SAFE HARBORS FOR QUANTITY DISCOUNTS AND BUNDLING

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INTRODUCTION

The courts and analysts are struggling to articulate safe harbors for a wide variety of common business pricing practices in which either a single product purchased in bulk is sold at a discount or multiple products are bundled together and sold at a different price than separate purchase of each item would produce. The phenomenon of tying, which conditions the sale of one product on the purchase of another, is closely related to bundling. Analysis of tying relies on the same economics as that used to analyze bundling,[1] though the law seems to make a distinction between the two. The need for safe harbors for common business pricing practices arises from the recognition that these practices often are motivated by efficiency and that a broad antitrust attack on them could cause more harm than good. In this essay, we analyze and propose safe harbors for quantity discounts and bundled products. A forthcoming paper discusses many of these issues in greater detail.[2] In our consideration of bundling, we specifically discuss the deficiencies of the safe harbor proposed by the Antitrust Modernization Commission ("AMC") in 2007.[3] We begin with an explanation of the central economic issue that motivates antitrust concern with pricing practices such as quantity discounts and bundling.

I. CENTRAL ECONOMIC ISSUE

The central antitrust concern with various pricing practices is their potential to exclude or disadvantage rivals, thereby allowing a firm to exercise market power and harm consumers. An antitrust claim involving exclusion

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[1] *See, e.g.*, Dennis W. Carlton & Michael Waldman, *Tying, in* ISSUES IN COMPETITION LAW AND POLICY (Wayne D. Collins ed., forthcoming 2008).

[2] Dennis W. Carlton, Patrick Greenlee & Michael Waldman, *Assessing the Anticompetition Effects of Multiproduct Pricing*, 53 ANTITRUST BULL. (forthcoming 2008).

[3] ANTITRUST MODERNIZATION COMM'N, REPORT AND RECOMMENDATIONS OF THE ANTITRUST MODERNIZATION COMMISSION 98-100 (2007), *available at* http://govinfo.library.unt.edu/amc/report_recommendation/amc_final_report.pdf. One of the authors of this essay, Dennis Carlton, was a member of the AMC.

accordingly requires harm to a rival, harm to consumers, and a linkage between the harm to the rival and the harm to consumers.[4] For example, a monopolist who switches from simple monopoly pricing to discriminatory pricing may harm consumers, but because no rival is affected the monopolist should not be (and is not) regarded as violating the antitrust laws.[5] This reasoning suggests that all mechanisms of exclusionary pricing that do not alter a rival's costs of operating or impair his ability to exist should not trigger an antitrust violation. In particular, this means that if there are no such effects, as for example when the production technology is characterized by constant returns to scale, then there can be no anticompetitive harm.[6] This does not mean that the rival's business is unaffected or that consumers are unaffected by the new pricing policy. Instead, this is a simple recognition that the mechanism of harm, if there is one, has nothing to do with excluding a rival. The rival's constraining effect on the monopolist's pricing is by assumption unchanged. Therefore, the focus of an economist's search for antitrust harm should be primarily, if not exclusively, on cases where a rival is so deprived of scale that it either goes out of business or suffers significant impairment of its competitive influence, enabling the firm practicing the price policy to increase its market power on a product.[7] Notice how similar this description is to the standard description of price predation.[8] Indeed, it is this similarity that motivates the AMC test for bundling, but as we shall see, the test has significant drawbacks.

II. SINGLE PRODUCT PRICING

To establish the relevant analytical framework for assessing claims of exclusionary pricing behavior, consider the standard story of price preda-

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4 *See, e.g.*, Dennis W. Carlton, *A General Analysis of Exclusionary Conduct and Refusal to Deal – Why* Aspen *and* Kodak *are Misguided*, 68 ANTITRUST L.J. 659, 663 (2001) ("In antitrust cases involving exclusivity, the courts weigh the harm to competition against any benefits to judge whether the exclusivity helps or harms consumers.").

5 *See* Dennis W. Carlton & Ken Heyer, *Appropriate Antitrust Policy Towards Single-Firm Conduct* 5-7 (Econ. Analysis Group, Working Paper No. EAG 08-2, 2008), *available at* http://www.usdoj.gov/atr/public/eag/231610.pdf.

6 One subtlety arises when there are costs that a consumer must bear such as switching costs. The presence of switching costs is a deviation from the assumption of constant returns to scale (taking into account both consumer and producer costs). For an analysis of this case, see Dennis W. Carlton & Michael Waldman, *Tying, Upgrades, and Switching Costs in Durable-Goods Markets* 15-22 (Nat'l Bureau of Econ. Research, Working Paper No. W11407, 2005).

7 We focus in this essay on exclusion achieved through depriving producers of B of scale. There can also be scale economies in distribution in which case bundling can lead to exclusive dealing and thereby adversely affect the ability of producers of B to achieve efficient distribution with a resulting harm to competition. DENNIS W. CARLTON & JEFFREY M. PERLOFF, MODERN INDUSTRIAL ORGANIZATION 352 (4th ed. 2005).

8 *Id.* at 375.

tion. One firm lowers price below its marginal cost, drives rivals out of business, and then recoups by raising price to monopoly levels. Recognizing that antitrust attacks on aggressive price cutting could chill the competitive process, in order to find antitrust liability, courts require that: (1) the price be below the firm's cost (though how to measure cost is a subject of debate), and (2) recoupment is possible and likely.[9] The first prong for antitrust liability is something that a firm can determine, assuming it knows what cost the court plans to use. Accordingly, this requirement gives guidance to a firm in a way that a standard requiring a firm to price above its rivals' costs would not since the firm does not know its rivals' costs. In essence, this first prong assumes that pricing below a firm's own cost is so unusual that it warrants suspicion when it occurs. However, it is well recognized that, in theory, there can be above-cost predation by a very efficient firm where the price is set above the firm's costs but below the cost of its rivals.[10] In this way, the first prong fails to capture all possible situations where predation can be successful but this is considered a reasonable price to pay in light of the fear of deterring beneficial price competition.[11]

The second prong reflects the principle that with constant returns to scale rivals will always constrain price,[12] thus there can be no recoupment of lost profits by the monopolist. In other words, with no fixed costs, entry is always possible and will guarantee that there is a competitive constraint on price. The second prong also applies to situations where there can be no recoupment even if there are not constant returns to scale. With no possibility of recoupment, there is no reason to incur the initial loss associated with pricing below cost.[13]

With this discussion as background, let us consider quantity discounts and try to find the test in that area analogous to the test used by the courts in analyzing price predation. Quantity discounts are ubiquitous in practice. They can reflect efficiency savings arising from a variety of different sources, including reduced shipping costs and improved ability to forecast demand. In the absence of efficiencies, quantity discounts are a well-understood method of price discrimination in which the firm tries to extract the surplus, especially of its largest buyers.[14] The pricing schedule can be described as E(q) where the expenditure, E, depends on the quantity, q. If all goods sell for the same price, P, then E(q) = Pq. With quantity discounts, E(q) will have the property that the incremental expenditure (i.e., the increase in expenditure arising from a unit increase in q) declines as q in-

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9 Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 222, 224 (1993).

10 *See* CARLTON & PERLOFF, *supra* note 7, at 358-59.

11 *Id.* at 357.

12 Carlton & Heyer, *supra* note 5, at 15.

13 CARLTON & PERLOFF, *supra* note 7, at 357.

14 *See, e.g.*, JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 133-35 (1988); CARLTON & PERLOFF, *supra* note 7, at 336-37.

creases. Under some reasonable assumptions, one can show that the incremental expenditure from purchase of an additional unit will generally exceed marginal cost at each quantity purchased in the profit maximizing solution. Therefore, it is not generally profitable to make an additional sale to a buyer if the additional revenue does not cover marginal cost. Just as in the first prong of the more familiar price predation story, if for some quantity level the incremental expenditure is below marginal cost, it raises suspicion. But there is an important caveat to this general rule.

When there is the same price for each unit, as in the price predation story, selling below a constant marginal cost generates a loss. That is not so here. Indeed, it is sometimes the case that non-linear pricing schedules can have minor discontinuities and can violate the condition that incremental expenditure exceeds marginal cost in the sense that total expenditure falls if one buys one more unit. For example, if you buy eleven units it may cost more than buying a dozen because there is a discount for purchasing twelve. When this occurs, it is typically because a pricing scheme that gives a discount for buying a dozen items is easy to describe and so saves on transaction costs compared to a more complicated pricing scheme. The potential problem arises when such situations are so frequent and systematic that they result in shifts of volume that significantly lower a rival's profit from what it would have been under alternative pricing schemes where the incremental price always exceeds incremental costs. If this occurs, then the pricing will appear peculiar as it may be a significant deviation from profit maximizing behavior even when one accounts for the transaction cost savings created by having a simple scheme to describe pricing.[15] To the extent that these deviations are not significant, they should be ignored.[16]

The second prong of the price predation test requires that recoupment is possible and likely. A similar requirement applies to a predation story involving quantity discounts. If either the rival will not be driven out or if re-entry can occur with no penalty, then recoupment is not possible, and the claim of anticompetitive exclusionary pricing should fail.

The fact that one firm's pricing structure reduces the sales of a rival should not be sufficient to sustain an antitrust claim. The mere existence of sunk costs or scale economies of a rival is also not sufficient. It is important to understand the flaw in the following incorrect assertion: "there is a sunk cost to enter, hence there are scale economies. Depriving a rival of scale

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[15] Over what range of output should we require that incremental expenditures exceed marginal cost? That strikes us as an empirical question that will depend on the particular industry. Remember we are trying to identify behavior that is such a deviation from profit maximization that it requires additional scrutiny. A conservative approach would be to require that the total sales to each individual customer (or to the large majority of them) be profitable. This is asking whether the total expenditure received from a customer covers the incremental cost of supplying the customer.

[16] If it is unclear whether a firm passes this test, one can go on to ask whether the volume shifted away from a rival as a result of the questionable pricing is sufficient to deprive the rival of necessary scale, causing the demise (or an increase in the costs) of the rival.

will therefore raise its costs." This argument confuses average with marginal costs. As long as the rival is not driven out, the rival's marginal cost determines its competitive effect. Once incurred, a sunk cost does not affect the rival's behavior. Depriving an existing rival of scale will not necessarily reduce the rival's competitive significance as long as marginal costs are non-decreasing and the rival remains in the industry.[17]

III. BUNDLING

Bundling products together and selling the package at a price different from the sum of the prices of the products bought separately is common.[18] Just like quantity discounts, bundling can be efficient and can also be a method of price discrimination. *Cascade Health Solutions v. Peacehealth*[19] and *LePage's Inc. v. 3M*[20] have analyzed the issue of exclusionary bundling and have raised an interesting question. Under what circumstances can bundling be used to harm competition and thereby harm consumers?

The AMC has addressed the issue of which test to use to determine whether bundled pricing is objectionable.[21] This test asks three questions. First, is pricing below cost when discounts are all allocated to the competitive good?[22] Second, is recoupment possible?[23] Third, is there an anticompetitive harm?[24] If the answer to any of these questions is "no", then the pricing falls within the AMC safe harbor and is not objectionable.[25] Pricing is objectionable only if the answer to each and every question is "yes."

Imagine the following situation. The monopolist of A charges $10. All firms have a constant marginal cost of $5 for producing B, and B is sold competitively at $5. The monopolist practices price predation on B by charging a below-cost price of $4, drives all rivals out of business and then prices B at $6. No firms reenter to produce B. In this case, the monopolist is guilty of price predation.[26]

Now consider the following. Suppose that each customer who wants B also wants A. Instead of selling B at $4 and driving out rival sellers of B, the monopolist bundles together products A and B and sells them for $14,

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17 Carlton & Heyer, *supra* note 5, at 15. If the rival's investments in, for example, new products or new techniques is adversely affected, then there can be an anticompetitive harm.

18 ANTITRUST MODERNIZATION COMM'N, *supra* note 3, at 95.

19 502 F.3d. 895 (9th Cir. 2007).

20 324 F.3d. 141 (3d Cir. 2003).

21 ANTITRUST MODERNIZATION COMM'N, *supra* note 3, at 98-100.

22 *Id.* at 98.

23 *Id.*

24 *Id.*

25 *Id.* at 99.

26 The theoretical difficulties with this story are well known but we ignore them here to make our point.

and sells A separately for $10. The effect is similar to selling B for $4, as this pricing strategy will drive out rivals, eventually allowing the price for the bundle to rise to $16. Under the first component of the AMC test for a safe harbor, which is analogous to the first prong of the price predation test, one would assign the "discount" (comprised of $10 + $5 - $14, or $1) to the $5 price of B and compare the "net" price of B ($5 - $1) to B's marginal cost of $5. (The "net" price of B is more directly calculated as $14 - $10 = $4.) [27] Since the "net" price of $4 fails to cover marginal cost, the pricing fails to fall into the AMC safe harbor.

In the context of the simplified predation example just given, the AMC test does make sense. However, as explained in Carlton's separate AMC statement, it is not true that a calculation, such as that contained in the first component of the AMC test, necessarily reveals pricing so aberrational from profit maximization that it requires further inquiry.[28] This is a major difference with the first prong of the standard test for predation.

The reason why pricing that fails the AMC test can be perfectly rational absent exclusionary conduct has to do with price discrimination.[29] It is well known[30] that bundling can be a profitable method to separate consumers into two groups, those who really want A alone and those who do not. This separation can allow the firm to use bundled pricing to extract additional value from consumers and thereby increase the firm's profits. The AMC test ignores this rationale for bundling and accordingly non-exclusionary profit-maximizing pricing can be condemned by the first component of the AMC test.[31]

To see how bundling can be used to price discriminate, consider the situation of two consumers: one consumer is willing to pay $15 for A but places no value on B, while another consumer is willing to pay $11 for A and $6 for B. Suppose B is sold competitively for $5, the constant marginal cost of producing B. The monopolist of A will charge $11 for A when he sells only A and will sell 2 units. From these sales he will earn $22, if we assume for simplicity that there are no costs incurred in the production of A. With (mixed) bundling, the monopolist of A will charge $15 for A alone

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27 An alternative would be to look at whether the price of the bundle exceeds the marginal cost of the bundle. This test does not deal as precisely with the predation story presumably that underlies the AMC test in which the predation is in Product B. It is likely an easier standard to pass than the first prong of the AMC test.

28 ANTITRUST MODERNIZATION COMM'N, *supra* note 3, at 398-99.

29 *Id.*

30 CARLTON & PERLOFF, *supra* note 7, at 322-23.

31 The AMC test contains an assumption that in the absence of the bundle price of $14, the price of A remains at $10. This was true in the predation example given earlier. But, it is quite likely that in the absence of the bundle, the price of A will fall when bundling is used as a method to price discriminate, as the next example shows.

and $16 for the bundle (A and B) and earn $26 ($15 + $16 - $5).[32] This pricing fails the AMC safe harbor test (the discount is calculated as $15 + $5 - $16 = $4, so the net price of B is $1, which is well below B's marginal cost). Each consumer will buy from the monopolist, and no firm that sells only B will exist. Yet there is no competitive harm to consumers of B since they continue to benefit from the competitive constraint on the price of B of $5 imposed by potential producers of B.[33] Indeed, suppose that there are many consumers who value B alone at $5 and place no value on A. They would continue to be served by producers solely of B. No exclusion of rivals occurs, yet the bundling fails the AMC safe harbor test.

The second prong of the AMC safe harbor test is recoupment.[34] The AMC test asks whether the price of B could eventually rise, just as in the price predation story, when the pricing scheme passes the first prong of the predation test ("is price below cost?") and after the rival's competitive significance has been impaired.[35] This makes perfect sense in terms of the context of the standard story of price predation in a dynamic setting. The court in *Cascade Health Solutions v. PeaceHealth* dismissed this prong by claiming that there can be "simultaneous" recoupment.[36] The court cites Nalebuff,[37] who uses a static model, while the AMC clearly has a dynamic setting in mind. Nalebuff explains that if a firm can credibly commit to charge a high stand-alone price for the monopolized product, it can induce consumers to purchase the bundle at a price that covers its cost so that there is no need for the firm to sacrifice profits even if it practices predation. That may be true but, as we have argued, the key issue is whether the price of B can ultimately be elevated above the competitive level as a result of the competitive impairment of the rival.

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32 At $16, the consumer who values both A and B buys the bundle and enjoys $1 worth of surplus. If the bundle were priced at $17, which generates zero surplus for the consumer, the consumer would forego the purchase of the bundle and instead buy B for $5 and enjoy the surplus of $1. The ability of the consumer to buy B at $5 guarantees that his surplus cannot fall below $1.

33 The consumer who values A at $15 is worse off as a result of the bundling, but not as a result of the elimination of producers of B.

34 The third prong of the AMC test requires competitive harm. The AMC test condemns the pricing only if all three prongs are satisfied. This third prong presumably prevents the full AMC test from making an error. But as the court notes in *Cascade Health Solutions v. PeaceHealth*, 502 F.3d 895, 915 (9th Cir. 2007), it is unclear what the point of a safe harbor test is if it requires a full blown analysis of competitive effects.

35 In addressing recoupment, the logic of the AMC test would seem to require that recoupment in Product B occur. However, the prong of the AMC test dealing with recoupment focuses on the entire bundle. For some justifications, see Jonathan M. Jacobson, *Exploring the Antitrust Modernization Commission's Proposed Test for Bundled Pricing*, 21 ANTITRUST L.J. 23, 26 (2007).

36 *PeaceHealth*, 502 F.3d at 921.

37 *Id.* at 906 (citing Barry Nalebuff, *Exclusionary Bundling*, 50 ANTITRUST BULL. 321, 321 (2005)).

If one accepts the proposition that the antitrust laws should not prevent price discrimination,[38] then an alternative (or perhaps complement) to the AMC test is the following question: are consumers of B who do not consume A made worse off because the bundling excludes independent producers of B?[39] This test has the virtue that it requires exclusion of rivals *and* consumer harm. It also asks a more focused question than a general rule of reason analysis as to whether or not there is competitive harm. It means that a single product firm (producing just B) that can stay in business to serve customers for B without suffering any significant marginal cost elevation should generally not prevail in an antitrust claim of bundling against a multi-product rival. The reason to focus on customers who demand only B is because the extraction of the consumer surplus of customers who also consume A is a form of price discrimination that, as previously explained, should be immune from antitrust challenge.

CONCLUSION

Various common pricing practices have been the focus of recent antitrust attention. Quantity discounts and bundled pricing (including tie-in sales) can work to benefit consumers by improving efficiency or can work as a method of price discrimination. If used for these purposes, the antitrust laws should not be used to attack them. These pricing mechanisms can also harm competition by depriving rivals of the necessary scale to succeed, forcing their demise and creating market power. The antitrust laws should be used to deter this type of behavior.

Safe harbors based on standard tests for predatory pricing can be adapted for quantity-based discounts but not for bundling. The standard test for predatory pricing consists of two prongs, each of which answers a well-posed question. First, is price below cost? Second, will rivals be driven permanently out of business or permanently impaired, so that the predatory firm can raise price and more than recoup its losses from pricing below cost?

It is relatively straightforward to adapt the two prongs of the standard test for predation to the use of quantity discounts. The first prong of the test becomes: is an incremental expenditure ever below cost and, if so, is the phenomenon sufficiently systematic that it represents a significant deviation from profit maximization once transaction costs are taken into account? The

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38 *See* Carlton & Heyer, *supra* note 5, at 10.

39 In contrast, Greenlee et al. propose tests for bundling in which they examine lower consumer welfare arising from price discrimination. *See* Patrick Greenlee, David Reitman & David Sibley, *An Antitrust Analysis of Bundled Loyalty Discounts* 18-19 (Econ. Analysis Group, Working Paper No. EAG 04-13, 2004), *available at* http://www.stern.nyu.edu/networks/phdcourse/greenlee_reitman_sibley_Bundling_Royalty_Discounts.pdf.

second prong asks the same question as the standard test as to whether recoupment is possible and likely.

For bundled pricing, it is not possible to modify simply the standard test for predation and the AMC's attempt to do so contains some flaws.[40] The first prong of the AMC safe harbor test can falsely condemn non-exclusionary profit maximizing pricing behavior. It is the first prong of the AMC test that has received court acceptance and which will likely remain its important influence. No test is perfect but, as Carlton's separate AMC statement explains, the first prong of the AMC test will fail to immunize lots of pricing that does not raise an antitrust concern.[41] Therefore, we propose an alternative test as either a substitute or as an additional safe harbor. An alternative test is to focus on whether allegedly harmed rivals survive and can serve their customers as efficiently as they could in the absence of the bundled pricing. If so, the defendant should prevail.

40 These flaws were generally understood by the AMC. *See generally* Jacobson, *supra* note 35.

41 ANTITRUST MODERNIZATION COMM'N, *supra* note 3, at 398-99.