The mixing agent monopolist then becomes a distributor of these three products, inserts the mixing agent, and adds to the basic product price the WTP of each of the three groups of customers. In this case, the strategy is simply an implicit method of *group pricing*: Charging a different price to different consumer groups. The actual bundling is merely a means of preventing arbitrage.

III. Recoupment

The second element of the AMC test for bundles requires a showing of "recoupment." Here, some re-definition is necessary. The term recoupment has come to mean different things in different situations. The strong version of recoupment is the one the Supreme Court articulated in its *Brooke Group* and *Weyerhaeuser* decisions, which are generally read to require dollars-and-cents proof that a dominant firm can predict that a given investment in predatory pricing will be followed by a period of monopoly profits sufficiently certain and sufficiently large that, when discounted to present value, it gives the predation investment a positive payoff. Further, the Court envisioned single product predatory pricing as a firm's incurring of immediate losses by charging below cost prices.⁴⁶ Such a strategy could not be rational, the Court reasoned, unless the defendant had a reasonable prospect of recouping those losses in some subsequent time period of monopoly profits.⁴⁷

^{46.} *Brooke Group Ltd., v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993) (Robinson-Patman Act); *Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co., Inc.*, 127 S.Ct. 1069 (2007) (Sherman Act §2).

^{47.} See *Brooke Group*, 509 U.S. at 224:

Recoupment is the ultimate object of an unlawful predatory pricing scheme; it is the means by which a predator profits from predation.

The two-time-period recoupment requirement is in part a consequence of the fact that predatory pricing, as *Brooke Group* also defined it, is a non-sustainable strategy. Only prices below an appropriate level of cost are predatory. As a result, the predator cannot "make it up on volume" during the predation period -- the more it sells at the predatory price the more money it loses.

"Cost" is not the true baseline for measuring recoupment, however, and as a result the need for recoupment does not depend on the sustainability of the strategy. Rather, the baseline is the profits that the dominant firm was earning prior to implementation of the strategy. In sum, what must be recouped is the *opportunity costs* of predation. Even a price cut to above cost levels is rational only if it generates some kind of payoff.⁴⁸ In this case the payoff need not be observed only in the long run, as reduced margin can be outweighed by increased volume.

The mixed bundling strategies under discussion here are "sustainable" in the sense that the overall price of the bundle is

Without it, predatory pricing produces lower aggregate prices in the market, and consumer welfare is enhanced....

and *id.* at 225-226:

... The plaintiff must demonstrate that there is a likelihood that the predatory scheme alleged would cause a rise in prices above a competitive level that would be sufficient to compensate for the amounts expended on the predation, including the time value of the money invested in it. As we have observed on a prior occasion, "[i]n order to recoup their losses, [predators] must obtain enough market power to set higher than competitive prices, and then must sustain those prices long enough to earn in excess profits what they earlier gave up in below-cost prices."

quoting *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 590-591 (1986). For elaboration, see 3A Areeda and Hovenkamp, note 6 at ¶¶725-727.

48. The AMR Report recognizes this. It speaks of the "profits" sacrificed by bundling that must be recouped. See Report, note 4 at 98.

above cost. The "loss" that occurs results from the fact that net revenue per unit sold, while positive, is less than it is under separate pricing. In that case the opportunity cost of the strategy is the reduced short-term profits that the dominant firm earns during the bundling period.

Consider this example: firm X dominates the market for product *A*, for which costs are \$5 and the standalone monopoly price is \$8. It also sells product *B* in a more competitive market, where costs are \$2 and the price is \$3. Finally, it sells an *A/B* bundle at a price of \$9. On the one hand, the price of the bundle is well above firm X's costs, which are \$7. On the other hand, the incremental revenue that firm X obtains from bundling is less than the incremental cost of assembling the bundle, so the firm earns less money on each unit of the bundle than it would from separate sales. As such, each customer who buys the bundle instead of the standalone good *A* imposes a relative loss on the monopolist.

Such a strategy could nevertheless be profitable for either of two different reasons. First, bundling might make it impossible for standalone sellers of product *B* to survive. Once these sellers have exited the market then firm X intends to drop bundling and raise the price of *B* as well as *A*. This would be recoupment in the sense that *Brooke Group* envisioned it.⁴⁹

The other possibility is that the *A/B* bundle is profitable because it operates as a selective above cost price cut that stimulates sales, although it may exclude rivals in the process. Although standalone sales will now yield less profits than before, bundling greatly increases the number of total sales and profits are higher as a result. For example, suppose I sell bagels, which cost \$4.00 a dozen, at a price of \$6.00 per dozen. Then I throw in a container of cream cheese which costs \$2.50 at an incremental price of \$2.00, or \$8.00 for the bagel/cream cheese combination. Packaging in this way flunks the attribution test, but my \$8.00 price is still well above my \$6.50 costs and this strategy might be profitable simply because it increases my sales volume. Significantly, the strategy could even be profitable in a highly competitive market and without regard to the exclusion of any rival.

49. See appendix iv.

In the latter case "recoupment" is assuredly necessary in the sense that any rational pricing strategy must have a positive payoff. But recoupment here is a completely different thing from the recoupment that *Brooke Group* envisioned. Most importantly, the price cut and the "recoupment" occur simultaneously.⁵⁰

In this sense an anticompetitive bundled discount that fails the attribution test but is nevertheless above cost is somewhat analogous to so-called "limit" pricing, a term that describes a variety of above cost pricing strategies designed to exclude rivals from a market or restrain their growth.⁵¹ The important difference is that limit pricing is not likely to succeed if the dominant firm and its rivals are equally efficient.⁵² Bundling might succeed, however, provided

50. As Dennis Carlton, one of the AMC Commissioner's observed:

The second prong of the AMC safe harbor test is recoupment. The AMC test asks whether the price of B could rise, just as in the standard predation story when the first prong of the predation test ("is price below cost?") is passed. This makes perfect sense in terms of the context of the standard story of price predation in a dynamic setting. The court in *Peacehealth* dismissed this prong by claiming that there can be "simultaneous" recoupment. What the court means is that in equilibrium there will be no producers of only B, so that the price of B will be high. There is an instantaneous recoupment if the predation happens quickly or if the threat of predation deters entry. There is no dynamic story in the court's thought process - the decision cites Nalebuff (2005) who uses a static model - while there is a dynamic story underlying the AMC test. Whether the recoupment is simultaneous or delayed, as it is in the usual price predation story, is a detail. The key issue is whether the price of B can rise above the competitive level.

Carlton and Waldman, note 16.

For further explanation, see appendix iv.

51. We need not consider bundles priced below cost, as they would just be standard cases of price predation and can be treated as such. See, e.g., Carlton and Perloff, note 32, Ch. 11.

52. *Ibid.*

that the dominant firm produces goods inside the bundle that rivals do not produce.

Importantly, "recoupment" is also relevant even to limit pricing, although it is not the type of recoupment that *Brooke Group* envisioned. Limit pricing entails that a firm is charging less than its short-run profit-maximizing price and as a result it earns less per time period than it would by charging a higher price, assuming that new rivals do not enter or existing rivals increase their output. The recoupment question really amounts to whether the extended duration of market dominance that limit pricing produces yields enough additional revenue to offset the lower profits per time period that limit pricing entails.⁵³

Brooke Group developed its recoupment requirement in the context of non-sustainable predation involving below cost sales, but *all* strategies involving price cuts require some kind of "recoupment" in the sense that the loss of revenue per unit must be made up somewhere else.⁵⁴ Any time a firm cuts its price, even to a level that is above cost, the price cut reduces total profits unless there is a payoff in the form of (a) exclusion followed by a later price increase; or (b) higher output under the reduced (but nevertheless profitable) price.⁵⁵

In sum, assuming that the price of the package as a whole is above cost, the AMC's "recoupment" recommendation for package discount cases could take either of two forms:

1. If the package discount is intended to exclude rivals that do not make all products in the package in order to drive them

53. See 3A Areeda & Hovenkamp, note 6, ¶1736b1. For a graphical interpretation, see appendix iv.

54. For contrary views, see Aaron S. Edlin, *Stopping Above-Cost Predatory Pricing*, 111 Yale L.J. 941, 942 (2002); Einer Elhauge, *Why Above-Cost Price Cuts To Drive Out Entrants Are Not Predatory--and the Implications for Defining Costs and Market Power*, 112 Yale L.J. 681, 697 n. 51 (2003).

55. See appendix iv. In addition, it should be noted that pre-bundling prices may not exist in all situations, as a firm may have initiated the bundling strategy at the same time that it introduced its primary good.

out of business, then the recoupment issue is whether the cost of offering the package discount in the short run will be offset by some future period of monopoly prices after the rivals have exited from the market. The baseline for measuring the cost of this strategy is not marginal cost or average variable cost, but rather total pre-discount profits (i.e., the opportunity cost of the short-run discount strategy).

2. If the package discount's profitability depends on currently increased output, then "recoupment" depends on the current profitability of the package price cut.

Number one describes an at least presumptively anticompetitive scenario -- low prices today followed by higher prices tomorrow, with a net injury to consumers. Recoupment would certainly be no easier to measure than in a conventional predatory pricing case, but in principle it would be much the same. One would compare the decline in profitability during the short-run period in which the exclusionary bundling occurred, and weigh it against the present value of any future recoupment period, taking into account the risk of failure and other difficulties that can reasonably be anticipated.⁵⁶

Number two is much messier. First of all, an output increase is in and of itself presumptively competitive. Second, any injuries could come from ongoing suppression of rivals, an ongoing exclusion strategy, or raising of rivals' costs. These practices create effects that are akin to limit pricing -- something the law does not condemn in the single-product setting⁵⁷ -- but also to tying and exclusive dealing, both of which recognize the existence of sustainable strategies that are thought to be anticompetitive because they suppress the output of rivals or raise their costs.

None of this matters very much if we abandon the strict recoupment requirement altogether and adhere to some more basic structural principles -- namely, that monopolization requires a market with high entry barriers and economies of scale that persist over high output ranges relative to demand at cost prices. One problem with the recoupment problem as *Brooke Group* articulated it is the great

56. See 3A Areeda and Hovenkamp, note 6 at ¶¶726-727.

57. See *id.*, ¶¶736-737.

information demands it makes in close cases. Predicting the length and opportunity cost of a predation strategy, what the likely recoupment (supracompetitive) price would be, when entry might occur and how quickly it would move prices back to the competitive level is typically an exercise in pure speculation except in very obvious situations. A better approach for litigation purposes is to abandon the strict recoupment requirement, but ensure that the market at issue is one that is structurally capable of being monopolized.

As a result, we believe the best solution to this problem is to abandon the recoupment problem as articulated in *Brooke Group* altogether. To be sure, in extreme cases on both ends the relevant information might be readily obtained and a prediction fairly clear. But in the vast middle any testimony that profitable recoupment in the *Brooke Group* sense would or would not result is bound to involve significant amounts of conjecture.⁵⁸ Indeed, it is not clear that *Brooke Group* itself demanded "dollars and cents" proof of recoupment. The Court said:

The plaintiff must demonstrate that there is a likelihood that the predatory scheme alleged would cause a rise in prices above a competitive level that would be sufficient to compensate for the amounts expended on the predation, including the time value of the money invested in it.⁵⁹

The operative word here is "likelihood," which in the context means "a good chance," or perhaps "reasonable probability." A few sentences later the Court elaborated that:

If market circumstances or deficiencies in proof would bar a reasonable jury from finding that the scheme alleged would likely result in sustained supracompetitive pricing, the plaintiff's case has failed.⁶⁰

58. In the context of traditional predatory pricing, see Areeda and Hovenkamp, note 6 at ¶726d5.

59. *Brooke Group*, 509 U.S. at 227-228.

60. *Ibid.*

In sum, the plaintiff must show a "likelihood," or good chance, that a below cost pricing scheme would be followed by a period of "sustained supracompetitive pricing." A clear showing of significant scale economies in the relevant range, meaningful entry barriers and a dominant firm should suffice for this purpose.⁶¹

IV. Conclusion: Anticompetitive Effects

In addition to a package discount that fails the attribution test and a showing of recoupment, the AMC Report's third requirement is a showing of an adverse effect on competition.⁶² In its *Cascade* decision the Ninth Circuit dismissed this requirement as simply

61. See Donald J. Boudreaux, Kenneth G. Elzinga & David E. Mills, *The Supreme Court's Predation Odyssey; from Fruit Pies to Cigarettes*, 4 *Sup.Ct.Econ.Rev.* 57, 73 (1995) (citing a set of less technical criteria as tending to establish the recoupment requirement and justifying further inquiry into price-cost relationships:

- Does the alleged predator currently confront substantial competition from noncollusive rivals (other than its intended victims) within the relevant market?
- Is entry into the relevant market devoid of high entry barriers?
- Do customers in the alleged market have credible counter-strategies that are likely to defeat a predatory scheme?
- Is the industry in rapid decline?

Only if the previous questions are answered in the negative would a court be justified in allowing the parties to undertake the expensive and complicated task of gathering and presenting data on price-cost comparisons.

Elzinga and Mills were the two authors that the Supreme Court relied on for the recoupment requirement in *Brooke Group* itself. See Kenneth G. Elzinga & David E. Mills, *Testing for Predation: Is Recoupment Feasible?*, 34 *Antitrust Bull.* 869 (1989). See also Cyril Ritter, *Does the Law of Predatory Pricing and Cross-Subsidisation Need a Radical Rethink*, 27 *World Competition* 613 (2004).

62. Report, note 4 at 99.

restating the "antitrust injury" requirement.⁶³ That is not the way the Supreme Court defined "antitrust injury" in its *Brunswick* decision, which held that a plaintiff could not complain about *increased* competition brought about by an allegedly unlawful vertical merger, because doing so was inimical to the goals of the antitrust laws.⁶⁴ Since *Brunswick*, however, lower courts including the Ninth Circuit have repeatedly used the term "antitrust injury" as kind of a catch-all to refer to competitive injury or injury-in-fact.⁶⁵

Using the term "antitrust injury" as a substitute for anticompetitive effects in a §2 case is a bad idea because antitrust injury is required in all private antitrust actions, even those involving per se offenses.⁶⁶ By contrast the structural and behavioral requirements for unlawful monopolization are severe and specific to that statute. *If* a rival was injured by an unlawful exclusionary practice then its injury was antitrust injury, but one still has to establish that the injury fell within the boundaries of the monopolization offense.

Further, given the very large number of false positives that the

63. *Cascade*, note 11, 515 F.3d at 910:

The third element proposed by the AMC is that the bundled discount or rebate program has had or is likely to have an adverse effect on competition. *AMC Report*, supra, at 99. We view this final element as redundant because it is no different than the general requirement of antitrust injury that a plaintiff must prove in any private antitrust action.

64. *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 489 (1977). See 2A Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law* ¶1337 (3d ed. 2007).

65. See, e.g., *SmileCare Dental Group v. Delta Dental Plan*, 88 F.3d 780 (9th Cir. 1996), cert. denied, 519 U.S. 1028 (1996); *Syufy Enters. v. American Multicinema, Inc.*, 793 F.2d 990, 999-1000 (9th Cir. 1986), cert. denied, 479 U.S. 1031 (1987); *Catlin v. Washington Energy Co.*, 791 F.2d 1343, 1347 (9th Cir. 1986); *Dolphin Tours, Inc. v. Pacifico Creative Serv., Inc.*, 773 F.2d 1506, 1509 (9th Cir. 1985); *Northwest Pub., Inc. v. Crumb*, 752 F.2d 473, 476 (9th Cir. 1985); and see 2A Areeda & Hovenkamp, *Antitrust Law*, note 64 at ¶1337a.

66. *Id.*, ¶1337c.

attribution test produces, a per se rule is hardly in order. Competitive effects must be assessed in each case. Here, as in most rule of reason cases, rational shortcuts must be developed. At a minimum, we would require the following:

- The defendant is a dominant firm in a market structurally conducive to durable monopoly (our equivalent of recoupment). Entry barriers and economies of scale must both be significant.
- The defendant does not have a significant rival who produces the full range of goods in the bundle in dispute. If that were the case, the bundle does not force all rivals to price below cost. The orthodox predatory pricing rule requiring overall prices below cost applies.
- The defendant's bundle flunks the attribution test over a sufficient range of sales to cause an inference of substantial harm to the rival (presumably the plaintiff), either driving it from the market or raising its costs and thus allowing the defendant to increase prices in the secondary market.
- The defendant cannot show significant joint costs or economies of scope that justify bundling, which would entail a showing that the per-unit profit earned on the bundle exceeds that earned on the standalone good.

APPENDICES

In each appendix, we let A denote the monopoly good while B denotes the secondary good, which is sold in a market that is at least somewhat competitive. We let β denote the bundle A + B.

Appendix i: Equivalence of the two prevailing accounts of the attribution test

The two definitions given for the attribution test are mathematically equivalent, though they are given in terms of different variables.

Let d denote the value of the bundled discount. Explicitly we have that:

$$d = P(A) + P(B) - P(\beta)$$

where $P(A)$ and $P(B)$ denote the individual prices of A and B, and $P(\beta)$ denotes the price of the bundle (A + B).

We denote the marginal costs of A, B, and β as $MC(A)$, $MC(B)$ and $MC(\beta)$ respectively. For our purposes, we consider the marginal cost levels that firms observe at the time bundling is introduced. Accordingly, the accounts of the two definitions of the attribution test are as follows:

Account 1:

To prove that a bundled discount is exclusionary or predatory for the purposes of a monopolization or attempted monopolization claim under § 2 of the Sherman Act, the plaintiff must establish that, after allocating the discount given by the defendant on the entire bundle of products to the competitive product or products, the defendant sold the competitive product or products below its average variable cost of producing them [quoting *Cascade*].

Explicitly, account 1 can be given as:

$$\text{Test Outcome} = \begin{cases} \text{Pass if } P(B) - d \geq MC(B) \\ \text{Fail if } P(B) - d < MC(B) \end{cases}$$

Account 2:

To prove that a bundled discount was exclusionary or predatory for the purposes of a monopolization or attempted monopolization claim under § 2 of the Sherman Act, the plaintiff must establish that the incremental price of the bundle (that is, the difference between the defendant's standalone price of A and its price of A + B) is less than the marginal cost of producing the B good. [or alternatively, less than the average variable cost of producing the B good].

Explicitly, account 2 can be given as:

$$\text{Test Outcome} = \begin{cases} \text{Pass if } P(\beta) - P(A) \geq MC(B) \\ \text{Fail if } P(\beta) - P(A) < MC(B) \end{cases}$$

By substituting $[P(A) + P(B) - P(\beta)]$ for d in the first equation, we find that that the two accounts of the attribution test are mathematically identical. Observing the tests in the vector form {pass, fail}, we have that:

$$\begin{aligned} \text{Account 1} &= \{P(B) - d \geq MC(B), P(B) - d < MC(B)\} \\ &= \{P(B) - P(A) - P(B) + P(\beta) \geq MC(B), P(B) - P(A) - P(B) + \\ &\quad P(\beta) < MC(B)\} \\ &= \{P(\beta) - P(A) \geq MC(B), P(\beta) - P(A) < MC(B)\} \\ &= \text{Account 2} \end{aligned}$$

Hence, we see that the two accounts of the attribution test given in many cases (not involving joint costs) are actually equivalent. There is, however, a different way to define the test that can also effectively provide “safe harbor” in the presence of scope economies, or joint costs. See appendix iii.

Appendix ii: Output requirements of profitable bundling strategies

In order grant safe harbor more effectively, we will determine the conditions under which total output (of A) must increase for a bundling strategy to be profitable regardless of its impact on rivals. These can be used to supplement decisions regarding the propriety of a bundling strategy.

We make the following assumptions in each case:

- 1) The bundle fails the attribution test with respect to the standalone price of A observed upon bundling.
- 2) Each bundling strategy is profitable without regard to its impact on rivals.
- 3) The price of the bundle, $P(\beta)$, is greater than the standalone price of any good within the bundle.
- 4) All firms are equally efficient.
- 5) No joint costs or scope economies are observed by firms.
- 6) The monopolist does not sell the secondary good, B, individually.

Case 1: Individual price of A remains the same

In this first case, we assume that the standalone price of A does not change upon bundling. We define the marginal or per-unit profitability of both the bundle and the standalone good A. It is very important to note that because we are considering only specific price levels, marginal profit will always be equal to that price minus the marginal cost of production. As a matter of practicality, it would be most appropriate to consider that level of marginal cost which is observed immediately before bundling is introduced. Of course, in some cases it might be necessary to use a measure of average variable cost in lieu of any reliable way to estimate marginal cost. In any case, we simply require some realistic measures of per-unit profits, as they exist both immediately before and immediately after bundling is introduced. The difference between these values represents the difference between the incremental price and the incremental cost of bundling (with respect to the standalone good A).

$$MP_A = P(A) - MC(A)$$

$$\begin{aligned} MP_\beta &= P(\beta) - MC(A) - MC(B) \\ &= P(A) + P(B) - d - MC(A) - MC(B) \end{aligned}$$

Where AP_x denotes the marginal or per-unit profitability of x, $P(x)$ denotes the price of x, and $MC(x)$ marginal cost of x. Again, the value of the bundled discount, d , is defined as $d = P(A) + P(B) - P(\beta)$.

Because we assume the strategy fails the attribution test, we can show that the marginal or per-unit profitability of the bundle must be

less than that of the standalone good A. In order to show this explicitly, we define the difference in marginal profitability, which we will denote as L:

$$L = d + MC(B) - P(B)$$

(Because the attribution test is failed, we know that L is positive)

Accordingly:

$$MP_{\beta} = MP_A - L$$

And hence,

$$MP_A > MP_{\beta}$$

Further, we can define the condition for a bundling strategy to be profitable when the standalone price of A remains the same:

$$Q_{A2}(MP_A) + Q_{\beta}(MP_{\beta}) \geq Q_{A1}MP_A$$

where Q_{A1} is the quantity of the standalone good A sold prior to bundling and Q_{A2} is the quantity of the standalone good sold after bundling becomes available. It should be noted that Q_{A2} does not represent the total quantity of A produced upon bundling, as some units of A are sold in bundles. Rather, it only represents the quantity of *standalone* units of A that are sold in the market. Because a discount is offered on the bundle, we will observe that $Q_{A1} > Q_{A2}$, as the bundle will attract some customers who formerly bought only the standalone A.

Solving for relative output levels:

$$Q_{A2}(MP_{\beta} + L) + Q_{\beta}(MP_{\beta}) \geq Q_{A1}(MP_{\beta} + L)$$

$$Q_{A2}(MP_{\beta}) + Q_{A2}(L) + Q_{\beta}(MP_{\beta}) \geq Q_{A1}(MP_{\beta}) + Q_{A1}(L)$$

$$Q_{A2} + Q_{\beta} \geq Q_{A1} + (Q_{A1} - Q_{A2})(L/MP_{\beta})$$

Thus, because $(Q_{A1} - Q_{A2})(L/MP_{\beta})$ is positive, we have that:

$$Q_{A2} + Q_{\beta} \geq Q_{A1}$$

Hence, if a bundling strategy does not raise the price of A, it must increase output if it is to be profitable without regard to exclusion.

What if the price of A rises upon bundling?

For cases 2 and 3, we assume the standalone price of A rises upon bundling.

Because there are now two prices of A being considered and therefore two levels of marginal or per-unit profitability. We define the following:

$P_1(A)$ = The standalone price of A before bundling

$P_2(A)$ = The standalone price of A after bundling

where $P_2(A) > P_1(A)$.

Accordingly, we can define the corresponding levels of marginal or per-unit profit as:

$MP_{A1} = P_1(A) - MC(A)$

$MP_{A2} = P_2(A) - MC(A)$

Where $MP_{A2} > MP_{A1}$.

As in case 1, we define the difference in marginal profitability between the bundle and the standalone good A. However, with two levels of marginal profit to consider, we will have two such differences to define.

Accordingly:

$MP_{A1} = MP_{\beta} + \mathcal{L}$

$MP_{A2} = MP_{\beta} + L$

where $L > \mathcal{L}$.

For a given standalone price of A, a bundle fails the attribution test if the corresponding difference in marginal profitability is positive. Although the discount given by a bundle will be measured relative to the new price, we will consider both prices. As such, we will examine two cases: First, we consider situations in which the bundle

fails the attribution test with respect to both prices of A, giving that both L and \mathcal{L} must be positive. Then we consider situations in which the bundle only fails the attribution test with respect to the new price, in which case only L is positive.

Case 2: Individual price of A rises; both L and \mathcal{L} are positive

To begin, it will suffice to assert that the total profit resulting from *standalone* sales of A will decline. This happens because the bundled discount will persuade many consumers to buy the bundle rather than only the standalone good A. Also, we assume the previous standalone price of A was profit maximizing and thus any deviation from it would result in reduced profits.

Hence:

$$Q_{A1}(MP_{A1}) > Q_{A2}(MP_{A2})$$

where $Q_{A1} > Q_{A2}$.

The amount by which total standalone profits fall represents the amount of profit which must be made up by bundled sales if the strategy is to be profitable. To observe the net effect on output, we determine what amount of the standalone profit reduction is attributable to each lost standalone sale of A. If this amount is greater than the per-unit profitability of the bundle, then the number of bundles that must be sold is greater than the number of lost standalone sales of A. In such a case total production of A must increase for the strategy to be profitable.

Hence, if a bundling strategy is to be profitable without regard to foreclosure, output must increase if the following condition holds:

$$Q_{A1}(MP_{A1}) - Q_{A2}(MP_{A2}) / (Q_{A1} - Q_{A2}) > MP_{\beta}$$

$$Q_{A1}(MP_{A1}) - Q_{A2}(MP_{A2}) > (Q_{A1} - Q_{A2})MP_{\beta}$$

$$Q_{A1}(MP_{\beta} + \mathcal{L}) - Q_{A2}(MP_{\beta} + L) > Q_{A1}(MP_{\beta}) - Q_{A2}(MP_{\beta})$$

$$Q_{A1}(MP_{\beta}) + Q_{A1}(\mathcal{L}) - Q_{A2}(MP_{\beta}) - Q_{A2}(L) > Q_{A1}(MP_{\beta}) - Q_{A2}(MP_{\beta})$$

$$Q_{A1}(\mathcal{L}) - Q_{A2}(L) > 0$$

$$Q_{A1}(\mathcal{L}) > Q_{A2}(L)$$

$$Q_{A1}/Q_{A2} > L/\mathcal{L}$$

Case 3: Individual price of A rises; L is positive; \mathcal{L} is negative

In this case, the bundle fails the attribution test with respect to the new price, but not the price maintained before bundling. If the strategy is to be profitable, the total profit lost on standalone sales can be regained through increased margin; it need not result in the expanded production of A.

Following the same process used in case 2, such a firm must increase output if the following holds:

$$Q_{A1}(\mathcal{L}) > Q_{A2}(L)$$

Given that the left-hand side is now negative, this condition cannot possibly be met, as the right-hand side is positive. Hence, increased output is never a necessary condition for this sort of bundling to be profitable.

The conditions given in these three cases describe the circumstances under which a firm must increase output in order for its bundling strategy to be profitable. They do not imply that a firm who does not meet the relevant condition cannot increase output. Rather, they tell us that if a firm meets one of these conditions and has not increased total output of A, then the bundling strategy is not profitable without regard to its affect on rivals. Thus, if a firm is to benefit from the decision, they must capitalize on the foreclosure of rivals.

Another implication is that if firms are assumed equally efficient, the attribution test can be defined in terms of new variables: the marginal or per-unit profitability of A, and that of the bundle, β . This is significant because, unlike prevailing definitions of the attribution test, this ensures proper adjustments for changes in cost that result from scope economies or joint costs.

Appendix iii: Improving the attribution test

The two prevailing accounts of the attribution test are mathematically identical (see appendix i) when there are no joint costs. However, the prevailing accounts produce incorrect conclusions in situations involving scope economies, or joint costs.

Recall the following scenario, which is given in the text:

Colds are treated with medicines Alpha for congestion and Beta for coughs. Firm 1 has a dominant position in medicine Alpha which costs \$5 to manufacture. The process of inserting Alpha into a capsule and packaging it ("encapsulating") costs \$4. Firm 1 sells encapsulated Alpha for \$12, 3\$ above its costs. Firm 1 also has a less substantial position in a multi-firm market for Beta. Its Beta manufacturing costs are \$3 and it sells encapsulated Beta for \$8, which includes a \$1 markup. Finally, the firm offers an Alpha/Beta combination for \$16. Because it costs no more to encapsulate two drugs than to encapsulate one, it earns exactly the same markup as it would earn on separate sales, but incurs the encapsulating costs only once.

As discussed in the text, this strategy ought to be granted safe harbor because it cannot exclude a rival who is equally efficient and observes the same joint cost savings.

We can then apply the two prevailing (and equivalent) accounts of the attribution test, showing that both draw inappropriate conclusions. We will let A and B denote encapsulated alpha and beta respectively. β will denote the bundled encapsulation of alpha and beta.

From appendix i, account 1 can be given as:

$$\text{Test Outcome} = \begin{cases} \text{Pass if } P(\mathbf{B}) - d \geq MC(\mathbf{B}) \\ \text{Fail if } P(\mathbf{B}) - d < MC(\mathbf{B}) \end{cases}$$

In our case $P(\mathbf{B}) = 8$, $d = 4$, and $MC(\mathbf{B}) = 7$. Hence, the bundle fails

the attribution test, account 1.

As shown in appendix i, account 2 can be given as:

$$\text{Test Outcome} = \begin{cases} \text{Pass if } P(\beta) - P(A) \geq MC(B) \\ \text{Fail if } P(\beta) - P(A) < MC(B) \end{cases}$$

In our case $P(\beta) = 16$, $P(A) = 12$, and $MC(B) = 7$. Hence, the bundle fails the attribution test, account 2.

The problem with these tests is that they do not properly account for differences in the *marginal* costs faced by firms. To be sure, the marginal cost of producing B is less than the marginal cost of adding B to an already encapsulated A, as the latter does not include the joint cost that must be faced by the former. However, this difference is ignored by the prevailing versions of the attribution test.

Now consider the alternative test we offer in the text:

To prove that a bundled discount was exclusionary or predatory the plaintiff must establish that the incremental price of the bundle (that is, the difference between the defendant's standalone price of A and its price of A + B) is less than the incremental cost that the seller incurs when adding the B good to the bundle

Explicitly, this can be given as:

$$\text{Test Outcome} = \begin{cases} \text{Pass if } P(\beta) - P(A) \geq MC(\beta) - MC(A) \\ \text{Fail if } P(\beta) - P(A) < MC(\beta) - MC(A) \end{cases}$$

In our case, $P(\beta) = 16$, $P(A) = 12$, $MC(\beta) = 12$, and $MC(A) = 9$. Hence, the bundle passes the attribution test. Unlike the previous accounts of the attribution test, this new test effectively provides safe harbor.

To simplify, this test can be given in terms of marginal or per-unit profitability, as they were defined earlier:

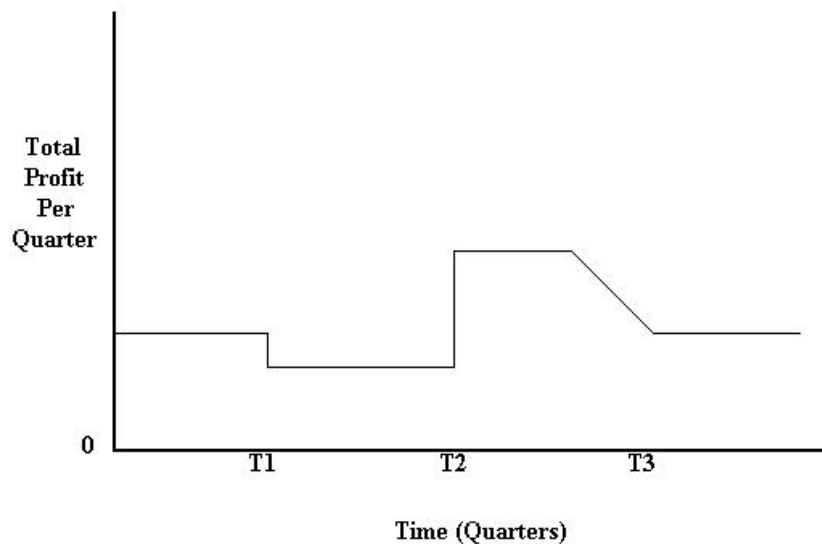
$$\text{Test Outcome} = \begin{cases} \text{Pass if } MP_{\beta} \geq MP_A \\ \text{Fail if } MP_{\beta} < MP_A \end{cases}$$

This new version of the attribution test works equally well in situations that do not involve scope economies or joint costs.

Appendix iv: Earning profits through bundling

Case 1: Profits resulting from exclusion

If a bundling strategy observes reduced profits in the short run, it must observe long run recoupment in order to be profitable. This situation is analogous to standard cases of price predation. The baseline here, however, is not cost, but the profits earned before bundling. After all, no pricing decision is *prima facie* rational unless it raises *total* profits above their previous levels.



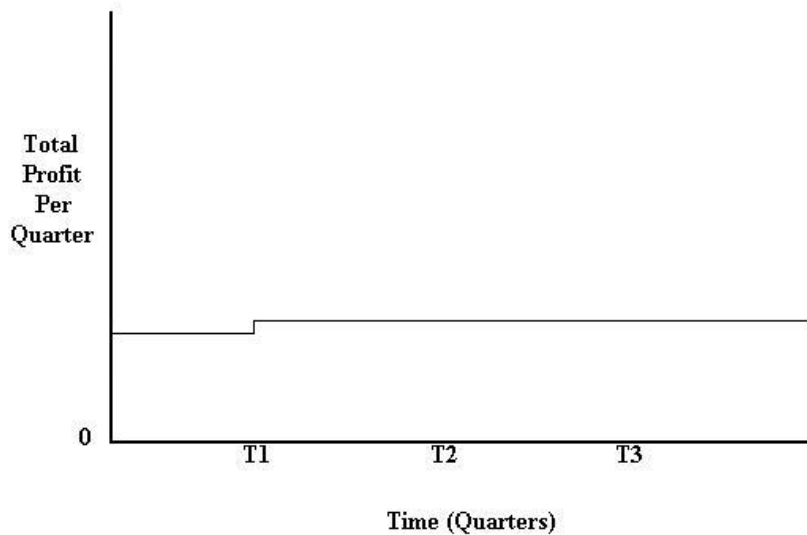
In this example, the firm begins by offering only the monopoly good. At T1, the firm begins offering a bundle that fails the attribution test. Clearly, any increased sales that result do not outweigh the reduced profitability of the bundle, as the firm observes reduced profits. However, rivals are foreclosed at time T2. At this time, the firm can begin charging artificially high prices. Hence profit per quarter rises well above the level observed before bundling. As new rivals begin entering the market, profit per quarter begins to decline. At T3, the monopolist faces profits similar to those observed before bundling, indicating it still has some price setting power over the secondary good (or that it simply stopped selling bundles).

In order for an exclusion-dependent strategy to be rational, a firm must believe that the increased profits observed from T2 to T3

outweigh the reduced profits observed from T1 to T2.

Case 2: Profits resulting from price discrimination

If a bundling strategy is profitable purely as a method of price discrimination, its payoff is observed immediately. There is no need for long run recoupment. Rather, the discount and the recoupment occur simultaneously.



Again, the firm begins offering the bundle at T1. Because it attracts so many new customers, the increased output outweighs the reduced margin. The increased profits are observed immediately, and remain consistent throughout. In this case, the profitability of the bundling strategy is not dependent on the foreclosure. However, this does not mean rivals cannot be foreclosed. What is important is that the firm in question would pursue this strategy whether or not it is likely to result in exclusion.