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The Economics of Loyalty Discounts and  
Antitrust Law in the United States

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# The Economics of Loyalty Discounts and Antitrust Law in the United States

Bruce H. Kobayashi

## Abstract

This paper examines the law and economics of loyalty discounts. While there have been recent advances in the economic analysis of loyalty discounts, this literature is still relatively recent and sparse. Though some of these papers provide tests that would serve to identify either deviations from short run profit maximization or, in the case of bundled discounts, a reduction in consumer welfare or the exclusion of a hypothetically equally efficient competitor, these tests have several shortcomings. As a result, the economic literature currently does not provide a reliable way to gauge whether the potential harm from the use of loyalty discounts would outweigh any demonstrable benefits from their use.

A review of the major cases involving loyalty and other volume discounts suggests the following general observations. In the single product case, courts have consistently applied the “not easy to establish” two part test for predatory pricing set out by the Supreme Court in its Brooke Group decision. As a result, the courts have generally ruled that above-cost volume discounts, including those that use market share discounts and near exclusive thresholds, are lawful and do not violate the antitrust laws. In cases involving multimarket or bundled rebates, however, courts have not generally followed the Brooke Group Court’s presumption that above cost bundled discounts are presumptively legal. However, they have generally followed the Brooke Group Court’s focus on the actual facts or realities of the marketplace rather than on hypotheticals. Thus, while the lower courts have considered the theories and tests contained in the recent theoretical literature on loyalty discounts, they have generally refused to find liability absent sufficient proof that the conditions required by these tests apply, and that the underlying tests reflect market realities. This approach is consistent with the federal courts’ generally cautious approach to expanding Section 2 liability, and the recognition

of the underdeveloped and untested state of the academic literature.

Moreover, there are significant flaws in the two cases where courts have found use of bundled loyalty rebates to be unlawful. In *SmithKline*, the court did focus on data and concluded that an equally efficient competitor would have been excluded by the bundled discounts evaluated in the case. However, economic theory suggests that the court may have used a flawed standard, and should have instead focused on the fact that changes to the bundled rebate programs served to increase rather than decrease prices. And the court's decision in *LePage's* not only suggested use of the same flawed standard, it found liability without requiring sufficient proof that the standard even applied to the facts of the case.

## I. Introduction

This article analyzes the use of loyalty discounts by firms and their implications for antitrust enforcement in the U.S. The pricing conduct described by the term “loyalty discount” has not been precisely defined in the literature or in practice. Generally, loyalty discounts are a particular form of non-linear pricing in which the unit price of a good declines when the buyer’s purchases meet a buyer-specific minimum threshold requirement.<sup>2</sup> The use of buyer-specific thresholds differentiates loyalty discounts from traditional quantity or volume discounts, which are offered on a nondiscriminatory basis to all potential buyers. While quantity discounts and volume discounts have been extensively examined by the courts and in the economic literature, the use of loyalty discounts has been given relatively little attention.

In addition to the use of buyer-specific thresholds, other features have been used to characterize loyalty discounts.<sup>3</sup> One is the use of an all-units discount. That is, when the buyer’s purchases meet the predetermined threshold, the discount or rebate  $d$  is applied to all units. Another is the use of buyer specific thresholds that require a buyer to allocate a significant share of his total purchases to a single seller in order to obtain the discount or rebate. This threshold can be a specific volume of purchases made during a given time period (a traditional discriminatory volume discount), or can be based upon the buyer’s share of his total purchases of a defined group of products exceeding a target share (a market share discount).<sup>4</sup>

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<sup>2</sup> Non-linear pricing occurs when the buyer’s total expenditure on an item does not rise linearly with the amount purchased. See Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization*, (1990) at 459

<sup>3</sup> See Patrick Greenlee and David Reitman, *Distinguishing Competitive and Exclusionary Uses of Loyalty Discounts*, Mimeo, U.S. Dept. of Justice (December 22, 2004).

<sup>4</sup> In general, the choice of the particular form of the threshold will be determined by the relative costs and benefits associated with each type of threshold. In the absence of transactions and information costs, the form of the threshold does not matter, as any market share target could be mimicked by an appropriately set volume threshold. For example, uniform market share discounts would allow small as well as large firms to participate in the loyalty programs. However, volume based thresholds could mimic such uniform market share targets by setting lower volume based targets for smaller firms. Under uncertainty, the different thresholds imply a different set of risks for the market participants. The relative risk of a share based versus volume based targets will depend upon whether the distribution of demand across brands is more or less stable than the overall level of demand. See Patrick Greenlee and David Reitman, *Competing with Loyalty Discounts*, U.S. Department of Justice EAG Discussion Paper 04-2, (2004, revised February 4, 2005) at 6. Moreover, market share thresholds may be harder to administer if the manufacturer cannot easily monitor and track all purchases by the retailer. In contrast, volume targets simply require that the

Programs labeled “loyalty programs” are used by firms both to sell directly to end users and to sell to those who distribute and sell their products. When used by manufacturers to sell their products and services to retailers and distributors, such loyalty discounts give retailers strong incentives to sell a given firm’s product. Thus, loyalty discounts given to retailers and other distributors serve many of the same functions as other vertical control practices, such as tying and exclusive dealing.<sup>5</sup> Indeed, exclusive dealing can be thought of as the limiting case of a market share loyalty discount with the market share threshold set equal to one.

As is the case with vertical control practices generally, firms’ use of loyalty discounts have the potential to be used for both pro and anticompetitive purposes. Recent scholarship and U.S. case law have focused on whether loyalty discounts can serve as an exclusionary device that would violate Section 2 of the Sherman Act.<sup>6</sup> In addition, firms’ use of loyalty discounts in the distribution of their products has also been attacked as unlawful primary line price discrimination under the Robinson Patman Act.<sup>7</sup> In the U.S. federal courts, use of above cost loyalty discounts in the single product setting generally has been viewed as a pro-consumer form of price competition, and antitrust challenges to such programs have not been successful.<sup>8</sup> Antitrust challenges to above cost loyalty programs involving multiple markets, however, have met with greater success. In two cases, *LePage’s v 3M* and *SmithKline v Eli Lilly*, the Third Circuit Court of Appeals has upheld jury verdicts condemning the use of loyalty discounts under Section 2 of the Sherman act that involved bundled multiproduct rebates.<sup>9</sup>

At the retail level, programs called “loyalty programs” are ubiquitous. Pioneered by the airline industry, “frequent buyer” programs are now used in a wide variety of markets. Examples include grocery stores, book stores, sporting goods stores, and coffee shops. They are used by large chains and individually owned business, in competitive and concentrated industries. While such frequent shopper programs can reduce both shopping costs and marketing costs, and may benefit both firms and consumers,<sup>10</sup>

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manufacturer track his own shipments to a given retailer. See Alberto Heimler, *Pricing Below Cost and Loyalty Discounts: Are the Restrictive and If So When?*, mimeo (2005).

<sup>5</sup> See Richard A. Epstein, *Monopoly Dominance or Level Playing Field? The New Antitrust Paradox*, 72 U. Chi. L. Rev 49 (2005) (suggesting that use of bundled rebates in 3M loyalty program falls “between the cracks” of tying, predatory pricing, and exclusive dealing). See Patrick Greenlee, David Reitman & David Sibley, *An Antitrust Analysis of Bundled Loyalty Discounts*, U.S. Department of Justice, EAG.Discussion Paper EAG-04-13 (2004, revised October 2004) (suggesting analysis of bundled rebates as a form of de facto tying); Willard K. Tom, David A. Balto, & Neil W. Averitt, *Anticompetitive Aspects of Market-Share Discounts and Other Incentives to Exclusive Dealing*, 67 Antitrust L. J. 615 (2000) (analyzing market-share discounts as a form of de facto exclusive dealing); Andrew Gavil, *Exclusionary Distribution Strategies by Dominant Firms: Striking a Better Balance*, 72 Antitrust L. J. 3 (2004) (examining loyalty discounts as vertical control devices).

<sup>6</sup> 15 U.S.C. § 2.

<sup>7</sup> 15 U.S.C. §13.

<sup>8</sup> See Section IIIa, b, *infra*.

<sup>9</sup> See Section IIIc, *infra*.

<sup>10</sup> See David Bell and Rajiv Lal, *The Impact of Frequent Shopper Programs in Grocery Retailing*, Harvard Business School Review of Marketing Science Working Paper (2002).

economic analyses of such programs generally have focused on the effect use of such programs have on increasing consumer switching costs.. These analyses have shown that loyalty programs can cause consumers who would otherwise be indifferent between homogenous products to become brand loyal in order to qualify for discounts, prizes or rebates based upon their cumulative purchases. These increased switching costs make the demand for an individual firm's product more inelastic, resulting in higher equilibrium prices and lower consumer welfare.<sup>11</sup> Use of loyalty programs can also change the nature of competition and can alter the intensity of price competition.<sup>12</sup>

While these economic analyses show that loyalty programs used to sell goods and services to end users can reduce welfare, such programs generally have not raised antitrust concerns. In addition, many of the ubiquitously used programs do not use customer-specific discounts, and thus lack the primary characteristic used in this paper to define loyalty programs. For these reasons, the focus of this paper will be on firms' frequent use of volume and market share based loyalty discounts to sell their products and services to retailers and distributors, and not on programs used to sell goods and services to end users.

The organization of this article is as follows. Section II examines the academic literature on loyalty discounts. Section III examines the antitrust treatment of volume and loyalty discounts in the United States. Section IV concludes.

## II. The Law and Economics of Loyalty Discounts

### a. The Economic Literature on Loyalty Discounts

The economic literature on loyalty discounts is rather recent. As noted above, loyalty programs have been analogized as a way to engage in de facto exclusive dealing, as a way to engage in predatory foreclosure, and as a way to engage in de facto tying.<sup>13</sup> And in contrast to loyalty programs aimed at end users, loyalty discounts at the wholesale level have been successfully challenged under the antitrust laws, and have generated interest in the academic community. The primary focus of this recent literature is on the use of loyalty programs as a way to exclude competitors. Loyalty programs exclude by giving strong incentives for distributors to purchase a large share from one supplier.

To see the strong incentives generated by loyalty discounts, suppose that Firm *A* offers a price  $P_A$  if the buyer purchases  $q_T$  or fewer units during a certain time period, and price  $P_A - d_A$  on all units purchased if the buyer purchases more than  $q_T$  units during that time period. All units discounts generate strong incentives with small per-unit discounts. From the perspective of the total discount given, for a buyer purchasing  $q'$  units above

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<sup>11</sup> See, e.g., Paul Klemperer, *The Competitiveness of Markets with Switching Costs*, 18 RAND J. Econ. 138 (1987a); *Markets with Consumer Switching Costs*, 102 Q. J. Econ. 375 (1987b), Ramon Caminal and Carmen Matutes, *Endogenous Switching Costs in a Duopoly Model*, 8 Int. J. Indus. Org. 353 (1990).

<sup>12</sup> See, e.g., Byung-Do Kim, Mengze Shi, and Kannan Srinivasan, *Reward Programs and Tacit Collusion*, 20 Marketing Sci. 99 (2001), Joshua S. Gans & Stephen P. King, *Paying for Loyalty: Product Bundling in Oligopoly*, Mimeo (2004).

<sup>13</sup> See note 5 and accompanying text.

the threshold, such an all units discount would be equivalent to giving a incremental discount on the  $q'$  units of  $d_i = d_A(q_T + q')/q' > d_A$ . Moreover the non-linear prices yield strong marginal incentives to purchase at least  $q_T$  units, but lower marginal incentives for  $q > q_T$ .<sup>14</sup> This allows firm to give these strong discounts while keeping the nominal per-unit price of their products above cost.

The use of such discounts by Firm  $A$  will also affect competing sellers. A competing Firm  $B$  that wants to compete away  $q_B \leq q'$  units from Firm  $A$  would have to offer a price  $P_B \leq P_A - d_A$ . However, if Firm  $B$  wanted to compete away  $q_B > q'$  units from Firm  $A$ , it would have to compensate the buyer for the forgone loyalty discount on  $q_T$  units. As a result, Firm  $B$  will have to offer a price  $P_B < P_A - d_A((q_T + q')/q_B)$ . Thus as long as  $q_B$  is less than or equal to  $q_T + q'$ , Firm  $B$ 's price will have be lower than Firm  $A$ 's net per unit price. Moreover, this effect is greatest for relatively small firms, *i.e.*, when  $q_B$  is much smaller than  $q_T + q'$ .

To illustrate how offering such discounts affects marginal incentives, suppose that  $q_T = 100$ , and that a representative customer purchases 10 units over the loyalty threshold, so that  $q' = 10$ . In addition, suppose that the constant marginal cost of producing a unit of the good  $c$  equals 10. Let  $P_A = 12$ , and let  $d_A = 1$ , so that Firm  $A$ 's price of the good net of the discount equals 11, above the marginal cost of 10. Suppose that Firm  $B$  has a capacity of 20 units. Holding constant the number of units purchased, Firm  $B$  could sell up to 10 units to a representative customer without causing them to lose their loyalty discount. Moreover, holding Firm  $A$ 's prices constant, he could make sales by offering them at a price lower than 11. However, if Firm  $B$  wanted to sell more than 10 units to a representative consumer, he would have to compensate the buyer for the loss of the discount  $d_A = 1$  on  $q_T = 100$  units. In addition, Firm  $B$  would have to match the discount  $d_A = 1$  on the  $q' = 10$  units. Spread over 20 units, matching the total discounts of 110 would require a per unit discount of 5.5 relative to  $P_A$  to cover the lost discounts. This would result in net price  $P_B = 6.5$ . Thus, in order to successfully compete away 20 units from Firm  $A$ , Firm  $B$  would have to price below marginal cost. Thus, even if Firm  $B$  could produce units of the good at the same marginal cost as Firm  $A$ , he would not be able to make sales at prices at or above the marginal cost of producing the good.

Some have suggested that this shows that a hypothetical equally efficient competitor would be foreclosed by use of an all-units discount. This foreclosure result, however, requires that Firm  $B$  is constrained in some way from selling a large number of the  $q_T$  units. To see this, consider an example where  $q_B = 55$ . In this case, the required discount shrinks to 2 and the price required to compensate consumers for the loss of the loyalty discount from  $A$  is  $P_B = 10$ . Thus, at current prices, Firm  $B$  would be able to make at cost sales. Moreover, if Firm  $B$  could enter at the same scale as Firm  $A$ , there is no differential discount required. That is, suppose that  $q_B = 110$ . It is easy to see that in order to match the total discounts offered by  $A$  spread over  $q_B = 110$  units, Firm  $B$  would only require a discount equal to one, the same as given by the firm with the all-units discount.

<sup>14</sup> See Heimler, *supra* note 4.

Besides capacity constraints, one way in which Firm *B* could be constrained from producing a large fraction of the  $q_T$  units is if Firm *A* currently produces goods for sale in multiple markets, while Firm *B* produces and sells goods in a subset of these markets. If the loyalty discount is based on meeting thresholds that span multiple markets, or if the loyalty discounts in each market are bundled, a firm able to operate only in a subset of these markets will be in an analogous position as the severely capacity constrained firm *B* in the above numerical example.<sup>15</sup>

To see this, take the simple example where there are two separate markets (Market *X* and Market *Y*) where the representative customer participates in both markets. Suppose that Firm *A* offers a loyalty discount on all purchases of *X* and *Y* if a multimarket consumer's total purchases  $q_X + q_Y$  exceed  $q_T$ . Let  $q_X = q_Y = 55$  and let  $q_T = 100$ . Consider a consumer that currently purchases all of its demand for *X* and *Y* from Firm *A*, and is currently receiving a loyalty discount. Under the assumption that Firm *B* is only in market *X* and cannot enter the remaining market *Y*, the firm would only be able to compete for  $q_Y$ . If the consumer purchased its required *X* from *B*, they would lose their bundled loyalty discount on both *Y* and *X*. As in the above example, such a setting would require firm *B* to offer discounts twice as large as the per unit discounts offered by Firm *A*, which would drive prices to marginal cost. Moreover, if *A* bundled three products, *X*, *Y*, and *Z*, the required discount for Firm *B* to make *X* sales would drive its prices below cost. To see this, suppose that  $q_Z = 55$ , and  $q_T$  is raised to 150. If Firm *B* cannot enter the *Y* or *Z* markets, the required discount for Firm *B* to sell in the *X* market equals 3, which results in a below cost price of  $P_B = 9$ .<sup>16</sup>

While loyalty discounts can increase switching costs or be exclusionary, they also can be a powerful and natural instrument of competition. Volume discounts and non-linear pricing are an equilibrium outcome in a variety of models where exclusionary motives are absent.<sup>17</sup> Kolay, Schaffer and Ordober (2003) show that all-units discounts can be used to efficiently address double marginalization problems in the presence of bilateral monopoly. Intuitively, the manufacturer can use the minimum threshold required to qualify for the discount to induce the retailer to choose the joint profit maximizing retail price. The all-units discount is used to divide the maximized surplus between the manufacturer and retailer. Use of the all-units discount eliminates the double marginalization problem, and increases welfare relative to when linear pricing is used. Moreover, use of the all units discount can increase welfare relative to when a two-part tariff, which also eliminates the double marginalization problem, is used. They also note that an all units discount can be used to engage in price discrimination.<sup>18</sup>

<sup>15</sup> Under this theory, one must consider why the single product firm cannot enter multiple markets. The analysis here assumes that such a showing is possible. If not, Firm *B* could enter in multiple markets, and the bundled discounts would not provide any advantage.

<sup>16</sup> Alternatively, the loyalty discount could be set so that it is awarded only if the consumer purchases 50 units each of *X*, *Y*, and *Z*. It is easy to show that such a program yields similar incentives.

<sup>17</sup> See Greenlee and Reitman, *supra* note 4 (citing literature).

<sup>18</sup> Marx and Shaffer examine use of market share discounts, slotting allowances, and predatory pricing in a three-party sequential contracting environment. In their model, two sellers negotiate sequentially with one buyer. Market share discounts and slotting allowances are used to shift rents between the contracting parties, with no short run consequences for social welfare. One result is that these rent shifting equilibria



Loyalty programs also can be used to reduce the divergence in incentives that exist between manufacturers and those who distribute their products. The provision of promotional and other point of sale services for a manufacturer's products at the retail level may be necessary for the manufacturer to increase the demand for his products and reach his optimal level of output. However, retailers will often have divergent incentives to provide such promotional and point of sale services. The use of bundled rebates can ensure that distributors and/or retailers of a manufacturer's goods have strong incentives to promote and sell these goods. Bundled rebates can be used by manufacturers as a way to compensate retailers for their efforts on behalf of the manufacturer, and thus can serve to mitigate retailer free-riding and hold up problems.

Thus, loyalty discounts and rebates can serve the same efficiency promoting vertical control functions as has been identified in the literature examining the use of tying, exclusive dealing and other forms of vertical restraints.<sup>19</sup> However, unlike exclusive dealing, use of bundled rebates do not prevent retailers from offering consumers other manufacturers' products. This difference is likely to be important when retailers' point-of-sale services and consumers' demand for variety at the retail level are both important.<sup>20</sup> In this respect, discounts are often quite cheaper for the discounting firm than other more costly forms of incentives.<sup>21</sup>

Another difference between loyalty discounts and exclusive dealing is that formal analyses of efficiency promoting uses of loyalty discounts have not been undertaken. There are no systematic empirical analyses of why or when firms use loyalty discounts to distribute their products, and the theoretical literature on loyalty discounts has not generally considered efficiency based reasons using loyalty discounts. One exception is Mills (2004), who presents a formal model of how market share discounts can be used by manufacturers to induce promotional effort by retailers.<sup>22</sup> In his model, promotional effort on the part of retailers allow consumers to make more informed purchasing decisions. Specifically, the promotional effort informs uninformed consumers about the availability of a premium brand that is more valuable, *ceteris paribus*, than the alternative brand. As a result of the promotions, more consumers choose the higher quality and higher value brand in equilibrium. Moreover, because it increases the proportion of consumers that make an informed decision, use of market share discounts increase welfare. While market share discounts increase the market share of the firm offering the

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generally result in both sellers remaining in the market. In the long run, they suggest that preventing the use of such devices will result in the adoption of strategies that are more likely to result in one of the sellers being excluded. However, the model does not explicitly analyze the welfare effects of such long term effects. See Leslie M. Marx and Greg Shaffer, *Rent Shifting and Efficiency in Sequential Contracting*, mimeo (2004).

<sup>19</sup> See, e.g., Howard Marvel, *Exclusive Dealing*, 25 J. L. & Econ. 1 (1982); Benjamin Klein, *Exclusive Dealing as Competition for Distribution "on the Merits"*, 12 Geo. Mason. L. Rev. 119 (2004); Jan B. Heide, Shantanu Dutta, & Mark Bergen, *Exclusive Dealing and Business Efficiency: Evidence from Industry Practice*, 41 J. L. & Econ. 387 (1998).

<sup>20</sup> See Benjamin Klein & Joshua Wright, *The Economics of Slotting Arrangements*, Mimeo (2005), (noting a similar dual function as an explanation for the use of category management).

<sup>21</sup> Heimler *supra* note 4 at page 4

<sup>22</sup> David E. Mills, *Market Share Discounts*, Mimeo, University of Virginia (2004).

discounts, and decrease the share of other firms, their use does not drive these competing firms out of the market except under extreme conditions.

b. Tests for Anticompetitive Loyalty Discounts

From an antitrust standpoint, the primary issue is how to distinguish pro and anticompetitive loyalty discounts. In the single product setting, cost based tests have been used to judge the lawfulness of loyalty discounts. Under these cost based tests, the lawfulness of a firm's pricing conduct, including its use of loyalty discounts, is judged based upon whether the resulting prices are above or below an appropriate measure of cost (usually marginal cost, or long run average variable costs).<sup>23</sup> Pricing below the appropriate measure of cost is presumed to be unlawful, while pricing above this benchmark is presumed to be lawful.

These cost based tests, especially as implemented by the Supreme Court, have been shown to allow some anticompetitive behavior.<sup>24</sup> However, such tests have the virtue of minimizing the costs of false positives – i.e., the deterrence of chilling legitimate price competition. Moreover, such tests are relatively administrable. Moreover, if one assumes that predatory pricing, while theoretically possible,<sup>25</sup> is rare, the costs of false negatives will not be large.<sup>26</sup> Thus, use of such tests can plausibly minimize the sum of error costs and direct costs.<sup>27</sup>

Economists have suggested more refined cost-based predation tests.<sup>28</sup> In theory, use of such tests would lower error costs relative to use of the cost based tests. Several recent papers have suggested more refined tests that can be applied to loyalty programs. In a series of papers, Greenlee and Reitman (2004a,b) and Greenlee, Reitman and Sibley (2005) examine the use of loyalty discounts in both the single and multiple product settings. In the single product setting, Greenlee and Reitman examine loyalty programs as a form of predation and derive such a test. In order to derive their test, they first characterize the equilibrium under the assumption that firms are maximizing short term profits. Specifically, they characterize the loyalty program that would emerge in equilibrium when firms are maximizing short term profits. Observed deviations from this equilibrium are then used to infer non compensatory and presumably anticompetitive behavior.

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<sup>23</sup> See generally, Phillip Areeda and Donald F. Turner, *Predatory Pricing and Practices Under Section 2 of the Sherman Act*, 88 Harv. L. Rev. 697 (1975).

<sup>24</sup> See the discussion in Section IIIa, *infra*.

<sup>25</sup> See, e.g., Paul Milgrom and John Roberts, *Predation, Reputation, and Entry Deterrence*, 27 J. Econ. Theory 280 (1982).

<sup>26</sup> See, e.g., Frank Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U. Chi. L. Rev. 263 (1981); John R. Lott, Jr., *Are Predatory Commitments Credible? Who Should the Courts Believe?* (1999); John S. McGee, *Predatory Pricing Revisited*, 23 J. L. & Econ. 289 (1980).

<sup>27</sup> See generally, Richard A. Posner, *Economic Analysis of Law*, (6<sup>th</sup> ed. 2002) at 536, David Evans & A. Jorge Padilla, *Designing Antitrust Rules for Assessing Unilateral Practices: A Neo-Chicago Approach*, 72 U. Chi. L. Rev. 27 (2005).

<sup>28</sup> See generally, Janusz A. Ordover & Robert D. Willig, *An Economic Definition of Predation: Pricing and Product Innovation*, 91 YALE L.J. 8 (1981).

Specifically, the model has duopoly firms ( $A$  and  $B$ ) competing with differentiated products. There is a constant unit cost of producing a unit of the good equal to  $c$ . The products are differentiated by a parameter  $q$ , which represents the consumer's preference for product  $B$  over  $A$ , *ceteris paribus*. Large or repeat consumers purchase multiple units of the product, and the consumer's relative value of  $q$  for each purchase is assumed to have a strictly positive support, and is independently and identically distributed with cumulative distribution function  $F(q)$ . Large consumer may purchase goods from both firms, and simultaneously purchase goods under and separate from the loyalty program. There are also consumers who only buy at the spot prices. Firms compete setting non-loyalty unit prices  $P_i$ ,  $i = A, B$ , and by defining a loyalty program with discount  $d_i$  threshold  $q_i$ .<sup>29</sup> In equilibrium, one firm (e.g., Firm  $A$ ) has a loyalty program, while the other does not. Relative to the equilibrium without loyalty programs, the non-loyalty prices increase, so that small consumers are worse off with loyalty programs. Large consumers receive discounts through the loyalty program. Under some circumstances, consumer surplus for large buyers increases. However, the discount is off an inflated non-loyalty price, so it is possible that large consumers are not made better off. Moreover, the loyalty program can reduce consumer surplus by steering large consumer's purchases toward goods they view as inferior, *ceteris paribus*. Overall consumer surplus may rise or fall.

Assuming that Firm  $A$  is maximizing short-term profits, it would set the threshold of its loyalty program so that a buyer wishing to qualify for its loyalty discount must purchase from  $A$  for all values of  $q \leq q_A = P_B - c$ . Intuitively, Firm  $A$ 's loyalty program would not attempt to include those purchases where the consumer's preference for Firm  $B$ 's goods is so great that there is no joint surplus for the buyer and Firm  $A$  to share. Thus a firm maximizing will set the threshold of its loyalty program so that the incremental profits equal the incremental increase in the discount. This occurs when  $P_A - c = d$ .<sup>30</sup>

The authors use the latter condition to set out a test that distinguishes "competitively motivated loyalty discounts from those that are potentially exclusionary." Loyalty programs that set high purchase requirements so that the profits on the incremental unit is less than the incremental increase in the discount required are non-compensatory,<sup>31</sup> and "suggestive of a motive beyond short-run profit maximization."<sup>32</sup> The authors note that the data required by the test might not be generally available. However, they suggest that such a test may be feasible when examining changes in loyalty programs, especially those that increase the thresholds above historical levels. Under these circumstances, one could look at revenue and cost data to test the hypothesis

<sup>29</sup> For Firm  $A$ , this threshold requires the consumer make all purchases from Firm  $A$  where  $q < q_A$  in order to receive the discount  $d$ . Setting a threshold  $q_A$  is equivalent to a market share requirement that  $F(q_A)$  of a consumer's purchases of the good are from Firm  $A$ .

<sup>30</sup> To see this, suppose that Firm  $A$  sought to induce an incremental purchase through the loyalty program by increasing the threshold to a point where  $q_A > P_B - c$ . In order to do this, Firm  $A$  would have to incrementally increase the discount so that  $P_A - d + q_A = P_B$ . But this implies that  $P_A - d + P_B - c < P_B$ , or equivalently  $P_A - c < d$ . Thus, such an incremental increase in the loyalty threshold will reduce Firm  $A$ 's profits.

<sup>31</sup> See Ordovery and Willig, *supra* note 28.

<sup>32</sup> See Greenlee and Reitman, *supra* note 4.

that the incremental profits from the change in the programs equaled the incremental increase in the discounts against the alternative hypothesis that incremental profits were less than the incremental discounts.

In the multiple product setting, several tests have been suggested. First, some have advocated the use of cost based tests. One issue is how to apply such tests to multiproduct bundled rebates. One approach would compare the price of the bundle to the relevant cost of producing the bundle. Pricing conduct that results in bundle prices that exceed the relevant cost of producing the bundle would be presumptively lawful.<sup>33</sup> Some have criticized such a standard as too permissive, and suggest that the bundle discount be allocated between the component goods, and then examining whether the price of each component good, net of this allocated discount, is greater than the appropriate measure of cost. The problem with such an approach is there is no consensus, in theory or in practice, on how to make such an allocation.<sup>34</sup> Unless the allocation is done in an arbitrary way, such a task is likely to increase the costs of administering such a rule, and may even increase both types of error costs.<sup>35</sup>

Greenlee and Reitman also examine use of loyalty discounts in the case of parallel markets – that is when Firm *A* is in all *N* markets, facing competition from single product firms in each market.<sup>36</sup> In their model of parallel markets, each market has a duopoly structure, with Firm *A* being one of the duopolists in all markets. Firm *A* can link the loyalty programs across the *N* markets, so that the loyalty discount is dependent upon a buyer qualifying in all *N* markets. If all *N* single market firms can offer loyalty programs, then the equilibria in each of the *N* markets, including the loyalty thresholds, are the same as the single market case studied above. The authors also consider the case where some of the single product firms do not, for some reason, offer loyalty discounts. Greenlee and Reitman show that such a change only affects the equilibrium size of the loyalty discount. The optimal target levels for their loyalty programs remain the same. Under these conditions, they show that moving from a single market to multiple parallel markets does not change the test used to distinguish between loyalty programs motivated by maximization of short run profits and those that “are non-compensatory and only make sense if driven by something other than short-run profit maximization.” Thus, they would advocate use of the incremental cost based tests under these conditions

Recent papers by Greenlee, et al. and Nalebuff have suggested tests to distinguish pro and anticompetitive uses of bundled discounts in markets where a monopoly seller in one market (market *Y*) faces competition in a second market (market *X*).<sup>37</sup> Both papers demonstrate how bundled discounts, including loyalty discounts, can be used by a monopolist in one market to exclude firms in a second market. Both papers use similar

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<sup>33</sup> See, e.g., Timothy J. Muris, Comments on Antitrust Law, Economics, and Bundled Discounts, submitted on behalf of the United States Telecom Association in response to the Antitrust Modernization Commission’s Request for Public Comments, (July 15, 2005).

<sup>34</sup> For an example of this issue, see the text accompanying notes 93 and 94, *infra*.

<sup>35</sup> See text accompanying note 51, *infra*.

<sup>36</sup> See Greenlee and Reitman, *supra* note 4.

<sup>37</sup> Barry Nalebuff, *Exclusionary Bundling*, Mimeo (2005), Patrick Greenlee, David Reitman & David Sibley, *An Antitrust Analysis of Bundled Loyalty Discounts*, Mimeo (2004)

models where a monopolist in product  $Y$  engages in the bundling of  $Y$  and a competitively supplied good  $X$ . Absent bundling, the price of  $Y$  equals  $m$ , the stand alone monopoly price, and the price of  $X$  equals  $c$ , the cost of production. If bundling is feasible, the monopolist can also offer a bundle with stand alone prices  $(P_Y, c)$  and a bundle price  $(P_Y - e, P_X)$ .

To see how bundling serves as an exclusionary device, consider a bundle discount with prices  $(m - e, c + d)$ , where  $e$  and  $d$  are small positive deviations from the no-bundling equilibrium prices. At the monopoly price  $m$ , the small decrease in the price of  $Y$  will have a second order effect on profits. However, the small increase in the price of  $X$  will have a first order effect on profits. Thus, for some small  $e$  and  $d$ , offering the bundle discount increases the profits of the monopolist. Moreover, for some small  $e$  and  $d$ , the bundle will be preferred by consumers to the stand alone prices  $m$  and  $c$ . Thus, such bundle discounts are welfare increasing.

Because the bundle is preferred to the stand alone prices  $m$  and  $c$ , such a bundle discount can exclude an equally or even a more efficient competitor.<sup>38</sup> Moreover, such exclusion does not require the monopolist to price either product or the bundle below cost. Because this bundle discount would exclude a hypothetically equally efficiency competitor, Nalebuff would condemn these uses of bundling based on this outcome.<sup>39</sup> However, based on a consumer welfare standard, use of such a test under these circumstances would erroneously condemn a welfare increasing use of bundling.<sup>40</sup>

However, not all forms of bundled discounts increase consumer surplus or total surplus. Consider a bundled discount where the bundle is priced at  $m + c$ , but the stand alone price for the monopoly good is increased above  $m$ . Once again, consumers prefer the bundle to the stand alone prices, so that an equally efficient competitor would be excluded as he would not be able to make sales at  $c$ . Moreover, in this case, consumer welfare unambiguously falls. Consumers that purchase the bundle are indifferent, as the bundle prices are equal to the non-bundling stand alone prices. The same is true for those who purchase  $X$  at the stand alone price  $c$ . But consumers that purchase  $Y$  at the stand alone price are made worse off. Thus consumer surplus must fall under these circumstances.

Because an equally efficient competitor would be excluded, this bundle offer would fail the hypothetical equally efficient competitor test. Such a bundle discount would pass a cost based test, as both  $X$  and  $Y$ , as well as the bundle, are priced above cost. Because consumer welfare falls, Greenlee et al. would also condemn such bundle offers

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<sup>38</sup> The exclusion result does not follow if the monopolist can source production of  $X$  from competitive suppliers. The monopolist is indifferent between producing  $X$  himself and purchasing  $X$  from an equally efficient competitive supplier at 10. Indeed, if the competitive suppliers are more efficient, the monopolist would be better off purchasing these units at a price below 10 and reselling them in the bundle at 11. See Richard Schmalensee, *Commodity Bundling by Single Product Monopolies*, 25 J. L. & Econ. 67 (1982).

<sup>39</sup> See Nalebuff, *supra* note 37. See also, Phillip E. Areeda and Herbert Hovenkamp, 3 *Antitrust Law* ¶749 (2005 supp) at 183-4 (advocating use of the hypothetical equally efficient competitor test in limited circumstances).

<sup>40</sup> See Greenlee, et al, *supra* note 37.

on antitrust grounds. This leads Greenlee, et al. to propose the following test for welfare decreasing bundled discounts: Under the assumption that the bundle prices are optimal, a bundle discount will decrease consumer surplus if the stand alone price for good *Y* is above the monopoly price of *Y* in the absence of bundling. Such welfare reducing bundle discounts would be found to violate the antitrust laws. Such a test is more conservative than the hypothetical equally efficient competitor test, as it would leave bundled discounts that actually yielded lower prices to consumers alone, and only condemn those where the bundle discount is only a discount compared to inflated stand alone prices. It would be more aggressive than the cost-based tests, as it would condemn welfare decreasing but above cost bundled discounts.

Taken as a whole, the paper provides a useful consumer welfare test for bundled discounts. On the other hand, such a test may be difficult to implement. Accepting for the moment the validity of the model, carrying out the test suggested by Greenlee, et al. would require a comparison between the existing stand alone price for the monopoly good *Y* offered in conjunction with the bundle with the optimal monopoly price that would be charged in the absence of bundling. While this task is well defined within the context of a theoretical model with known and stable demand, such a task is likely to be much more difficult to administer in practice.<sup>41</sup> There also may be no identifiable pricing regimen before the loyalty rebate program was implemented. Moreover, the test is ambiguous when the loyalty program involves an increase in the strand-alone price and a decrease in the discounted price relative to the previous monopoly price, and is dependent upon the assumptions that the monopolist fully extracts consumer surplus under the loyalty program, and also that prior to the rebate program, the market *X* equilibrium was at the perfectly competitive price. Thus, while the Greenlee test would, in theory, result in lower error costs than either the cost based tests or the hypothetical equally efficient competitor test, the costs of implementing such a test may be higher. Moreover, potential errors in administering this test may reduce any theoretical error cost advantage.<sup>42</sup> Both of these effects would tend to favor use of a simpler, easy to administer test.<sup>43</sup>

### III. Loyalty Discounts and Antitrust Law in the U.S.

There have been several challenges to firms' use of market share and loyalty discounts under the U.S. antitrust laws. While frequent buyer programs aimed at end users can in theory increase prices and decrease welfare, and have been challenged under the U.S. antitrust laws, such challenges have not been successful. Reported cases in the U.S. with antitrust claims involving loyalty programs marketed to end users have not directly challenged the firms' use of the programs. Rather, these cases have attacked the

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<sup>41</sup> The test would require the estimation of the but-for-bundling optimal price of *Y*. One proxy for this would be the direct observation of the price of good *Y* before the monopolist began bundling. However, such prices are not always available, and changes in demand and cost conditions may make such a proxy unreliable. In such cases, estimating the but-for monopoly price would require an econometric estimation that controlled for these changing variables.

<sup>42</sup> See test accompanying note 51, *supra*.

<sup>43</sup> See text accompanying note 27, *supra*. For an explicit analysis of these issues, see Bruce H. Kobayashi, *Two Tales of Bundling: Implications for the Application of Antitrust Law to Bundled Discounts*, mimeo, George Mason University School of Law (2005).

firms' attempts to change the terms of the program,<sup>44</sup> or have attacked attempts by firms' to prevent resale of frequent buyer rewards in a secondary market.<sup>45</sup>

Most of the recent antitrust claims involving loyalty programs have involved use of such programs at the wholesale level. In the remainder of this Section, we examine these recent cases and the economic theories of harm underlying the claims. These cases were chosen because they involve volume discounts with customer specific thresholds. In Part a, we examine the single product case with near exclusionary volume discounts in *Barry Wright v. ITT Grinnell* and *Brooke Group v. Brown & Williamson*. The first case involved an above cost volume discount that was based on buyers agreeing to take nearly all of their requirements from one seller. In the second, the Supreme Court set out high hurdles for a plaintiff to prevail in a predation case involving individualized below cost volume discounts. Part b examines the use of market share discounts in *Concord Boat*. All three cases resulted in judgment for the defendant, and all stress a focus on the actual facts or realities of the marketplace rather than on hypotheticals.

Part c examines the loyalty discounts in the multimarket or multiproduct setting in *Virgin Atlantic v. British Airways*, *Ortho v. Abbot*, *SmithKline v. Eli Lilly*, and *LePage's v. 3M*. In these cases, the courts differentiate cases involving bundled loyalty discounts from the single product cases. As a result, they do not extend the *Brooke Group* standard that yields a safe harbor to above cost pricing conduct to these multimarket cases. In *SmithKline*, the appeals court found that the bundled rebates would have foreclosed an equally efficient competitor, and upheld judgment for the plaintiff. However, in *Ortho* and *Virgin*, the courts granted summary judgment for the defendant because the plaintiffs failed to present sufficient evidence in support of their theory. Finally, in *LePage's*, the court upheld a verdict for the plaintiff. However, unlike the other cases reviewed here, the court did not require the plaintiff to demonstrate through sufficient evidence that the defendant's bundled rebates were exclusionary. Table 1 summarizes the cases reviewed in this Section.

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<sup>44</sup> See, e.g., *American Airlines v. Wolens*, 513 U.S. 219 (1995).

<sup>45</sup> See *TransWorld Airlines v. American Coupon Exchange, Inc.*, 689 F. Supp. 1476 (1988) (airline's actions to prevent the brokering of frequent flyer miles did not violate the Sherman Act); *Haas, et al., v. Delta Airlines, et al.*, U.S. District Court, SDNY 03 Civ. 0589, Complaint filed 01/27/2003 (class action complaint alleging that restrictions on the brokering of frequent flyer miles violate the antitrust laws). See generally, Katherine Ann Braden, *Frequent Flyer Coupon Brokering: A Valid Trade?*, 55 J. Air L. & Comm. 727 (1990). While allowing the resale of frequent buyer credits would mitigate the effects such programs have on consumer switching costs, it would likely reduce firms' benefits from offering such programs. Nor would such an outcome necessarily be beneficial. The overall effect of eliminating or restricting frequent flyer and other loyalty programs would depend upon what form of promotional expenditures replaced these programs. See, e.g., Ernest Gellhorn, *Trading Stamps, S&H and the FTC's Unfairness Doctrine*, 1983 Duke L. J. 903 (1983) (discussing the economics of trading stamps, and the FTC's oversight of them following *FTC v. Sperry & Hutchinson*, 405 U.S. 223 (1972)).

Table 1 – Recent U.S. Loyalty Discount Cases

Case	Below Cost	Thres-holds = Near exclu-sivity	Market Share Discount	All Units Discount	Multi-market	Bundled Rebates	Disposition of Case.
<i>SmithKline</i> (1978)	N	N	N	Y	Y	Y	Judgment for plaintiff, Aff'd 3 <sup>rd</sup> Cir.
<i>Barry Wright</i> (1983)	N	Y	N	Y	N	N	Judgment for defendant, Aff'd 1 <sup>st</sup> Cir.
<i>Brooke Group</i> (1993)	Y	N	N	?	N	N	JMOL for defendant, Aff'd 4 <sup>th</sup> Cir., SCT
<i>Advo</i> (1995)	N	N	N	N	Y	N	Summary judgment for defendant, Aff'd 3 <sup>rd</sup> Cir.
<i>Ortho</i> (1996)	N	N	N	Y	Y	Y	Summary Judgment for defendant.
<i>Concord Boat</i> (2000)	N	N	Y	Y	N	N	Judgment for plaintiff. Rev'd 8 <sup>th</sup> Cir.
<i>Virgin Atlantic</i> (2001)	N	N	N	Y	Y	Y	Summary Judgment for defendant, Aff'd 2 <sup>nd</sup> Cir.
<i>LePage's</i> (2003)	N	N	N	Y	Y	Y	Judgment for plaintiff, Rev'd en banc 3 <sup>rd</sup> Cir.

a. Single Product Volume Discount Cases with Near Exclusivity.

Near exclusive volume discounts were the subject of *Barry Wright v. ITT Grinnell*.<sup>46</sup> This case was decided before the Supreme Court's decisions on predatory pricing in *Brooke Group*<sup>47</sup> and in *Matsushita*.<sup>48</sup> While its holding is consistent with these later Supreme Court cases, its analysis of the potential for above cost pricing behavior to be anticompetitive, and its treatment of near exclusive thresholds are useful for evaluating whether the existence of these factors yield potential reasons to deviate from the *Brooke Group* standard.

<sup>46</sup> 724 F.2d 227 (1983).

<sup>47</sup> *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993).

<sup>48</sup> *Matsushita Elec. Co. v. Zenith Radio Co.*, 475 U.S. 574 (1986).



In this case, Pacific was the only domestic manufacturer of mechanical snubbers, used in building pipe systems for nuclear power plants.<sup>49</sup> *Grinnell* built these pipe systems, and was a large consumer of Pacific's snubbers. Faced with the lack a viable alternative to Pacific, Grinnell entered into a contract under which it would help the Barry Wright Corporation develop a full line of mechanical snubbers. Under the contract, Grinnell agreed to contribute to Barry Wright's development costs, and agreed to use them as the exclusive source for two years (during 1977 and 1978). While Barry Wright was developing its product, Grinnell continued to purchase snubbers from Pacific at the normal 20% off the list price.

At some point, Pacific realized that Grinnell was attempting to develop an alternative source of mechanical snubbers, and offered Grinnell larger discounts of 30 percent off list for small snubbers and 25 percent off list for large snubbers if Grinnell would agree to a large purchase of 5.7 million dollars, which would have satisfied Grinnell's demands for snubbers through the end of 1977.. Grinnell initially rejected Pacific's offer, and placed a small 1 million dollar order at the standard 20 percent off list price. Subsequently, Barry Wright failed to meet the agreed upon production schedules, and announced it would not be able to produce small snubbers until August 1977, and large ones until February 1978. As a result, in January 1977, Grinnell met with Pacific and entered into a contract to purchase 4.3 million dollars of Pacific's snubbers, enough to fill its demands through 1977. The contract price specified the large 30/25 percent discounts off list, and gave Grinnell an option, open until July 1977, to buy its 1978 requirements at these prices. Grinnell also agreed to a non-cancellation clause, and informed Barry Wright that it had breached its contract. In late May, Grinnell agreed to buy 6.9 million dollars of snubbers from Pacific in 1978 (estimated to be its entire demand for that year) and 5 million dollars of snubbers in 1979 from Pacific, both at the 30/25 percent discount off list. Soon after, Grinnell notified Barry Wright that its collaboration was at an end. Barry Wright subsequently abandoned its efforts to develop mechanical snubbers.

Barry Wright brought an antitrust lawsuit against Grinnell and Pacific, alleging that the above described contracts between Pacific and Grinnell violated Sections 1 and 2 of the Sherman Act, and Section 3 of the Clayton Act, and that Pacific had tortiously interfered with Barry's contract with Grinnell to develop snubbers. The district court entered judgment for the defendant on all counts. On appeal, the First Circuit affirmed. One of Barry Wright's central claims under Section 2 of the Sherman Act was that the 30/25 discounts were "unreasonably low". The court found this argument unconvincing because the 30/25 percent discount, while "lower than normal," did not result in prices that were below average total cost.

The court then examined Barry Wright's argument that discounts that leave prices above total average cost may still prove unlawful, even if prices remain above total cost. The court noted that economists had demonstrated that it was theoretically possible that above cost price cuts "might be viewed as lying outside the range of normal, desirable,

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<sup>49</sup> Foreign mechanical snubbers did not meet regulatory requirements, and hydraulic snubbers were viewed as less reliable, and customers often required the use of mechanical snubbers.

competitive processes” if such price cuts would be unprofitable but for their ability to (1) drive out competitors and (2) to allow the firm to charge higher prices later.<sup>50</sup> The court, however, rejected this argument on the grounds that consideration of such claims would prove to be unadministrable and counterproductive. The court noted that “while technical economic discussion helps to inform the antitrust laws, those laws cannot precisely replicate the economists’ (sometimes conflicting) views. For, unlike economics, law is an administrative system the effects of which depend upon the content of rules and precedents only as they are applied by judges and juries in courts and by lawyers advising their clients. Rules that seek to embody every economic complexity and qualification may well, through the vagaries of administration, prove counterproductive, undercutting the very economic ends they seek to serve.”<sup>51</sup>

The court also considered Barry Wright’s claim that the contracts between Grinnell and Pacific were exclusionary long term contracts. The court noted that the contracts were fixed dollar amounts, and not true requirements contracts. And although the contracts for 1977 and 1978 were for dollar amounts that would have covered the entire demand and thus would have resulted in “near exclusivity”, the contract for 1979 was for significantly less than the total estimated market demand for that year (approximately 72.4% of total estimated demand). Thus, any de facto exclusivity was from a sequence of contracts, and these near exclusive contracts would last two, and not three years. The court did not find such “near exclusivity” problematic. Moreover, the court noted that both Grinnell and Pacific had legitimate business reasons to enter into these forward contracts. Because there was often significant lead time between orders and their delivery, contracts specifying delivery at a later date were the norm. Furthermore, the contracts would give Grinnell a stable source of supply at a favorable price, and would allow Pacific to take advantage of production efficiencies.<sup>52</sup>

The issue of volume discounts or rebates was addressed by the Supreme Court in *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*<sup>53</sup>. This case involved competition between two cigarette manufacturers. Prior to the mid 1980’s, both companies produced branded cigarettes. In the mid-1980s, Liggett, which eventually became part of Brooke Group, pioneered the development of “generic” cigarettes, which were sold at a lower price (approximately 30% lower) than branded cigarettes. Liggett promoted its generic cigarettes at the wholesale level by giving rebates that increased with the volume of cigarettes ordered. In response, Brown & Williamson introduced their own line of generic cigarettes, and also promoted them using volume rebates.

After a price war developed in which successively larger volume rebates were offered to wholesalers, Liggett filed a suit alleging, among other things, that Brown & Williamson’s “discriminatory volume rebates to wholesalers violated the Robinson Patman Act by furthering a predatory pricing scheme designed to purge competition from

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<sup>50</sup> See Greenlee and Reitman, *supra* note 4 (discussing literature).

<sup>51</sup> See *Barry Wright*, *supra* note 46 at 234.

<sup>52</sup> See also *Barr Labs, Inc. v. Abbot Labs*, 978 F.2d 98 (3<sup>rd</sup> Cir. 1992) (Holding that volume discount to large buyer with 15% of the market did not constitute unlawful exclusive dealing).

<sup>53</sup> 509 U.S. 209 (1993)

the economy segment of the cigarette market.”<sup>54</sup> Both the price war and the filing of the suit occurred prior to the actual market introduction of Brown & Williamson’s generic cigarettes.

The volume discounts in *Brooke Group* had several features that differentiated them from standard volume discounts. First, the volume discounts were discriminatory, as the largest volume rebates were targeted to wholesalers currently carrying Liggett’s generic cigarettes. Moreover, there was evidence that the prices net of the rebates were below the average variable costs of production. Further, the incentives given by the volume discounts often led to *de facto* exclusivity. However, it is not clear that the exclusivity resulted from Brown & Williamson’s setting of near exclusionary thresholds. Given the undifferentiated nature of the generic products and the volume discounts, distributors commonly preferred to purchase their entire demand for generic cigarettes from one supplier.

After a lengthy trial, a jury returned a verdict in favor of the plaintiff on the primary line Robinson Patman claim and awarded Liggett 49.6 million dollars, which was trebled to 146.8 million dollars. However, the district court judge granted the defendant’s motion for judgment as a matter of law, and set aside the jury verdict on three separate grounds: lack of injury to competition, lack of antitrust injury to Liggett, and lack of a causal link between the discriminatory rebates and Liggett’s alleged injury.<sup>55</sup> The Fourth Circuit affirmed. The Supreme Court granted certiorari in the case. Under then existing precedent, most courts applied a rebuttable presumption of legality to pricing below average total cost, but above average variable costs. Pricing below average variable costs was generally held to be presumptively unlawful subject to the existence of market conditions (such as the absence of barriers to entry) that would predatory pricing “implausible”. Pricing above average total cost was almost always held to be lawful.<sup>56</sup>

The *Brooke* Court further increased the burdens placed on plaintiff in predatory pricing cases. Noting that “primary-line competitive injury under the Robinson-Patman Act is of the same general character as the injury inflicted by predatory pricing schemes actionable under § 2 of the Sherman Act,” the Court held that the two prerequisites to recovery remain the same whether the claim alleges predatory pricing under § 2 of the Sherman Act or primary-line price discrimination under the Robinson-Patman Act. Although the Court declined to set out a rule of *per se* nonliability when recoupment is alleged to take place through supracompetitive oligopoly pricing, it set out a two “not easy to establish” prerequisites for recovery in predatory pricing cases. First, a plaintiff seeking to establish competitive injury resulting from a rival’s low prices must prove that the prices complained of are below an appropriate measure of its rival’s costs. Second, he must show “that the competitor had a reasonable prospect, or, under § 2 of the Sherman Act, a dangerous probability, of recouping its investment in below-cost prices.”<sup>57</sup> The

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<sup>54</sup> 15 U.S.C. § 13a. This type of injury, which harms direct competitors of the discriminating seller, is known as primary-line injury.

<sup>55</sup> *Liggett Group, Inc. v. Brown & Williamson Tobacco Corp.*, 748 F.Supp. 344 (MDNC 1990).

<sup>56</sup> *Matsushita*, *supra* note 48.

<sup>57</sup> *Id.* at 224.

high burdens placed on a plaintiff were appropriate, in the Court's view, because "predatory pricing schemes are rarely tried, and even more rarely successful,"<sup>58</sup> and because of the high costs of an erroneous finding of liability – the deterrence of pro-competitive price competition.

Applying these two prerequisites to the facts of the case, the Court found that despite evidence of anticompetitive intent and evidence that Brown & Williamson's prices net of the volume discounts were below the appropriate measure of cost,<sup>59</sup> they were entitled to judgment as a matter of law because the plaintiff failed to demonstrate competitive injury as a matter of law. The Supreme Court focusing on the actual facts or realities of the marketplace rather than on hypotheticals, held that the evidence in the case was "inadequate to show that in pursuing this scheme, Brown & Williamson had a reasonable prospect of recovering its losses from below-cost pricing through slowing the growth of generics." Specifically, the Court rejected the theoretical possibility of harm as a basis for liability, noting that "[w]hen an expert opinion is not supported by sufficient facts to validate it in the eyes of the law, or when indisputable record facts contradict or otherwise render the opinion unreasonable, it cannot support a jury's verdict."<sup>60</sup>

b. The Courts treatment of Above Cost Market Share Discounts in Concord Boat.

The Court's evaluation of the volume rebates in *Brooke Group* set a high hurdle for plaintiffs alleging that pricing conduct, including discriminatory volume discounts, violated either Section 2 of the Sherman Act or Section 2a of the Robinson-Patman Act. As noted above, loyalty discounts, however, can have additional features that differentiate them from standard volume discounts. As noted above, the volume discounts in *Barry Wright* and *Brooke Group* had many of these features, including the use of all-units discounts, and the use of volume discounts with customer specific thresholds that require or result in near exclusivity. However, other features of loyalty discount programs can, in theory, distinguish the use of such loyalty discounts from the case of the near exclusive, discriminatory, all units volume discounts considered in *Brooke Group*, and can provide a reason to deviate from the Matsushita/Brooke Group rule and condemn above cost pricing.

One additional feature is the use of market share discounts. Market Share discounts were considered by the Eighth Circuit in *Concord Boat Corporation v. Brunswick Corporation*.<sup>61</sup> Brunswick produced stern drive engines for boats, and was the market leader with a 75% market share in 1983. Beginning in 1984, Brunswick offered market share discounts. To receive these discounts, boat builders could agree to purchase a certain percentage of their engines from Brunswick for a fixed period of time.

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<sup>58</sup> *Id* at 226 (citing Matsushita, 475 U.S., at 589)

<sup>59</sup> *Id* at 231 (noting that "There is also sufficient evidence in the record from which a reasonable jury could conclude that for a period of approximately 18 months, Brown & Williamson's prices on its generic cigarettes were below its costs, ... and that this below-cost pricing imposed losses on Liggett that Liggett was unwilling to sustain, given its corporate parent's effort to locate a buyer for the company.")

<sup>60</sup> *Id* at 242.

<sup>61</sup> 207 F.3d 1039 (8<sup>th</sup> Cir. 2000).

These agreements specified a 3% discount to boat builders who bought 80% of their engines from Brunswick, a 2% discount for a 70% share, and a 1% discount for a 60% share. In 1994, Brunswick attempted to increase its market share requirement to 95%, but was unsuccessful due to complaints from boat builders. Beginning in 1995, the top two share requirements were lowered. The program was changed to a 3% discount for a 70% share, a 2% discount for a 65% share. The program was discontinued in the middle of 1997.

The plaintiffs, who were boat builders, filed an antitrust suit in 1995 alleging, among other things, that Brunswick's market share and volume discounts were de facto exclusive dealing contracts that violated Section 1 of the Sherman Act. Moreover, the plaintiff argued that the discount programs and acquisitions violated Section 2 of the Sherman Act because they were part of a deliberate plan to exclude competitors from the stern drive engine market, and that this exclusion would enable Brunswick to charge supracompetitive high prices for its engines.<sup>62</sup>

The boat builders' primary evidence to establish Brunswick's antitrust liability was the testimony of their economist expert witness. He testified that Brunswick had market power, and that its market share discount programs were used to impose a "tax" on boat builders and dealers who purchased engines from other manufacturers equal to the all-units discounts these purchasers gave up by not buying from Brunswick.<sup>63</sup> This tax forced Brunswick's competitors to charge substantially lower prices in order to convince customers to purchase from them and forgo the all-units discounts. He testified that the discount programs, combined with the market power Brunswick acquired by purchasing two boat builders, enabled Brunswick to capture a large share of the stern drive engine market, which in turn deterred entry into the market.

A jury found for the plaintiff on all the antitrust claims and counterclaims, and the judge denied the defendant's motion for judgment as a matter of law. The Eighth Circuit reversed. The court evaluated the testimony of the plaintiff's economic expert witness, and found that this testimony should have been excluded.<sup>64</sup> Specifically, they found that the plaintiff expert's testimony "was not grounded in the economic reality of the stern drive engine market, for it ignored inconvenient evidence."<sup>65</sup> Because of the deficiencies in the foundation of the opinion, and because the expert's opinion did not separate lawful from unlawful conduct, the court concluded the expert's resulting conclusions were "mere speculation". As a result, the court held that the plaintiffs failed to carry their burden of proof and that Brunswick's motion for judgment should have been granted for this

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<sup>62</sup> They also alleged that Brunswick's acquisition of two boat builders in 1986 violated Section 7 of the Clayton Act. The Eighth Circuit disposed of these claims by ruling that the statute of limitations had tolled.

<sup>63</sup> For a discussion of this effect, see text accompanying note 14, *supra*.

<sup>64</sup> See *Concord Boat*, *supra* note 61, applying the Court's test for admissibility in *Daubert v. Merrill Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993).

<sup>65</sup> For example, the plaintiff's expert's damage calculations ignored that fact that boat builders often exceeded the volume discount thresholds. Moreover, his theoretical model did not reflect the realities of the market, including other plausible reasons, such as a recall of their competitor's engines that caused Brunswick to attain a high market share. See *Concord Boat*, *supra* note 61 at 1055-7.

reason.<sup>66</sup>

Of particular interest is the court's analysis of the legality of above cost price cuts. The court noted that no one had argued that the discounts drove Brunswick's prices below costs, and that the "decisions of the Supreme Court in *Brooke Group* and *Matsushita* illustrate the general rule that above cost discounting is not anticompetitive."<sup>67</sup> The court then discussed Brunswick's theory that "any pricing practice that leads to above costs prices is *per se* lawful under the antitrust laws." In discussing several cases that had explicitly rejected a rule of *per se* legality, the court noted that these cases "examined by the district court all involve bundling or tying." Because "only one product, stern drive engines, is at issue here and there are no allegations of tying or bundling with another product," the court did not find these cases persuasive.<sup>68</sup>

c. Multiple Market Volume Discounts

As set out in the prior part, the Federal courts have set out broad rules for pricing conduct involving single markets. These rules have set out "hard to satisfy conditions" for plaintiffs to prevail, or even survive summary judgment, with a predatory pricing claims. And given the facts and evidence in the cases reviewed by the Federal appellate courts, above cost volume discounts, including those that have near exclusivity, and those that use market share discounts, have resulted in judgment for the defendant.

However, the Supreme Court did not adopt a rule of *per se* legality for above cost pricing conduct. And courts examining loyalty discounts in cases involving multiple markets or products have distinguished the single product case from cases involving multiple products or markets, and have not extended the above cost safe harbor in *Brooke Group* to the latter set of cases. Thus, while above cost pricing is presumptively legal in the single product setting, the courts have generally considered allegations that above cost loyalty discounts can have anticompetitive effects and violate the antitrust laws in

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<sup>66</sup> In contrast, the European Union (EU) has generally condemned the use of market share discounts. See, e.g., *Michelin v. Commission*, 2003 ECR\_ (2003). For a discussion of EU law, see Heimler, *supra* note 4, Office of Fair Trading Economic Discussion Paper, *Selective Price Cuts and Fidelity Rebates*, (July 2005). For a discussion of the differences between European and U.S. approaches to vertical antitrust policy, see James C. Cooper, Luke M. Froeb, Daniel P O'Brien, and Michael Vita, *A Comparative Study of United States and European Approaches to Vertical Policy*, Vanderbilt Working Paper No. 05-11 (2005).

<sup>67</sup> *Id* at 1062.

<sup>68</sup> Market share discounts are similar to use of promotional payments in exchange for specific percentages of total display space. See, e.g., *R. J. Reynolds Tobacco Co. v. Phillip Morris Inc.*, 199 F. supp 2d 362 (2002); *aff'd per curiam*, 67 Fed. Appx. 810 (4<sup>th</sup> Cir. 2003) (granting summary judgment for defendant in antitrust challenge to promotional payments in exchange for near exclusive shelf space allocations). See also, *Bayou Bottling v. Dr. Pepper*, 725 F.2d 300 (5<sup>th</sup> Cir. 1985) (rejecting monopolization claim based on shelf space requirement not exceeding firm's market share.) Such programs have also resulted in challenges under the Robinson-Patman Act, with differing outcomes. See, e.g., *FTC v. McCormick*, FTC file No. 961-0050 (FTC challenge to payments by McCormick in exchange for near exclusive shelf space allocations as secondary line price discrimination under the Robinson Patman Act). For a discussion of these cases, see Joshua D. Wright, *Antitrust Law and Competition for Distribution*, Mimeo, George Mason Law School (2005).

the multiple market setting. Moreover, they have also considered alternatives to the cost based *Brooke Group* test that attempt to more accurately differentiate between pro and anticompetitive bundled loyalty discounts. However, while the courts have considered the plaintiff's theoretical arguments, they generally have not ruled for the plaintiffs based on the theoretical possibility of harm. Rather, these cases have turned on the sufficiency of the evidence offered in support of a theory or test. Thus, the vast majority of cases are consistent with the *Brooke Group* Court's focus on "actual market realities" over "hypotheticals".

This latter requirement, if taken seriously, is not a trivial one. The theoretical literature on loyalty discounts reviewed above does not go beyond showing that such effects are possible. The models reviewed in Section II contain many restrictive assumptions. For example, the models assume that the firm using the bundled loyalty program has an actual monopoly. In practice, firms rarely have a market share equal to 1, and little attention has been paid to considering how the existence of competition in the market for the assumed monopoly good might affect their results. This latter point is important given that under the antitrust laws, firms that face some competition in all markets can be found to possess "market power", which is often erroneously equated with "monopoly power."<sup>69</sup> And because of the lack of empirical work analyzing loyalty discounts, there is little or no evidence that such harm is likely.

Moreover, these papers suppress the large and varied reasons why bundling might be used. For example, both thus suppress the potential that bundled discounts are being used to price discriminate in the face of heterogeneous consumers.<sup>70</sup> Nor do these models consider how their results would be affected by efficiencies from bundling. Moreover, while the use of bundled rebates has been analogized to tying and exclusive dealing, they do not consider the pro-competitive reasons why manufacturers adopt such policies. And while others have studied these pro-competitive uses in the context of exclusive dealing and tying, this work has not been undertaken in the context of bundling and bundled rebates.<sup>71</sup> As a result, these models do not provide a reliable way to gauge whether the potential for harm would outweigh any demonstrable benefits from the practice.

Despite the relative lack of knowledge regarding the effects of bundled discounts, they were held to violate Section 2 of the Sherman Act in *SmithKline Corp. v. Eli Lilly & Co.*<sup>72</sup>. In this case, decided before the Supreme Court's decisions in *Matsushita* and

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<sup>69</sup> See, e.g., Benjamin Klein, *Market Power in Antitrust: Economic Analysis After Kodak*, 3 Sup. Ct. Econ. Rev. 43 (1993).

<sup>70</sup> Consideration of such issues would further complicate application of the Greenlee, et al. test, as the stand alone prices for *X* and *Y* associated with mixed bundling are often higher than the optimal prices for *X* and *Y* in the absence of bundling. For an example, see W. J. Adams & Janet L. Yellen, *Commodity Bundling and the Burden of Monopoly*, 90 Q. J. Econ. 475 (1976) (containing example of mixed bundling with these characteristics).

<sup>71</sup> See, e.g., Jan B. Heide, Shantanu Dutta, & Mark Bergen, *Exclusive Dealing and Business Efficiency: Evidence from Industry Practice*, 41 J. L. & Econ. 387 (1998); Howard Marvel, *Exclusive Dealing*, 25 J. L. & Econ. 1 (1982).

<sup>72</sup> 575 F.2d 1056 (3d Cir.1978).

*Brooke Group*, both SmithKline and Lilly sold cephalosporin antibiotics to hospitals. Lilly was the dominant seller of cephalosporin antibiotics. Beginning in October 1972, Lilly instituted a Cephalosporin Savings Plan (CSP) which gave volume rebates of 2% to 12% based on a hospital's total purchases of Lilly cephalosporins. The original program covered four patented cephalosporins.<sup>73</sup> In October 1973, Lilly added Kefzol, an unpatented cefazolin cephalosporin antibiotic to the CSP program. By this time, SmithKline was selling a competing cefazolin, with the brand name Ancef. In April 1975, Lilly came out with a revised CSP. The revised CSP contained a base dividend with a schedule of volume rebates based upon total purchases.<sup>74</sup> However, compared to the CSP volume discounts, the percentage rebates under the revised CSP base dividend were generally reduced by 3% across the board.<sup>75</sup> However, Lilly allowed hospitals to obtain an additional 3% "bonus rebate" if they met individual target volumes for 3 out of the 5 cephalosporins sold by Lilly. Thus, a hospital could generally receive the same rebate under the revised CSP as it did under the CSP. However, to do so, it would have to meet the new product specific targets.<sup>76</sup>

On its face, the added requirement for the "bonus rebate" does not seem exclusionary or targeted at SmithKline. However, the court noted that in most cases, the bonus rebate thresholds set by Lilly made it unlikely that a hospital would meet the individual thresholds for its low volume products, Loridine and Kafocin. Thus, in order to get the bonus rebate, most hospitals were required *de facto* to meet the individual targets for Keflex, Keflin, and Kefzol. The court noted that the rebates were "actually paid largely in Keflin and Keflex."<sup>77</sup> Moreover, the individual thresholds could be set so that meeting the threshold for Kefzol would be difficult if a hospital purchased Ancef from SmithKline.<sup>78</sup>

SmithKline challenged Lilly's use of bundled discounts (in the form of rebates) under Lilly's revised (revised CSP). The district court, after a bench trial, held that Lilly's revised CSP violated Section 2 of the Sherman Act. The court, confronting the fact that Lilly's volume discounts did not result in net prices below cost, noted that "a

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<sup>73</sup> These included Keflex, Keflin, Loridine, and Kafocin. See *SmithKline Corp. v. Eli Lilly & Co.* 427 F. Supp 1089, 1094 (E.D.PA.1976).

<sup>74</sup> *Id.* At 1104-5.

<sup>75</sup> For example, a hospital purchasing over 96,000 grams per quarter would have received a 12% rebate (the maximum) under the CSP. Under the revised CSP, the same hospital would have received a 9% rebate.

<sup>76</sup> Thus, the hypothetical hospital in the prior note, *supra* would receive a 9% rebate under the revised CSP. However, if it bought over 2000 grams of three different Lilly cephalosporins in a given quarter, its total rebates would rise back to 12%.

<sup>77</sup> *SmithKline*, *supra* note 72.

<sup>78</sup> In a case decided after *Brooke Group*, the same Circuit Court applied the *Brooke Group* standard to the use of discounts in the monopoly product based (in this case, run of the press advertising) based on total purchases from the defendant (including ROP and direct mail advertising). See *Advo, Inc. v. Philadelphia Newspapers, Inc.*, 51 F.3d 1191 (1995). The plaintiff in the case sold only direct mail advertising. The court differentiated this case from *SmithKline* on the grounds that the discounts in that case were "tied to the purchase of specific items", whereas the discounts in *Advo* were "total quantity" discounts. From the standpoint of direct mail market, such a discount structure would disadvantage the single product plaintiff, so in theory, such total market discounts could exclude. However, even if one rejects this distinction, the same result could have been reached by holding that the plaintiff failed to provide sufficient evidence of such an exclusionary effect. *Id.* at 1203.



monopolist does not receive immunity merely because it has priced the product in issue above its average cost. For that immunity is lost when it uses a pricing scheme linking the monopolistic products (Keflin and Keflex) with another competitive product (Kefzol) to deter SmithKline from entering or effectively competing in the cephalosporin market. We should be ever mindful that the gravamen of this complaint and my holding are not that the price which Lilly separately charges for Keflin or Keflex is unreasonable from an antitrust standpoint; the nub of this case is the linkage of these latter products in a pricing scheme to deter competition in Kefzol.”<sup>79</sup>

While the court did not find that the revised CSP constituted an illegal tying arrangement, it did find that “the effect of Lilly’s revised CSP was likely the same as if a tie-in was used namely, the expansion of Lilly’s monopoly power into previously competitive areas of the cephalosporin market.”<sup>80</sup> In analyzing the substantive effect of the revised CSP on SmithKline, the court noted that “the revised CSP raised substantially the discount Smith-Kline would have to offer hospitals on sales of Ancef,” resulting in a negative return on sales on both average and large accounts.<sup>81</sup> The court noted that even if SmithKline were able to reduce the costs of goods to Lilly’s levels, would be unable to compete successfully for larger accounts without extraordinarily high rebates.

Thus, in finding liability, the court adopted a form of the hypothetical equally efficient competitor test.<sup>82</sup> The court found that the plaintiff, through evidence of profits and the likely size of the rebates necessary to match Lilly’s bundled rebates, had met its burden of proof. From an economic standpoint, the hypothetical equally efficient competitor test is flawed, as it focuses on the harm to competitors, and does not separate out bundled rebates that decrease welfare from ones that do. Thus, use of such a test, as noted above, can be over inclusive and condemn welfare increasing bundled rebates.

On the other hand, Greenlee et al. note that the facts of the case are consistent with a welfare decreasing use of bundling, and would likely fail their consumer welfare test. They note that the change from the CSP to the revised CSP generally resulted in a 3% decrease in the rebate if a hospital did not meet its bonus rebate, but resulted in the same rebate as the CSP for those that did qualify for the 3% additional bonus rebate. Thus, the revised CSP resulted in higher prices, *ceteris paribus*, for those who did not meet the bonus rebate thresholds, and the same prices with more conditions for those who did. Thus, relative to the CSP, Lilly’s move to the revised CSP implemented a *de-facto* tie, and likely reduced welfare. Thus, while they do not agree with the court’s use of the hypothetical equally efficient competitor standard, they suggest that the court did get the correct result, but for the wrong reasons.

Other courts have considered similar above cost pricing behavior, but have come to the opposite conclusion. The equally efficient competitor test was used by the court in

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<sup>79</sup> *Id.*

<sup>80</sup> *Id.* at 1121.

<sup>81</sup> *Id.* at 1122-3.

<sup>82</sup> See text accompanying notes 38-40 .

*Ortho Diagnostic Systems v. Abbot Labs, Inc.*,<sup>83</sup> decided after *Brooke Group*. In this case, Abbot Labs sold five tests used to detect viruses in the blood supply. These tests included the HCV (a test for Hepatitis C virus), the Anti-core (tests for the core of the Hepatitis B virus), the HTLV (test for a virus associated with leukemia), the HIV ½ (tests for two strains of the HIV virus), and the HBsAg (tests for the Hepatitis B surface antigen). The tests were not interchangeable, and tested for the presence of different viruses. The plaintiff, Ortho, sold only the HCV test.

Ortho sued Abbot over a contract between Abbot and the Council of Community Blood Centers (CCBC). Under the terms of this contract, CCBC's members were entitled to advantageous pricing if they purchased a package of four or five tests from Abbot. Ortho argued that the terms of this contract served to foreclose or impair competition by Ortho. Specifically, the contract specified prices in which a buyer that only purchased three tests would pay more than one that purchased all five tests. They argued that this resulted from the *de facto* penalty structure built into the prices of the HTLV and HIV ½ tests when three, rather than four or five tests were purchased.<sup>84</sup>

The judge granted the defendant's motions for summary judgment on the Section 2 claims. While the plaintiff conceded that Abbot had priced each component of the package above average variable costs,<sup>85</sup> the court held that this alone was not sufficient to shield it from Section 2 liability. Rather, the court ruled that the existence of package pricing prevented it from disposing of the case under the *Brooke Group* test, as such pricing could be used to exclude an equally or more efficient competitor.<sup>86</sup> However, the judge found that in this case, Abbot's package discounts would not have in fact excluded an equally efficient competitor, as even its most discounted prices were above both its and Abbot's average variable costs.

The judge also considered the deposition testimony of Ortho's expert economist, who suggested using an incremental profit test to examine whether or not the incremental discounts on the five product package, while resulting in net prices that were above costs, were compensatory.<sup>87</sup> The plaintiff's expert argued that if the incremental discounts were not compensatory, Abbot would not have used such discounts absent an anticompetitive motive. While the court did not reject the compensatory pricing theory as a matter of law, it did reject application of the theory because of a lack of rigorous data and analysis showing that Abbot's bundle pricing was in fact non-compensatory, noting that "[in] order to defeat a properly supported motion for summary judgment, a party may not rest on economic theories that may or may not apply to the fact of the case or on conclusory or incomplete expert analyses any more than it may rest on unsubstantiated allegations of its pleading."<sup>88</sup>

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<sup>83</sup> 920 F. Supp. 455 (1996).

<sup>84</sup> Purchase of only the HTLV, HIV ½ and HCV tests from Abbot would cost \$7.57, while purchase of all five tests, plus data management services, would only cost 7.37 when purchased as a bundle. *Id.* at 461.

<sup>85</sup> *Id.* at 470.

<sup>86</sup> *Id.* at 467-8.

<sup>87</sup> For a fuller discussion of incremental predation tests, see the text accompanying notes 28-32, *supra*.

<sup>88</sup> *Ortho*, *supra* note 83 at 471.

A similar example is contained in *Virgin Atlantic Airways, LTD. v. British Airways PLC*.<sup>89</sup> In this case, the plaintiff Virgin sued British Airways under Section 1 and 2 of the Sherman Act, alleging that the defendant used anticompetitive volume discounts with travel agents and corporate clients. The district court granted the defendant's motion for summary judgment, principally on the ground that the plaintiff failed to support its expert's theories of anticompetitive practices with factual evidence. The Second Circuit affirmed. With respect to the Section 2 claims, the Second Circuit held that the volume discounts did not constitute below cost pricing, nor did they constitute an attempt by British Airways to leverage its monopoly at London's Heathrow Airport to other markets.<sup>90</sup>

The incentive agreements used by British Airways were based exclusively on measures such as sectors flown or revenue earned. The agreements were not uniform, with some of the agreements having all British Airways travel count toward the thresholds, while in other agreements only certain routes were specified. The discounts, once reached, were applied to all units.<sup>91</sup>

Virgin charged British Airways with engaging in predatory foreclosure and the bundling of ticket sales in an attempt to foreclose transatlantic competition by diverting passengers from Virgin and other airlines to itself. The plaintiff's economic expert testified that incremental sales induced by the volume discounts were priced below the incremental cost of the program. This foreclosed entry or expansion by competitors, and allowed British Airways to immediately recoup any losses on these below cost sales by maintaining supercompetitive prices on routes that were protected from more vigorous competition.

To show incremental below cost pricing, the plaintiff's expert attempted to implement the incremental cost test suggested by Greenlee and Reitman.<sup>92</sup> Specifically, he estimated that British Airways' incremental cost of adding an additional transatlantic flight was approximately 90 percent of incremental revenue. Based on British Airways' incentive payment schedule, he then calculated the ratio of incremental incentive payments to incremental revenues. He found that in many cases, this ratio exceeded 10 percent. Under these circumstances, the incremental revenue net of the incremental incentive payments would not cover their incremental costs.<sup>93</sup>

The court did not explicitly reject the plaintiff's theory of predatory foreclosure nor did it reject the expert's proposed incremental cost test. Rather, it found the plaintiff

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<sup>89</sup> 257 F. 3d 256 (2001).

<sup>90</sup> The same loyalty discounts for travel agents were successfully challenged under Article 82 in European courts. See Heimler, *supra* note 4.

<sup>91</sup> *Id.* at 261.

<sup>92</sup> See text accompanying notes 31 - 32, *supra*.

<sup>93</sup> For a loyalty discount program to be compensatory, the incremental revenues net of the incremental discounts must exceed any incremental costs. If incremental discounts were 10 percent of incremental revenues, and incremental revenues equaled 90 percent of incremental costs, the plaintiff's expert's calculations imply that incremental revenues net of incremental discounts were about .81 percent of incremental costs, and thus were non-compensatory.

had failed to present sufficient evidence in support of its theory and test. The court noted that the plaintiff's expert assumed that the entire cost of an additional flight was attributable to the use of incentive agreements. It was not clear to the court, for several reasons, that this was the correct measure of incremental costs. In addition, the court noted the lack of specific market data regarding the use of incentive agreements on the particular routes where antitrust harm was alleged to have occurred. As a result, the court held that "summary judgment was properly granted, for where 'deficiencies in proof would bar a reasonable jury from finding that the scheme alleged would likely result in sustained supracompetitive pricing, the plaintiff's case has failed'"<sup>94</sup>

While the courts in the above cases did not extend the above cost safe harbor in *Brooke Group* to cases involving bundled discounts, they have generally followed the *Brooke Group* Court's focus on the actual facts or realities of the marketplace rather than on hypotheticals. This latter focus was not, however followed in *LePage's v. 3M*.<sup>95</sup> In *LePage's*, the Third Circuit Court of Appeals upheld a jury verdict that found 3M's use of bundled rebates violated Section 2 of the Sherman Act. 3M's bundled rebates gave large retailers (such as Wal Mart, K-Mart, and Target) discounts if they purchased certain volumes of various 3M products. The size of the bundled rebates increased when retailers met volume goals across six product categories, with the largest rebates being given to retailers that met the volume targets in all six categories. The use of bundled rebates was challenged by LePage's, the leading manufacturer of unbranded transparent tape. LePage's alleged that the 3M's use of bundled rebates caused retailers to drop LePage's as a supplier not because of competition on the merits, but rather because of the possibility that they might fail to qualify for the largest rebates. A jury found that 3M's practices violated Section 2 of the Sherman Act. A Third Circuit Panel reversed, but the Third Circuit, sitting *en banc*, upheld the jury's verdict on the bundling claims.<sup>96</sup>

Despite noting that the Third Circuit's *en banc* decision rested on an incomplete record and a poorly articulated theory of economic harm, the United States, in its brief to the Supreme Court in *LePage's*, urged the Court not to take the case.<sup>97</sup> While the United States recognized that "the business community and consumers would benefit from clear, objective guidance on the application of the Section 2 to bundled rebates", they had little confidence that this case would provide the Court "a suitable vehicle" for providing such guidance. In addition to the identified shortcomings of the case record and decision, the United States' position was influenced by the judiciary's relative lack of experience with this issue, and the underdeveloped nature of the "relatively recent and sparse" academic literature on bundled rebates.

The Supreme Court declined to review the case.<sup>98</sup> By deferring consideration of the issues presented in *LePage's*, the Court chose to await a case with a record better

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<sup>94</sup> *Virgin Atlantic*, *supra* note 89 at 273 (citing *Brooke Group*).

<sup>95</sup> *LePage's v. 3M*, 324 F.3d 141 (3<sup>rd</sup> Cir. 2003).

<sup>96</sup> For a detailed discussion of the economics of the case, see Daniel L. Rubinfeld, *3M's Bundled Rebates: An Economic Perspective*, 72 U. Chi. L. Rev. 243 (2005).

<sup>97</sup> See *Brief of the United States as Amicus Curiae*, 2004 WL 120591 (May 28, 2004)

<sup>98</sup> *LePage's v. 3M*, 124 S. Ct. 2932 (2004) (*cert. denied*).

adapted to development of an appropriate standard, and as urged by the United States in its brief, could allow “the case law and economic analysis to develop further”. In principle, the cautious approach urged by the United States in its brief and implicitly chosen by the Court is understandable, and is consistent with the cautious approach to the expansion of Section 2 liability taken by the courts generally.<sup>99</sup> Even in cases where the economic literature on vertical practices is relatively developed, the ability of courts to distinguish between pro and anticompetitive vertical restrictions is not so easy in practice. And without a reliable way to distinguish pro and anticompetitive uses, any rule that condemned ubiquitous business practices without a showing of likely harm to competition would result in the widespread condemnation of efficient practices. Such a result would be particularly damaging to the economy as it would chill the very conduct the antitrust laws are designed to protect.

Given the courts’ lack of experience with the practice of bundled rebates, and given the lack of empirical evidence regarding the relative prevalence of exclusionary versus pro-competitive uses of bundled rebates, these arguments for a cautious approach would seem to apply *a fortiori* to bundled rebates. The problem with the cautious approach taken by the United States and by the Supreme Court is that Third Circuit, in its *en banc* opinion in *LePage’s*, failed to exercise such caution. The Third Circuit concluded that it was sufficient for *LePage’s* to prove that it could not compete with 3M’s bundled rebates because “they may foreclose portions of the market to a potential competitor who does not manufacture an equally diverse group of products and who therefore cannot make a comparable offer.” Although the Third Circuit suggested that 3M’s bundled rebates could exclude an equally efficient competitor, it did not cite any evidence that an equally efficient competitor would have been excluded by 3M’s bundled rebates. Thus, in contrast to its approach in *SmithKline*, and the other circuits’ approach to cases involving multiproduct discounts, the Third Circuit’s approach in *LePage’s* would allow a jury to find a dominant firm liable under the antitrust laws based on the possibility that bundled rebates, including those that yield customers discounts, could exclude an equally efficient competitor that produces a less diverse set of products. The plaintiff would not have to show that it was an equally efficient competitor, nor would it have to prove that the bundled rebates in question would have, in fact, excluded a hypothetical equally efficient competitor.

As a result, *LePage’s* has generated much uncertainty over the legality of using a ubiquitous practice. The Third Circuit exposed to potential antitrust liability any firm found to possess sufficient market power that chooses to offer discounts on a bundle of products that are also sold separately by firms that sell only a subset of these products. The potential for liability will result in such firms being deterred from using bundling that would have led to reduced prices for consumers, and higher welfare. Thus, this decision is likely to impose the high type I error costs the Court has been so careful in avoiding in the past.

#### IV. Conclusion.

<sup>99</sup> See Evans and Padilla, *supra* note 27.

While there have been recent advances in the economic analysis of loyalty discounts, this literature is still relatively recent and sparse. Though some of these papers provide tests that would serve to identify either deviations from short run profit maximization or, in the case of bundled discounts, a reduction in consumer welfare or the exclusion of a hypothetically equally efficient competitor, these tests have several shortcomings. The incremental cost tests and the consumer welfare based tests may be difficult to implement and administer. And tests based on whether an equally efficient competitor can be excluded can condemn welfare-increasing behavior. Furthermore, the literature on loyalty discounts is almost exclusively theoretical, and the models and their specific assumptions have not been subjected to rigorous empirical testing. Moreover, these theoretical models, and the academic literature in general, has not rigorously examined procompetitive reasons firms might use loyalty programs. As a result, the economic literature currently does not provide a reliable way to gauge whether the potential harm from the use of loyalty discounts would outweigh any demonstrable benefits from their use.

A review of the major cases involving loyalty and other volume discounts suggest the following general observations. In the single product case, courts have consistently applied the Court's holding in *Brooke Group* and its "not easy to establish" two part test. As a result, they have generally ruled that above-cost volume discounts, including those that use market share discounts and near exclusive thresholds, are lawful and do not violate the antitrust laws. In cases involving multimarket or bundled rebates, however, courts have not generally followed the *Brooke Group* Court's presumption that above cost bundled discounts are presumptively legal. However, they have generally followed the *Brooke Group* Court's focus on the actual facts or realities of the marketplace rather than on hypotheticals. Thus, while the lower courts have considered the theories and tests contained in the recent theoretical literature on loyalty discounts, they have generally refused to find liability absent sufficient proof that the conditions required by these tests apply, and that the underlying tests reflect market realities. This approach is consistent with the federal courts' generally cautious approach to expanding Section 2 liability, and the recognition of the underdeveloped and untested state of the academic literature.

Moreover, there are significant flaws in the two cases where courts have found use of bundled loyalty rebates to be unlawful. In *SmithKline*, the court did focus on data and concluded that an equally efficient competitor would have been excluded by the bundled discounts evaluated in the case. However, economic theory suggests that the court may have used a flawed standard, and should have instead focused on the fact that changes to the bundled rebate programs served to increase rather than decrease prices. And the court's decision in *LePage's* not only suggested use of the same flawed standard, it found liability without requiring sufficient proof that the standard even applied to the facts of the case.

In this area, the challenge for both antitrust law and economics is the same. In order to reliably distinguish between procompetitive and anticompetitive uses of loyalty discounts, a broader understanding of this area is required. Systematic research on why

loyalty discounts are used should consider pro as well as anticompetitive theories, and should focus on generating testable hypotheses and the data that can be used to test these hypotheses. Until this is done, the courts will likely be forced, in many more cases, to make uninformed decisions and choose between flawed over and under inclusive tests based upon incomplete theories and insufficient facts.