Bundled Rebates as Exclusion, not Predation

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Introduction and summary

Around the world, monopolization or "abuse of dominance" has a more controversial intellectual status compared to horizontal collusion and merger law. As monopolization law restricts the ability of firms to seek new organization forms or compete too heavily, it has long been subject to the critique that it is about protecting competitors rather than competition and consumer welfare.

The most recent set of practices to receive extensive attention internationally involves bundle rebates or fidelity rebates, in which a buyer loses discounts on volumes of purchases, sometimes over multiple product lines, if it substitutes a purchase from a rival for a purchase from the incumbent. Andrew Gavil (2006), in a recent review of antitrust law, called these "compensated exclusion" cases the major frontier of antitrust analysis. Major cases reviewed below include *SmithKline v. Eli Lilly* (1978), *Ortho Diagnostic Systems v. Abbott Laboratories* (1996), *Concord Boat* (2000), *LePage's v. 3M* (2003), and, in the one instance of a case brought by a public competition enforcement agency, *Commissioner of Competition v. Canada Pipe* (2006). An indicator

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of uncertainty regarding these practices is that the US Department of Justice and Federal Trade Commission advised the U.S. Supreme Court not to take the LePage's case, because a definitive opinion would be "premature."

Recent literature has analyzed the effects of bundles in a competition policy context (Kobayashi, 2005). Nalebuff (2004) argues that bundling is exclusionary, but in his model, both consumer and total welfare increase in all plausible equilibria. Greenlee, et. al. (2004) show that bundling can allow a monopolist to extract consumer surplus through the equivalent of a two-part tariff, potentially reducing consumer welfare. Ordover and Shaffer (2006) have a model in which loyalty rebates serve as a predatory tactic, driven by asymmetry in access to capital.

These analyses miss that in the leading cases, the rebate goes not to a final consumer, but a complement supplier, e.g., a distributor or retailer. Models based on end users miss the possibility that the purpose is to eliminate competition in the complement market. As Ordover and Panzar (1982) and Katz (1997) have shown, intermediate good markets, where each buyer's demand depends on the price paid by rivals, means that they are not proxies for end users. The ability to exclude from X requires not market power in X, but market power over an input or complement X suppliers need. However, most legal tests for bundling retain the perspective that the tactic is, instead, akin to predation. Examples include requirements that some incremental price of the bundle be below some incremental or marginal cost to be illegal. Strict cost tests may be appropriate for predation cases, to prevent over-deterrence of desirable price-cutting. But they are inappropriate when the effect arises from reductions of competition in a complement.

These considerations suggest two tests for whether an exclusionary bundle rebate is anticompetitive. First, we ask how much of a relevant complement market is covered by the bundle rebate. This does not presume that bundling involves rent extraction (Greenlee, et. al., 2006) or makes output commitments credible (Whinston, 1990). It is equivalent to asking whether a merger among the complement providers would be problematic. Standard market definitions and entry response assessments are applicable. For example, if the practice involves discounts to distributors, rivals cannot be disadvantaged if they can turn to other distributors or enter the market themselves at a cost similar to the price of distribution absent the practice.

If a significant share of a complement market is covered by the practice, we then ask how much it raises the price of obtaining the complement from those suppliers. Ascertaining what makes a bundled rebate exclusionary, and distinguishing it from price cuts, requires making some potentially tricky assessment. However, the tests for exclusionary effect do not require comparing an incremental price under a rebate to an incremental cost. Such comparisons arise when applying the second test to exclusive dealing contracts. In compensating a complement supplier for breach, a rival ends up competing against the monopolist's short-run marginal cost. Such a standard retains the shortcomings of the "efficient component pricing rule" (Baumol and Sidak, 1994, critiqued by Economides and White, 1995).

Bundling, rebates, and other practices may be efficient solutions to agency problems. Competitive harm arises only to the degree to which they cover a complement market. This invites a merger-like approach: Upon a finding of harm, allow the monopolist to continue the practice but only below a sufficient scale, e.g., leaving some percentage of distribution capacity available to rivals so as not to drive up its price.

The paper proceeds as follows. Following this summary, the paper contains a slightly more detailed critique of bundling models. It then summarizes the "complement market monopolization" framework for examining exclusion, emphasizing error cost considerations distinguishing it from predation. This analysis leads to the bundling tests, and the relevance of existence models for exclusionary equilibria (Rasmusen, et. al., 1991; Erutku, 2006). Efficiency considerations invite assessment of share-based rather than all-or-nothing remedies.

Assessing the exclusionary effect of a bundle rebate or other practice is difficult; both the margin of competition and the relevant market are crucial. A question we begin to explore is whether capacity constraints can resale price maintenance harmful, not because it reduces pricing discretion, but because it may tie up the supply of retailer effort. After brief assessments of the shortcomings of "profit sacrifice" and "equally efficient competitor exclusion" tests in rebate cases, we show that marginal price-cost comparisons play a role only if the harm is equivalent to that from exclusive dealing contracts. We conclude with lessons monopolization law overall.

Prior perspectives

Monopolization controversy

Bundle rebate cases, and bundling cases more generally, are controversial largely because Section 2 monopolization cases themselves have long been controversial (Posner, 1976; Brennan, 2007). Cases falling into the other major categories of competition law, dealing with collusion and horizontal mergers, may be problematic in along some methodological or empirical dimensions. For example, Canadian and U.S. competition law differ with regard to collusion cases, in that the former lacks "*per se*" or "rule of reason" categories, yet requires a merger-like market definition and assessment to show that an agreement created an "undue" lessening of competition (Nozick, 2005).

With regard to mergers, cases can and do turn on difficult empirical contentions regarding market definition and an assessment of competitive effects (Armington et. al., 2006; Salinger et. al., 2006). On the methodological side, economists are reassessing the extent to which market definition (DOJ/FTC Horizontal Merger Guidelines, 1997) should define merger assessment or is a tool to be used with discretion, particularly in the analysis of unilateral effects (White, 2006). However, absent critiques grounded in libertarian philosophical commitments or exceptional confidence regarding the ability of entry to cure all ills (Dewey, 1979; Armentano, 1986; Crandall and Winston, 2003), the general theoretical premise the collusion is unwarranted or horizontal mergers can reduce competition remain relatively secure.

Monopolization cases, and single-firm conduct cases more generally, are difficult to assess. As monopoly pricing itself is not a violation of antitrust laws in the U.S. (Gellhorn and Kovacic, 1994), single-firm conduct is evaluated not against a competitive ideal, but whether it makes matters worse than under that illegal conduct. The "Chicago school" critique focused on "leveraging" contentions—whether an established monopolist could add to its market power by creating a second monopoly over a complementary good.

The core of this critique was two-fold. First, a monopolist typically prefers competition over monopoly in the complement market, as the lower prices for the complement will boost demand for its monopoly good. Hence, the foregone profits from the reduced competition in the complement created by vertical integration, vertical restraints, tied sales, or bundling would typically be outweighed by welfare-enhancing improvements in marketing, service, or other cost reductions. To the extent that the conduct facilitated price discrimination, the welfare effects were not presumptively bad and may well be positive, in enabling buyers with relatively low willingness to pay for the monopolist's good into the market.

The second, related concern is that a competitor in a market maximizes its presence relative to its competitors normally by acting in ways that enhance welfare. One might characterize the tactics as cutting costs or boosting demand. Examples of the former include organizational changes, such as vertical integration or restraints, to improve distribution and promotion, or adding capacity or investing in process innovations to reduce marginal production costs. Examples of the latter include cutting prices, improving quality, or coming up with new products. A long held skeptical concern is that laws preventing "monopolization" thus prevent competition along these many dimensions, protecting inefficient competitors and reducing consumer welfare.

For these reasons, the bar in monopolization cases is often regarded as high if not insurmountable (Brennan, 2007). As Ronald Cass (2006) has put it,

> This branch [of antitrust] has been confused since its inception, and has become a vehicle of suppressing, not promoting, competition in the marketplace—an unfortunate fact of U.S. antitrust law and even more so of European competition law.

Bundling

Claims against bundling generally, and bundled rebates in particular, have received similar critiques. Evans and Salinger (2005) have noted that bundling and tying are ubiquitous, even in competitive markets, motivated by cost savings that models critical of the practice typically fail to incorporate. In a comprehensive review of the literature, Kobayashi (2005a) concludes that "[the literature] does not provide a reliable way to gauge whether the potential for harm would outweigh any demonstrable benefits from the practice." These benefits include economies of scope, reduced transaction costs, and improved information. In many respects, the analysis of bundling is not unlike that of price discrimination, with similar ambiguities. This is not surprising, as one rationale for a close cousin of bundling, tying, is to price discriminate by metering demand.[1]

It may be useful to look in more detail at some recent prominent analyses of bundling. Perhaps the most prominent is Nalebuff (2004).[2] He presents a model in which a monopolist over one good bundles it with another, previously offered itself by a separate monopolist. Such entry depresses that stand-alone firm's profits, potentially leading to its exit. However, if one looks at any of the three plausible equilibria—the stand alone firm remains, pricing either simultaneously with or after the bundler, or the stand-alone firm exits following the bundling—both consumer welfare and total welfare increase relative to the equilibrium prior to the bundle.

The last result, welfare increases even if the stand-alone firm exits, is perhaps the most powerful, in that it suggests that welfare increases even if bundling drives the stand-alone firm out of the market. Although it follows directly from Nalebuff's cost and demand assumptions, it need not be a general result. Potentially, nonlinear demand or marginal cost, or correlations of demand across the bundled products could affect the welfare calculations. Certainly, any fixed costs of the bundler's adding the bundled product would depress the welfare gains, although on the other hand, fixed costs saved by the stand-alone firm's exit—and avoiding such costs is necessary to induce exit—would tilt the balance back in favor of bundling.

That bundling increases welfare is not surprising, however, since it represents added competition, via entry by the bundler into the stand-alone firm's formerly monopolized market. It is the case that in Nalebuff's model, entry by one firm into that stand-alone market without bundling would increase welfare even more, but only if the stand-alone firm remains in the market, in which case there is no exclusionary effect. Were his model right, a market allocation agreement between the firms to keep the bundler from bundling would be encouraged, not *per se* illegal under US antitrust law.

While static models of bundling may be limited, some analyses have identified how bundling could have some strategic implications. Whinston (1990) has shown that if a monopolist can compete to tie sales of its monopoly product to sales of a product in a more competitive market, it will price more aggressively, since sales lost in that competitive market will reduces profitable sales of the monopoly product. This aggressive pricing—essentially, a credible commitment to maintain output—can deter entry in the competitive market, leading to its monopolization as well. Carlton and Waldman (2002) formally model how tying sales of a second product could impede

[1] Bundling is usually taken to mean fixed proportion packaging of two or more goods into a single item being sold, while tying refers to a more general practice in which a firm refuses to sell good A to buyers that do not purchase all of their B from that firm, regardless of the amount.

[2] The following summarizes points and numerical results in Brennan (2005).

potential future entry into a prior monopoly. However, both of these models require special assumptions that, following the assessments of Evans/Salinger and Kobayshi above, render them inadequate as general bases for concern. Brennan (2001) uses the U.S. Microsoft case to show that the requirements on market definition regarding sources of competitive advantages in entering those future markets go beyond those associated with simply acquiring control over methods of distributing the second product.

Bundled rebates

The analysis of bundled rebates and, more generally, loyalty rebates is highlights potential competitive problems, through switching costs created by the potential loss a buyer suffers by foregoing the discount when turning to a competitor. On loyalty discounts, Kolay, Ordover, and Shaffer (2004) find that they can increase welfare in ways akin to volume discounts, by facilitating price discrimination and reducing double marginalization. Greenlee and Reitman (2005) look at loyalty discounts in the single and multiple product cases. Assuming large buyers that spread a fixed level of purchases among two differentiated suppliers, they find that only one supplier will offer a discount off the spot price. They then adopt the prevailing "but for" test, claim that a discount is exclusionary only if the share requirement in the program goes beyond what competitive profit maximization would predict.

Taking a more skeptical view, Edlin and Rubinfeld (2004) critique discount bundles by academic journal publishers. The claim most relevant here is that such bundling preserves the market position of current journal publishers by forcing entrants to compete only by offering similar bundles. Leaving aside questions about market definition in academic journals—one might ask whether each is its own monopoly already, particularly from the perspective of library buyers[3]—the analysis leaves open the possibility that new journals could find it profitable to enter by soliciting competing offers from the set of publishers that offer bundle discounts to subscribing libraries. More recently, Ordover and Shaffer (2006a, 2006b) find that loyalty discounts can impede entry, but only by meeting asymmetric capital market conditions for predation, i.e., that entrants and incumbents differ in their ability to finance up front expenditures to lock-in consumers over time.

One model nominally intended to address bundled rebates is second recent static model of bundling is Greenlee, Reitman, and Sibley (2006). Along the lines of the distinction central to this paper, they focus on the exclusionary effects of bundling, in contrast to Tirole's (2005) view that tying is harmful only if predatory. This also contrasts with the dominant perspective that to analyze bundled discounts, one needs to apply a predation-like test, and ask if some incremental

[3] The economics of this two-sided market might be different if journals competed for submissions on the basis of prices charged for submissions.

price associate with purchases under the is below the incremental cost of supplying goods for those purchases, hence whether an equally efficient competitor would be excluded.[4]

Their central claim, however, is that a bundled discount over two products essentially ties the second to the first. In doing so, a monopolist over one good can extract consumer surplus by raising the price for the bundled good, if it is otherwise unable to extract the surplus through a direct volume discount or two-part tariff.[5] The effects of a bundled rebate in this case are akin to price discrimination. The authors show that consumer welfare may fall if the, following the bundle rebate, the bundler raises the price of the stand-alone product, thus hurting at least those consumers who garner little benefit from the second product. Two things about this test are notable. First, it is not based on the bundler's cost, but simply on changes in prices of the stand-alone good. Second, as Nalebuff's model perhaps inadvertently shows—in which bundling raises the stand-alone price of obtaining all of the products if the non-bundling firm exits—the test these authors recommend is may be necessary for consumers to be worse off, but it is not sufficient.

But do these models speak to the cases?

The theoretical literature on bundling and on bundled rebates more specifically has produced the variety of possibilities we have come to expect from a game-theoretic approach. In his recent comprehensive review of the literature on bundled rebates, Kobayashi (2006b) after reviewing this literature as well, concludes that the literature, while suggesting possible harms, is "sparse." Moreover,

> The incremental cost tests and the consumer welfare tests may be difficult to administer. And tests based on whether an equally efficient competitor could be excluded may condemn welfare-increasing behavior. (Kobayshi, 2006b, 147)

To see how these difficulties have revealed themselves in practice, we take a look at the leading cases. Many antitrust cases have involved tying or bundling, but a few in particular emphasize the role of bundled or loyalty discounts. Those leading cases include:

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[4] See the literature reviewed in Englert, R., "Defending the Result in LePage's v. 3M: A Response to Other Commentators," *Antitrust Bulletin* 50 (2005) 481-497.

[5] Dennis Carlton stated in a session on bundled rebates at the 2006 International Industrial Organization Conference that the central issue in bundle rebate cases is non-linear pricing. If the practice is essentially price discrimination, it should not be proscribed by antitrust. Hence, for bundling to be bad, it has to have the strategic effects akin to predation. Accordingly, if the incremental price of adding the bundled exceeds the marginal cost of the bundled good

- *SmithKline v. Eli Lilly* (1978).[6] Under what it called the "Cephalosporin Savings Plan," Lilly granted to hospitals a discount based on its purchases of five types of a particular type of antibiotic it sold and, in particular, a 3% rebate if it purchases a minimum amount of any three of the five cephalosporins. SmithKline developed a generic substitute for one of Lilly's antibiotics. It claimed that the CSP excluded it because Lilly's bundle rebate was included sales of two cephalosporins for which it held patents and was the market leader. The Third Circuit found no tie-in, because hospitals could still obtain Lilly's patented drugs if they purchased SmithKline's generic. However, the court found that SmithKline faced "three-on-one" competition, since had to cut prices on its one product to match the rebate Lilly was giving on all three. Largely on that basis, the Third Circuit upheld a lower court finding that Lilly violated Section 2. The Supreme Court declined to review the case.

- *Ortho Diagnostic Systems v. Abbott Laboratories* (1996).[7] Abbott was the sole supplier of five major tests for screening blood for viruses (each test directed at a particularly virus, e.g., hepatitis B or HIV), and offered discounts to a consortium of blood centers that used four or five of Abbott's tests. Ortho offered competitive tests for three of the five viruses. The court, responding to a petition from Abbott for summary dismissal of Orthos's complaint, found that Abbott's bundled discounts hurt Ortho, although there was some dispute regarding how much. Nevertheless, it did continue to compete profitably in the markets for these blood tests. The court, viewing bundled discounts as if they might be predatory, found that an overall average-cost test is inappropriate for evaluating the competitive significant of bundle discounts. Rather, the court's test is whether the single product supplier can compete profitably even if it has to cut the price of its lone product by the discount the incumbent applies across the entire bundle. The court found that because Ortho remained profitable and in the market an equally or more efficient competitor had not been excluded, and thus that Abbott's discounts were "legitimately competitive."

- *Concord Boat v. Brunswick* (2000).[8] Starting in the mid-1980s, Brunswick, the leading supplier of boat engines, instituted a loyalty discount program in which boat builders received up to a 3% discount if they purchased 80% of their engines from Brunswick. Brunswick also acquired two boat builders. A group of competing boat builders, including Concord, claimed that Brunswick's pricing and acquisitions had allowed it to mo-

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[6] 427 F. Supp. 1089 (D.C.E.D. Penn. 1976), aff'd., 575 F.2d 1056 (3rd Circ. 1978), cert. denied 439 U.S. 838 (1978).

[7] 920 F. Supp. 455 (D.C.S.D. N.Y. 1996).

[8] 207 F.3d 1039 (8th Cir. 2000), cert. denied, 531 U.S. 979 (2000). This case is sometimes not included as a bundled rebate case, but unless all boat engines made by Brunswick were substitutes, a rebated covering engines of multiple sizes and power ranges is essentially a bundled rebate.

nopolize the relevant engine market. A jury agreed, but the court of appeals overturned the verdict. It disallowed the trial expert's claims that, essentially, Brunswick must have overcharged (despite the rebate) because it had more than a 50% market share. The court also found that Brunswick's discounts were not exclusive contracts and did not foreclose entry into the engine market. Evaluating the pricing claims as if they might be predatory, the court of appeals found that Brunswick's prices were above costs and thus legal, as the engines were not effectively one product and not bundled with any others.[9]

- *LePage's v. 3M* (2003).[10] By 1992, LePage's was supplying 88% of transparent adhesive tape sold under a private label ("store brand"), in competition with brand-name tape, the most prominent of which is 3M's Scotch tape, selling more than 90% of branded tape. Following LePage's entry, 3M offered a set of bundled rebates over a range of products, but most importantly included both Scotch tape and tape for private labels. 3M contended the rebates were above costs and legal. LePage's argued that the prices were exclusionary, but did not bring a predatory pricing claim. The court found that the rebates strongly affected LePage's, as they were spread across six of 3M's products. The size of the rebates to Sam's Club and K-Mart were on the order of 40-65% of LePage's revenues. The court also rejected 3M's claims that the rebates were not tantamount to exclusive dealing because there was no contractual exclusivity. The court found that 3M foreclosed LePage's access to large volume buyers and thus "impeded LePage's ability to compete," hurting consumers by forcing them to purchase more of the higher margin Scotch tape. A dissenting opinion makes clear that LePage's did not specifically show that 3M's rebates led to below-cost prices that an equally efficient competitor could not match.

LePage's is of particular note because the Supreme Court declined review, following the recommendations in an *amicus curiae* brief filed by the Department of Justice and Federal Trade Commission.[11] Since "neither [the court of appeals] nor other courts have definitively resolved what legal principles and economic analyses should control" and "the issues here [bundled rebates] are novel and difficult," the agencies argued, a Supreme Court test for when bundled rebates are anticompetitive would be premature. The agencies acknowledged that the courts in *SmithKline* and *Ortho* had rejected a direct test based on comparing post-rebate prices to cost, but that it would be better to allow the case law to see how alternative standards might perform rather than make a definitive ruling based solely on the limited facts in *LePage's*.

[9] One might ask whether all boat engines are substitutes. If not, Brunswick's practice did, in effect, involve bundling of separate products.

[10] 324 F.3d 141 (3d Cir. Pa., 2003), cert. denied 124 S. Ct. 2932 (2004). For extensive discussions of economic and legal issues in this case, see Rubinfeld (2005) and Englert (2005).

[11] Brief for the United States as *amicus curiae*, *3M v. LePage's*, No. 02-1865, 2002 *U.S. Briefs* 1865 (May, 2004), available at http://www.usdoj.gov/atr/cases/f203900/203900.pdf.

One more case, from outside the U.S., is worth noting, as it may be the most prominent bundled rebate case brought by a public enforcement agency rather than a private plaintiff, although in this case the rebate came with exclusivity.

- *Commissioner of Competition v. Canada Pipe* (2006).[12] The defendant here, with a dominant share of cast iron pipe in geographic markets through Canada, offered commercial distributors of cast iron drain pipes, under a "Stocking Distributor Program" (SDP), rebates of up to 20% for exclusively stocking its cast iron products. The Competition Bureau claimed such practices were an exclusionary abuse of Canada Pipe's dominance The Competition Tribunal, Canada's trial court for civil antitrust matters, ruled that the practice, while exclusive dealing by a dominant firm, had not been shown to have substantially lessened competition in relevant pipe markets. The Tribunal had found that distributors bore no switching costs, and that there had been some entry while the SDP was in place. The Federal Court of Appeal overturned the Tribunal. It found that competition need not be totally suppressed; the Bureau needs to show only that "but for" the practice, competition would be substantially greater, not simply whether the practice rendered entry impossible.[13]

The decision is not final; Canada Pipe has requested review by the Supreme Court of Canada, and following that determination the case would, if the Bureau prevails, have to be remanded to the Tribunal. Under Canadian abuse of dominance law, all relief (including from private cases) is only injunctive, so Canada Pipe bears no penalty other than litigation cost for extending the case rather than settling.

The crucial omission: Complementary market monopolization

The difficulties Kobayashi identified follow because, in a fundamental way, theories attempting to speak to the law fail, in a crucial and fundamental respect, to fit these cases. Specifically, they neglect the consequential fact that in all of these leading cases, which we review below, the buyers themselves compete in a market for a good or service complementary to the focus of the

[12] 2006 FCA 233 [2006], available at http://decisions.fca-caf.gc.ca/en/2006/2006fca233/2006fca233.html.

[13] The FCA also found that the Tribunal erred in applying an effects-based test to determine whether a practice is anticompetitive. Under Section 79(1) of the Competition Act, whether a practice is anti-competitive is a separate criterion for abuse of dominance from whether that practice substantially lessens competition. The FCA found that principles of statutory interpretation require that separate criteria have separate meanings, thus it must be possible for a practice to be anti-competitive but without substantially lessening competition. To do so, it found that whether a practice is anticompetitive depends on predatory, exclusionary, or disciplinary intent. The FCA said that evidence of "subjective intent" was too much to expect, but that one could infer intent from the "reasonably foreseeable consequences" of the practice. Defendants could counter this accusations by showing that a "valid business justification" provided reasons for the act apart from intent to harm rivals. *Canada Pipe*, *id*. at ¶73.

cases. Table 1 below illustrates:

Case	Primary market	Complement market
SmithKline v. Lilly	Antibiotics	Hospitals
Ortho v. Abbott	Blood virus screens	Blood donation centers
Concord Boat v. Brunswick	Boat engines	Boat builders
LePage's v. 3M	Private brand tape	Tape retailers
Comm. v. Canada Pipe	Cast iron drain pipe	Pipe distributors

Table 1: Bundling, rebate cases—primary and complement markets

The analysis of bundled rebates, in the economic literature and in the courts neglects the direct possibility that they effectively raise the price competitors at the margin must pay in a previously competitive market for a complement. It is the potential for effective monopolization of a complement market that makes the appropriate analysis of discounts exclusion, not predation—hence, in particular, that tests based on comparisons to incremental production costs and exclusion of only equally efficient competitors are inappropriately strict.[14] Such tests should be replaced by those asking simply if the practice raises the price rivals have to pay to obtain the retailing or other complementary services provided by those who receive the rebates.

Exclusion involves monopolizing a new market

Of the accepted viewpoints that have made monopolization or abuse of dominance law so controversial for so long, perhaps the most fundamental is the oft-repeated assertion that defining monopoly power as "the power to control prices or exclude competition." Although the usual citation for this is the 1966 case *U.S. v. Grinnell*,[15] the *Grinnell* court cited the Supreme Court's 1956 decision in *U.S. v. DuPont*,[16] otherwise familiar as the decision comprising the "Cellophane fallacy." That fallacy concerns incorrectly inferring competitive pricing from the availability of substitutes, when a monopolist would set price to the point where consumers would begin to turn to alternatives that would be poor substitutes were the monopoly product priced competitively.

[14] Spector (2005) also notes that loyalty rebates should be judged on the basis of exclusionary rather than predatory effect, but solely on the basis of whether the practice denies entrants scale economies necessary to compete. He does not directly address effects on competition in the market in which the buyers compete. Thus, he regards them as primarily "cheaper predation." This omission is perhaps striking in that the procompetitve justifications for rebates that he presents rely on addressing agency problems, which one would not face were end-users the buyers.

[15] 385 U.S. 563, 571 (1966).

[16] 351 U.S. 377, 391 (1956). The Cellophane case, in turn, cited a decade earlier decision in *American Tobacco v. U.S.*, 328 U.S. 781, 811 (1946).

That the case with the most famous economic error—inferring competitive pricing from the presence of substitutes—is also the case that equates market power with the power to exclude, may not be an accident. Certainly, for a firm to have market power, it rivals firms cannot readily enter or expand so as to give the firm the impression that it could increase profit by reducing output. The mistake is only slightly subtler, arising from a failure to be explicit about the market in which the power putatively rests. In particular, *market power in X does not give the holder the ability to exclude rivals from producing X.* This is simply because one does not use X to produce or supply X.

Barriers to entry must take place outside the market, not within it. Exclusion, or raising rivals' costs, requires power over something outside the X market that one needs to produce, distribute, market, and sell its goods or service (Brennan, 1988). The usual example might be a production input, but possibilities include distributors, retail outlets, and or suppliers of any other complement *to* X that needs to be competitively priced for the rivals *in* X to restrain an X supplier's prices. Consequently, to exclude, a firm needs to raise the explicit or implicit price of those complements. Exclusionary conduct rests not on market power in X, but whether a firm has acquired market power over a complement to X in such a way to raise those prices significantly—what one might call "complement market monopolization," or CMM (Brennan, 2007).

In many respects, this issue is addressed in monopolization cases. The conduct in "exclusion," or "foreclosure" cases typically involves tying up the market for a complement. In *U.S. v. Dentsply*,[17] the primary market was teeth for dentures, but the exclusion depended upon Dentsply's foreclosing access to the complement market in distributing teeth to dental labs. In *Canada Pipe*, the exclusionary conduct involved allegedly rewarding pipe distributors for not carrying the products of rivals. Questions of how rivals are excluded means that the complement market comes up indirectly in cases. But CMM can and should be front and center.

End user vs. intermediate makes a difference

The key idea, and that missing from the predominant legal and economic analyses, is in not seeing that exclusion cases typically rest on the cornering of a new market. This is omitted when the firms who buy a bundle and obtain the discount or rebate are treated as if they are final customers, as they are in these models. To take perhaps the three most prominent examples, Nalebuff's buyers derive utility directly from the two goods that they buy bundled or separately. Greenlee et. al. (2006) examine bundling as a tactic for extracting surplus from end users. Ordover and Shaffer (2006a) treat bundle rebates as a form of predatory pricing, in which rivals less able to sustain a price war through access to capital markets are forced to exit.

[17] 277 F. Supp. 2d 387 (D.C. Del. 2003), r'vsd and remanded, 399 F.3d 181 (3rd Circ. 2005).

For these analyses to apply to the bundling and rebate cases listed above, complement good suppliers, e.g., retailers or distributors have to be proxies for end users they ultimately serve. This may be a legitimate assumption when each retailer or distributor has a monopoly over some set of end users. Then, they may be thought of as agents of the buyers, albeit even there not perfect, unless they can appropriate the entire surplus from those final customers. However, when the firms compete, their interests diverge from those of their customers. Unlike their customers, they can enter and exit. Most fundamentally, because they compete with one another, their demands are interdependent. Because one competitor's demand for a product depends on the price they can get, the demand from one buyer depends on the prices paid by other buyers.

These differences have theoretical and practical effects. On the theory side, the interdependence of demands can lead to situations where price discrimination across buyers can lead to everyone's prices going up (Katz, 1987). Raising prices to one buyer boosts demand from a second buyer, potentially raising the profit-maximizing price that could be charged to the latter. An earlier finding illustrating the difference between competitors and buyers and final customers is in Ordover and Panzar (1982), who show that a monopolist would lose by charging a two-part tariff with marginal cost pricing, even when buyers are identical. The up-front fee, which simply extracts surplus when we are talking about end users, creates an artificial economy of scale when thinking about firms qua buyers. This affects entry and exit, leading to too few buyers operating at inefficiently large scales, to the detriment of the upstream monopolist.

A leading practical manifestation of the difference between end users and buyers who compete is in the effect on regulatory policy. At least impressionistically, a leading emphasis in regulated pricing is that the prices not be discriminatory, that they be uniform for all buyers. From a welfare perspective, this is not obvious. From an end-user perspective, monopoly price can be non-discriminatory, yet harm buyers as much or more than prices that discriminate. From the point of view of competing buyers, however, absolute input price levels are of relatively little consequence—high costs will be passed on the buyers. However, relative prices matter a great deal, as the ability of a firm to earn profits depends crucially on competitive advantage, including whether it can get inputs at prices below those paid by rivals. In some strategic situations, a small competitive disadvantage can lead to negative profits and exit; the other firm's slight relative advantage can give it a monopoly. Hence, it would not be surprising that when a regulator deals with prices for inputs, it will face much more political pressure to ensure that no one gets a competitive advantage than to set prices that maximize the welfare of final customers.

For our purposes, that intermediate or complement good markets may have properties not shared by markets where the purchasers are final consumers serves mainly to emphasize the point that one cannot simply treat buyers as agents for end users when the end users are not the direct purchasers. The fundamental point is not that the harms from exclusionary practices fit these models. Rather, it is more simple—the recognition that there is a separate market to monopolize. It is in that sense that the inquiry with bundled rebates should be whether it serves to monopolize access to a previously (more) competitive complement market. In particular, the test should not be whether a bundled rebate is akin to predation—a monopolization strategy that does rely on end users as the target.

(End user) predation, (CMM) exclusion should also thus differ in their legal treatment

In these and other examples, the analysis neglects the relatively simple and direct possibility that the practice has an anticompetitive effect by raising the price at the margin that rivals have to pay for the complement, such as retail space or wholesale distribution. As we illustrate below, the harm is akin to that of a merger in the complement market. By raising that marginal price, the eventual price of the primary product, including complementary goods and services, is greater, leading to inefficient reductions in purchases.

Importantly, such a practice at market-wide scales is directly bad. It is not like predatory pricing, where the problem is too much of an ordinarily good thing. When the allegedly anticompetitive act is desirable but for an alleged anticompetitive effect, it is important to impose stringent test to avoid excessively deterring that undesirable conduct. For this reason, it makes sense to require that a price be predatory only if it is below some appropriate measure of marginal or average variable cost, to establish that could not be a reasonable response to competition from an equally efficient competitor (Elhauge, 2003), even though prices above average variable cost reduce welfare by inducing exit of less efficient firms (Edlin, 2002).

But exclusion through complement market monopolization is justified, if at all, by countervailing efficiencies, just as we might find acceptable otherwise anticompetitive mergers or collusive agreements. Because over-deterrence is not similarly risky, it is inappropriate to apply the same kind of strict predation-like standards based on cost to exclusion cases. Requiring that there be a common such standard for exclusionary as well as predatory conduct, e.g., that it make "no business sense" apart from anticompetitive profit, makes exclusion cases too hard to bring.

Complementary market monopolization is crucial in presuming that exclusionary conduct is directly bad in a way that charging low prices is directly good. Certainly, all manner of relationships via vertical integration, exclusive dealing contracts, and other conditions on dealing are not inherently bad. They only become presumptively harmful when they reach a scale that raises the price of the complement to outsiders. Horizontal mergers are a useful reference point. Generally, horizontal acquisitions have little to no effect on market power; they likely arise to exploit potential efficiencies in production, finance, organization, or marketing—the considerations that support policies to allow capital markets to function freely. It is only when the reach a certain size, large enough within a relevant market to threaten a substantial, non-transitory price increase that the burden of proof shifts, requiring proof of efficiencies and, in the U.S., countervailing consumer benefit, before the merger would be allowed.[18]

Consequently, the desire to apply a single standard to all conduct that falls under Section 2 (Kolasky, 2005), be it exclusionary or predatory, is poor economics and law because the underlying presumptions of harm are different (Brennan, 2006b). Different presumptions on the costs of false positive and false negatives imply different screens.[19] In particular, tests for predation should not be applied to exclusionary conduct. If bundled rebates have an exclusionary effect, predation-like tests based on comparisons between the discounted price and the discounter's cost are inappropriate. To the extent that bundled rebates make the complement more expensive for rivals to obtain, they may be harmful even if those rivals who have to pay more to obtain them are less efficient than the alleged monopolist.

Illustrating the effect: How one can "think merger"

Before showing how the CMM perspective can inform analysis of bundled rebates, it may be useful to illustrate how it might work where the exclusionary effect may be more obvious—explicit exclusive dealing contracts. The following diagrams, based on the cast of characters in *LePage's*, may be helpful. Let 3M be an alleged monopolist, with LePage's as its rival. The complement market consists of the retailers who, essentially, provide 3M and LePage's with shelf space to sell their tape to customers. The "price" 3M and LePage's pay for that service is the retail margin, i.e., the difference between the retail and wholesale prices for tape. Four of the retailers, including CVS and Staples, are low cost retailers, in that the margins are low. The sector also includes inferior retailers, indicated at the bottom right, to whom tape manufacturers could turn, but obtaining lower wholesale prices for a given retail price.

Begin first with a setting in which 3M has an exclusive dealing arrangement with a single retailer, CVS, as displayed in Figure 1. In this case, LePage's access to the retailing sector is no more difficult than without the exclusive dealing arrangement. Whatever power 3M acquires

[18] Canadian merger law allows for an efficiencies defense under a "total welfare" standard, unless the distributional effects of otherwise smaller consumer losses outweigh the efficiency gains (Mathewson and Winter, 2000). For a recent argument that U.S. authorities should follow a total welfare standard, see Heyer (2006).

[19] Much of the criticism of monopolization law is based on the fallacy that because rivals are the nominal targets, that all monopolization law involves conduct consistent with competition, which also hurts rivals. Thus, either one makes such cases very hard if not impossible to bring, to prevent over-deterrence, or one adopts a populist perspective that good antitrust requires explicit rival protection. Brennan (2007) discusses this at length and proposes "complement market monopolization" as a middle ground that would apply to exclusion but not (at least directly) to predation.

over the ability to exclude LePage's was already available to CVS to exploit, e.g., by offering exclusive access unilaterally to the highest bidder.[20]

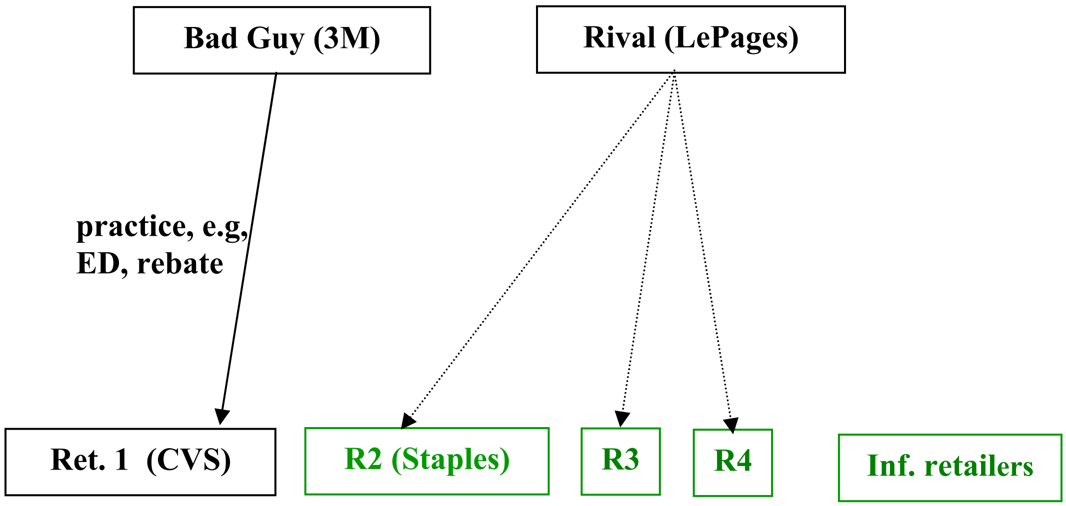

Figure 1. Single exclusive dealing.

Competitive concerns begin to arise only after the practice covers a greater portion of the retailing market. Figure 2 illustrates this, portraying exclusive dealing contracts between 3M and both Staples and CVS. As 3M expands its practice, it acquires effective control over a greater share of retailing. This, in turn, increases the likelihood that LePage's will have to pay more for retail access. The costs of trying to market all of its tape through retailers R3 and R4 may rise, and it might be forced to turn to the inferior retailers. In effect, it is as if for purposes of tape retailing, CVS and Staples merged or formed a joint venture. The horizontal aspect is what creates the exclusionary effect; 3M is just the instrument.

[20] An exception would be if CVS were a regulated monopoly while the tape market was unregulated. An exclusive relationship with 3M would allow 3M to evade the regulation and exercise CVS's market power by monopolizing the tape market. Such concerns have served as the basis for the 1984 divestiture by AT&T of its local telephone monopolies and for electricity regulations intended to ensure that transmission monopolies function independently to protect competition in generation markets. Whether such conduct would be actionable under the antitrust laws today is doubtful after the Supreme Court's 2004 decision in *Verizon v. Trinko*, 540 U.S. 398 (2004) (Brennan, 2006a).

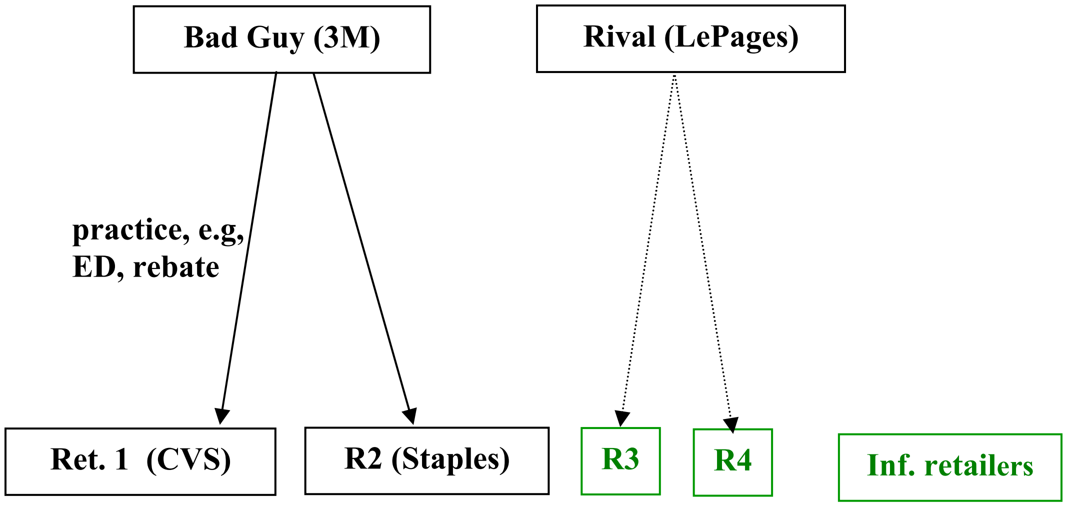

Figure 2. Increasing coverage of the complement market

If 3M were to continue to spread its exclusive contracts across the retail market, the cost of retail access to the rivals—and thus the downstream price of the product—would go up. Figure 3 illustrates this scenario. Evaluating the competitive effects requires an inquiry akin to what would be asked of a merger among the covered retailers. One would ask whether those retailers constitute a competitively meaningful share of a relevant market, i.e., whether a small but significant non-transitory increase in price (SSNIP) would bring the inferior retailers into the market. If not, and if the rival would be forced to use the inferior retailers, we could say that 3M's conduct had harmed competition. However, the harm is vertical, directly because of 3M's participation, but horizontal, because it had acquired effective control over a previously competitive complement market—retailing—and was able to increase price by a SSNIP.

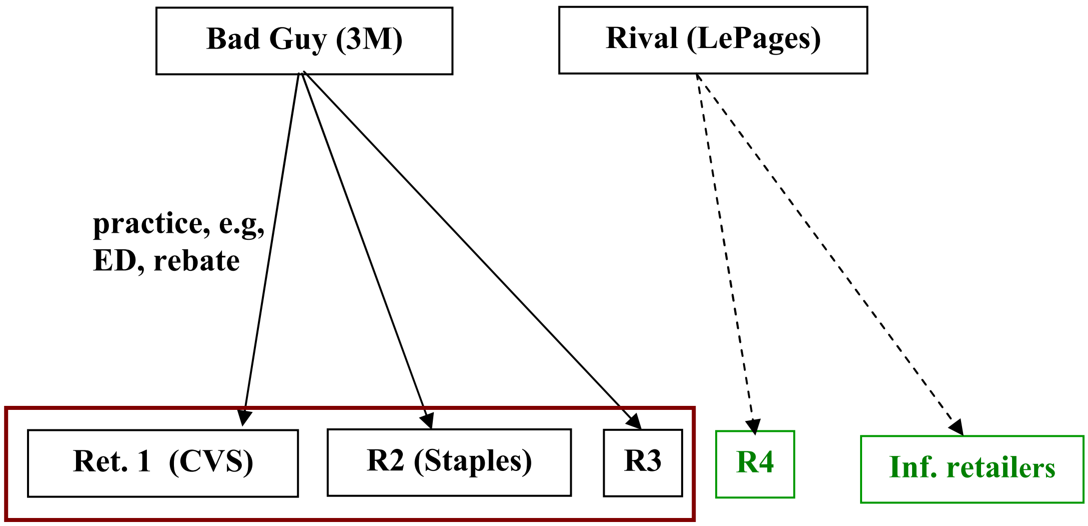

Figure 3. Creating market power through exclusive contracts

This illustration shows that the appropriate screens for analyzing exclusionary conduct are not based on a theory of predation. Rather, when CMM is the means by which market power is created, screens akin to those used for horizontal mergers (DOJ/FTC, 1997) are appropriate. The relevant market, however, is not the primary market in which 3M and LePage's participate, but the market for complement needed to compete in the primary market. One should ask what would happen if the complement providers covered by exclusive dealing or the alleged exclusionary conduct had merged. One applies SSNIP tests to delineate the relevant complement market, see what share of that market has been tied up by the practice in question, and ask whether nevertheless that complement market is easy to enter.[21] If entry into the complement market (e.g., low margin retailing) is easy, the rival (e.g., LePage's) cannot be harmed by the practice.[22]

[21] In commenting on earlier presentations of the CMM approach, Larry White has pointed out that if complement is monopolized through exclusive dealing, the complement may no longer be marketed to rivals, and thus there may be no price for which to observe a SSNIP. The effective price may be implicit, e.g., how much it costs LePage's to have to turn to inferior alternatives. Although not in the terms used here—and thus, without implying endorsement of these views—Dennis Carlton has usefully referred to this price as a "shadow price."

[22] If the primary market is difficult to enter, the exclusionary practice will have less of a competitive effect. The appropriate question for the primary market should be whether it would be significantly more competitive but for the practice. The lower are other barriers to entry apart from the monopolized complement, the more competitive the market would be, and thus the greater is the harm to competition from the practice. Requiring that the primary market perpetrator (e.g., 3M) have market power prior to instituting the practice is thus counterproductive.

Exclusion via bundled rebates: A proposed two-part test

Viewing exclusionary conduct generally as complementary market monopolization, i.e., acquiring control over a meaningful share of a relevant complement market in order to raise its price, suggests a two-question test for assessing whether a bundled rebate (or any other exclusionary practice

1. How much of a relevant complement market is covered by the bundled rebate?

A necessary and sufficient condition for an anticompetitive effect is the creation or expansion of new market power in the complement market. To do this, one needs to know whether the practice covers enough of the market to be competitively significant, as if the covered complement providers had merged. As with mergers, it is useful if not required to delineate the relevant complement market, asking how much of the complement sector (e.g., retailing or distribution) one has to cover to institute a SSNIP profitably. As with mergers, this inquiry would include an assessment of the degree to which firms would shift from other operations (e.g., retail one product instead of another) or enter de novo in response to a SSNIP.

Examples of relevant complement markets are in Table 1 above. The illustration above showed how complement market definition would apply to the 3M case, asking which retailers were in the relevant market as outlets for tape, whether inferior retailers were outside the market, and whether entry into that market is easy. One could and should ask the same questions in all of those markets listed in the table.[23]

Analysis of the primary market can be important in informing this inquiry. First and foremost, the primary market, as buyers of or sellers using the complement, provide the market and testimonial evidence of whether different complement providers are sufficiently close substitutes to mitigate concerns that a practice by one of them is monopolizing a complement market. This is no different than in any other merger case, where the marginal rates of substitution of buyers are the ultimate data for delineating markets. A second reason why buyers are important at this stage of the analysis is that they may be among likely potential entrants, e.g., through self-distribution or through retailing via brand-name stores.

2. How much does bundled rebate affect complement market prices and competition?

Having identified the relevant complement market, the next step is to see what effect the practice has on the complement price and competition. With exclusionary conduct generally, the

[23] For an example outside the bundled rebate contexts, see *U.S. v. Dentsply*, n. 17 *supra*. Although the court and plaintiffs defined the relevant market as teeth for dentures, the relevant complement market and instrument for exclusion was the set of national distributors of teeth to dental labs. If distribution of teeth is easy to enter, including by manufacturer self-distribution, or if regional distributors could supply the service, Dentsply's exclusionary conduct would have no effect (Brennan, 2007).

degree of exclusion involves impeding competition by raising the price of obtain access to a complement needed to compete. This is exactly the inquiry one would undertake were one faced with a merger of the complement providers participating in the practice, e.g., obtaining the bundled rebate.

However, because these are complement markets, the competition analysis may require assessment of additional strategic considerations. In short, a small difference in the price of a complement can have significant competitive effects downstream. Consider Bertrand competition between two suppliers of differentiated products. Assume that at competitive complement prices, the equilibrium prices of the two lead to zero profits, as the variable profits from pricing above marginal cost due to differentiation just cover fixed costs. Then, assume that one of them can raise the price that its rival would pay for a complement by a positive but arbitrarily small amount. In the illustration above, as a result of exclusive contracting by 3M with low cost retailers, LePage's has to turn to inferior retailers, but those retailers required only a minimally higher margin than those previously in the market. The rival's profits in equilibrium would become negative, and it thus would exit the market when it came time to re-incur those fixed costs. Knowing this, the firm that acquired control of the complement would be able to set the price at the monopoly level (i.e., with no competition from the rival), since the rival's post-entry equilibrium profits would be negative. In this way, a small price increase could have a significant effect on competition in the primary market.

In the case of bundled rebates, the complement price effect is, in the first instance, the increase in the price that rivals in the nominal primary market have to pay the complement providers, e.g., retailers and distributors, to overcome the discount. This consideration is not unique to bundled rebates; as we discuss in more detail below, exclusive dealing contracts have the same effect, in that the rivals would could obtain access to those complement providers if it is willing to cover the cost of the penalty for breach of the contract. In assessing these price effects, at least six major practical questions present themselves, apart from those having to do with market delineation itself:

- When is a practice exclusionary? Can a firm ever leave money on the table for complement providers?
- What it the marginal effect of the bundled rebate on the complement price?
- Should exclusive dealing be the standard for assessing the competitive harm from a bundled rebate?
- How can one distinguish exclusionary conduct (raising the prices of the complement) from predation (driving out the rival by forcing it to cut wholesale prices)?

- Are prevailing Section 2 tests—profit sacrifice, excluding only efficient competitors—useful for assessing bundled rebates?

- How should efficiencies or business justifications affect the assessment of exclusion?

We consider these questions of empirical method below. But note that the CMM perspective does not presuppose that the starting point for assessing anticompetitive exclusion is whether some incremental price of the bundle is below the costs borne by the bundler. Such costs can matter but, as we see below, only insofar as one concludes that a bundled rebate should be allowed unless the effect on price of the complement is raised as much as if the price incorporated the payment for breach of an exclusive dealing contract.

The questions

1. When is a practice exclusionary? Can a firm ever leave money on the table?

A first concern with bundled rebates or similar programs is that it raises the concern that any practice that rewards a complement provider, such as a retailer or distributor, for carrying one's product looks like it might be exclusionary. It may appear that any practice by one firm that leaves money on the table for the complement providers must raise the price of the complement by forcing rivals to match that benefit. However, before one can conclude that the practice is exclusionary, one has to ask whether matching is forced. Using distribution or retailing as an example, one would ask whether an incentive to expand one's carriage or sales of X reduces the incentive at the margin to carry or sell Y.

This is not a given. Assume, perhaps not unreasonably, that the complement in question, such as distribution or retailing, is a constant cost enterprise. Then, the "price" of distribution will just equal that cost. If one firm in the primary market elects to induce some or even all distributors or retailers to carry its product at a premium, *the marginal cost of making the complement available to the rivals will not change*. Assume that constant cost of retailing, for example, is C. Assume that the producer of X practice gives a retailer a marginal reward M for carrying X. Rival producers of Y and Z can still obtain retailing services at C. The practice does nothing to exclude them. To show that a bundled rebate or other practice has the effect of raising the price of the complement, it is necessary that the marginal cost of the complement eventually rises, and that that rising portion of the supply curve becomes relevant.[24]

[24] This is equivalent to the argument that a merger is harmful only if it restricts the supply of low cost product and would consumers to turn to more expensive or less desirable alternatives. In simple terms, if suppliers can expand supply at constant cost, consumers cannot be harmed unless all suppliers are covered by the merger and entry is impossible.

Consider volume discounts. Volume discounting is at the core of the claim by Virgin Atlantic that British Airways's programs to induce travel agents to boost sales of BA flights.[25] The key consideration in a case like this should be to ask whether redirecting some resources in the travel agent sector toward BA raised the price of travel agent resources that Virgin Atlantic and other rivals would have to pay for them. If there are no capacity constraints among travel agents, or equally efficient travel agents could easily enter, or other forms of obtaining tickets (e.g., Internet sites) are available at equally desirable terms, then the practice would have no effect. On the other hand, if there are a limited supply of travel agents, BA has contracts with all of them, and those travel agents have upward-sloping marginal cost curves (in the extreme, fixed capacity limits), then BA's practice may well force up the price that its rivals have to pay for travel agent services, even if not explicitly share-based.

A similar argument pertains to resale price maintenance (RPM). RPM is widely recognized among economists (if not among antitrust practitioners) as being largely benign, as a method for providing incentives for retailers to provide assorted point-of-sale services such as consumer instruction, product inventories, and fashion promotion. For that reason, RPM has been a practice in search of theory as to why it might be harmful. However, consideration of exclusionary conduct leads one to wonder if the solution to the mystery might be that an RPM program, by rewarding retailers who carry a product with a higher retail margin, might make it harder for rivals to get their products marketed.

RPM, in and of itself, does not seem to raise the price of providing retailing space without point-of-sale service. Discount retailers remain available. But if retailer effort is a scarce resource, or if expending such effort reduces the supply curve of retail space available to rivals, then RPM could be harmful, not because of its effect on retail prices, but because of the effect on rivals.

2. What's the margin?

The second question is to ask to what extent a bundled rebate or loyalty rebate program raises prices for a covered retailer. This question has a direct and indirect component. The direct component involves the margin of competition. If, say, one firm has a program in which suppliers receive a discount if 80% of their sales of a product are of that firm's offering, then a rival who wants to sell one more unit beyond 20% of sales would have to offer a huge discount, perhaps even having to pay the retailer to take the product—the so-called "negative price." As the courts

[25] In 1999, the European Commission ruled that BA was guilty of abuse of dominance and should pay a fine of 6.8 million euros. The Court of First Instance upheld the Commission's ruling in 2003, and the European Court of Justice rejected BA's appeal on March 15, 2007. See the Commission's press release of March 15th, 2007 at http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/07/103&format=HTML&aged=0&language=EN&guiLanguage=en.

in *SmithKline* and *Ortho* noted, this marginal cost can be even more precipitous if the rebate extends over a number of products.

This leads to the indirect component—why can't rivals compete by utilizing the practice themselves, by offering bundled rebates, loyalty rebates, or exclusive dealing contracts? An important consideration would be to ask whether a rival could overcome a rebate by getting a complement provider to switch all business to it. Were that possible, the rebate need not make obtaining complement access any more expensive.

This leads one to consider theoretical models to explain why rivals might be unable to compete. The degree to whether such models are not just helpful but necessary can be exaggerated. First, the intuition that exclusionary conduct needs to be explained is based on the incorrect assumption that targets, the complement suppliers, are victims. As the figures above illustrate, the market power created by the exclusionary conduct comes about just because the complement market is able to charge supra-competitive prices. The profits from those prices can be spread among the providers, making them better off than if the exclusionary practice was not taking place (Erutku, 2006). The CMM approach to exclusion shows that the buyers who accept the exclusionary agreements are not victims but participants who profit.[26]

A second problem is that in actual cases, one is not speculating whether exclusion could happen, but one is faced with a credible claim that a complement market has been monopolized. If so, it need not make much sense if, after seeing exclusive contracts or rebates the cover a market, to ask if they could have happened.[27] To the extent that a model is useful, Rasmusen et. al. (1991) and Erutku (2006) suffice to show that an exclusionary equilibrium is plausible.[28] The former is based on scale economies rendering it unprofitable for any single supplier to deal with a rival and, as noted above, the latter provides theoretical support for the collective profitability of CMM to the buyers supposedly abused by a monopolist's dominance.

The main purpose of existence models is to show that the practice need not be justified solely by efficiencies. For that purpose, the models cited above probably meets the need, although one may still need to ask why the rivals cannot enter the complement market themselves.[29] That is

[26] It is in this sense that the firm monopolizing the complement market through exclusionary practices might be thought of as a "cartel ringmaster," using the terminology in Krattenmaker and Salop (1986, 238).

[27] Alan Blinder has been credited with the aphorism that "an economist is someone who sees something work in practice and wonders if it works in theory."

[28] An oft-cited model for justifying concern with exclusion is Aghion and Bolton (1986). However, that model is not likely to pertain to any actual exclusionary practice. It involves an agreement by an incumbent and a single buyer to collectively exercise monopsony power against an entrant, in which the necessary upward slope to the entrant's supply curve is driven solely by uncertainty over the entrant's costs.

[29] A tension between the Rasmusen et. al. model and the CMM perspective is that for the former, in our terms no one complement provider is large enough to offer the service that the rivals need, but the usual

not to deny that rebates or exclusionary conduct may have efficiency justifications. The problem such justifications create, however, is exaggerated by the current focus on "all or nothing" remedies. Before we turn to that topic in slightly more detail, we look at whether exclusive dealing should be the standard for harm, distinguishing exclusion from predation, and the costs of predation-based tests.

3. Should exclusive dealing be the standard for competitive harm?

Tom, Balto and Averitt (2000, 615) suggest that rebate schemes should be "judged according to the same economic principles as exclusive dealing." In our terms, that would be equivalent to asking that a bundled rebate or other practice should be deemed anticompetitive only when it imposes a price effect on rivals equivalent to that in exclusive dealing contracts. Such a price effect is not infinite. In principle, the effect of exclusive dealing on the price of a complement is the added amount a rival has to pay to compensate the complement provider for breaching the contract.

A simple model illustrates the effect.[30] Let I, for "incumbent" by convention, be the alleged monopolist that has imposed an exclusive contract on complement provider R, which we will assume a retailer. E, for "entrant" also by convention, is the rival; whether it was or wasn't in the market prior to the exclusive contract is immaterial. We also suppose that R has limited capacity, and can devote that capacity to carrying either I or E's product. Either supplies enough that R could devote himself to carrying one or the other. Let P_I and P_E be the retail prices of I and E's product respectively, and let W_I and W_E be their respective wholesale prices.

Absent an exclusive contract, R carries E's product if $P_E - W_E \geq P_I - W_I$. If there is a penalty for breach, which we call B, then R will not carry E's product unless the retail margin for carrying E's product exceeds the margin for carrying I's product, plus the breach penalty, i.e.,

$$P_E - W_E \geq P_I - W_I + B$$

The key is to identify the breach penalty. If breach is efficient, it equals the profits foregone by I when R violates the contract by carrying E's product. For each unit, I's foregone profits will be the difference between its wholesale price and its short-run marginal cost ($SRMC_I$). Thus, $B = W_I - SRMC_I$, implying that for R to carry E's product,

$$P_E - W_E \geq P_I - W_I + [W_I - SRMC_I] = P_I - SRMC_I.$$

argument against entry is that the rival cannot achieve sufficient scale economies in the complement market.

[30] The model here is included in Brennan (2007).

In other words, exclusive contracts force rivals to compete not against the incumbent's wholesale price, but against its marginal cost.

Some might argue that this is not anticompetitive, since it rules out entrants who have costs exceeding the incumbent's short-run marginal cost. As noted in the introduction, this is the basis for the "efficient component pricing rule" (Baumol and Sidak, 1994). However, as some have pointed out in that context (Economides and White, 1995), this need not be the appropriate standard. First and foremost, entry by less efficient competitors can still reduce price below the monopoly or oligopoly level, increasing consumer and total welfare. Second, if the incumbent is at capacity, the short run marginal cost from lost sales may be very low, below an appropriate measure of the competitive price in the market.[31] Last and not least, courts may either estimate marginal cost too low or impose damages for breach that otherwise exceed the efficient level, impeding competition even from rivals willing to match the short run marginal cost of the incumbent.

Comparing bundled rebates to exclusive dealing contracts is notable in that it provides the one rationale where, in an exclusionary contexts, the alleged monopolist's costs may matter—as the standard in determining breach payments and thus the hurdle that rivals have to overcome when faced with exclusive dealing arrangements. The considerations above suggest that that hurdle may be too high. Analogizing bundling or exclusion more generally with merger within or monopolization of the complement market suggests that a more appropriate test for anticompetitive conduct would be to ask if the arrangement raised the price of the complement by a SSNIP comparable to that which would raise concern for mergers. This requires that we can tell when a bundled rebate is exclusionary, and when the only concern is predation.

4. How can we distinguish exclusion from predation?

Theory alone does not rule out the possibility that the price cuts at issue in a bundled rebate case are actually predatory, if harmful at all. If so, we should be careful, since price cuts are presumptively beneficial. They should not be regarded as harmful unless they meet stringent test, e.g., that they are below the incumbent's cost and profits can be recouped.

To see how to make the distinction, it is useful to see that rivals can be harmed by a bundled rebate in two ways, as indicated by the stylized characterization below. With respect to a sale of the last unit, holding other input prices constant, rivals can be harmed by a bundled rebate in two ways, as shown by

Return to rival = Final sales price – "distribution" price.

[31] This is the central concern in the debate about the propriety of critical loss measures in assessing mergers (Harris and Simons, 1989; Katz and Shapiro, 2003).

Here, "distribution" refers to the complement price; we might think of this as the margin kept by distributors, retailers, or other complement providers.

This simple equation illustrates that the first way rivals can be harmed, in terms of a reduced return, is if the distribution price rises. That is the concern addressed by exclusionary conduct, including bundled rebates, from the CMM perspective. This is presumptively bad, arising from an extension of horizontal control, suggesting an approach akin to merger evaluation. The second way rivals can be harmed is if the practice in question leads final product prices to fall. This is presumptively good, and thus showing that a practice leading to lower prices is harmful requires the high bars typical of predation tests to prevent over-deterrence.

Hence, to show that bundled rebates are exclusionary and not predatory, it is crucial to show that the bundled rebate translates into higher explicit or implicit prices for the complement but not lower downstream prices for the product. If the rivals have to pay more for the complement but the final price of the product does not change, or rises, then one can infer that the effect of the practice is exclusionary. The strongest case for exclusion will be when the higher price rivals pay for the complement raises the price at which they can compete, leading to higher final product prices.

If, on the other hand, the effect of the bundle rebate is to reduce the price of the alleged monopolizer's product, however, then it raises the possibilities that the bundled rebate is beneficial. Any anticompetitive effect would then require a theory based on predation.[32] At that point, screens based on costs, such as "profit sacrifice" or "no business sense" tests, become useful. Their purpose, as Edlin (2002), cannot be to screen out welfare increasing price reductions, since above-cost predation can drive out competitors and lead to monopoly prices. The rationale for such tests must be to prevent over-deterrence, essentially by saying that when a practice is presumptively good, such as price cutting, it will become subject to legal sanction only if the behavior is such that one would never observe it as a competitive response. It is in that sense that requiring sales at prices below short-run marginal production costs (or average variable costs as a proxy) becomes a reasonable screen.

5. Are prevailing Section 2 tests—profit sacrifice, "no business sense," or excluding only equally efficient competitors—useful for evaluating bundled rebates?

As noted above, the reason to apply strong test to predation is to avoid over-deterrence of low prices, expanding output, increasing capacity, and other actions that are generally the desirable outcomes of competition. Insisting on standards that strict for bundled rebates, however, is appropriate if such rebates have anticompetitive outcome only if they are predatory. If they reflect

[32] One of course has to watch for confounding effects, e.g., that the cut in price is the result of something other than the practice, e.g., treating the product as a loss leader.

the acquisition of sufficient power over a complement's market to raise its price, however, such screens can be counterproductive.

Requiring that an exclusionary practice make "no business sense" (which we treat here as equivalent to profit sacrifice) but for anticompetitive profits has been criticized extensively (Gavil, 2004; Jacobsen and Sher, 2006; Brennan, 2007). We focus here on only a few more salient points. Perhaps the foremost is that the requiring that a practice be unprofitable but for the exclusionary effect creates an absolute efficiency defense for that practice (Gavil, 2004; Brennan, 2007). To say that there a practice must lose money but for the anticompetitive effect means that if it would be trivially efficient, making a penny on its own, it immunizes any anticompetitive effect, no matter how large.

Requiring that bundled rebates make no economic sense, but for the exclusionary conduct, is particularly ironic in light of the history of antitrust economics. Prior to the Chicago School approach, the courts declared vertical restraints and trivial mergers illegal, largely on the grounds that they looked anticompetitive and could think of no reason for them. The Chicago School critique observed that if the practices were undertaken by a monopolist, those restraints would typically reduce the monopolist's profits, by reducing competition in the complement market. Accordingly, the profit sacrifice must indicate an efficiency that the courts and outside observers previously had not perceived. This insight led to the recognition of the importance of vertical control in addressing incentive and monitoring problems associated with product-specific effort and incomplete contracting. In short, "profit sacrifice" meant that one hadn't looked hard enough to find efficiencies, not that one had discovered anticompetitive conduct.

As we saw in the discussion of exclusive contracting, requirements that a bundled rebate pass muster if it covers short run marginal cost would exclude only equally efficient competitors, yet need not promote efficiency. In virtually every model of competitive interaction—Bertrand pricing, sequential pricing (dominant firm/competitive fringe), Cournot capacity—adding less efficient competitors to the mix reduces price. Absent strong output reallocation effects (Mankiw and Whinston, 1986), such entry increases total welfare.[33]

The limits of the utility of these tests come out when one asks if they should apply to mergers. For example, should we require that for a merger to be anticompetitive, plaintiffs have to prove that the merger would lose money but for market power effects? If so, then the efficiency defense becomes something not balanced against consumer effects, assuming a total welfare standard, but goes past it to excuse mergers with any cognizable efficiencies regardless of effects on consumers. Should mergers be allowed if they result in only the elimination of less efficient

[33] The presumption of lower prices makes it unlikely that entry by inefficient competitors should and would be banned because it would be profitable yet reduce total welfare. This, of course, could be an artifact of a consumer welfare approach to competition policy; perhaps under total welfare entry would receive additional scrutiny.

competitors? Since in all mergers one of the parties is probably marginally less efficient than the others, this would result in accepting all mergers unless plaintiffs showed that the less efficient firm was taking control of the more efficient partner. Since bundled rebates, as an instrument for acquiring control of a complement market, are akin to mergers within the complement market, the inappropriateness of these tests for mergers suggests that they are not a good idea for exclusionary practices as well.

6. How should efficiencies or business justifications affect the assessment?

Of course, bundled rebates could be efficient, for the reasons that tying or bundling generally can be (Evans and Salinger, 2005). To the extent that rebates are based on shares of sales, they can allow firms in the primary market to give complement provider the benefits of acquiring products at prices closer to marginal cost, without distorting market structure by rewarding complement providers on the basis of size alone (Warren-Boulton and Haar, 2006).[34] Such efficiencies need not imply that bundled rebates are therefore permissible. The problem with efficiencies is that the remedies in bundled rebate cases, and monopolization cases, tend to be draconian: either the practice is permissible or it is not.

The CMM approach shows that a practice, bundled rebate or exclusive dealing contract, is not bad *per se*. Rather the problem is its scale—how much of the complement market it covers. This suggests a wider range of remedies. Instead of litigating over the permissibility of the practice, plaintiffs could recommend that the practice be permitted, but restricted to a share of the complement market small enough to alleviate concern that the practice may result in raising the price of the complement.

Courts in cases based on exclusionary conduct, not just bundled rebates, should consider share-based remedies (Brennan, 2006b). In theory, the size of that target share depends on the competitive conditions in the complement market and the magnitude of the efficiencies generated by the practice. In practice, one is likely to argue for a convenient target, e.g., that the share not cover more then 35% or 50% of the complement market. Those complement providers left out may complain, but since the harm from exclusion arises from the creation of market power in the complement market, one can attribute the complaints to the loss of profit from eliminating that market power.

Share-based remedies have an important advantage. If the purpose of the practice is go generate efficiencies, a defendant will continue the practice, but at a smaller scale. If the practice was instituted solely for exclusionary purposes, however, the defendant would drop it, as restricting it to a competitively benign share of the complement market would render it ineffective as a means for raising complement prices and downstream prices of the product. As above, mergers

[34] This paper also suggests that loyalty rebates may be a device to facilitate collusive market allocation between the rebating firm and its rival.

are an instructive example. Merger remedies are share-based, where they are allowed but only up to the point where market power becomes a concern. Keeping them below high shares—where the optimal share depends on efficiencies and competitive effects—shows that, absent court error, those that proceed do so based on expected efficiencies.[35]

Recognizing the merits of share-based remedies brings out another aspect of cases against exclusion. A defendant's claim that efficiencies warrant broad complement market coverage will be more plausible the larger is the defendant's share of the primary market. This suggests that exclusion cases should be harder to bring the *larger* is the prior presence of the firm in the primary market. Exclusionary conduct is troublesome not because it reflects abuse of pre-existing market power, but because it creates market power where it would not have existed otherwise. The economic justification for legal intervention is strongest when the primary market would be competitive but for the practice at hand.[36]

Concluding observations

Most prior models of bundling and rebates, and prevailing legal doctrines, are not as helpful as they might be in assessing bundled rebates. Although one problem with leading models is that bundling increase total welfare and, in the case of Nalebuff (2004), consumer welfare, the main problem is that they are based on the erroneous implicit assumption that the buyers are either final consumers or agents on their behalf. Exclusionary conduct, be it by bundled rebates or other practices, is anticompetitive because, as all the leading rebate or discount cases illustrate, it creates new market power in the complement market in which the buyers participate. This is different from predation, in which the anticompetitive effect comes about from conduct that is seemingly beneficial—cutting prices to end users. Appropriate screens for those practices should be constructed as if the buyers had merged to increase their profits, not as if the buyers are victims of a predatory scheme imposed on them by a price-slashing monopolist.

The difference between exclusionary and predatory conduct is under-appreciated, in part because of the desire to have a single doctrine cover all forms of conduct that violate Section 2 of the Sherman Act. Rather than use predation-like screens based on price-cost comparisons, like "profit sacrifice," that are justified by a concern with over-deterrence, appropriate screens are similar to those in mergers. The first such screen is to ask if the bundled rebate cover a competi-

[35] This assumes a controversial (if not controverted) claim that the market for corporate control works sufficiently well to prevent mergers that are inefficient, even if competition in relevant markets is not reduced.

[36] This "but for" test, different from the "no business sense but for anticompetitive profits" test, was proposed by the Competition Bureau in its case against Canada Pipe and adopted by the Canadian Federal Court of Appeal. *Canada Pipe*, n. 12 *supra* at ¶¶38-44.

tively significant share of a relevant market in a complement, taking into account ease of expansion and entry (including self-provision by rivals).

The second, and harder, screen involves measuring the competitive effects. Among the empirical questions to address with respect to that screen are identifying what makes a bundled rebate or any other practice exclusionary, the relevant sales margin to ascertain the effect on the complement price, and whether breach of exclusive dealing contracts is the appropriate standard for assessing the competitive effects of a bundled rebate. The last of these does bring in cost-based tests, although not as a predation test.

This brings to the fore the problem of distinguishing exclusionary from predatory conduct, based on whether the rebates raise the price of the complement or reduce the price of the final product. It also shows that tests based on predation screens are inappropriate. Excluding only equally efficient competitors is an inappropriate screen because less efficient competitors nevertheless reduce price and can increase welfare. "Profit sacrifice" or "no business sense" tests create absolute efficiency defenses that may be appropriate for predation, but not for exclusion. Efficiencies may be important, but should not be an excuse for deciding whether all-or-nothing remedies are appropriate; courts should entertain remedies that allow a practice but, as with mergers, limit it to a share of the relevant complement market to preclude anticompetitive price increases.

The evaluation of bundled rebates is part of the assessment of a question posed by Vickers (2003): Should there be "be a gap between the thresholds … relating to abuse of dominance and to mergers"? That gap is appropriate for predatory conduct, but not for exclusionary conduct. If it is appropriate to view bundled rebates as exclusionary rather than predatory, that gap should be smaller or non-existent. The crucial question is whether bundled rebates are something that should be regarded as presumptively good, like cutting price, or not, like exclusionary contracting that forecloses access to a complement market. That question cannot be answered accurately, however, unless the role of complement market monopolization is appropriately appreciated.

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