A UNIFYING ANALYTICAL FRAMEWORK FOR LOYALTY REBATES

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ABSTRACT (ENGLISH)

Because the final price is a function of the buyer’s purchases from rival manufacturers, the loyalty-rebate contract references rivals.4 Loyalty rebates are often called "all units discounts" because, once the buyer’s purchases pass a designated share threshold, the rebate typically applies to all units that the buyer purchases within a specified time period up-to-and usually past-the contract threshold. [...] the dominant firm wants to prevent an entrant’s contestable-market success from facilitating entry into non-contestable markets. Courts tasked with fashioning injunctive relief and parties keen on settling their disputes have long relied on unbundled pricing to resolve the competition problems that discounts pose.9 Unbundled pricing exhibits procompetitive externalities that damages do not: an injunction against exclusionary rebates benefits all current and future entrants. [...] under the rule of reason, a court should enter an injunction only after finding that a loyalty rebate lacks procompetitive efficiencies that outweigh its harmful consequences.10 In these circumstances, unbundled pricing is unlikely to diminish consumer welfare. so the welfare gains from antitrust enforcement in the discount context seem particularly compelling-presuming, of course, that courts and regulators can efficiently distinguish anticompetitive from competitively benign discounts.3 Framing Our Inquiry This article uses the variables above-threshold, discount, and contestable share-to identify loyalty contracts that raise antitrust concerns. we first define the scope of our analysis by demarcating circumstances about which we make no claims. [...] we say little about rebates conditioned on volume and not share.14 Volume rebates do not rely on "information outside [the] 'standard' buyerseller contractual relationship";15 in other words, volume contracts do not reference rivals.

FULL TEXT

This article asserts and operationalizes the principle that demand contestability determines the competitive effects of loyalty rebates. We urge antitrust courts and enforcers to recognize that the construction of a loyalty-rebate contract is an act-akin to a decision to tie, to refuse to deal, or to collude-that carries competitive consequences. These consequences, we demonstrate, turn on the interaction of three important features of the contract: (1) the discount; (2) the threshold, i.e., the share of a buyer’s requirements that it must purchase from the incumbent to qualify for the discount; and (3) the contestable share. The incumbent firm determines each of these features. Our analysis shows that existing marginal-cost rubrics are unlikely to capture the impact of a loyalty-rebate contract on competition.

We propose to replace these rubrics with a single metric-the penalty that a rebate contract imposes on a prospective entrant. Specifically, we calculate the burden that the rebate contract imposes on the entrant-the amount by which the entrant must lower its own price below the market price to counteract the impact of the rebate contract on customer incentives. This "effective entrant burden" measures the extent to which the dominant firm leverages non-contestable demand into anticompetitive exclusion. An analysis that focuses on the size of this burden, we assert, makes sense of the divergent holdings of courts confronted with loyalty-rebate disputes.
The article proceeds in four Parts. Part I introduces the structure and theory of contracts that reference rivals (CRRs), with a focus on loyalty rebates. We provide a summary of the contracts’ exclusionary effects before describing the contracts’ structural features and reviewing existing literature on discount exclusion. This Part defines contestability and concludes with remarks on the concept’s implications for marginal-cost jurisprudence. Part II turns to doctrine. We compare loyalty-rebate standards in Europe and America and trace the fragmented case law produced by courts’ efforts to adjudicate loyalty-rebate cases. We suggest that contestability proves both ubiquitous and influential in antitrust litigation. Part III motivates and introduces our simple model of discount exclusion. We identify conditions that contracts and market structures must satisfy for loyalty rebates to pose a threat to competition. Taking these conditions as given, we then introduce the effective entrant burden as a tractable metric derived from the buyer decisions that collectively determine discount foreclosure. This simple construct, we argue, can explain and ought to guide the reasoning of courts tasked with adjudicating loyalty rebates. Part IV applies our metric to a group of recent loyalty-rebate cases in the United States and Europe. We compare the size of the effective burden imposed on the entrant to courts’ determinations of liability.

I. THE STRUCTURE AND THEORY OF CONTRACTS THAT REFERENCE RIVALS

A. BASICS

“Loyalty-rebate” contracts provide lump-sum, all-units rebates to buyers that purchase at least a designated share of their requirements from the seller. For example, at the end of a year, an engine manufacturer might award a boat builder a 5 percent discount on all engines purchased from the manufacturer, provided that these purchases account for at least 75 percent of all engines that the boat builder purchased. Notice that, to administer this contract, the manufacturer must learn how many engines the buyer purchased from rival manufacturers. Because the final price is a function of the buyer’s purchases from rival manufacturers, the loyalty-rebate contract references rivals.

Loyalty rebates are often called “all units discounts” because, once the buyer’s purchases pass a designated share threshold, the rebate typically applies to all units that the buyer purchases within a specified time period up to and usually past the contract threshold. The times at which sellers pay loyalty rebates varies. Some sellers provide rebates to buyers before a purchasing period begins; should the buyer fail to meet the threshold within the specified period, the buyer must return the rebate.

1. The Incumbent Designs the Bundle

Courts and commentators often overlook the endogeneity of discount structures: loyalty rebates apply chosen discounts when buyers reach chosen thresholds in bundles of chosen products. Return to the engine hypothetical: suppose that a firm dominant in engines and facing a new competitor is also dominant in pumps. It creates a loyalty rebate requiring buyers to reach thresholds in engines and pumps. Now suppose that the entrant does not make pumps. The engine-pump rebate limits the share of the constructed bundle that the entrant may serve. so the dominant firm can employ contractual conditions to manipulate contestable share.

2. A Narrative of Discount Exclusion

For readers unfamiliar with discount exclusion, we provide an informal narrative. Consider a dominant firm with high market share in a product market. Suppose that our case arises as loyalty-rebate cases often do—in a differentiated-product setting. In our stylized setting, the incumbent supplies a set of differentiated products that, together, comprise a product line. The entrant supplies only a subset of these products. The dominant firm contracts with a buyer to supply the buyer’s purchases across the product line. The contract includes a loyalty rebate based on the dominant firm’s share of the buyer’s purchases.

The dominant firm has two exclusionary motives: one static and one dynamic. First, the dominant firm wants to preserve its share in existing, contestable markets. Second, the dominant firm wants to prevent an entrant’s contestable-market success from facilitating entry into non-contestable markets. Non-contestable market entry may result if the entrant develops the fixed assets, such as distribution or brand name, necessary to supply a related product in the line.
To prevent share and profit erosion, the incumbent writes a loyalty contract. The contract raises list prices but provides an all-units discount-applied across all products in the line-to buyers that purchase a specified fraction of their requirements from the incumbent. If a buyer meets the threshold-and if the incumbent’s price increases offset the discount-the loyalty contract leaves the buyer’s costs and the incumbent’s revenues unchanged. But if the loyalty threshold approximates one minus the entrant’s share, the entrant cannot expand: the loyalty contract penalizes buyers that expand the entrant’s share.8

The contract has several consequences. First, the entrant does not expand because it cannot overcome the financial impact of the rebate on buyers’ incentives. Once the entrant realizes the futility of competing for sales subject to the rebate, other consequences may follow: exit due to lack of scale, less price competition because the entrant does not gain sales by lowering prices, or even higher entrant prices if the entrant retreats to serving a niche group of buyers that already favor its product. The contract reduces competition in all cases.

While courts have struggled to identify anticompetitive discounts, these discounts, once identified, have proven relatively easy to remedy through unbundled pricing. Courts tasked with fashioning injunctive relief and parties keen on settling their disputes have long relied on unbundled pricing to resolve the competition problems that discounts pose.9 Unbundled pricing exhibits procompetitive externalities that damages do not: an injunction against exclusionary rebates benefits all current and future entrants. Moreover, under the rule of reason, a court should enter an injunction only after finding that a loyalty rebate lacks procompetitive efficiencies that outweigh its harmful consequences.10 In these circumstances, unbundled pricing is unlikely to diminish consumer welfare. So the welfare gains from antitrust enforcement in the discount context seem particularly compelling-presuming, of course, that courts and regulators can efficiently distinguish anticompetitive from competitively benign discounts.

3. Framing Our Inquiry

This article uses the variables above-threshold, discount, and contestable share-to identify loyalty contracts that raise antitrust concerns. We first define the scope of our analysis by demarcating circumstances about which we make no claims. First, we say nothing here about “classic” price predation: that is, disputes arising from linear price schedules for single products viewed by consumers as close substitutes and offered by competing suppliers.11 Similarly, we take no position on rebates that involve single products rather than product lines.12 Though the magnitude and shape of scale economies might allow for harm to competition in single-product cases,13 product-line cases in which the entrant does not sell all products-account for most litigated disputes. Finally, we say little about rebates conditioned on volume and not share.14 Volume rebates do not rely on “information outside [the] ‘standard’ buyerseller contractual relationship”;15 in other words, volume contracts do not reference rivals. As a result, volume rebates impose no explicit restraint on trade between an incumbent’s customers and its rivals. By contrast, share rebates tax the marginal purchases that an incumbent’s customers make from its rivals.16

Incumbents can structure volume rebates, however, to have almost the same effects as loyalty rebates, and our analysis extends to volume rebates that incumbents have so structured. Several recent cases have involved such rebates.17 These cases have featured contracts that provided a discount (or series of increasing discounts) to customers that bought as much as they purchased in a prior period (or whose purchases exceeded their prior-period purchases by a specified increment).18 The competitive effects of such contracts depend, inter alia, on the growth and elasticity of market demand.19 If demand is static and inelastic, intermediary buyers must reduce their purchases from rivals if they want to buy more from the incumbent. In these settings, share and individualized volume thresholds have similar effects. If demand is elastic, by contrast, the intermediary may be able to exert effort to expand the market and sell more of the dominant firm’s product without necessarily affecting the entrant.

B. VARIABLES THAT CHARACTERIZE THE STRUCTURE AND EFFECT OF LOYALTY REBATES

Sellers choose the three variables-threshold, discount, and contestable share-that characterize loyalty contracts. The threshold quantifies the degree of buyer loyalty sought by the seller. The threshold may be specified as the quantity of, or expenditure on, a seller’s products relative to a buyer’s requirements for a product line. Thresholds
have typically been fairly high (e.g., 80 percent) in litigated cases. The discount specifies the price reduction that buyers receive on all purchases within the contracted time period upon reaching the contract’s threshold. Finally, contestable share is the share of a discount bundle that an entrant can supply in the short run. We assume that incumbents can supply all products in the bundle that they design. An illustration of contestability follows.

To care for patients, hospitals must buy thousands of products. These products include, for example, surgical kits, wound staples, and bandages. Typically, hospitals buy these products from distributors, not from the products’ manufacturers. Suppose that an incumbent distributor sells all the products that hospitals need but competes with an entrant distributor that sells only sutures—a product category that accounts for 10 percent of hospitals’ requirements. If the incumbent suddenly exited the market, leaving only the entrant, the entrant could supply at most 10 percent of hospitals' medical-products requirements. This 10 percent is the bundle’s contestable share. Residual demand, which only the dominant firm can supply, comprises the bundle's noncontestable share.

Contestable shares are fixed in the short run. But with time and capital, entrants can learn about demand and production, buy and install capacity, and build brands and develop distribution. Moreover, entrants may need to prove to investors that they can profitably supply a limited set of products before investors will fund expansion. So we assume—and the cases we analyze find—that entrants need time to develop complete bundles (often, product lines). In the short run, loyalty-rebate contracts exclude because entrants cannot serve non-contestable demand and thereby compete for a buyer’s entire business.

In this article, we derive from the threshold, discount, and contestable share a metric that quantifies the strength of the rebate incentive. The Effective Entrant Burden (EEB) is the product of the threshold and the discount (the total dollars that the incumbent has available to affect consumer choice) divided by the contestable share (the total sales that the entrant could attempt to obtain). The higher this metric, the larger the financial burden the contract places on the entrant.

C. ECONOMIC ANALYSIS OF LOYALTY REBATES

1. Motivations for Contracts with Loyalty Rebates

Loyalty rebates offer incumbents an advantage over predatory pricing: rebates are cheaper. Intuitively, and conditional on being successful, an incumbent would prefer to exclude by lowering price on as few units as possible. Conventional predation requires reducing price on all units today in exchange for uncertain profits on units tomorrow. For these reasons, predation is usually expensive and risky.

Loyalty rebates, by contrast, allow the incumbent to lower price on only marginal sales. A numerical example illustrates this point. Suppose the incumbent initially charges a profit-maximizing monopoly per-unit price of $95. We make the arithmetic easier by assuming that each product in the product line has a production cost of zero and the same optimal price, but these assumptions are not necessary for the analysis. In our example, the buyers are intermediaries, as they are in the majority of litigated cases. Each intermediary buys 100 units. An entrant offering some elements in the product line arrives in the market. The incumbent is the sole seller of varieties that comprise 80 percent of consumer needs, and therefore always sells at least 80 units. The contestable share is 20 percent because both the entrant and the incumbent offer products that account for this share of consumer needs. The entrant’s products are superior, however, and if offered the entrant’s and the incumbent’s products at the same linear prices, each buyer will purchase 20 units from the entrant. We assume symmetry in production costs between the entrant and the incumbent and assume that the entrant initially charges $95 per unit.

Before price competition occurs in the contestable segment, the dominant firm introduces a loyalty rebate: the dominant firm offers a 5 percent discount off a list price of $100 to buyers that purchase at least 90 percent of their requirements from it. By raising its list price to $100, the dominant firm ensures that, after the 5 percent discount is applied, the buyer pays the dominant firm’s profit-maximizing price of $95. To qualify for the rebate, a customer will have to buy 10 units from the incumbent that it would otherwise have bought from the entrant. Table 1, below, compares the costs that a buyer incurs absent the loyalty-rebate contract with those it incurs under the contract, which depend, in turn, on whether the buyer’s purchases meet the rebate threshold. Figure 1, below, presents a graphical analysis of the same costs.
The buyer can choose whether to adjust its purchases to qualify for the rebate. Suppose the buyer wants to buy 20 units from the entrant and 80 from the incumbent under the loyalty-rebate contract (the same product mix that the customer would have preferred to buy absent the contract). The buyer pays $100 for each of the 80 units it purchases from the incumbent, pays $95 for each of the 20 units it purchases from the entrant, and does not qualify for the rebate. The buyer's total expense (shown in the bottom row) has increased by $400, which goes to the incumbent. By contrast, if the customer remains "loyal" (i.e., meets the rebate threshold), the incumbent's sales increase from 80 to 90 units. The incumbent gains $1,400 in revenue but must rebate $450 to the buyer, for a net gain of $950. The buyer pays $9,500—exactly what it would have paid under a linear-pricing schedule, but $400 less than it would have paid for "disloyalty" (failure to meet the threshold). The entrant has lost $950 in revenue and 10 percent in market share.

The loyalty-rebate contract allows the incumbent to gain an additional 10 units of sales and $950 in profit. The marginal price of each non-contestable unit and unit above the threshold remains $95, the same price those units would have had absent the contract. The contract induces the buyer to purchase additional units from the incumbent not by offering the buyer direct savings on those units, but by changing the shape of the pricing function. The loyalty-rebate structure allows the incumbent to offer the buyer an incremental 10 units for a net price of $550 ($1,000 list price less the rebate of $450), or for an effective price of $55 each. Because of the shape of the pricing function, the buyer experiences a deep discount on the key contestable units, even as it continues to pay the same average price of $95 on its purchases ($8,550/90).

We can also see how the loyalty rebate affects the shape of the pricing function by examining the incumbent's revenue. Had it charged a flat $55 for each of the 10 incremental units, the incumbent would have generated an additional $550 for a total of $8,150 in revenue. This is $400 less than the $8,550 in revenue that the incumbent obtains by offering a loyalty rebate. Thus, loyalty rebates "constitute less costly and more efficient exclusionary tools than predatory pricing."33 and, indeed, are a less costly and more efficient exclusionary tool than a standard linear above-cost discount.

Alternatively, the rebate can be thought of as a penalty for disloyalty.34 The additional $400 paid by a buyer that fails to meet the loyalty threshold operates as a penalty or tax on the 10 additional units that the buyer would continue to purchase from the entrant. The contract raises the effective cost to the buyer of each of these entrant units by $40.

Notice that, by raising its list price before offering the discount, the dominant firm can implement this strategy without profit sacrifice. The key feature of the setting that enables this inexpensive strategy is the noncontestable share that the dominant firm cannot lose to the entrant. The dominant firm can offer a "discount" on non-contestable products (by raising their price above the optimal price of $95 and then discounting it back to $95) to induce buyers to purchase from the dominant firm products that they could have purchased from the entrant.

An effective loyalty-rebate contract gives a buyer a strong financial incentive to buy the marginal units from the incumbent by offering the buyer a small discount on all purchases but making that discount contingent on the buyer's marginal purchases at the threshold. The small discount multiplied across the non-contestable share becomes a large sum, which the incumbent then offers as a significant discount to induce the purchase of relatively few marginal units—10 in our example—that the buyer would otherwise buy from the entrant. Meanwhile, the incumbent can effectively offer the noncontestable share at its original optimal price—losing no demand—because in equilibrium, buyers will remain loyal and experience a net price of $95 on the contestable units.35

A key insight that emerges from this example is that the loyalty contract causes the total cost of the buyer's purchases from both firms to decline as the buyer purchases an increasing share of its requirements from the incumbent. As the buyer shifts 10 units from the entrant to the incumbent (moving from the "Disloyal Buyer" column in Table 1 to the "Loyal Buyer" column on its left), the buyer's total costs decline by $400 (from $9,900 to $9,500), even as the buyer continues to purchase the same number of units. From the buyer's perspective, each of the units that it continues to purchase from the entrant carries an effective penalty of $40; by shifting the 10 units from the entrant to the incumbent, the buyer lowers the total price it pays by $400, $4,500 instead of $4,900, even
though it is still purchasing a total of 100 units.
Cutting price on non-contestable share would waste resources because the entrant cannot sell those units in the short run regardless of price.36 The dominant firm will earn profits on its non-contestable products but faces significant competition, and will earn perhaps close to zero profits on the contestable share. This lack of profit on the contestable share can be solved by the dominant firm's introduction of a loyalty rebate.
Loyalty rebates may prevent a rival from entering or expanding or may induce a rival to exit.37 In our model, a loyalty-rebate contract cannot harm an entrant until the contract's threshold requirement exceeds the non-contestable share of market demand. A lower threshold does not affect the buyer's choices because the buyer must purchase non-contestable share from the incumbent in any case.38 However, we note that the relevant non-contestable share for antitrust liability could be smaller than the share that the entrant cannot currently produce if, for instance, the entrant is about to expand its product line. In such a setting, the competitively relevant non-contestable share to use may be the share the entrant will not be able to produce after expansion of its product line. For this reason, competitive analysis may properly consider future measures of contestable share—if those represent the plans of the entrant and the fears of the incumbent.
Loyalty discounts can "be used for both pro and anticompetitive purposes."39 Models of anticompetitive discounting "abound,"40 particularly where discounting firms have market power.41 These models identify both exclusionary and collusive harms from loyalty rebates.42 Roughly speaking, the exclusion narrative locates anticompetitive effect in the potential for cRRs to affect competitor decisions about exit, entry, or expansion.43 The collusion narrative takes entry, exit, and expansion as fixed and considers whether cRRs will weaken price competition among existing market participants.
we focus in this article on the anticompetitive effects that arise from exclusion, but both effects arise in the settings we discuss.44 consider our medical product-distribution example. The exclusionary effect is over products that the entrant does not currently, but could, offer, while the collusive effect increases the prices of products that both firms offer. It is not surprising that both effects could arise, because collusion and exclusion are often naturally combined by firms exercising market power.45

a. The collusion Narrative
Rebate contracts prevent entrants from expanding share. So entrants' usual tradeoffs between higher quantities and lower margins will not hold in markets where incumbents are successfully implementing rebate contracts. In trying but failing to pass the incumbent's rebate threshold, the entrant that opts for lower prices receives only lower margins on the same quantity. As a result, the entrant does not increase its profits by lowering its price. Instead, the entrant may choose to set its price at a level that maximizes its profits over the residual demand left to it by the incumbent's contract—essentially, to retreat to a small, but profitable, niche. This may result in a higher price to the intermediary, which can then pass on this higher price to the final consumers who most prefer the entrant's product. Consumers therefore will face higher equilibrium prices.46
A number of economists and commentators have developed models in which discounts facilitate anticompetitive coordination. For example, Michael Salinger has developed a simple model in which an incumbent uses a "cliffpricing" contract to force an entrant to choose between competing very aggressively for contestable share or retreating to a niche position and selling at high prices to those customers who already prefer its product.47 The cliffpricing contract thereby softens price competition.
Einer Elhauge, in a single-product setting, has argued that loyalty discounts raise prices by reducing firms' incentives to compete for "free" buyers—those who have not signed a contract and remain free to buy from both firms.48 A dominant firm that offers lower prices to free buyers, in Elhauge's model, must offer still lower prices to loyal buyers because the loyalty discount is coupled with a type of most favored nation clause that commits the firm to offering loyal buyers its lowest prices.49 Recognizing that the dominant firm has effectively committed itself to charging free buyers higher prices, entrants themselves offer free buyers prices that exceed competitive levels.50 Thus, the loyalty discount softens price competition.51
Nicholas Economides has suggested that rebate programs permit dominant firms to impose penalties on disloyal
customers, maintain market concentration, and elevate price. All of these collusion theories are of recent vintage. But they have begun to find their way into the rationales of published lower court opinions. Barry Nalebuff has presented an important insight about these strategies. In some settings, the products in the product line are substitutes for one another, though differentiated. In these settings, though the entrant is only producing one of several differentiated products, its low prices have the potential to steal share from the other products in the incumbent's product line. For example, low prices on LePage's generic transparent tape would likely cause some consumers to switch to generic tape from 3M's Scotch brand tape. The incumbent has a strong incentive to create a contract that keeps per-unit prices high across the product line rather than to lower the price of a product that could cannibalize other products' sales. If price for the contestable product falls too low, it will sell more and take share from the other products in the incumbent's product line, causing a loss of revenue due to either sales at a lower price or lost sales. Therefore, the incumbent is more willing to give a buyer a discount when that discount is structured to keep the marginal price of an additional contestable unit high.

In contrast, Benjamin Klein and Andres Lerner developed a model in which loyalty rebates sharpen competition by allowing output to expand past the point where list price is equal to consumer valuation. Sean Durkin has also presented a model in which loyalty rebates increase welfare. In both of these models, the incumbent and entrant sell only one good, for which consumers have a range of valuations. Unlike in our model, the incumbent in these models does not have non-contestable share, so the entrant can compete for the entire market. Loyalty rebates offer discounts at the margin and can be a procompetitive source of lower prices for that reason. Critically in these models, both firms can use loyalty rebates to compete for the whole bundle because both have inelastic customers and elastic customers. So these settings are very different from ours. In this article, we assume that firms make products in a product line; in the short run, the entrant cannot make all the products in the line; and each firm may choose a separate price for each product it makes in the line.

b. The Exclusion Narrative

In the face of a large financial penalty, an entrant may choose to exit all parts of the bundle. If exit occurs, the incumbent will face no competition in product markets into which the entrant might have found expansion profitable. Thus, entrant exclusion results in a short-run loss of consumer choice, higher prices, and lower quantity. Further harm may arise in the longer run from delayed entry into adjacent product markets into which the entrant could have expanded (to create contestable share) but for the rebate. The district court in SmithKline supported antitrust liability with a similar theory:

If Lilly can win today with such an anticompetitive plan, then in tomorrow's game, after the demise of its only real competitor (SmithKline), the defendant can then charge a very high price for its products unimpeded by the possibility that some new company might enter the field as a competitor. New entrants would not come because they would know that Lilly had destroyed SmithKline's valiant bid to enter the cephalosporin market.

Much academic analysis of loyalty contracts focuses on such contracts' exclusionary potential. This analysis comprises a subset of the "raising rivals' costs" literature and generally requires that loyalty rebates prevent rivals from obtaining minimum viable scale. Additional prerequisites for liability include "barriers to entry, [] the absence of procompetitive efficiencies," and, critically, constraints that prevent rivals from "competing to satisfy a large or complete portion of the [buyer]'s requirement." The decision rules that emerge from such theories consider foreclosure and the structural features of challenged discounts.

An early contribution to the literature that is important to our analysis is Philippe Aghion and Patrick Bolton's seminal 1987 paper. They model an exclusive contract designed by the incumbent, and allow the incumbent to choose a penalty for breach of that contract. The penalty makes purchasing from the entrant expensive and may deter entry. Deterrence depends on the empirical size of the penalty for breach relative to the efficiency of the entrant. The setting that Aghion and Bolton study is similar to one that we study insofar as an incumbent can create the arithmetic equivalent of a base price and a penalty using a higher price and a rebate. Given Aghion and Bolton's focus on exclusive dealing, the penalty in their model is triggered by a violation of exclusivity, rather than the buyer's failure to satisfy a lower share threshold.
Barry Nalebuff has identified two discount strategies that incumbents might use to foreclose—tactics that Nalebuff labels "exclusionary bundling." Nalebuff models a focal product market dominated by an incumbent firm (non-contestable) and an adjacent market in which buyers are indifferent between the incumbent's and entrant's products (contestable). The incumbent may achieve costless exclusion by bundling contestable and non-contestable demand under a contract with price equal to the sum of prices for contestable and non-contestable demand prior to the bundle. Although the high standalone price for the non-contestable product exceeds the incumbent's profit-maximizing monopoly price, buyers do not choose to pay the stand-alone price in equilibrium as they prefer to purchase the bundle. The threat is never carried out. Nalebuff concludes that bundling is exclusionary when "the defendant's pricing makes it unprofitable for [an entrant with the defendant's costs] to sell the competitive good at a price that would lead the customer to forgo the bundle." Nalebuff's analysis is similar to our own; the metric we develop quantifies the extent to which loyalty rebates render an entrant's sales "unprofitable." Nalebuff observes that discount exclusion entrenches monopoly by discouraging entry.

John Simpson and Abraham Wickelgren have developed a model in which a dominant upstream supplier can gain from tying its monopoly input to a second, competitively supplied input. It is in the interest of competitive downstream retailers to purchase the bundle, and their purchases cause foreclosure of competitive input sellers. The harm to upstream competition is passed on to downstream consumers.

Patrick Greenlee and David Reitman have analyzed loyalty discounts and found that bundled discounts cause prices to rise, though the ability of the firms to price discriminate complicates welfare analysis. In additional work, Greenlee, Reitman, and David sibley have allowed the tied market to be somewhat differentiated rather than perfectly competitive. They find that bundling by the monopolist can lower consumer welfare and lower the profits of rivals, which deters entry or induces exit. Janusz Ordover and Greg Shaffer present an exclusion model similar to Nalebuff's and also conclude that the loyalty rebate can be exclusionary. Their results depend critically, however, on the entrant facing a financing constraint. They do not address issues such as potential entry into new products in the product line. Joshua Wright and others have likened loyalty discounts to exclusive dealing and invoked scholarship that establishes exclusivity's power to thwart entry and reduce welfare. Klein and Lerner focus on intermediary buyers who can "shift share" of an input like a drug or a truck transmission when producing a final product. They argue that loyalty rebates are just price competition for "share-shifting services"; when a buyer threatens to shift share from one seller to the other, it is harnessing competition to extract a lower price. This argument, however, fails to recognize that the intermediary's objectives and consumers' interests may not be aligned. As "share shifting" implies, the intermediary can use the arrival of the entrant to create competition that drives down the incumbent's profits and prices. But the intermediary could also use loyalty rebates to seek a share of the monopoly profits that the dominant firm garners from avoiding competition.

Suppose that a given loyalty-rebate contract can be effective in excluding an entrant. As John Asker and Heski Bar-Isaac have shown, an incumbent facing an entry threat will be willing to share its monopoly profits with an intermediary in exchange for the intermediary's aid in excluding the entrant. Furthermore, in their model, the intermediary prefers a share of the dominant firm's monopoly profits to the small profit it could capture from offering final consumers both the incumbent's and the entrant's products. Therefore, we cannot assume that loyalty rebates will create competition when an intermediary with some market power has the incentive to aid exclusion.

A recent paper by Enrique Ide, Juan-Pablo Montero, and Nicolas Figueroa describes a setting in which an incumbent cannot use rebates to exclude entrants. The key assumption in this model is a super-efficient entrant. The entrant's total per unit cost (fixed plus variable) is less than the incumbent's variable cost alone. In cases that have been litigated in the United States and Europe—involving pharmaceuticals, airlines, hypodermic syringes, truck transmissions, blood testing equipment, postal services, and computer chips—R&D and other overhead costs typically constitute a significant fraction of total costs, and this assumption would not be anywhere close to satisfied. The authors' model yields the unsurprising result that, when an incumbent must price below its own marginal cost to sell any contestable units (or to foreclose), foreclosure is not a profitable
strategy, and the incumbent will not pursue it.

Overall, the variety of loyalty-rebate and bundling programs that we see firms use has led to a number of models in the academic literature. Rebates can be current, retroactive, cover all units, or cover only future units. Consumers can have uniform or heterogeneous valuations, and can buy one unit or have downward-sloping demand. The entrant’s products can be part of a product line with economies of scope in production, or be substitutes for or complements to the incumbent’s products. All of these features affect the ways in which a discounting program can or cannot be anticompetitive. Explaining these features and their economic consequences to the court is an important part of applying the rule of reason to loyalty rebates and bundling.82

In this article, we attempt to provide a unifying framework that can accommodate several of these attributes as well as identify the factors that courts must consider to draw conclusions about liability.

3. Cost-Based Tests and "As Efficient” Competitors

A common theme in the literature is the rejection of price-cost frameworks for the analysis of loyalty rebates. Economides, for example, would evaluate such contracts under a "structured rule of reason" that considers each of several routes by which loyalty rebates can lead to exclusion.83 Joshua Wright has rejected the predatory pricing analogy and its associated price-cost test, as has Joseph Farrell.84 Einer Elhauge has shown that a price-cost test does not capture exclusion.85 As Jonathan Jacobson summarizes, “The seller’s prices can remain well above cost on any measure while still excluding rivals and, in so doing, raising customer prices above competitive levels.”86 Nalebuff makes this point as well.87 These authors’ common theme is that price-cost tests ignore the financial hurdles that rebates erect before would-be competitors. These hurdles unnecessarily restrict competition regardless of entrant-incumbent cost comparisons. So while marginal-cost tests may be helpful in the antitrust review of predatory pricing, they should yield to alternative analyses in the context of loyalty rebates.

Klein and Lerner, however, employ a framework similar to ours and argue in favor of the price-cost test.88 They note that loyalty-rebate cases often feature buyers that assemble intermediate goods into products for the final consumer. These intermediaries-firms such as hospitals, OEM truck manufacturers, and boat builders-can choose their inputs. In Klein and Lerner’s framework, the incumbent input supplier engages in price competition with the entrant to win the buyer’s "share-shifting services” among contestable units; the incumbent and intermediaries write market share-based contracts because market shares are an efficient way to measure share-shifting services. In Klein and Lerner’s view, this price competition becomes competitively problematic only when the rebates, applied to the contestable units, result in a net price below the rival’s marginal cost. We disagree with this conclusion for several reasons. As explained above, the incumbent is using rebates on higher-priced non-contestable share to create a cost-free discount on the contestable units. "Price competition” via rebates that do not result in net reduced price to the buyer does not benefit consumers. The relationship of a constructed "discount” to any party’s marginal cost is of little relevance to the question of competitive harm.

Moreover, by leveraging non-contestable share instead of true discounts to impose a financial burden on the entrant, the incumbent prevents the entrant from competing on a level playing field; to respond, the entrant must cut its own price using costly dollars because it has no non-contestable share of its own.

4. The Relevant Margin

Antitrust jurisprudence and the price theory from which that jurisprudence derived focus on marginal cost. This focus stems both from judges, who welcomed the simplicity of tests based on marginal cost,89 and from economists, in whose models marginal cost often played an important role. Decisions "at the margin” focus analysis by charting optimal behavior: firms compare price to cost when deciding whether to produce an additional unit.

In observed loyalty-rebate settings, however, products—not units—often define margins. Two examples illustrate this point: First, consider Meritor. ZF Meritor, a truck-transmissions entrant, sought to compete with incumbent Eaton Corp. by introducing "the first two-pedal automated mechanical transmission to be sold in North America.”90 That marginal decision—the entry decision—required sinking costs such that only sufficient scale could guarantee profitability. An example from the medical-products distribution industry is a firm considering whether to add
another category of products to those it already distributes. Again, the firm evaluates the expansion as one project, a project that requires enough sales to achieve minimum efficient scale.

In a setting where competition for the "marginal unit" requires significant expansion or entry into a new version of the product, the marginal cost of competing for non-contestable demand must include the set-up costs required to make and sell the product at reasonable scale. If one were to contemplate using a price-cost test, the test should at least use a measure of marginal cost appropriate to the competitive tactic under scrutiny. Specifically, any price-cost test should focus on the cost of the entrant's expansion effort into the incremental product. This expansion cost, known as long-run average incremental cost (LRAIC), includes not only variable cost, but also the fixed cost of developing and launching a new version of the product. If the final price of the product is designed to cover both fixed and variable costs, including the return on capital, the price of either the entrant's or the incumbent's existing similar products may be able to serve as a reasonable proxy for LRAIC of the new product. If a court is concerned about the entrant's efficiency, the court can use the incumbent's price as a proxy for LRAIC. In this setting, the task of comparing the incumbent's effective price after rebates to the entrant's cost is equivalent to comparing the incumbent's effective price after rebates to the incumbent's undiscounted price. This difference is the financial penalty imposed by the incumbent on the entrant, and it measures the extent of the competitive burden. We argue in this article that, in our setting, a correctly done price-cost comparison is equivalent to the metric we develop below, the Effective Entrant Burden.

Charging a price above marginal cost or average variable cost, both of which are less than average total cost, may immunize an incumbent from predatory-pricing liability under U.S. law. The reasoning that underlies rules that limit predatory-pricing liability, however, does not fit the strategic considerations that drive the adoption and effect of loyalty rebates. Courts assessing loyalty rebates should avoid such rules, which require a recoupment period and ignore the substantial financial burden that an incumbent's well designed loyalty rebate can place on rivals. A judicial diktat that an entrant sell at marginal cost—and forgo in perpetuity the R&D expenditures needed to maintain a viable business—does not reflect "practical realities" that courts are urged to consider.92 Further, as antitrust economists recognize, entry by less efficient competitors benefits consumers.93 Under modest assumptions about entrant costs, entry by less efficient competitors places pressure on the incumbent to price below the monopoly level that would prevail but for that entry. Therefore, liability for exclusionary conduct should not turn on the entrant's efficiency. The liability question should turn on how large a penalty the incumbent is placing on the entrant, whatever the entrant's efficiency level. Loyalty rebates that raise entry costs and block would-be duopolists, regardless of their efficiency, harm competition and consumers. Finally, price-cost tests that turn on profit sacrifice are poor instruments for assessing the anticompetitive tendencies of tactics that do not require such sacrifice.94 Simply put, dominant firms can make money while pursuing loyalty strategies. Firms pursuing such strategies need not sustain short-term losses that they must recoup through future price increases.95 A dominant firm can construct and implement an anticompetitive rebate program without incurring any financial loss to itself or offering any true discount to its customers. As Nalebuff shows, a dominant firm can construct a package of prices, quantities, and discounts that delivers revenue equal to the revenue that the firm could generate by charging the "but for" linear price.96 In essence, a dominant firm need only "threaten to raise its unbundled prices if the bundle is not bought. All customers are led to buy the bundle, and so the threat never need be carried out."97 Thus "[t]here is no . . . justifiable grounds for assuming that 'discounts' from noncompliant prices reflect true discounts from but-for levels."98

5. Efficiency Justifications

Monopolization plaintiffs confronted with "nonpretextual claim[s] that [defendants'] conduct is indeed a form of competition on the merits" must rebut those procompetitive justifications to establish liability.99 Most discount efficiencies obtain with quantity-rather than share-discounts.100 And the suspicion that efficiencies often cannot explain loyalty discounts is confirmed by the anticompetitive potpourri that regularly accompanies loyalty discounts litigated cases: threats to revoke supply,101 manifest exclusionary intent,102 or contractual modifications contemporaneous with attempted entry.103
Nevertheless, there are efficiency justifications that require share-based incentives. First, incumbents may find quantity thresholds an ineffective or inadministrable mechanism for increasing sales from small, heterogeneous firms. Second, share thresholds may efficiently allocate risk to sellers in markets with predictable size but unpredictable composition. We acknowledge the theoretical validity of these two justifications, but have yet to see examples of these efficiencies in either litigated cases or academic research.

A third, more compelling efficiency relates to complementary investments made by suppliers and their customers that can expand the market. For example, a manufacturer might train workers at an intermediary to repair a product only if the intermediary sells a high enough share from that manufacturer to limit free-riding. A retailer, such as a supermarket, may likewise have the ability to increase total sales of a category. Suppose the retailer does not want to exclude rival products completely because heterogeneous consumers expect the retailer to stock all national brands. One brand, however, may offer a loyalty rebate that causes the retailer to invest in promotions, samples, and other programs that help that brand gain share at the expense of rivals as well as expanding sales. Depending on the context, such a contract may expand total category sales and therefore increase consumer welfare, while leaving final consumers a full set of choices.

The economic literature features several examples of conditional-pricing contracts with these features (though many of these examples do not involve share-based loyalty rebates). The industries that authors address include beer, vending machines, video rentals, and others where conditional pricing contracts are common. Most of these papers find the contracts, on balance, to be efficient.

One should bear in mind that researchers select settings for study based on their ability to identify an interesting question and to obtain good data, not based on the frequency with which those settings arise in litigation. And as Jacobson observes, loyalty-discount cases that have been litigated have sometimes been "associated with no complementary investments" or "applied to end-user purchasers, such as hospitals, where complementary investments are rare."

The paper that examines a practice closest to loyalty rebates is Christopher Conlon and Julie Mortimer’s 2016 study of confectionary vending machines. In the setting they studied, a manufacturer (Mars) gave a rebate to vending-machine owners that stocked Mars’s products in a certain number of the vending machine’s spots (equivalent to market share in this context). Conlon and Mortimer find that the loyalty rebate had a procompetitive aspect; the rebate caused owners to increase their restocking effort, which in turn, increased output, consumer surplus, and manufacturer profit. The authors also find, however, that the loyalty discount had a foreclosure effect: the rebate distorted owners’ assortment decisions in favor of Mars’s products. The authors show that the best product assortment from the consumer perspective was to stock one Hershey and one Mars product in the last two slots. But with the rebate, vending-machine owners would stock two Mars products in the last two slots, which created welfare losses from foreclosure. Including the efficiencies from increased restocking effort as well as the losses from foreclosure, the authors find that the contract reduced social surplus.

American antitrust law continues to struggle to give economic content and meaning to the concept of a cognizable efficiency, but Europe supplies an interesting framework. The Guidance on the Commission’s Enforcement Priorities in Applying Article 82 of the EC Treaty to Abusive Exclusionary Conduct by Dominant Undertakings (Guidance) requires dominant firms that use exclusionary tactics to demonstrate that the tactics (1) achieve an efficiency (2) unachievable through "less anti-competitive alternatives" that (3) outweighs "negative effects on competition and consumer welfare" and (4) does not remove "all or most existing sources of actual or potential competition." The Guidance, which we discuss further below, appears to limit these efficiencies to those "cost or other advantages which are passed on to consumers."
Commission’s December 2008 adoption of guidance on such rebates.117 “Conditional rebates,” the Commission wrote, "are not an uncommon practice."118 But the rebates could "have actual or potential foreclosure effects"119 that the Commission would assess by reference to contestability,120 retroactivity,121 and discount threshold and size.122

The Commission’s Guidance defines a structured inquiry into whether a loyalty rebate contract "is capable of hindering expansion or entry even by competitors that are equally efficient."123 That inquiry first defines a "relevant range" of buyer demand for which an entrant may compete.124 The Commission then estimates the price that the entrant "would have to offer in order to compensate the [buyer] for the loss of the conditional rebate."125 The Commission calculates that price over the relevant range of buyer demand that the entrant may supply and compares the price to the cost of an "as-efficient competitor." We will return to details of the calculation below.

The Commission’s Guidance has produced mixed doctrinal results.126 The "more economic approach" advanced by the Guidance proved influential in a preliminary European Commission 2009 decision regarding Intel.127 The Commission’s Intel decision disclaimed reliance on the Guidance128 but embraced its principles: Intel used its control of a "non-contestable share of demand," the Commission wrote, as "leverage to decrease the price for the elastic or contestable share of demand."129 To assess the foreclosure effect of Intel’s pricing, the Commission employed a methodology identical to that set forth in the Guidance.130

A year later, however, the European General Court returned to formalistic analysis-reminiscent of American per se liability—in Tomra v. Commission.131 Tomra arose from the market for "reverse vending machines"—machines that crush and recycle cans and bottles that consumers return.132 Tomra controlled more than 95 percent of the market and signed buyers (supermarkets and institutions) to 49 agreements that contained "individualized quantity commitments and agreements establishing individualized retroactive rebate schemes."133 Those provisions, the General Court wrote, "abuse[d] [Tomra’s] dominant position within the meaning of Article 82 EC."134 The contracts "remove[d] or restricted" the purchaser’s freedom to choose his sources of supply; European doctrine did not require an evaluation of "the actual effects of the [dominant firm’s] practices."135 Tomra thus exposed divergence between the rebate policy of Europe’s competition regulator and its General Court.136

In 2014, the General Court confirmed the Tomra decision's formalistic drift when the court decided Intel’s appeal. The General Court required no economic analysis to condemn loyalty rebates by a dominant firm.137 “[S]ettled case-law,” the General Court wrote, barred dominant firms from entering into contracts that forced buyers to "obtain all or most of their requirements exclusively from [the dominant] undertaking.”138 The question whether "exclusivity rebate[s] can be categorized as abusive," the court held, "does not depend on . . . circumstances of the case aimed at establishing a potential foreclosure effect.”139 The loyalty rebates of dominant firms were "by their very nature capable of restricting competition.”140

Europe’s highest court in September 2017 adopted a decidedly different approach and quashed the General Court’s decision.141 The European Court of Justice held that an analysis of exclusionary effects must precede a finding of infringement under Article 102 TFEU.142 While the Court of Justice did not prescribe a specific test for exclusionary effects, the court did identify elements of a sufficient analysis and cite analyses that will provide guidance to European litigants.

First, the high court’s Intel opinion itself identified the following factors as relevant to Article 102 TFEU exclusion analysis: “first, the extent of the undertaking’s dominant position on the relevant market and, secondly, the share of the market covered by the challenged practice, as well as the conditions and arrangements for granting the rebates in question, their duration and their amount.”143 The opinion then appears to require the European Commission to use an as-efficient competitor test to assess the practice’s effect.144

But the Court of Justice then offers no clear framework for discount liability. Its opinion directs the General Court to the high court’s opinions in Post Danmark and British Airways, but neither of cited passages describes an effects test.145 The Court of Justice’s Intel opinion proceeds to require the General Court to examine the Commission’s analysis.146 But the high court says nothing regarding the propriety of the Commission’s analysis beyond identifying the factors noted above. Thus, at this stage, European litigants know that economics has more
to do with their loyalty discount claims than it did before, and that the as-efficient competitor test is central. But which, if any, of Intel’s objections to the Commission’s 2009 analysis become law remains to be seen.147 Intel moves European antitrust law in the right direction by requiring analysis of the competitive effects of loyalty rebates. Nevertheless, the decision leaves to the General Court on referral certain important details. For example, while Intel’s “extent of . . . dominant position” translates readily to market share, the opinion does not define “the share of the market covered,” which litigants and regulators may read as contestability or foreclosure share.148 Nor does the opinion explain how the General Court ought to analyze these variables en route to a determination on liability. Additional empirical and analytical tools are therefore needed, particularly those consistent with the existing Guidance. We provide such a framework and metric in Part III, below.

B. IMPERFECT ANALOGIES: LOYALTY REBATES IN THE UNITED STATES

American courts lack rules for loyalty rebates. As with predatory pricing and tying, U.S. antitrust statutes prescribe no rules for courts to follow when analyzing loyalty rebates.149 But unlike those familiar tactics, the relative novelty of loyalty-rebate litigation has left courts struggling to glean rules from a sparse jurisprudence that lacks a controlling Supreme Court precedent. So lower courts—as Sean Gates has recognized—analogue loyalty rebates to practices with settled doctrinal frameworks: predatory pricing,150 tying,151 and exclusive dealing.152 Litigants encourage such analogies where advantageous.153 Below, we discuss these analogies and suggest that tying jurisprudence offers a promising if imperfect doctrinal frame for the analysis of loyalty discounts.

1. Tying

With increasing frequency, U.S. courts have analogized loyalty rebates to tying.154 Ties induce the sale of a tied product “not for the product’s own sake but because taking [the] product affects the availability or sales terms of another (tying) product.”155 This definition easily reaches rebates that link contestable and non-contestable demand for a single product. But tying’s brittle jurisprudence may dissuade courts from employing the concept in loyalty-rebate disputes: First, tying liability requires a linkage of separate product markets,156 a test that has proven hostile to plaintiffs in litigated rebate disputes. Second, tying grafts per se treatment onto business practices with which courts may lack familiarity.

Nevertheless, some U.S. courts have relied on the analogy. For example, the Tenth Circuit Court of Appeals embraced a tying analogy in 1995, when the court reviewed the pricing practices of a legal-education company. The company reduced the price of one course to zero when that course was purchased with a second course—the price of which the company raised by $50.157 The court held that the plaintiffs could go to trial on the theory that defendants had tied—which was illegal per se if defendants “had appreciable economic power in the tying product market.”158

2. Exclusive Dealing

The exclusive-dealing analogy has intuitive appeal: A contract requiring “that 99 percent of [buyer] requirements . . . be served by manufacturer A probably will have the same anticompetitive effects” as complete exclusivity.159 Moreover, an exclusive deal may be regarded as “a special case of a bundled loyalty rebate in which the penalty price is set to infinity.”160 For these reasons, several commentators urge courts to review loyalty rebates as exclusive-dealing contracts whose anticompetitive effects depend on the portion of the market that the contracts cover.161

Courts have readily adopted the exclusive-dealing analogy. For example, foreclosure tests associated with exclusive dealing appear in decisions of the Eighth and Ninth Circuit Courts of Appeal.162 The Ninth Circuit in a nonprecedential 2009 opinion reviewed using exclusive-dealing criteria a Section 2 claim against bundled discounts.163 And the Eighth Circuit reviewed loyalty-rebate contracts in Concord Boat Corp. v. Brunswick Corp.164 That court heard claims that defendants had violated both Section 1 and Section 2 of the Sherman Act. Concord Boat then evaluated the Section 1 claims using market-foreclosure criteria developed in Tampa Electric Co. v. Nashville Coal Co., the Supreme Court’s seminal holding on exclusive dealing.165

3. Predatory Pricing

Concord Boat applied a different analogy—predatory pricing—to plaintiffs’ Section 2 claims.166 "No one [had]
argue[d] . . . that Brunswick's discounts drove the engine price below cost," the court wrote. And because "only one product, stern drive engines, [was] at issue," the Eighth Circuit refused to follow decisions approving above-cost predation theories in multiproduct settings. The Second, Sixth, and Ninth Circuits have similarly considered loyalty rebates through the lens of predatory pricing. Loyalty payments, the Sixth Circuit wrote in NicSand, Inc. v. 3M Co., "are nothing more than price reductions offered to the buyers for the exclusive right to supply a set of stores under multi-year contracts." According to the court, a plaintiff who "disclaimed . . . that [the defendant] had engaged in predatory pricing" suffered no antitrust injury. Today, this analogy to predatory pricing is "the analogy most often used for the analysis of rebates." 4 Tying Doctrine Offers the Best Existing Analytical Framework for Loyalty Discounts

For the set of market circumstances and contractual conditions identified in this article, we endorse the analogy between loyalty discounts and tying. We do so for several reasons. First, of the developed doctrines within Section 2, tying alone contemplates antitrust liability for decisions regarding joint distribution of products. As SmithKline, LePage's, and, more recently, Inline Packaging make clear, the distinguishing anticompetitive feature of a contract that references rivals is a price condition that only a diversified supplier can match. Second, tying doctrine springs from a set of competitive threats that parallel those that loyalty rebates present. Ties can "reduce rival competitiveness by impairing rival efficiency, entry, existence, aggressiveness, or expandability." Given this set of motivating concerns, we believe tying is the thread of Section 2 doctrine that best addresses the anticompetitive potential of loyalty rebates.

Third, tying provides a stable doctrinal platform upon which discount jurisprudence may build. Indeed, courts have reached for tying doctrine when confronting facts closest to the paradigmatic examples outlined in Part I. Anticompetitive loyalty schemes function by binding a product for which no substitutes exist-non-contestable demand-to a product on which competition occurs-contestable demand. And like ties, loyalty schemes exclude only when a "substantial volume of commerce is foreclosed"-that is, when loyalty thresholds exceed levels of non-contestable share. Just as important, American tying law does not require that plaintiffs prove below-cost pricing. That feature implicitly recognizes that ties may create enduring anticompetitive effects without profit sacrifice.

Nevertheless, loyalty discounts require updates to tying doctrine. Discounts, for example, resurface the question whether pricing options can amount to ties. Loyalty discounts also present an opportunity to formalize tying's "volume of commerce" inquiry. That inquiry, which predicates antitrust liability upon a finding that a tie forecloses a "substantial volume of commerce," has received little attention from courts. Today, the inquiry requires only that the dollar value of commerce foreclosed exceed a de minimis threshold. That requirement too readily condemns a practice with theoretically uncertain competitive effects. And the requirement barely aligns with the mechanisms by which ties foreclose. We update the doctrine in Part III by operationalizing "volume of commerce" with a metric that captures the competitive determinants of a loyalty rebate.

Finally, and most importantly, the indeterminate competitive effects of loyalty discounting require us to reject the application of tying's per se rule. In its place, we propose a structured rule of reason guided by inquiry into competitively determinant features of the market and the contract. We say more on this rule below. But first, we respond briefly to criticisms that contestability has no place in tying doctrine or in discount jurisprudence, generally.

C. The Ubiquity of Contestability in Antitrust Analysis

The tying standard that we develop in Part III relies on contestability. We think that reliance is faithful to close readings of seminal American discount decisions. But judges might hesitate to consider a variable novel in name, even if familiar in substance. The following paragraphs identify the holdings and dicta that, we submit, carve a place for contestability in American competition law.

Broadly, we would suggest that jurists observe how the following decisions discuss an entrant's inability to supply a customer's entire demand. In Meritor, for example, "[p]laintiffs alleged that [incumbent] Eaton used its...
position as a supplier of necessary products to persuade [truck manufacturers] to sign contracts that contained loyalty rebates. The loyalty rebates "were conditioned on share penetration across all product lines," and Meritor's entrant "never developed a full line of heavy-duty truck transmissions." As a result, "no [buyer] could satisfy customer demand without at least some" incumbent products.

Similar to Meritor is Eisai, Inc. v. Sanofi-Aventis U.S., LLC, in which the U.S. Court of Appeals for the Third Circuit decided in May 2016. The Third Circuit's opinion contains the richest discussion of contestability in the federal reports to date. Contestability figured heavily in Eisai because defendant Sanofi offered loyalty rebates on a drug that was approved to treat both "severe forms of heart attack" and deep vein thrombosis. Plaintiff Eisai made a competing drug that was approved to treat deep vein thrombosis but not heart attack. So "[a] portion of a hospital's demand for the . . . drugs [at issue] could only be satisfied by [Sanofi's drug]." Through the loyalty rebates, Eisai argued, Sanofi "bundled incontestable and contestable demand.

In Eisai, as in Meritor, the plaintiff could not expand its product offerings in the short run. Without regulatory approval, Eisai could not "promote or market [its] drug in the U.S." for cardiology applications. But obtaining regulatory approval to compete in the non-contestable portion of the market would have entailed undertaking clinical trials for the missing indication and then seeking FDA approval, a long and costly process. Absent such an effort, Eisai could compete for a hospital's entire demand only to the extent that physicians prescribed Eisai's drug for an unapproved, or "off-label," use. The Third Circuit rejected the plaintiff's contestability arguments in a decision that we critique further in Part IV. For now, we note only that Eisai provides an early judicial response to liability theories predicated expressly upon contestable demand—a response that we expect judges and litigants will further develop.

A third example makes plain that American discount doctrine is contestability all the way down. Both LePage's Inc. and 3M manufactured private label tape, but 3M also manufactured Post-It Notes, automotive window tint, sponges, and host of other products that LePage's did not manufacture. So when 3M conditioned rebates for these varied products on sales of privatelabel tape, LePage's could not respond in the short run. LePage's would have had to invest in manufacturing the full line of products or in contracting with other manufacturers to sell a joint bundle. The "principal anticompetitive effect" of 3M's rebates, the court of appeals wrote, was that they "foreclose[ed] portions of the market to a potential competitor [that did] not manufacture an equally diverse group of products."

The above examples demonstrate not only the frequency with which contestable and non-contestable demand characterize market structure, but also the effect that contestability has already had on antitrust jurisprudence. Courts look to competitors' product-line asymmetries when durable. So liability standards predicated on contestable shares do not revolutionize—they merely formalize—the common law of American antitrust.

III. Modeling Discount Exclusion
A. Necessary Conditions for Discount Exclusion
We focus here on the exclusionary effects of loyalty discounts and provide necessary conditions for discount exclusion.

1. A loyalty discount can have the exclusionary effect we analyze here only if the incumbent has non-contestable share. If an entrant makes all products in a bundle then consumers can enjoy price competition between identical bundles and extract the full consumer surplus. It is the leveraging of non-contestable share that makes loyalty rebates an especially inexpensive method of exclusion.

2. A loyalty rebate threshold must be equal to or greater than the incumbent's non-contestable share or the non-contestable share the incumbent expects or plans to have in the near future. In the motivating example at the beginning of this article, the threshold is 90 percent, while non-contestable share is 80 percent, so this condition is satisfied (0.9 > 0.8). In a dynamic example, the entrant might be launching a second type of syringe, and when it does, contestable share will rise to include all sales of that syringe type (e.g., from 0.2 to 0.3). The rebate threshold must impair the entrant's ability either to maintain its current sales or to achieve its near-term sales plans. In other
words, the dominant firm must seek through the contract to "win" sales for which the entrant could otherwise compete. If the loyalty-rebate threshold does not exceed non-contestable share, the loyalty-rebate contract does not affect buyer incentives and therefore affects neither market structure nor decisions about entry and exit.212

3. The loyalty rebate must impose on the disloyal buyer a significant financial penalty. The simple existence of a loyalty rebate that has only a trivial financial effect on the entrant would not likely qualify as an unreasonable restraint on trade.

B. Modeling Anticompetitive Effect

with these conditions in mind, the paragraphs that follow structure a set of decision rules for antitrust courts evaluating loyalty discounts. our metrics operationalize contestability and discount threshold and size. we propose a test that employs these variables to sift anticompetitive from procompetitive loyalty discounts. our test has a similar purpose and structure to a test developed by Giulio Federico, except that his metric assumes that the buyer either buys nothing from or the entire contestable share from the entrant.213 Our model specifically incorporates a threshold share at which the incumbent awards the loyalty rebate.

We propose that courts use a metric we call the "Effective Entrant Burden" to measure the exclusionary force of loyalty-rebate contracts. Roughly speaking, this measure will identify-and allow courts to condemn-loyalty contracts that impose a significant financial burden on an entrant. The EEB measures the exclusionary force of the loyalty contract.

First, we define the variables discussed above. These are the only pieces of information required to calculate the EEB metric.

s: the contestable share available to an entrant, 0 <s <1. Non-contestable share is equal to 1 - s.

h: the requirements threshold at which a buyer receives a discount across all units purchased up to that point, 0 <h <1.

d: the discount that a buyer receives upon reaching h, 0 <d <1.

We assume throughout that the threshold "eats into" the contestable share available to the entrant: h >1 - s (or equivalently, s >1 - h). This inequality captures the second necessary condition observed in Part III.A: the discount threshold must exceed the non-contestable share that the dominant firm could obtain without discounting.

ordinarily, an entrant convinces buyers to purchase by competing on the merits. when a customer has signed a loyalty contract, an entrant, in addition to overcoming other barriers to entry, must overcome the cost that the contract imposes on the customer when it makes threshold purchases from the entrant. Suppose the entrant's product provides consumers a slightly greater value than the incumbent's product provides. We make this assumption to ensure the entrant would sell all of the contestable units in an unrestrained environment in which the entrant and incumbent offered contestable units at equal prices. Where there is a loyalty rebate, however, the entrant must choose a price pe such that buying as much as possible (all contestable demand) as well as any necessary non-contestable units from the incumbent costs the buyer less than remaining loyal to the incumbent. if loyalty is cheaper than disloyalty, it will win out.

Suppose that a buyer satisfies all of its contestable demand from the entrant because it has a slight preference for the entrant's product, but satisfies all of its non-contestable demand from the incumbent. Such a buyer is disloyal and does not qualify for a loyalty rebate. The buyer must compare its total cost of disloyalty with the cost of buying the contract threshold amount from the incumbent at the loyalty-discounted price and the remainder from the entrant.

Assume that the size of the market is one, so that share is equivalent to quantity sold. This assumption is restrictive when the entrant's low price pe would otherwise cause either (i) an increase in total market sales while keeping the entrant's share the same, or (ii) an increase in the entrant's share due to cannibalization of the incumbent's non-contestable product line. We assume that demand is fairly inelastic, so neither of these effects is significant in the short run. To simplify our analysis, we aggregate all of the incumbent's products and apply one representative price, but this aggregation does not affect our results. The price, pe, that the entrant chooses to compete with the bundle must satisfy the following condition:
The left-hand side of equation (1) represents the buyer’s expenditures if it buys as much as possible from the entrant. The first term is the product of contestable share (which the entrant supplies) and entrant price. The buyer must also buy the non-contestable products of course, so we add the cost of those purchases to the left-hand side as well. Thus, the second term on the left-hand side is the product of non-contestable share and the incumbent’s undiscounted price. The right-hand side of equation (1) represents the buyer’s cost of adhering to the loyalty contract. The first term is the product of the threshold and the incumbent’s discounted price. The buyer must also pay for the purchases that the loyalty contract permits the buyer to make from the entrant. The second term on the right-hand side represents the cost of these purchases: the product of the entrant’s price (which we assume could be different if the entrant is not competing for all contestable units) and the remaining allowed share (one minus the discount threshold).

An important modeling choice at this point concerns the price $p_e$ that the entrant will charge when it is not competing for any share beyond the threshold $(1-h)$. To further simplify the equation above, we choose a convenient value for $p_e$: symmetry with the incumbent’s list price. We would like our metric to be as generalizable as possible, rather than geared to a transformational entrant or an inefficient entrant. If we allow our entrant to be low cost, we will raise our measure of the entrant’s burden even if the loyalty-rebate contract parameters do not change. Assuming the entrant is less efficient than the incumbent makes the same loyalty-rebate contract look less costly for the entrant. We therefore assume symmetry to avoid stacking the deck in the calculation of our metric and do not assume the entrant has any particular advantage or disadvantage. We set the price the entrant charges when it knows the customer will remain loyal to the incumbent to be equal to the incumbent’s list price. (This could also be interpreted as capturing the price softening or “collusive” effect.)

Substituting this expression into equation (1) and rearranging terms yields:

This is the ratio of the price that the entrant must set to compete for contestable share ($p_e$) to the incumbent’s price ($p_i$). We define the effective entrant burden (EEB) to be one minus this expression:

This metric summarizes the features of a dominant firm’s contract—the levels of $h$, $d$, and $s$—that impose a financial penalty on buyers that purchase from the entrant. The EEB measures the magnitude of that penalty. This term is analogous to the penalty for breach in Aghion and Bolton’s 1987 paper. A numerical example follows. Consider a market with 30 percent contestable share ($s$). An incumbent offers a 20 percent discount ($d$) to a customer that meets a 90 percent loyalty threshold ($h$). In these circumstances, the effective burden faced by the entrant is:

The contract generates a burden for the entrant of 60 percent. If the entrant wants a buyer to purchase more than the loyalty threshold $h$ permits, it must offer a discount of at least 60 percent. To compensate the buyer for the cost of disloyalty, the entrant must sell at a price no higher than 40 percent of the incumbent’s price:

EEB measures the reduction in price that the entrant must accept in order to compete for contestable share—a reduction driven by the contract rather than the relative merits of the incumbent’s and entrant’s products. Higher EEBs indicate harsher penalties inflicted by incumbents on entrants. As noted in the discussion above, this calculation can be made regardless of the entrant’s efficiency. A high EEB will harm any type of entrant, thereby harming competition in the absence of a countervailing efficiency of similar magnitude.

Another way to think about the penalty imposed on the entrant that wants to increase its sales is that it must cut its price by 60 percent in order to move from a 10 percent market share to a 30 percent market share. The discount on the incremental 20 percent volume is an even larger 90 percent (i.e., $0.60 \times 3/2$).

To illustrate the calculation of the EEB, we revisit the numerical example with which we began the paper. To
simplify the arithmetic, we assume here that, once the incumbent introduces the loyalty contract, both the incumbent and the entrant charge an undiscounted per-unit price of $100. Recall that here the contestable share (s) is 20 percent, the discount (d) is 5 percent, and the threshold (h) is 90 percent. Suppose the entrant wishes to make the two packages equally costly to the buyer—being loyal versus buying 20 units from the entrant—by choosing a price that keeps the customer's total costs at $9,550. in Table 2, below, we carry out this calculation and see that the entrant must lower its price from $100 to $77.50 to leave the customer paying the same total price for the two packages. The EEB for this set of facts is 22.5 percent.

... The entrant must set a price no more than 77.5 percent of the incumbent's list price to be competitive with the loyalty contract.

The numerator of the EEB ratio is the revenue the contract allows the incumbent to use as leverage:219 the threshold multiplied by the discount once the customer reaches that threshold. When the number of h x d discount dollars is large relative to the market share that is contestable, the buyer has a strong incentive to remain loyal.220 When the contestable share is small and the number of discount dollars is large, the ratio can exceed one. That is, the entrant would have to offer a discount greater than its total revenue to neutralize the loyalty contract.

The European Commission's guidance on the as-efficient competitor test is consistent with the reasoning above and with our metric.221 To calculate the effective discount that the entrant must match to win contestable sales, the Commission divides the total sum that the loyalty contract puts at stake by the "relevant range" of incremental sales that the entrant might win from a buyer.222 The subtle point to appreciate here is that the usual interpretation of the relevant range is the difference between the threshold and the noncontestable share, or (h - (1 - s)). Under this interpretation, calculating the effective discount that the entrant must match involves dividing all the rebate dollars at stake by the incremental contestable units covered by the loyalty rebate contract.223 If the threshold is set low so that there are not many such units, the effective per-unit discount can become very large. Federico makes the point that a contract with a low threshold will look worse by this metric than a contract that requires the buyer to purchase the entire contestable share from the incumbent.224 However, the latter contract will leave the entrant with less revenue in total and therefore may be more effective in foreclosing competition. The confusion stems from the failure of the Guidance to define an explicit role for the loyalty threshold. The threshold h is an important parameter in calculating EEB because it measures the extent to which the contract limits the entrant. A setting in which the contestable share is 50 percent and the contract limits the entrant's share to 20 percent is very different from one in which the contestable share is 50 percent and the contract limits the entrant's share to 49 percent. in the latter case, the contract hardly diminishes the sales for which the entrant can compete on the merits. Assuming a 10 percent discount, the latter case results in a small EEB of 10.2 percent, whereas the former generates an EEB of 16 percent.

When a test explicitly considers the size of the threshold and divides the loyalty rebate by all units that the entrant could potentially sell to the buyer, the result is a reliable measure of the burden the entrant faces.225 Thus, the Guidance methodology must be augmented by this additional information to obtain an accurate view of competitive effects caused by a particular loyalty rebate.

The Guidance's analysis of the discount's relationship to cost is an approach we feel is well tailored to loyalty rebates. In particular, LRAIC, as described in the Guidance, "includes product specific fixed costs made before the period in which allegedly abusive conduct took place."226 The marginal cost of producing an additional unit will often not provide insight into the nature of competitive harm. In the cases we study below, the incumbents' and entrants' prices are much higher than their marginal costs of production, suggesting that industry success requires expenditures not only on variable costs but on fixed costs, such as research or advertising. If fixed costs drive product value, an entrant that sets price equal to the cost of manufacturing an additional unit cannot sustain a viable business.227 "Failure to cover LRAIC indicates that the dominant undertaking is not recovering all the (attributable) fixed costs of producing the good or service in question . . . ."228

Because the long run includes new product development, long-run incremental cost measures exactly the types of
fixed costs that an entrant must sink to enter part of the product line. The entrant must continue to sustain some of these fixed costs (advertising, R&D) to compete. Loyalty rebates in such a setting can therefore lead to foreclosure despite a discounted price that exceeds the incumbent’s variable cost. By comparing the incumbent’s loyalty rebate to the incumbent’s own price, our test is automatically structured to be an as-efficient competitor test.229

Using a model with these three elements—contestable share, threshold, and rebate—and measures of the actual prices set by the incumbent, it is possible to carry out a simple as-efficient competitor test. The metric we describe above measures the burden relative to LRAic that the loyalty-rebate contract places on the entrant. The share of buyers covered by such contracts and their purchases over time are among other empirical facts needed to evaluate competitive effects. However, analysis of the type that the European Court of Justice required in Intel may be carried out using the three elements identified above.230

We introduce the EEB aware of concerns that exclusion theories “are complex and are often beyond the capability of a court to manage.”231 Our results, we submit, are not susceptible to such criticism. In particular, the preconditions for exclusion that we identify supply judges with workable per se heuristics for dispensing with non-meritorious litigation.232 In addition, litigants should be able readily to obtain evidence of all the components of our measure. The discount and the threshold are written into the loyalty-rebate contract. The incumbent has designed the bundle and enforces the contract, so it must necessarily have definitions of its own products that make up the denominator. The remaining challenge is to determine the share of the bundle that the entrant can supply. Both parties will have records of their revenues across products. Both parties will have business documents that shed light on their costs and plans for entry into other products.233 Yet, even if contestability determinations sometimes prove difficult, the abandonment of price-cost analysis that contestability enables should mitigate any net increase in the complexity of antitrust litigation.234

That said, the confidentiality associated with the operative facts of discount disputes suggests that courts should only rarely dismiss discount complaints at the pleading stage. Simply put, this article shows that the merits of discount claims turn on contractual details: size of discount, threshold, and contestable share. Because plaintiffs typically lack access to such details prior to discovery, we recommend that courts carefully scrutinize motions for Rule 12(b)(6) dismissal of loyalty claims.235

C. The Implications of Contestability for Market Definition

Before presenting our analyses of litigated cases, we offer a final comment on the doctrinal implications of contestability. Traditionally, American antitrust law defines markets by demand cross-elasticity: markets comprise products that end consumers consider substitutable. But discount disputes tend to arise upstream of end consumers, and in all the cases we analyze, the loyalty rebate contract applies to an intermediary. Thus, end-consumer preferences may not shed light on discounts’ anticompetitive effect.

As a result, we argue that courts should assess the contestable share of a buyer’s demand as a share of items in the bundle, not as a share of demandside substitutes. An entrant that wants to sell a viable tape product must price to compete with the incumbent’s bundle, even if that bundle comprises health care products, home improvement products, and stationery products.236 This is true even if consumer substitution patterns would place the bundle’s elements in different "antitrust markets."237 End consumers may not substitute transparent tape for automotive window tint, but buyers such as Kmart and Sam’s club may achieve economies of scale by buying both products from one firm. In the loyalty context, any case for disregarding automotive window tint when analyzing buying patterns for transparent tape collapses given that Kmart can buy both from 3M and only tape from LePage’s.238

The composition of the bundle designed by the dominant firm determines the competitive harm attributable to a loyalty rebate. Products’ production economies of scope or perceived substitutability by end consumers is often irrelevant to the question of harm.

IV. MATCHING CASE EVIDENCE TO our EEB

in this Part, we review evidence from litigated loyalty-rebate cases to estimate the effective entrant burdens in
those cases, we compare our estimates to courts’ determinations on liability in those cases and find that, generally, liability for discounting practices accompanies effective entrant burdens above 10 percent (the exceptions are RTI, Suture Express, and Eisai). Other elements of the incumbent’s conduct beyond the financial aspects of the loyalty rebate may be important in determining liability in any given case, so EEB will not, in general, be the only evidence a court considers. The consistency between our metric and liability, however, leads us to conclude that EEB provides courts a useful tool for evaluating antitrust liability. In particular, if EEB is low, any harm to competition is not occurring through the exclusion and collusion mechanisms presented above, which would generate significant measurable financial costs to the buyers and the entrant.

We provide in Appendix A sources for the contestability, discount, and threshold data relied on below. In brief, we glean these data from a variety of sources, including case materials, interviews, oral argument, and academic writings. We recognize the imprecision inherent in statistical analyses of litigation records open to public inspection. Indeed, sealed or redacted documents abound in the dockets of litigated discount disputes. And the shifting, informal character of many loyalty rebate programs injects further uncertainty into our analysis. As a result, the table below comprises averages, approximations, and deductions from descriptions of market structure contained in primary or secondary materials. Because we gathered these data primarily from legal documents, however, they were those available to the courts that made the decisions we analyze. Thus, they represent the behavior and the competitive conditions being evaluated by the court. we regret any error in the data that follow, but we proceed in order to illustrate our method, and any reader with superior information can easily recalculate the statistic of interest for him or herself.

The table below compares EEB to the liability outcome of litigated discount disputes. The second column from the right demonstrates that courts have rested liability on EEBs as low as 11 percent. In addition, at least one court has encountered-and condemned-an EEB greater than 100 percent: a contractual condition so onerous that an entrant must pay customers for the privilege of meeting contestable demand. The cases in our sample in which courts found defendants liable have EEBs that begin at 11 percent, range through the teens and up to levels above 50 percent. And we note that the largest fine imposed in connection with loyalty-rebate contracts-Europe’s €1.4 billion fine against Intel-arose from an EEB of about 70 percent based on available public information. This analysis of recent cases suggests that courts are, in practice, finding foreclosure when EEB is at 10 percent or more. In principle, any positive level of EEB harms the entrant’s ability to compete, and, as they have in the past, courts will likely consider other incumbent practices and the accuracy of data used to calculate EEB inputs when making liability determinations.

The paucity of litigated discount disputes-and the hitherto overlooked role of contestability in such disputes-limits the predictive and normative force of these analytics. But at minimum, the table demonstrates the role that EEB can play in identifying non-frivolous discount claims. Finally, we submit, the table suggests that courts-by and large-have gotten discounts right. Final judgments or appeals in discount litigations that have concluded generally condemned rebate schemes associated with significant entrant burdens and allowed rebates with minimal anticompetitive effects, as measured against our rubric. Three exceptions exist: Suture Express, Eisai, and RTI, all of which involved analytically difficult, non-standard settings. In those cases, courts allowed rebate schemes that produced significant EEBs.

A. Eisai

Eisai arose from loyalty discounts in the market for anticoagulant drugs. Defendant Sanofi marketed an anticoagulant with “at least seven FDA-approved uses (known as indications).” Plaintiff Eisai marketed a competing anticoagulant with only five indications. In particular, Eisai’s anticoagulant lacked an indication “for treating certain more severe forms of heart attack”-an indication which Sanofi’s anticoagulant had. That difference, Eisai argued, segmented the anticoagulant market into contestable and noncontestable demand. The Third Circuit rejected that argument-whether categorically or as applied to the facts of the case is unclear-in a decision that embraced the analogy between loyalty discounts and exclusive dealing. The court grasped the thrust of Eisai’s argument: that the discount “bund[led] each customer’s contestable demand . . . with the
customer’s incontestable demand.”251 But bundling, the court continued, “generally involves discounted rebates or prices for the purchase of multiple products.”252 Sanofi, by contrast, had “conditioned discounts [not] on purchases across various product lines, but on different types of demand for the same product.”253 The court noted that no court, to its knowledge, “ha[d] credited this novel theory.”254 Yet the Eisai court then proceeded to consider—and to reject—the bundling theory on its terms. “[N]othing in the record indicates that an equally efficient competitor was unable to compete with Sanofi,” the court explained.255 The court questioned Eisai’s assertion that it could not compete for the demand that it had called non-contestable.256 Nor had Eisai explain[ed] what percentage of incontestable demand for Lovenox was based on its unique cardiology indication as opposed to the other factors.”257 So the court “[could not] credit Eisai’s bundling claims, at least on the facts before [it].”258 Different facts, this language suggests, might support monopolization liability on a theory of bundling premised on non-contestability.259 Eisai therefore represents both the problems and the promise of American discount jurisprudence. The case is somewhat unusual: in most loyalty-discount disputes, different products serve as proxies for the contestable and noncontestable segments of demand that a discount bundles. Not so for demand segmented by regulatory attributes alone. For that reason, Eisai refused to consider the discount a tie: Tying analogies, the court suggested, were appropriate only when a dominant firm “conditioned discounts on purchases across various product lines.”260 So Eisai leaves the door open to a plaintiff who establishes that indications amount to “product lines.” Future plaintiffs may be able to adduce such proof: physicians may prescribe based on official FDA-granted indications, not least because federal law restricts off-label advertising and hospital administrators may be unwilling to instruct physicians to prescribe off-label. Such circumstances would guarantee non-contestable share for the drug with unique indications.261

B. Suture Express

Suture Express arose from the following facts: An entrant that distributed medical sutures alone sued two incumbent distributors that offered a “full line” of so-called med-surg products.262 The distributors, the entrant alleged, had executed agreements with hospitals that linked a suture loyalty requirement to discounts on the rest of the products that the distributors offered.263 The district court entered summary judgment for the incumbent distributors.264 Describing defendants’ discounts as a “pricing innovation,”265 the district court focused its analysis on the industry’s oligopolistic-as opposed to monopolistic-structure, rather than on the role of the rebates.266 The presence of full-line competitors, the district court reasoned, would “prevent defendants from raising prices” and thus leave the incumbents without “incentive to ex clude the rival who sells only the tied product.”267 In other words, competition among full-line distributors, all of whom sold a bundle and had the same incentive to use bundled pricing in the face of a differentiated entrant, should protect consumers. The court relied on a variant of this argument—that the incumbent distributors lacked market power—to enter summary judgment for the incumbents on the entrant’s tying theory.268 Also important is the district court’s finding that relatively few unconstrained buyers purchased from Suture Express. If an entrant cannot achieve a high share of the contestable segment among buyers who are free to choose its products without penalty, that may be an indication the contract is not the barrier. However, Suture Express’s shares in the unconstrained contestable market—which ranged as high as 40 percent—seem sufficiently high, particularly for a new entrant, to obviate this concern. On appeal, the Tenth Circuit affirmed, concluding that the plaintiff failed to adduce sufficient evidence of market power and competitive effects.270 Like the district court, the Tenth Circuit found that neither of the defendant distributors had market power over products that Suture Express did not supply.271 The Tenth Circuit observed that both defendants faced competition from other full-line distributors; the court found the decline in the defendants’ profits and the expansion of their full-line rivals persuasive evidence of the defendants’ lack of market power.272 And like the district court, the Tenth Circuit court found that the fact that many unrestrained customers did not purchase from Suture Express fatal to the plaintiff’s attempts to demonstrate antitrust harm.273 Neither the district court’s nor the Tenth Circuit’s opinion made any reference to the well-known welfare losses that
may result from oligopolies. Perhaps accurately, the district court noted that "no court ever ha[d] applied the
discount attribution test to a non-monopolist."274 But of course, a court could choose to make this argument,
since the logic is exactly the same.275 The difference is only that it is more difficult for oligopoly competitors to
soften competition than for a monopolist to do so, but a court should take into account the ample empirical and
theoretical support for the stability and anticompetitiveness of oligopolistic exclusionary equilibria.276 There is
also the practical issue that, regardless of the number of full-line distributors, if each adopts a loyalty-rebate
program, suture Express remains unable to access the market.

c. rti
The most interesting competitive analysis of loyalty rebates in Retractable Technologies, Inc. v. Becton Dickinson
&Co. (RTI) appears in the district court’s opinion denying the defendant’s motion to dismiss.277 In that opinion, the
court describes the plaintiff’s allegations and how they interact with the theory.278 The decision adheres to legal
precedent and economic theory and finds that the rebates have the potential to violate antitrust law. The court
later submitted the question of liability for the exclusionary rebates to the jury, which declined to impose liability
on that theory. The verdict was appealed, but not the issue of loyalty rebates. Thus, RTI points to the need for
clearer guidance on loyalty rebate cases. Juries will make better decisions if they have a framework and tools with
which they can both determine the size of any penalties generated by loyalty rebates and identify the contexts in
which such rebates can harm competition.

V. conclusion
we motivate and structure a rule-of-reason inquiry into the competitive effects of loyalty rebates. This inquiry
recognizes that not all discounts exclude. But those that do, do so by design: incumbents select for a single loyalty
scheme both those products that a rival makes and products that the rival does not. Those selections determine a
bundle’s contestable share. Once an incumbent also selects discount threshold and size, the incumbent has
designed a financial penalty that entrants must overcome to compete. Entrants must set a low price to win the
business of contracted buyers. We summarize that burden with a new metric, the Effective Entrant Burden.

our framework provides at least two lessons for American and European antitrust courts and regulators. First,
liability standards that employ variable or marginal cost may fail to condemn loyalty discounts with
anticompetitive consequences. such standards do not account for the product line-to-product line competition
that frequently characterizes discount exclusion. second, loyalty discounts-at least those that bundle contestable
and non-contestable demand—are best, if imperfectly, analyzed under American tying law. We lend an easy rigor to
tyiing’s "volume of commerce" inquiry with our metric, EEB. The EEB reduces to a single number the anticompetitive
effect of the size and conditions of the discount incentive when compared to the entrant’s potential volume
(contestable share).

For that reason, the EEB provides a useful pole around which discount jurisprudence may reorient itself. That shift
need not be radical: indeed, of the dozen discount decisions that we reviewed, all but three reach the outcome the
EEB would suggest. This reasonable level of consistency may reflect the sagacity of judges, the severity of
litigated rebate schemes, or some combination of the two. Neither phenomenon provides sound footing for
antitrust adjudication: a theory-based, replicable formula for discount analysis will lend reliability, predictability and
extensibility to this area of the law.

This article neither will nor should conclude academic examination of loyalty rebates. In particular, contracts with
individualized quantity targets or graduated thresholds are a valuable area for further research. Future research
might also consider the role of market intermediaries in a loyalty-rebates setting, and the interaction with market
and consumer preferences.

Footnote
1 See generally Fiona M. Scott Morton, Contracts that Reference Rivals, Antitrust, Summer 2013, at 72.
2 See Bruce H. Kobayashi, The Economics of Loyalty Discounts and Antitrust Law in the United States,
Competition Pol’y Int’l, Autumn 2005, at 115, 116 ("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
3 See Concord Boat Corp. v. Brunswick Corp., 207 F.3d 1039, 1044 (8th Cir. 2001).
4 See Scott Morton, supra note 1.
5 See Case COMP/E-1/38.113-Prokent-Tomra, Comm'n Decision, ¶317 (Mar. 29, 2006) (summary at 2008 O.J. (C 219) 12) (Tomra), ec.europa.eu/competition/antitrust/cases/dec_docs/38113/38113_250_8.pdf ("Most of the rebate schemes provided for the rebate to be paid at the end of the reference period depending on whether the threshold was reached. In other instances, the rebate was subtracted from an invoiced price for the machines, usually combined with a provision obliging the customer to transfer back the discount if the agreed target was missed.").
6 Demand-side scope economies may afford the dominant firm considerable latitude to compose discount bundles. Boat builders, for example, may welcome the opportunity to minimize contract, service, or training costs by purchasing engines and pumps from a single seller. See also Suture Express, Inc. v. Owens &Minor Distrib., Inc., No. 12-2760-DDC-KGS, 2016 WL 1377342, at *2 (D. Kan. Apr. 7, 2016), aff'd, 851 F.3d 1029 (10th Cir. 2017) (describing demand-side economies of scope in market for medical-products distribution).
7 Litigated discount disputes have involved, for example, differentiated truck transmissions and hypodermic syringes. See ZF Meritor, LLC v. Eaton Corp., 696 F.3d 254, 274 n.11 (3d Cir. 2012); Retractable Techs., Inc. v. Becton Dickinson &Co., No. 2:08-cv-16, 2013 WL 8374234 (E.D. Tex. Sept. 11, 2013) ("First, as you've seen already, there are differences among these products. The biggest one is that there's retractable versus non-retractable safety syringes. But even with-among the non-retractable, there's a sliding sheath, there's a sliding shield, and then there is the pivoting shield. And the second key fact is that different firms offer different types. So RTI only offers retractable. It doesn't sell the other type."). In these examples-to which our discussion below refers-the entrant supplied only one product from the line because it had made a significant innovation that extended the product line.
8 Figure 1, below, graphically depicts a prototypical loyalty rebate. A numerical example follows in Table 1, below.
9 See, e.g., Conditional Dismissal Order at 1, Collins Inkjet Corp. v. Eastman Kodak Co., No. 13-cv-00664 (S.D. Ohio Oct. 22, 2015) (ECF No. 135) ("Pricing for Kodak's refurbished Versamark printheades shall be without regard to whether Kodak or Collins inks are used.").
10 See William C. Holmes &Melissa Mangiaracina, Antitrust Law Handbook 2:10 (2016) ("Relevant circumstances can include such diverse factors as . . . apparent justifications for the restriction such as enhanced efficiencies, protection of product or service goodwill, and inducing dealer loyalty.").
12 An exception to this stance involves single products whose demand can be divided into contestable and non-contestable portions. As discussed in Part III, below, dominant firms profitably may devise exclusionary discounts by leveraging such a product's non-contestable demand. Generally, American courts use price-cost tests to resolve predation disputes that arise from single-product loyalty rebates. See, e.g., ZF Meritor, LLC v. Eaton Corp., 9 F.3d 254, 274 n.11 (3d Cir. 2012) ("Accordinly, we join our sister circuits in holding that the price-cost test applies to market-share or volume rebates offered by suppliers within a single-product market."); Concord Boat Corp. v. Brunswick Corp., 207 F.3d 1039, 1062 (8th Cir. 2000).

14 The conditions under which volume and share contracts are entirely equivalent are fairly restrictive: perfectly predictable demand, individually tailored contracts, and perfect knowledge of the customer's aggregate need. See Chiara Fumagalli & Massimo Motta, On the Use of Price Cost Tests in Loyalty Discounts and Exclusive Dealing Arrangements: Which Implications from Economic Theory Should Be Drawn?, 81 Antitrust L.J. 537, 571 n.125 (2017) (observing that "certainty of demand and lack of differentiation between the suppliers' products are both crucial to the equivalence between loyalty discounts and quantity discounts" and that "if these conditions are relaxed, then quantity discounts represent a less effective tool than loyalty discounts to limit the buyer's purchases from the rival").

15 Scott Morton, supra note 1, at 72.


18 See, e.g., LePage's, 324 F.3d at 154 ("[B]oth of 3M's rebate programs set customer-specific target growth rates in each product line."); Case COMP/E-1/38.113-Tomra, supra note 5, ¶¶97, 102, 111; Case IV/D-2/34.780-Virgin/British Airways, Comm'n Decision, 2000 O.J. (L 30) 1, ¶¶6-11.

19 Cf. Benjamin Klein & Andres V. Lerner, Price-Cost Tests in Antitrust Analysis of Single Product Loyalty Contracts, 80 Antitrust L.J. 631, 644 (2016) (litigated discount disputes "generally involve an increased demand for one product relative to another, not merely a buyer moving down its demand curve and purchasing more of a seller's products without reducing the demand for rival products").

20 European decisions and commentators occasionally conflate contestability and what American courts term "foreclosure." See, e.g., Danilo Samá, The Antitrust Treatment of Loyalty Discounts and Rebates in the EU Competition Law: In Search of an Economic Approach and a Theory of Consumer Harm 5 (2012) (unpublished manuscript), papers.com/papers.cfm?id=2452100; Case COMP/E-1/38.113-Tomra, supra note 5, ¶ 163. Though contestability may influence the share of market demand supplied through challenged contracts—that is, the level of market foreclosure—the concepts are distinct.

21 Values for all three variables—threshold, discount, and contestable share—will fall between zero and one.


23 Id. at *1.

24 Id. at *2.


26 This paragraph addresses the chronological dimension of the supply-side determinants of contestability. But demand-side determinants also exist: in the long run, for example, buyer requirements may shift and alter competitive share. See Giulio Federico, The Antitrust Treatment of Loyalty Discounts in Europe: Towards a More Economic Approach, 2 J. Eur. Competition L. &Prac. 277, 279 (2011) ("Another issue that concerns the measurement of the contestable share relates to the time horizon over which one should assume that a buyer may
be able to switch some of its purchases away from the dominant firm and towards a smaller rival.


28 See generally David spector, Loyalty Rebates: An Assessment of Competition Concerns and a Proposed Structured Rule of Reason, Competition Pol'y Int'l, Autumn 2005, at 89, 95 (explaining how loyalty rebates can reduce the cost of price discounts).


30 Cf. Thomas J. Campbell, Predation and Competition in Antitrust: The Case of Nonfungible Goods, 87 Colum. L. Rev. 1625, 1627 (1987) ("While price-cutting will put pressure on a new entrant, the predatory firm would itself have to endure the lower price . . . Indeed, since the predatory firm sells more at the lower price, it will suffer a greater loss than its target and all losses are in the present, while prospective gains are in the future." (citations omitted)); see also Frank H. Easterbrook, Predatory Strategies and Counterstrategies, 48 U. Chi. L. Rev. 263, 268 (1981) (citing John McGee, Predatory Price Cutting: The Standard Oil (N.J.) Case, 1 J.L. & Econ. 137 (1958)).

31 Jonathan Jacobson provides an example in the same spirit. See Jonathan M. Jacobson, A Note on Loyalty Discounts, Antitrust Source 1,7 (June 2010), www.americanbar.org/content/dam/aba/publishing/antitrust_source/June10_Jacobson6_24f.authcheckdam.pdf.

32 The undiscounted list price of $100 is above the monopoly price, so the buyer might reduce its purchases in response. We do not need to model this response because the buyer will not choose to forgo the loyalty rebate and purchase units at the undiscounted list price in equilibrium. See Barry Nalebuff, Exclusionary Bundling, 50 Antitrust Bull. 321, 326 (2005).

33 Spector, supra note 28, at 95.

34 We are grateful to Barry Nalebuff for this interpretation.

35Because buyers do not pay the $100 list price in equilibrium, see Nalebuff, supra note 32, we do not analyze the role of elasticity of demand in our model. Although buyers choose not to pay the $100 list price, however, they are likely to regard the incumbent's commitment to that price as credible if the incumbent deals with many buyers over time and wishes to maintain a reputation for adhering to its discount scheme.

36 Cf. Nicholas Economides, Tying, Bundling, and Loyalty/Requirement Rebates, in Research Handbook on the Economics of Antitrust Law 121, 138 (Einer Elhauge ed., 2012) ("A dominant firm does not offer a loyalty discount to attract buyers to the incontestable part of the demand since it already is able to sell these units at full price.").

37 See Wright, supra note 13, at 8 ("Loyalty discounts can be employed by a supplier with substantial market power . . . to drive out rivals entirely, or to prevent potential entrants from entering the market in which it competes.").

38 If the incumbent's threshold is below the non-contestable share, the loyalty rebate causes no shift in market share: buyers meet the rebate's threshold through purchases that, by the definition of non-contestability, the buyers must purchase from the incumbent. In that situation, entrants may freely grow by satisfying a greater share of contestable demand. A seller is unlikely to offer a loyalty rebate with a threshold below non-contestable share as such a rebate would serve no obvious business purpose.

39 Kobayashi, supra note 2, at 117 (emphasis added).


41 Scott Morton, supra note 1, at 72.

42 Cf. Willard K. Tom et al., Anticompetitive Aspects of Market-Share Discounts and Other Incentives to Exclusive Dealing, 67 Antitrust L.J. 615, 617 (2000) ("Exclusive dealing arrangements are most likely to threaten competition in one of two ways: the arrangements can either facilitate collusion among competitors, or they can facilitate exclusion." (internal citation omitted)).

43 E.g., Daniel A. Crane &Joshua D. Wright, Can Bundled Discounting Increase Consumer Prices Without Excluding
Rivals?, Competition Pol'y Int'l, Autumn 2009, at 209 (“[B]undled discounting schemes lower prices to consumers unless they are predatory—that is to say, unless they exclude rivals and thereby permit the bundled discounter to price free of competitive restraint.”).

44 The coincidence of exclusionary and collusive effects should not surprise the antitrust analyst. Exclusion may foster market structures hospitable to collusion. 9 Areeda & Hovenkamp, supra note 13, ¶1700d, at 7 (“Even if rival sellers . . . are not completely eliminated, some of them may be so weakened as to make the tied-product market . . . open to tacit oligopolistic coordination.”). And collusive competitors may seek to exclude in order to preserve the profits of collusion. See generally Jonathan B. Baker, Exclusion as a Core Competition Concern, 78 Antitrust L.J. 527, 558 (2013) (providing examples).

45 We are indebted for this point to Jonathan Baker. See Baker, supra note 44, at 536, 558.

46 Accord Samá, supra note 20, at 21 (“[F]or the rival firm [it] would be more convenient and rational to forego the last unit and to sell exclusively the incremental units above the threshold.”).

47 See Michael A. Salinger, All-Units Discounts by a Dominant Producer Threatened by Partial Entry, 81 Antitrust L.J. 507 (2017).

48 See, e.g., Einer Elhauge, Loyalty Discounts and Naked Exclusion (Harvard Law Sch. John M. Olin Ctr. for Law, Econ. & Bus., Discussion Paper No. 608, 2008); Einer Elhauge & Abraham L. Wickelgren, Robust Exclusion Through Loyalty Discounts 2 (Harvard Law Sch. John M. Olin Ctr. for Law, Econ. & Bus., Discussion Paper No. 662, 2010); Economides, supra note 36, at 136 (“If the seller commits to charge loyal buyers a discount from any future price it charges to disloyal buyers, this can result in higher prices. This is akin to a 'most favored nation' clause. It makes it more costly to the seller to cut prices to non-committed buyers because then prices will have to be cut to committed buyers.”).

49 Elhauge, supra note 48, at 3. Elhauge develops his results in Bertrand settings biased, if at all, against anticompetitive outcomes. Id. at 5.

50 Elhauge & Wickelgren, supra note 48, at 2 (“This disincentive will limit the extent to which the sellers lowers prices for free buyers, which means the sellers' rival has less incentive to lower prices, as well, thus raising prices and harming consumer and total welfare.”); Elhauge, supra note 48, at 6.


52 Economides, supra note 36, at 131.


54 Nalebuff, supra note 32, at 349.

55 Cf. LePage's Inc. v. 3M, 324 F.3d 141, 144 (3d Cir. 2003) (“Distribution patterns and consumer acceptance accounted for a shift of some tape sales from branded tape to private label tape.”).

56 For example, in the loyalty contract example of Table 1, the buyer pays $95 for an additional unit above the threshold, not $55.

57 Klein & Lerner, supra note 19.


60 See, e.g., Economides, supra note 38, at 130 (“Tying and bundling, including under a loyalty/requirement program can be used by a monopolist in A to foreclose rivals, reduce their scale of operations, and thereby increase their unit costs and reduce their competitiveness.”). See generally Steven C. Salop & David T. Scheffman, Raising Rivals' Costs, 73 Am. Econ. Rev. 267 (1983).

61 Wright, supra note 13, at 7.

62 Id. at 9 (Otherwise, "rival firms would be able to evade the costs imposed by the structure of the loyalty
discount.

63 Id. at 23-24 ("The foreclosure requirement provides a rough measure of a firm's ability to prevent rivals from achieving minimum efficient scale and potentially harming competition.").


65 Nalebuff, supra note 32, at 324.

66 Id. at 325.

67 Id. at 326.

68 Id. at 337.

69 Id. at 325 ("If entry is costly, then [entrants] may not reappear after exiting, especially if they anticipate that the [incumbent] can repeatedly drive them out via a costless cross-subsidy.").


73 Id. at 1135.


75 Id. at 571.

76 Wright, supra note 13, at 6 ("The primary competitive concerns with loyalty discounts are similar to those that arise with exclusive dealing.").

77 See Klein & Lerner, supra note 19, at 647.


79 Enrique Ide, Juan-Pablo Montero & Nicolás Figueroa, Discounts as a Barrier to Entry, 106 Am. Econ. Rev. 1849 (2016).

80 Id. at 1853.

81 The assumption might be satisfied in a case involving an entrant with a very different or disruptive technology. Wickelgren, supra note 51.

82 See generally Economides, supra note 36, at 141-42.


86 See Jacobson, supra note 31, at 5.

87 See Nalebuff, supra note 32, at 350.

88 See generally Klein & Lerner, supra note 19.

89 Wright, supra note 13, at 17.


92Partly for this reason, Steven Salop recommends rule of reason analysis for contracts that reference rivals. See Steven C. Salop, The Raising Rivals' Cost Foreclosure Paradigm, Conditional Pricing Practices, and the Flawed Incremental Price-Cost Test, 81 Antitrust L.J. 371, 401 (2017) ("[Plaintiff's] ability to compete may be sufficiently marginalized by the higher costs or reduction in its customer base that its incentives to invest will be significantly reduced.").
93E.g., Case C-23/14, Post Danmark A/S v. Konkurrencerådet, ECLI:EU:C:2015:343, ¶73 (ej May 21, 2015) (Opinion of Advocate General Kokott), curia.europa.eu/juris/ liste.jsf?num=C-23/14# ("[O]n a market in which competition is so weakened by the presence of a dominant undertaking that as-efficient competitors cannot even establish themselves there, the competitive pressure exerted even by less efficient undertakings must not be underestimated."); see also Nalebuff, supra note 32, at 327 n.10.

94 The European Commission recognizes in its Guidance that loyalty rebates may foreclose "without necessarily entailing a sacrifice for the dominant undertaking." Guidance, supra note 91, ¶37; see also AAI Brief, Meritor, supra note 2, at 5 ("[U]nlke predatory pricing, the [loyalty rebate] strategy may be fully profitable for the dominant firm in the short run. Thus, a predatory pricing price-cost test plainly is not appropriate.").

95 Robert H. Lande, Should Predatory Pricing Rules Immunize Exclusionary Discounts?, 2006 Utah L. Rev. 863, 869 ("The essence of predatory pricing is . . . a short-term sacrifice of profit so that the dominant firm . . . can gain a long-term monopoly profit. However . . . discounts (or practices that appear to be discounts) often involve no such sacrifice."); cf. Jean-Jacques Laffont &Jean Tirole, Competition in Telecommunications 163 (2000) ("Predation can be profitable only if it leads competitors to exit the market enduringly.").

96 Nalebuff, supra note 32; see also Economides, supra note 36, at 131 (describing bundled and a la carte price schedules that permit dominant firms "to increase market share without decreasing price.").

97 Nalebuff, supra note 32, at 321.


99 United States v. Microsoft Corp., 253 F.3d 34, 59 (D.C. Cir. 2001) (en banc) (per curiam); cf. Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 608 (1985) ("Perhaps most significant, however, is the evidence relating to Ski Co. itself, for Ski Co. did not persuade the jury that its conduct was justified by any normal business purpose.").

100 Cf. Economides, supra note 36, at 133 ("[P]ricing that depends on an individual buyer's demand and gives the same discount to one buyer for, say, unit number 100 as to another buyer for unit 1000 is very hard to justify on efficiency considerations.").


102 McWane, Inc. v. FTC, 783 F.3d 814, 821 (11th Cir. 2015), cert. denied, 136 S. Ct. 1452 (2016) (dishonest customers might "be cut off from purchasing" incumbent's products); cf. Meritor, 696 F.3d at 282-83 ("And despite the fact that Eaton did not actually terminate the agreements on the rare occasion when an oEM failed to meet its target, the oEMs believed that it might.").

103 Case COMP/E-1/38.113-Tomra, supra note 5, ¶98 ("Tomra's overall strategy is not only confirmed by the different practices employed by the group, but was also discussed extensively within the group on various occasions, be it at meetings and conferences or in correspondence, for instance, e-mail. For example, with reference to a Norwegian company, called 'Repant', that had started operations, [the president of Tomra Europe AS] wrote to Tomra Butikkstrysmer AS, Tomra's Norwegian distribution subsidiary: 'We must use ah means to keep them out/down.' . . . 'I expect that you do everything possible to block any attempt from Repant of entering the market.' (emphasis omitted)); Suture Express, Inc. v. Owens &Minor Distrib., Inc., No. 122760-DDC-KGS, 2016 WL 1377342, at 23 (D. Kan. Apr. 7, 2016), aff'd, 851 F.3d 1029 (10th Cir. 2017) ("Several of defendants' internal documents and communications acknowledge that using bundling terms successfully has prevented Suture Express from selling suture and endo distribution to their customers.").

Amended and Supplemental Complaint ¶18, Collins Inkjet Corp. v. Eastman Kodak Co., No. 1:13-cv-00664-MRB, 2014 WL 6852567 (S.D. Ohio Mar. 27, 2014) (ECF No. 101) ("Collins is currently attempting to enter the refurbished printhead market, but has not yet been able to do so except on a trial basis. Kodak is aware of many of Collins' activities related to Collins' attempts to enter the market.").

105 See Concord Boat Corp. v. Brunswick Corp., 207 F.3d 1039, 1047 (8th Cir. 2000) ("[Dr. Frederick Warren-Boulton] explained that the discount programs encouraged competition in the boat building industry by providing discounts to smaller boat builders who otherwise would not be able to order sufficient quantities of engines to qualify for strict volume discounts."); see also Alberto Heimler, Below-Cost Pricing and Loyalty-Inducing Discounts: Are They Restrictive and, If So, When?, Competition Pol'y Int'l, Autumn 2005, at 149, 156 ("[A]pplying discount rates which are independent of the size of the retailer and in some sense in proportion to its sales efforts tends to increase, not decrease, competition among retailers . . . .").


107 For a fuller discussion, see Spector, supra note 28.


109 See id.


112 See generally Einer Elhauge, Defining Better Monopolization Standards, 56 Stan. L. Rev. 253, 295-300 (2003) ("[T]he problem remains that the Supreme Court's scant development of the issue means that none of its monopolization opinions address the baseline issues necessary to give the efficiency concept more definitive content.").

113 Guidance, supra note 91, ¶30.

114 Id. ¶46.

115 Vito Auricchio, Discount Policies in US and EU Antitrust Enforcement Models: Protecting Competition, Competitors or Consumer Welfare?, 3 Eur. Competition J. 373, 374 (2007); see also id. at 394-95 ("[O]ne might even argue that, before the Discussion Paper, in the EU the evaluation of discounts was not based on a real effects-based test."). Decisions representative of this formalistic starting point include Michelin II. See Case T-203/01, Manufacture Francaise des Pneumatiques Michelin v. Comm'n, 2003 E.C.R. II-4071, ¶¶56, 65 ("[I]t may be inferred generally from the case-law that any loyalty-inducing rebate system applied by an undertaking in a dominant position has foreclosure effects prohibited by Article 82 EC.").

116 See Eur. Comm'n, DG Competition, DG Competition Discussion Paper on the Application of Article 82 of the Treaty to Exclusionary Abuses, ¶58 (Dec. 2005), ec.europa.eu//antitrust/ art82/discpaper2005.pdf ("This definition [of 'abuse'] implies that the conduct in question must . . . have the capability, by its nature, to foreclose competitors from the market.").


118 Guidance, supra note 91, ¶37.

119 Id.

120 Id. ¶39.

121 Id. ¶40.

122 Id. ¶40.

123 Id. ¶41.

124 Id. ¶42.

125 Id. ¶41.
The Guidance is not controlling law. As the Court of Justice's Advocate General explained to the European Court of Justice in May 2015, the "administrative practice [of] the Commission is not . . . binding on the national competition authorities and courts." Case C-23/14, Post Danmark A/S v. Konkurrencerådet, ECLI:EU:C:2015:343, ¶60 (CJ May 21, 2015) (Opinion of Advocate General Kokott). National authorities, the Advocate General wrote, were "bound only by the requirements arising from Article 82," and it was "for the [Court of Justice] to define what those requirements [were]." Id.

127 Federico, supra note 26, at 277.

128 COMP/C-3/37.990-Intel, Comm'n Decision, ¶916 (May 13, 2009) (summary at 2009 O.J. (C 227) 13) (Intel), ec.europa.eu/competition/antitrust/cases/_docs/37990/37990_3581_18.pdf ("As a document intended to set priorities for the cases that the Commission will focus upon in the future, it does not apply to proceedings that had already been initiated before it was published, such as this case.").

129 Id. ¶1005 (internal quotation omitted); see also Geradin, supra note 117, at 587 (the Guidance's methodology was used by the Commission in its Intel decision).

130 COMP/C-3/37.990-Intel, supra note 128, ¶11006.


133 See id. ¶¶10-11.

134 See id. ¶208.

135 See id. ¶¶209, 219. The Tomra decision suggested that its hawkish formalism would extend even to rebate schemes that foreclosed de minimis market shares. Id. ¶241 ("[T]he customers on the foreclosed part of the market should have the opportunity to benefit from whatever degree of competition is possible on the market and competitors should be able to compete on the merits for the entire market and not just for a part of it.").


137 Wouter P.J. Wils, The Judgment of the EU General Court in Intel and the So-Called More Economic Approach to Abuse of Dominance, 37 World Competition 405, 407 (2014). The General Court acknowledged but rejected the Guidance framework. See Geradin, supra note 117, at 602 ("[W]hile the [General Court] recognize[d] and supported the underlying logic of the discount attribution test, it reject[ed] the application of this test by the Commission as entirely irrelevant.").


139 Id. ¶80. Only the evaluation of individualized volume commitments, the court wrote, required analysis of such circumstances. Id. ¶¶78, 82, 84.

140 Id. ¶85. The European Court of Justice reinforced these formalisms in a preliminary ruling in a different case in October 2015. See Case C-23/14, Post Danmark A/S v. Konkurrencerådet, ECLI:EU:C:2015:651, ¶56 (CJ Oct. 6, 2015) ("[T]he invoicing of 'negative prices', that is to say, prices below cost . . . is not a prerequisite of a finding that a retroactive rebate scheme operated by a dominant undertaking is abusive."); id. ¶57 ("[I]t is not possible to infer from Article 82 EC or the case-law of the Court that there is a legal obligation requiring a finding to the effect that a rebate scheme operated by a dominant undertaking is abusive to be based always on the as-efficient-competitor test.").

142 Id. ¶¶138-141; see generally Consolidated Version of the Treaty on the Functioning of the European Union art. 102, 2012 O.J. (C 326) 47 [hereinafter TFEU].

143 Case C-413/14 P, Intel, ECLI:EU:C:2017:632, ¶139.

144 Id. ("[I]t is also required to assess the possible existence of a strategy aiming to exclude competitors that are at least as efficient as the dominant undertaking from the market."); id. ¶140 ("That balancing of the favourable and unfavourable effects of the practice in question on competition can be carried out in the Commission's decision only after an analysis of the intrinsic capacity of that practice to foreclose competitors which are at least as efficient as the dominant undertaking.").


146 See Case C-413/14 P, Intel, ECLI:EU:C:2017:632, ¶¶142, 144.

147 See generally Case T-286/09, Intel Corp. v. Comm'n, ECLI:EU:T:2014:547, ¶¶142-166 (GC June 12, 2014) (discussing relevance of as-efficient competitor test and Intel's criticisms thereof to General Court's decision).

148 But see Case C-413/14 P, Intel, ECLI:EU:C:2017:632, ¶116 (appearing to equate "the share of the market covered" with "foreclosure" share).

149 See generally 15 U.S.C. 1-2, 12-27. The Robinson-Patman Act's proscription against discount discrimination stops short of addressing the loyalty contracts that we analyze. See 15 U.S.C. 13a. Specifically, the act's text addresses discounts offered to distributors in order to exclude competing distributors. See id. ("It shall be unlawful . . . to be a party to . . . any transaction . . . which discriminates . . . against competitors of the purchaser[.]") (emphasis added)). The loyalty discounts that we consider are generally challenged by competitors of the party offering the discount, not by competitors of the party's distributors.

150 See, e.g., NicSand, Inc. v. 3M Co., 507 F.3d 442, 451-52 (6th Cir. 2007) (en banc); Concord Boat Corp. v. Brunswick Corp., 207 F.3d 1039, 1062 (8th Cir. 2000); Barry Wright Corp. v. ITT Grinnell Corp., 724 F.2d 227, 236 (1st Cir. 1983).

151 See Sean P. Gates, Antitrust by Analogy: Developing Rules for Loyalty Rebates and Bundled Discounts, 79 Antitrust L.J. 99, 108 (2013); Masimo Corp. v. Tyco Health Care Grp., No. CV 02-4770 MRP, 2006 WL 1236666 at *13 (Mar. 22, 2006), affd, 350 Fed. App'x 95 (9th Cir. 2009) ("The court concludes that as a general matter, absent evidence of predatory pricing or tying, the practice of offering a discount on two or more bundled products is not anticompetitive under Section 2.").

152 See ZF Meritor, LLC v. Eaton Corp., 696 F.3d 254, 271 (3d Cir. 2012) (quoting Tampa Elec. Co. v. Nashville Coal Co., 365 U.S. 320, 329 (1961)). Tampa Electric applied Section 3 of the Clayton Act to prohibit exclusive dealing contracts that "foreclose competition in a substantial share of the line of commerce affected." Tampa Electric, 365 U.S. at 327; see also AAI Brief, Meritor, supra note 2, at 11 (listing sources below the heading, "2. Many scholars agree that loyalty rebates should be treated as a form of exclusive dealing").

153 3B Areeda & Hovenkamp, supra note 13, ¶768, at 152 ("Lawyers challenging discounting practices invariably try to fit them under as many legal theories as possible, and it is not unusual for a discount practice to be challenged as both unilateral under 2 and as multilateral under 1.")

154 Gates, supra note 151, at 109; see also Collins Inkjet Corp. v. Eastman Kodak Co., 781 F.3d 264, 267-68 (6th Cir. 2015).

155 9 Areeda & Hovenkamp, supra note 13, ¶1700a, at 4; see also FTC v. Church & Dwight Co., 665 F.3d 1312, 1316 n.- (D.C. Cir. 2011) (rejecting analogy to tying in discount dispute because FTC investigated only condom market and "had[d] not identified any potentially tied product").


158 Id. at 1546. In addition, the Ninth Circuit in PeaceHealth allowed a tying argument to reach a jury. See Cascade Health Solutions v. PeaceHealth, 515 F.3d 883, 915-16 (9th Cir. 2008).


161 See, e.g., Wright, supra note 13, at 7; Tom, Balto & Averitt, supra note 159.

162 Concord Boat Corp. v. Brunswick Corp., 207 F.3d 1039, 1058-59 (8th Cir. 2000); Masimo Corp. v. Tyco Health Care Grp., L.P., 350 Fed. App’x 95, 97 (9th Cir. 2009).

163 Masimo, 350 Fed. App’x 95, 97.

164 Concord Boat, 207 F.3d at 1044.

165 Id. at 1059 (citing Tampa Elec. Co. v. Nashville Coal Co., 365 U.S. 320, 327 (1961)).


167 Concord Boat, 207 F.3d at 1062.

168 Id.

169 Virgin Atl. Airways, Ltd. v. British Airways PLC, 257 F.3d 256, 266-69 (2d Cir. 2001) (“Virgin has therefore failed in its burden to show below cost pricing. . . . As long as low prices remain above predatory levels, they neither threaten competition nor give rise to an antitrust injury.”).

170 NicSand, Inc. v. 3M Co., 507 F.3d 442, 454-55 (6th Cir. 2007) (rejecting application of exclusive dealing analogy and observing that, “[w]hile NicSand complains about the up-front discounts 3M offered, it does not allege that 3M was selling below cost”).

171 Cascade Health Solutions v. PeaceHealth, 515 F.3d 883, 903 (9th Cir. 2008) (“[W]e . . . hold that bundled discounts may not be considered exclusionary conduct within the meaning of 2 of the Sherman Act unless the discounts resemble the behavior that the Supreme Court in Brooke Group identified as predatory.”); see also Gates, supra note 151, at 117 (reading PeaceHealth as “squarely adopt[ing] the predatory pricing analogy”).

172 NicSand, 507 F.3d at 452 (internal quotation omitted).

173 Id. at 458.

174 Gates, supra note 151, at 111; cf. Federico, supra note 26, at 281 (“A retroactive rebate can be interpreted as the application of predatory pricing ‘in disguise.’ That is, the retroactive structure hides the existence of very low prices on contestable volumes by the application of the discount on all of the volumes sold by the dominant firm.”).

175 This analogy enjoys substantial academic support. See, e.g., Greenlee, Reitman & Sibley, An Antitrust Analysis of Bundled Loyalty Discounts, supra note 72, at 1135 (“When the tied market is perfectly competitive, bundled discounts resemble tying and are not a form of predatory pricing.”); Caves & Singer, supra note 159, at 889. Even Areeda & Hovenkamp hint that the tying paradigm may control in circumstances that are frequently litigated. See 3A Areeda & Hovenkamp, supra note 13, ¶149d, at 316 (“Given that above-cost discounts can be matched by equally efficient rivals, anticompetitive effects are likely only when the larger firm can offer a larger variety of products or services than the smaller firm does. The most common scenario resembles tying.”).


177 In the absence of price conditions that reference multiple products, loyalty-discount strategies are analytically
indistinguishable from predatory pricing. We discuss why Eisai Inc. v. Sanofi-Aventis U.S., LLC, 821 F.3d 394 (3d Cir. 2016), a case ostensibly involving a single product, is appropriately analyzed as a product-line case in Part II.C, below.

118 Elhauge, supra note 98, at 413.

119 Cf. Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 14 (1984) (tying may "either harm existing competitors or create barriers to entry of new competitors in the market for the tied product" (emphasis added)).

180 See supra at 119-81; see also Suture Express, 2016 WL 1311342, at ¶14 (loyalty-rebate plaintiff sought summary judgment on tying theory); Ortho Diagnostic Sys., Inc. v. Abbott Labs., Inc., 920 F. Supp. 455, 468 (S.D.N.Y. 1996) (reviewing rebate contract that spanned differentiated blood assays and quoting passage from SmithKline that emphasized the "linkage of these . . . products in a pricing scheme").

181 As discussed below, we require courts to find non-contestable demand before deeming a loyalty discount exclusionary. That requirement-to extend the tying analogy-amongs to a showing that the incumbent has tied two markets. Accord Economides, supra note 36, at 135 ("Loyalty/Requirement Pricing Can Be Equivalent to Bundling 'Incontestable' and 'Contestable' Units of a Single Good").

182 Accord Beard, Ford & Kaserman, supra note 29, at 594 ("If there is some positive level of sunk costs associated with entry, then [entrant] enters only if its expected profit is positive."); Elhauge, supra note 98, at 413 ("[T]ying can profitably deter entry by an equally efficient rival by foreclosing enough of the tied market to make entry profits lower than entry costs.").

183 See Cascade Health Sol'ns v. PeaceHealth, 515 F.3d 883, 900 (9th Cir. 2008).

184 Cf. Invacare Corp. v. Respirronics, Inc., No. 1:04CV1580, 2006 WL 3022968, at ¶10 n.5 (N.D. Ohio Oct. 23, 2006) ("An indispensable element of an unlawful tying arrangement is the seller's conditioning of the availability of product A on the purchase of product B. . . . In the instant case, it is undisputed that consumers may purchase [positive airway pressure devices] and masks individually; thus, a tying claim fails as a matter of law."); PeaceHealth, 515 F.3d at 900 ("The package discount thus does not constrain the buyer's choice as much as the traditional tie."). But see Nalebuff, supra note 32, at 323-24 (analogizing price conditions to ties).

185 See infra at 815.


187 For two notable exceptions, see Datagate, Inc. v. Hewlett-Packard, 60 F.3d 1421 (9th Cir. 1995) (tying arrangement that affected one customer could affect "not insubstantial" volume of commerce), and Digidyne Corp. v. Data General Corp., 734 F.2d 1336, 1341 (9th Cir. 1984) ("Nor is a restraint on competition that is substantial in terms of the entire market for the tied product required.").


189 See Jefferson Parish, 466 U.S. at 15-16 ("[A]pplication of the per se rule focuses on the probability of anticompetitive consequences."). In this conclusion, we are joined by substantial judicial and academic commentary that argues for nuanced liability standards in tying cases. See, e.g., United States v. Microsoft Corp., 253 F.3d 34, 84 (D.C. Cir. 2001) (en banc) (per curiam) (applying rule of reason to tying arrangements involving platform software products); Christian Ahlborn, David S. Evans & A. Jorge Padilla, The Antitrust Economics of Tying: A Farewell to Per Se Illegality, 49 Antitrust Bull. 287 (2004); Einer Elhauge, Rehabilitating Jefferson Parish: Why Ties Without a Substantial Foreclosure Share Should Not Be Per Se Legal, 80 Antitrust L.J. 463 (2016).

190 See, e.g., Inline Packaging, LLC v. Graphic Packaging Int'l, Inc., 164 F. Supp. 3d 1117, 1126-27 (D. Minn. 2016). Non-contestable demand also characterizes European discount proceedings. The European Commission's Intel decision, for example, placed an even greater emphasis on contestability. See COMP/C-3/37.990-Intel, supra note 128, ¶1009-12, 1202-82, 1339-84, 1473-77; see also Case COMP/E-1/38.113-Tomra, supra note 5, ¶277 (discussing factors that "explain why many customers would have bought considerable quantities from Tomra anyway").

191 ZF Meritor, LLC v. Eaton Corp., 696 F.3d 254, 277 (3d Cir. 2012) ("Significantly, there was considerable testimony that the [buyers] did not want to remove [the entrant’s] transmissions from their data books, but that they were essentially forced to do so or risk . . . supply shortages.").
Further, Meritor's entrant could not have closed the gap in the short run. The case arose from the "heavy-duty truck transmissions market," Meritor, 696 F.3d at 263, a market in which product development could take years. Responding Brief and Principal Brief of Appellees/Cross-Appellants ZF Meritor LLC and Meritor Transmission Corp. at 19, ZF Meritor, LLC v. Eaton Corp., 696 F.3d 254 (3d Cir. 2012) (Nos. 11-3301, 11-3426) ("Eaton did not have a two-pedal automated mechanical transmission, and would not fully release one until 2004-three years later."). This feature of the transmission market's structure—"the incontestable character of some portion of each OEM's demand"—proved "central to the court's conclusion that Eaton did not rely mainly on pricing to exclude." Fumagalli & Motta, supra note 14, at 541.

The FTC's decision in McWane, which the Eleventh Circuit affirmed, also arose from unequal product lines leveraged to anticompetitive effect. See McWane, Inc. v. FTC, 783 F.3d 814, 821 (11th Cir. 2015). The chronology of contestability emerged plainly in administrative proceedings between the FTC and McWane, Inc., a dominant domestic manufacturer of pipe fittings. McWane, Inc., 155 F.T.C. 903, 1131 (2013) (Initial Decision) ("Star recognized that it would not have the full range of Domestic Fittings it intended to supply available to its customers on day one, and that a ramp-up period would be required.").

195 821 F.3d 394 (3d Cir. 2016).

196 See id. at 401-02, 405-06.


198 Eisai Inc. v. Sanofi-Aventis U.S., LLC, Civil Action No. 08-4168 (MLC), 2014 WL 1343254 at ·2 (D.N.J. Mar. 28, 2014), affd, 821 F.3d 394 (3d Cir. 2016); see also Plaintiff's Brief, Eisai, supra note 197, at 3 ("Sanofi had . . . even stronger control over a segment of the market, in this case . . . drugs to be used for certain cardiology purposes.").

199 Eisai, 2014 WL 1343254, at ·2; see also Plaintiff's Brief, Eisai, supra note 197, at 14.

200 Eisai, 2014 WL 1343254, at ·26 ("This prevented hospitals from switching entirely to a competitor . . . drug."); see also Plaintiff's Brief, Eisai, supra note 197, at 16.


202 Plaintiff's Brief, Eisai, supra note 197, at 14; see also Transcript of Oral Argument at 40, Eisai, 821 F.3d 394 (No. 14-2017) (statement of counsel for defendant-appellee Sanofi Aventis U.S., LLC) ("The only prohibition is that the company is not permitted to promote for that use if they don't have a label indication.").

203 See Transcript of Oral Argument at 39, Eisai, 821 F.3d 394 (No. 14-2017) (statement of counsel for defendant-appellee Sanofi Aventis U.S., LLC) ("Eisai could have done the clinical trials, could have established the label indication and then been free to promote it."). But see id. at 49 (statement of counsel for plaintiff-appellant Eisai, Inc.) ("[G]etting FDA approval is a very expensive proposition.").


205 LePage's Inc. v. 3M, 324 F.3d 141, 144, 154 (3d Cir. 2003) (en banc) (product lines supplied by 3M included "Home Improvement Products, Stationery Products (including transparent tape) . . . and Leisure Time").

206 Id. at 154 ("3M's rebate programs offered discounts to certain customers conditioned on purchases spanning six of 3M's diverse product lines . . . . In addition to bundling the rebates, both of 3M's rebate programs set customer-specific target growth rates in each product line.").

207 Such a project would presumably entail substantial costs relative to its synergies, or the entrant would have entered with that product line in the first place.

208 LePage's, 324 F.3d at 155.

209 See also Cascade Health Sol'ns v. PeaceHealth, 515 F.3d 883, 891 (9th Cir. 2008) (noting that plaintiff offered
primary and secondary hospital services but that "McKenzie [did] not provide tertiary care"; plaintiff developed
capacity for tertiary care only through merger). Not all antitrust disputes that arise from discounts turn on
contestability: predatory-pricing jurisprudence supplies appropriate frameworks for single-product discounts in
(1993) ("Liggett's and Brown &Williamson's black and whites were more or less fungible"); Concord Boat Corp. v.
Brunswick Corp., 207 F.3d 1039, 1057 (8th Cir. 2000) ("There was . . . evidence that the boat builders did not
hesitate to switch to OMC and Volvo when they offered superior discounts.").

210 Although not an opinion or order, we also draw support from the State of New York's filings in its
monopolization action against Intel. New York settled the loyalty-rebate suit in 2012, but the state's filings make
plain New York's reliance on notions of contestability. "[W]hen an OEM considered launching a new product line
with AMD CPUs, Intel's tax system led OEMs to fear that their costs could escalate for all product lines that would
still need Intel microprocessors for years to come. In this way, uncontested product lines were held hostage by
Intel to an OEM's decision on contested lines." New York's Combined Opposition to Defendant's Motions for
No. 260); see also New York's Memorandum in Opposition to Intel's Motion to Exclude Testimony of Dr. Frederick
258) ("The OEMs cannot rely wholly on the rivals' products . . . the monopolist can 'leverage' its dominance as to
those products which an OEM must purchase from it (the 'uncontested' segment) to bar competition with respect
to products to which the OEM might purchase from a rival (the 'contestable' segment), tying the two together.").

211 See, e.g., U.S. Dep’t of Justice, Competition and Monopoly: Single-Firm Conduct Under Section 2 of the
Sherman Act 107 (2008); Beard, Ford &Kaserman, supra note 29, at 596 ("All that is needed [for an anticompetitive
result] is an inability of the entrant to serve all customers otherwise served by the incumbent firm."); Giacomo
(2011) ("[W]hen firms are symmetric, there is little support to the view that quantity discounts are
anticompetitive."); Klein &Lerner, supra note 19, at 633 ("[O]th economics and previous loyalty contract case law
indicate that a simple Brooke Group average price-cost test is applicable only when all sales are 'contestable.'").

212 Gianluca Faella recognizes that the anticompetitive effects of discount thresholds that alter entrant incentives
will rise with the difference between threshold and contestability. Gianluca Faella, The Antitrust Assessment of
Loyalty Discounts and Rebates, 4 J. Competition L. &Econ. 375, 380 (2008).

213 See Federico, supra note 26, at 279.

214 We believe such models accurately reflect observed customer behavior in litigated discount disputes. See, e.g.,
Plaintiff Collins Inkjet Corp.’s Memorandum in Opposition to Defendant Eastman Kodak Company’s Motion for
Partial Dismissal and to Transfer the Entire Case at 3-4, Collins Inkjet Corp. v. Eastman Kodak Co., No. 13-cv-00664,
2015 WL 4396232 (S.D. Ohio filed June 19, 2015) (ECF No. 131) ("In August 2012, after the increased printhead
refurbishment cost policy was unveiled to customers, a Collins ink customer contacted Collins to explain that it
was switching to Kodak ink from Collins ink because of Kodak’s new policy. The customer found the new policy
was 'unacceptable,' but also believed it was 'unavoidable' that it was switching to Kodak after doing a financial
analysis and concluding that remaining with Collins was now cost prohibitive when factoring in Kodak’s new
printhead refurbishment pricing policy.").

215 If the entrant itself offers a discount, then the inequality above will change to reflect that discount. In this
simple context, we incorporate any entrant discount into pe.

216 We reiterate here, as in the introduction, that this metric is designed to measure the entrant burden in a case
where non-contestable share is being used by a dominant firm to exclude. In any given case, there could be other
anticompetitive theories and effects and/or other efficiencies that this test does not capture.

217 Indeed, our EEB metric is analogous to Aghion and Bolton's decrement from incumbent price that deters some
fraction of potential entrants. See Ide, Montero &Figuerola, supra note 79, at 1855 (interpreting Aghion &Bolton,
supra note 64).
We are indebted to Barry Nalebuff for this point. We note that if a loyalty contract specifies a lump sum for reaching a threshold, or gives a reward in kind, these would have the equivalent impact of a percentage discount and would be analyzed the same way. The numerator \( h \times d \) can be replaced with the total value of the reward.

See, e.g., Sama, supra note 20, at 4 (discussing “suction effect” that arises when “the customer has reached an amount of purchases very close to the [discount] threshold”).

Guidance, supra note 91, ¶¶37-45.

The formula for this calculation is \( \frac{hd}{h - (1 - s)} \) as compared to our formula of \( \frac{hd}{s} \).

Analogous point appears in David S. Sibley, Matthew D. Sibley & Melanie Stallings Williams, Tying and Bundled Discounts: An Equilibrium Analysis of Antitrust Liability Tests, 13 Berkeley Bus. L.J. 149, 163-64, 170 (2016) (“[F]inding specific intent to monopolize amounts to asking whether equilibrium pricing with bundled discounts is affected by Firm Two’s fixed costs.”).

Guidance, supra note 91, ¶26.

It is important to consider the rebate in the context of an efficiently scaled firm, which the entrant may not yet be, particularly if it cannot expand due to the loyalty rebate. A small entrant that does not appear as efficient as a larger incumbent might prove to be just as efficient as the incumbent if it attained the incumbent’s scale. See Salop, supra note 92, at 385 (“But even if a rival can cover its costs and remain viable, it will be a weaker and less efficient competitor if its distribution or other input costs are higher.”).


Herbert Hovenkamp, Discounts and Exclusion, 2006 Utah L. Rev. 841, 841 (2006); cf. Barry Wright Corp. v. ITT Grinnell Corp., 724 F.2d 227, 234 (1st Cir. 1983) (“Nonetheless, while technical economic discussion helps to inform the antitrust laws, those laws cannot precisely replicate the economists’ (sometimes conflicting) views.”).


See, e.g., Faella, supra note 212, at 403 (“In many cases, professional buyers should be able to say, with an acceptable degree of approximation, whether, and how large, a portion of their requirements must be satisfied by a particular product or producer.”); Sama, supra note 20, at 9 (“As practical guidelines, for an existing competitor a helpful indication of the relevant range may come from the data related to the fluctuations of sales over time, whereas, for a potential competitor, a useful suggestion may derive from the evaluation of the scale of sales that a new entrant would reasonably be able to reach.”).

See Salop, supra note 92, at 400 (arguing that, following the adoption of a raising rivals’ costs paradigm for customer foreclosure, “[t]he court . . . does not need to carry out a complex price-cost test”); see also id. at 405 (describing “administrative[] inefficiency” as “fundamental flaw[]” of incremental price-cost test).
If contestable share is truly unknown, an alternative metric can be constructed by substituting total entrant revenue (m) for contestable share. The alternative metric is \((h \times d) m\), that is, the ratio of the total rebate in dollars \((h \times d)\) to total entrant revenue. An entrant with $80 in total revenue that must match $10 in total rebates may perceive the incumbent’s loyalty program as a surmountable barrier to expansion. An entrant with $8 in total revenue may not.

One reason that this test is not as attractive as EEB is that, without any estimate of contestable share, we do not know if the entrant could spread those rebate dollars over a larger number of units and thereby lessen its burden. Because this test can only approximate the entrant’s burden, we view it as less helpful than EEB.

Cf. LePage’s Inc. v. 3M, 324 F.3d 141, 154 (3d Cir. 2003) (en banc).

For discussion of antitrust market definition, see Massimo Motta, Competition Policy: Theory and Practice 102 (2004) (“3.2.1 Product Market Definition”).

Courts that evaluate the anticompetitive potential of rebates by looking to bundle composition need not discard discounting jurisprudence entirely: rebates applied across products that have very different production processes (e.g., tape and automotive window tint) may permit courts to presume that entrants cannot contest demand for products that they do not produce.

For example, the Meritor court considered significant Eaton’s practice of requiring that truck manufacturers exclude Meritor from the manufacturers’ catalogues, or “data books.” See ZF Meritor, LLC v. Eaton Corp., 696 F.3d 254, 256-66 (3d Cir. 2012).


E.g., Complaint ¶43, New York v. Intel Corp., No. 09CV00827, 2009 WL 3697889 (D. Del. Nov. 4, 2009) (“The 'cap' provision was suppressed and kept secret, but numerous drafts, subsequent emails, and testimony confirm that it was central to the agreement and was observed by HP and enforced by Intel.”).

E.g., Collins Inkjet, Meritor, Intel, Masimo, Tomra, LePage's, and SmithKline.

E.g., Church & Dwight and Concord Boat.


See Eisai, 821 F.3d at 399.

Id.

Id.

Id. at 401 (“The incontestable demand for Lovenox was based, at least partially, on its unique cardiology indication, which no other anticoagulant in the market possessed and which hospitals needed to treat certain of their patients.”).


Eisai, 821 F.3d at 401.

Id. at 405 (emphasis added).

Id.

Id. at 406.

Id. (“Eisai does not offer evidence demonstrating that fixed costs were so high that competitors entering the market were unable to obtain a cardiology indication.”).
257 Id.
258 Id.
259 Indeed, the Eisai court seemed to acknowledge the theory’s validity when the court rejected Sanofi’s suggestion that the court apply a price-cost test derived from predation doctrine. See id. at 409. Non-contestability, the court explained, rendered a price-cost test inapplicable. See id. ("On Eisai’s telling, the bundling—not the price—served as the primary exclusionary tool. Because we have concluded that Eisai’s claims are not substantiated and that they fail a rule of reason analysis, we will not opine on when, if ever, the price-cost test applies to this type of claim."). At minimum, this explanation stands in tension with the court’s suggestion, elsewhere in its opinion, that demand non-contestability alone could not give rise to a bundling claim. See id. at 405-06.

260 Id. at 405-06.
264 See generally Suture Express, 2016 WL 1377342, at ¶1-36.
265 Id. at ¶35.
266 Id. at ¶18-20.
267 Id. at ¶19, 23 ("Defendants are not monopolists, and they would not benefit from excluding a rival who produces less than a full range of products because other breadline distributors exist to compete against defendants and prevent them from raising prices.").
268 Id. at ¶21-26.
269 See id. at ¶6.
271 Id. at 1042-44.
272 Id. at 1042, 1043. Though of course, the decline in profits might alternatively indicate that Suture Express was placing competitive pressure on full-line distributors.
273 Id. at 1044 ("[T]he 'but-for world' existed for almost half the market (since 36-44% of the market was not constrained), yet less than half of that market 'purchased from Suture Express at its lower price.' In 2007, Suture Express accounted for only 16% of unrestrained suture-endo sales; that number increased to 41% in 2010, and fell to 24% in 2012.").
275 See generally C. Scott Hemphill & Tim Wu, Parallel Exclusion, 122 Yale L.J. 1182 (2013) (arguing that "parallel exclusion" of this kind should be recognized as a form of monopolization).
278 Id.
279 The sources and assumptions associated with the values included in Table 3 are on file with the authors.


291 See, e.g., Case COMP/E-1/38.113-Prokent-Tomra, Comm’n Decision, ¶145 (Mar. 29, 2006) (summary at 2008 O.J. (C 219) 12) (Tomra), ec.europa.eu/competition/antitrust/doc/dec_docs/38113/38113_250_8.pdf (discount size); id. ¶159 (threshold); id. ¶163 Figure 12 (contestable share).

292 Concord Boat Corp. v. Brunswick Corp., 207 F.3d 1039, 1044 (8th Cir. 2001).

293 Id. at 1057. But see Klein & Lerner, supra note 19, at 641 (asserting that “[s]ome of Brunswick’s sales were incontestable, in the sense that rivals could not reasonably be expected to economically compete for all of a boat builder’s sales.”).

294 See LePage’s Inc. v. 3M, 324 F.3d 141, 171 (3d Cir. 2003) (en banc).


297 See Collins Inkjet Corp. v. Eastman Kodak Co., 781 F.3d 264, 269 (6th Cir. 2015); Brief of Appellant at 7, Collins Inkjet, 781 F.3d 264 (No. 14-3306) ("[T]he policy has generated only about $600,000. Of that, only $200,000 comes from ink sales."). But see id. at 8 n.2 ("[T]he percentage of [total cost of printing] representing refurbishment relative to ink varies from customer to customer."); Brief of Appellee at 11, Collins Inkjet, 781 F.3d 264 (No. 14-3306) ("For two of the customers, the annual increased cost of refurbished printheads far exceeds the cost of ink; for the third, the annual increased cost of refurbished printheads is 63% of the ink cost.").

APPENDIX
detail on table 3 data sources279

Eisai: Eisai’s contestable share is 90% because it had approval for most indications.280

Meritor: We obtained estimates of the threshold and discount size from the Third Circuit’s opinion.281

SmithKline: The Third Circuit’s opinion provides market shares for all cephalosporins.282 We added the shares of products in markets open to generics (cefazolin and cephradine) to obtain a contestable share of 22%. We estimated the threshold applicable to an individual hospital using aggregate market data. To form this estimate, we added the shares of Lilly’s major products Keflin and Keflex to the share of Kefzol. Then, we divided that sum by another sum that also included the share of SmithKline’s Ancef, thereby accounting for all hospital demand for cefazolin. Finally, we rounded down by one percentage point to allow for measurement error by the parties. This yielded 88% as the threshold. Lilly calculated that, for an individual hospital, the required discount on Ancef was
RTI: We obtained estimates of the threshold from the plaintiffs’ response to Beckton Dickinson’s motion to dismiss and of the discount size from the testimony of the plaintiffs’ expert witness. The parties did not present expert testimony on contestable share. Our discussions with industry participants suggested that safety syringes account for roughly 10% of all syringes.

Church & Dwight: We obtained estimates of the threshold and discount size from the district court’s April 2012 opinion on summary judgment. Many non-drugstore retail channels offered contestable share and carried a full line of products.

Masimo: We obtained estimates of the threshold and discount size from the district court’s opinions on summary judgment and judgment as a matter of law. Tyco machines had a five- to seven-year life, and we assume Tyco had sold 100% of the installed base. Therefore, approximately one-sixth of the base would be replaced each year.

Masimo, the entrant, could compete for at most this share, so 17% is the contestable share.

Intel: Discount thresholds associated with Intel reflect contracts signed by Hewlett-Packard and NEC. Dell and IBM received payments for exclusivity. Discount size associated with Intel reflects a contract signed by Dell.

We obtained estimates of contestable share from the European Commission’s decision.

Post Danmark: We obtained estimates of discount size and contestable share from the opinion of the European Court of Justice. Discounts ranged from 0.06-0.16. Post Danmark was the legal monopolist for 70% of mail; 40% of the population lived in the urban areas. Therefore, an urban entrant could obtain 12% of mail. We estimated the threshold applicable to individual postal customers as 100%, as Post Danmark based the rebate threshold on the volume of mail that a customer was expected to send in the reference year.

Tomra: We obtained estimates of discount size, threshold, and contestable share from the European Commission’s decision. Thresholds were expressed as minimum purchase volumes but represented 70-90% of customers’ requirements.

Concord Boat: The Eighth Circuit’s opinion describes the structure of the discount. No evidence of non-contestable share appears in the court’s opinion. Indeed, the appeals court notes that "boat builders did not hesitate to switch to [rivals] when they offered superior discounts."

LePage’s: Because we do not know what share tape constituted of the bundle covered by the 3M’s contracts, the table’s calculations assume 3M leveraged only sales of branded tape. 3M had a 90% share in all transparent tape, including its branded and private-label products. LePage’s had a 90% share in private-label tape. We calculated that private-label tape accounted for 10% of all transparent tape. Contestable share was therefore at least 10%; our estimate of contestable share would likely have been higher were we able to measure demand for all products that 3M leveraged through the bundle. 3M set each year’s contract threshold to be slightly higher than the customer’s purchases over the past year, or on average 91% of the customer’s current requirements. The 2.5% discount comes from the Third Circuit’s en banc opinion.

Suture Express: We obtained estimates of discount and contestable share from the plaintiff’s first amended complaint and obtained an estimate of the threshold from the district court’s April 2016 opinion on summary judgment.

Collins Inkjet: We obtained estimates of threshold and discount size from the Sixth Circuit’s opinion and an estimate of contestable share from the appellant’s brief.

DETAILS

**Subject:** Antitrust; Discounts; Purchasing; Engines; Economic models; Product lines; Estimates; Federal court decisions; Market entry; Competition

**Location:** Europe