

CHAPTER 10

RAISING RIVALS' COST FORECLOSURE

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This chapter analyzes the raising rivals' costs (RRC) foreclosure paradigm in more detail. It sets out the distinction and connection between input foreclosure and customer foreclosure and describes the steps and evidence involved in showing anticompetitive harm. It analyzes how foreclosure conduct can be used to achieve, maintain, or enhance market or monopoly power. It discusses the various criticisms made by some commentators that this foreclosure analysis ignores the single monopoly profit theory, ignores the potential for counter-strategies by rivals who are targeted for exclusion, and improperly leads to the protection of less efficient entrants. It also analyzes potential procompetitive effects associated with exclusionary conduct and the usefulness of the output and no economic sense tests, which have been proposed for evaluating exclusionary conduct.

I. Input and Customer Foreclosure

Certain RRC exclusionary conduct and vertical mergers may totally or partially “foreclose” competitors from access to critical inputs, complements, distributors, and/or customers, allowing rivals to raise their prices, reduce their output, or possibly even exit, thereby allowing the excluding firm to profit by setting a supra-competitive output price, which harms consumers.

It is useful to distinguish two foreclosure mechanisms by which exclusionary conduct can harm competition: input foreclosure and customer foreclosure. Input foreclosure includes foreclosure of access to complementary products. It also includes foreclosure of distributors, who can be treated as providing a distribution services input. In other cases, distributors may be treated as customers. In this case, the analysis of customer foreclosure could be applied. Customer foreclosure includes exclusive dealing contracts, tying, and conditional pricing practices, as well as vertical mergers. The unconditional price cuts involved in predatory pricing forecloses rivals from those customers, possibly causing rivals to exit, but the concept of customer foreclosure analyzed here is normally restricted to non-price conduct.

Justice O'Connor's concurring opinion in the *Jefferson Parish* tying case flags both types of concerns:

Exclusive dealing can have adverse economic consequences by allowing one supplier of goods or services unreasonably to deprive other suppliers of a market for their goods, or by allowing one buyer of goods unreasonably to deprive other buyers of a needed source of supply.¹

Conduct to "deprive other suppliers of a market for their goods" implies customer foreclosure; conduct to "deprive other buyers of a needed source of supply" corresponds to input foreclosure. Input foreclosure theory explains how exclusive contracts and other conduct can raise rivals' costs of a critical input by restricting one or more rivals' access to one or more input suppliers. Customer foreclosure theory explains how exclusive contracts, other exclusionary conduct, and vertical mergers can reduce rivals' access to some or all of the entire customer base, thereby reducing their output, limiting their ability to expand, and even causing them to exit.^{2, 3}

It is sometimes unclear which type of foreclosure is at play, especially with respect to manufacturers' restraints on distributors. Distributors may be manufacturers' customers. For example, a manufacturer may sell its merchandise to a retailer that resells it. But distributors also provide an input: distribution services. They may be charged an explicit price for those services, as in the case in which the manufacturer itself sets the retail price and pays a fee to the retailer, whether explicitly or implicitly, as the difference between the retail and wholesale prices of the merchandise. There are even cases in which one set of customers might be considered an input to other customers. For example, gaining a "lead" customer is a key input for a new entrant hoping to establish a reputation and track record in order to attract other customers. Other examples are discussed later in this monograph.

The key difference between the forms of foreclosure is their direct effects on the rival. The effects become related when indirect effects are included. The central focus of input foreclosure is generally the higher marginal cost directly suffered by the rival from the restraint that may lead it to raise its prices. The central focus of customer foreclosure is the customer revenue loss directly suffered by

¹ *Jefferson Parish Hospital Dist. No. 2 v. Hyde*, 466 U.S. 2, 45 (1985).

² Distributors can be characterized as both customers and suppliers of distribution services as an input.

³ In a formal sense, predatory pricing might be seen as a type of customer foreclosure. However, the term *foreclosure* is usually applied to conduct that goes beyond unconditional price cuts.

the rival that may lead the customer to exit from the market (or a market segment) or reduce its investment.

Put another way, foreclosure that inflicts higher marginal costs on the rival can be characterized as input foreclosure, whereas foreclosure that causes a direct loss of customers and associated revenue can be characterized as customer foreclosure. This distinction is useful, because a particular foreclosure strategy can have both effects.

A loss of customers may also increase the rival's marginal costs. If foreclosure causes the rival to have much higher marginal costs or sufficiently high average costs, it may lose so many customers that it exits from the market or reduces its investment.

The two types of foreclosure can occur separately or simultaneously. In *Jefferson Parish*, the plaintiff, Dr. Hyde, alleged customer foreclosure in the form of denying him and others access to patients at East Jefferson Hospital. Dr. Hyde alleged that he was forced to exit the New Orleans anesthesiology market, which led to higher anesthesiology fees at other hospitals.⁴ These higher anesthesiology fees could raise the costs of surgery at competing hospitals (input foreclosure), allowing East Jefferson Hospital to raise the prices it charged for surgery.

In private antitrust, which approach to take or emphasize may depend on the plaintiff. In the *Jefferson Parish* case, where the plaintiff was a rival anesthesiologist, the focus of the antitrust injury was his foreclosure from the loss of East Jefferson as a customer. By contrast, if the case had been brought by a rival hospital, the focus would have been the higher costs suffered by that hospital from foreclosure of access or the higher cost of the anesthesiology as an input as a result of the agreement between its competitor, East Jefferson Hospital, and the Roux Associates anesthesiology group. A public enforcer would evaluate both types of foreclosure.

A key issue in the economic and legal analysis of foreclosure strategies involves the necessary evidence to establish harm to competitors (RRC) and market power harm to competition (power over price). Courts traditionally focused on the simple foreclosure rate—the share of inputs or customers controlled by the defendant's exclusionary conduct. A common requirement was a foreclosure share of at least 40 percent. Courts sometimes went farther and required a showing of total foreclosure or sufficient foreclosure to drive the competitor below the minimum viable scale.

These numerical tests are overly rigid and can be overly permissible. To put the economic test most simply in the context of input foreclosure, if the conduct raises the rivals' costs by foreclosing their access to the most efficient distribution or inputs, rivals' costs are raised and anticompetitive effects can result, regardless of the fraction of inputs foreclosed, even if the rivals remain viable and otherwise efficient.

Other permissive decisions suggested that only long-term exclusive contracts can lead to anticompetitive foreclosure, because rivals could compete on equal terms when contracts have short durations. For example, Judge Posner suggested that contracts of less than one-year duration were

⁴ *Jefferson Parish Hospital Dist. No. 2 v. Hyde*, 466 U.S. 2 (1985).

presumptively lawful.⁵ This presumption lacks any economic basis. Even if exclusive contracts have short durations or can be terminated on short notice or at will—or even if there is no contract—foreclosure can have anticompetitive effects, because it allows a firm with monopoly power or substantial market power generally to maintain exclusivity in the face of attempted bidding competition for a nonexclusive or exclusive contract by an entrant or smaller competitor, as discussed in below.⁶

A. Input Foreclosure

Vertical mergers, exclusive dealing, denial of access, and other exclusionary conduct can raise entrants' or existing rivals' costs by input foreclosure—that is, by materially raising their costs or eliminating their efficient access to critical inputs. These inputs can involve manufacturing inputs, such as raw materials; intellectual property; or distribution.

Distribution services can be understood as an input.⁷ Raising rivals' costs of distribution services can weaken their ability to serve some or all of the customer base and their ability and incentives to expand.⁸ For example, by excluding entrants' or rivals' access to the most efficient distribution system or other input, a monopolist can reduce their ability and incentive to induce downward pricing pressure, thereby allowing it to maintain its monopoly power.⁹ The substantiality of input foreclosure is best captured by the resulting impact on competitors' costs and output, not by the simple fraction of input suppliers affected.

B. Basic Economic Analysis of Anticompetitive Harms

Putting aside for now any possible procompetitive efficiency benefits, the economic analysis of the possible anticompetitive effects of input foreclosure conduct involves the impact on both the input market and output market—that is, the possible harms to competitors and to competition and consumers, respectively.

⁵ See, for example, *Roland Mach. Co. v. Dresser Indus., Inc.*, 749 F.2d 380, 395 (7th Cir. 1984) (Posner, J.).

⁶ In *Lorain Journal*, for example, there was no contract, only the exclusivity demanded by the defendant newspaper.

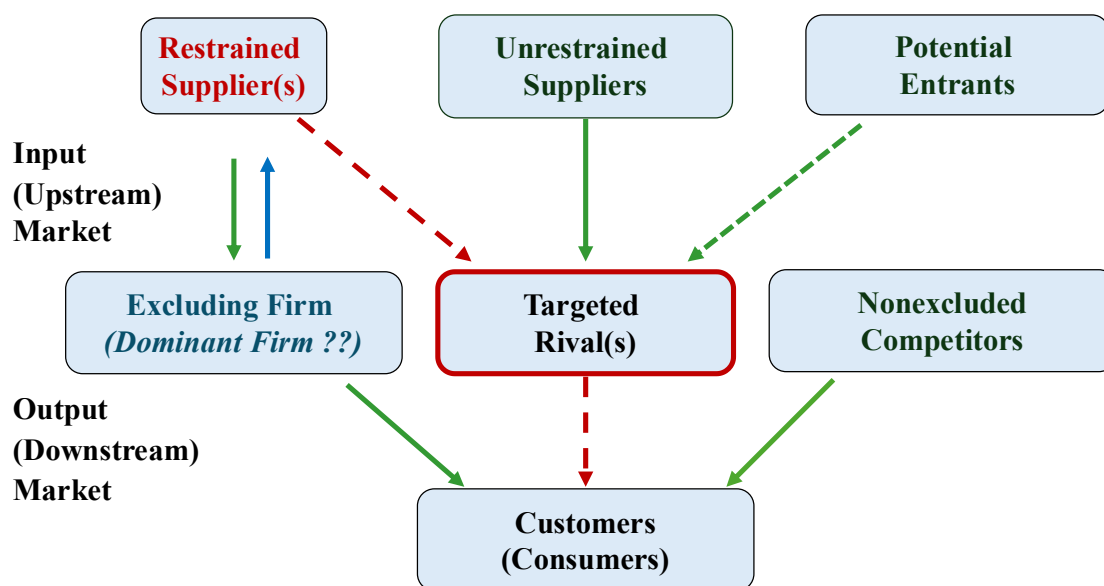
⁷ Janusz Ordover et al., *Equilibrium Vertical Foreclosure*, 80 AM. ECON. REV. 127 (1990). In this analytic framework, it is often useful and valid to characterize distributors as suppliers of a distribution services input rather than simply as customers. Thomas G. Krattenmaker and Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209, 226 (1986).

⁸ *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, 551 U.S. 877 (2007). The difference between the price retailers charge consumers and the price a manufacturer charges retailers represents part of the manufacturer's cost of distribution.

⁹ Judge Bork was very skeptical of exclusionary conduct claims. However, he wrote one paragraph that concedes the potential for RRC foreclosure conduct: "In any business, patterns of distribution develop over time; these may reasonably be thought to be more efficient than alternative patterns of distribution that do not develop. The patterns that do develop and persist we may call the optimal patterns. By disturbing optimal distribution patterns one rival can impose costs upon another, that is, force the other to accept higher costs." ROBERT H. BORK, *THE ANTITRUST PARADOX* 156 (1978); see also *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 604 n.31 (1985) (quoting Bork); *United States v. Dentsply Int'l, Inc.*, 399 F.3d 181, 191 (3d Cir. 2005); *United States v. Microsoft Corp.*, 253 F.3d 34, 70 (2001).

Figure 10.1 illustrates the basic structure of input foreclosure. It shows two markets: the market for the input that will be partially or totally foreclosed (indicated by the dotted arrows and the output market impacted by the foreclosure and possibly leading to market power and consumer harm. The arrows in both directions between the restrained supplier(s) and the excluding firm indicate that the inputs flow down and the payment for exclusion (if any) flows up.

Figure 10.1 Input foreclosure



Input foreclosure conduct can be traced through on the figure. The dominant firm induces certain input suppliers (“restrained suppliers”) to deny access to certain targeted rivals, degrade their quality, or charge them discriminatory high prices. The inducement may involve a payment or a threat. (If the inducement involves a payment, the payment may constrain the profitability of the conduct.) In response to this input foreclosure (“denied, degraded, or discriminatory access”), the targeted rivals will have the incentive to attempt to prevent or mitigate the harm by substituting to unrestrained suppliers (either competitors or potential entrants) or by attempting to enter the input market themselves through backward integration

If the targeted rivals can easily move to equally cost-effective input suppliers, rivals’ costs will not be raised; there will be no harm to competitors, and the exclusionary strategy will fail to lead to market power downstream. Similarly, if the cost increase for the targeted input is small or the restrained input is not critical (i.e., it is a minor cost element for rivals), the rivals’ cost increase will not be material and the strategy will be less likely to harm competition downstream.

If, however, the input is critical and substitution is limited or impossible, the rivals’ costs will be raised, making them weaker, less effective competitors. They will have the incentive to reduce their output and raise their prices. This conduct can lead the excluding firm to recapture the customers

that leave the targeted rivals, which can give it the market power to raise its own prices and increase its market share.

Even if the costs of targeted rivals are materially increased, the ability and incentive of the excluding firm to exercise this market power may be constrained by other downstream competitors that are not excluded by the exclusionary conduct. These firms might use a different input or be vertically integrated into the production of the input themselves. They might also be able to convince the restrained input suppliers not to foreclose their access by compensating them in some way, as discussed in the analysis of counter-strategies below. These nonexcluded firms may also include sellers of different substitute products. If these substitute products prevent profitable downstream price increases, the relevant market would include them. If the relevant market is narrowly defined, their degree of substitutability and resulting price constraint can nonetheless be captured by the demand elasticity of the products in the narrow relevant market. Absent other barriers to entry, downstream substitutes may also include potential entrants that are not dependent on the restrained input. If there is sufficient consumer substitution to the nonexcluded competitors for any of these reasons, the exclusionary conduct will not be profitable. Absent efficiency benefits, the profitability and incentive to implement the exclusionary conduct will be deterred, and there will be no harm to competition or consumers.

The exclusionary conduct in both the upstream and downstream markets may involve purely unilateral incentives, or it may implicate coordinated effects. Coordinated effects can come into play in several ways. First, suppose there is a maverick input supplier that has disrupted attempts to coordinate in that market. If the excluding firm can coerce or otherwise induce that supplier to cease disrupting the coordination while continuing to supply the excluding firm at the previous low (or perhaps just lower) price, it can succeed in raising its rivals' costs through coordination.

Second, even absent a maverick, if the input market is concentrated and the excluding firm induces key input suppliers to raise their prices or refuse to sell to its rivals, the remaining unrestrained input suppliers may have the ability and incentive to raise the prices they charge to rivals and thereby accommodate the increase in rivals' costs.

Third, the downstream market may be highly concentrated but coordination deterred by the existence of a maverick competitor. If the exclusionary conduct targets this maverick and raises its costs, the maverick may no longer have the incentive to disrupt the coordination, leaving the firm free to facilitate increased output prices.¹⁰

It is useful to know how best to diagnose a case that may raise input foreclosure concerns. To aid the analysis, the appendix provides a checklist for evaluating input foreclosure concerns.

¹⁰ Krattenmaker and Salop refer to this situation as the "Frankenstein monster" scenario, in that the exclusionary conduct directed at some suppliers leads other unrestrained suppliers to exercise market power. Thomas G. Krattenmaker and Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209 (1986).

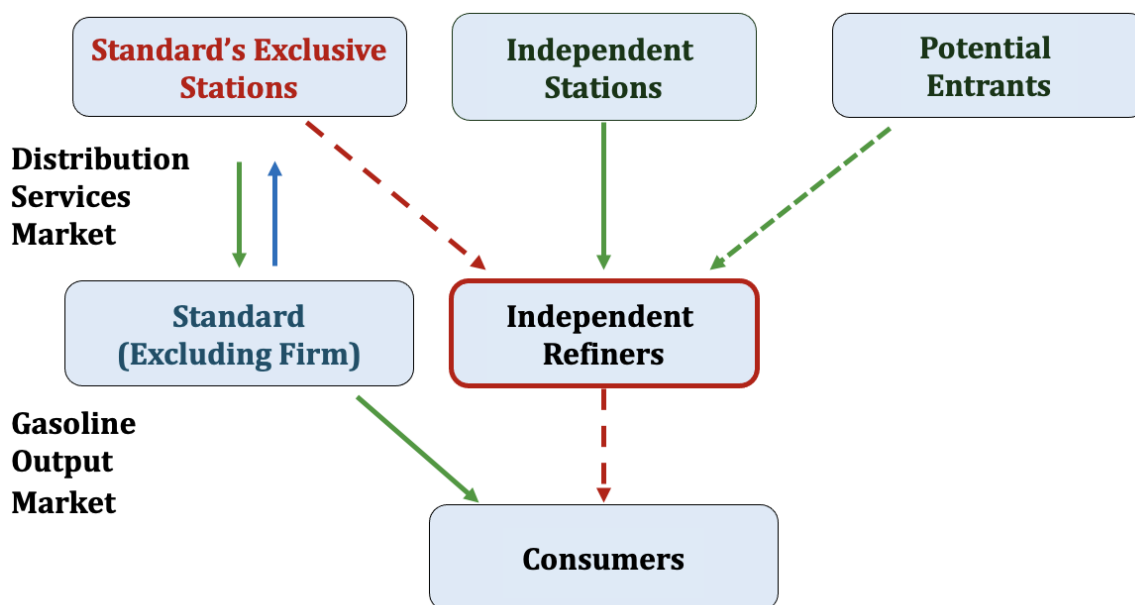
C. Diagnosing Input Foreclosure Concerns with Bubble Diagrams

Properly drawing the bubble diagram is key to correctly and quickly diagnosing foreclosure concerns. A very useful starting point is identifying the targeted rivals (the potential victims) and the input that is being foreclosed by denied, degraded, or discriminatory access. The restrained suppliers and the excluding firm are then identified (the excluding firm may or may not be dominant, a fact that will also be useful in the analysis). Once these firms are identified, it is possible to identify the potential unrestrained suppliers that the targeted rivals might turn to and the likelihood that they could prevent rivals' cost increases. This exercise is analogous to a market definition analysis, although it is generally not necessary to formally identify an upstream market. The potential for entry into the input market can also be considered. Analysis of the potential for RRC is very similar, if not identical, to the type of economic analysis that would be undertaken for a horizontal merger. In the downstream output market, possible nonexcluded competitors that might constrain price increases can then be identified. They may include substitute products, which implicate analysis of the relevant downstream market definition.

To see how this analysis works, consider the following hypothetical example. On the Island of Puerto Rico, a gasoline refiner named Standard requires exclusivity from all the retail gas stations that purchase its brand of gasoline. Is this exclusivity anticompetitive?

To diagnose these allegations, it is necessary first to identify the targeted rivals. Suppose one were to treat the gas stations that purchase gasoline from Standard as the targeted rivals. In this interpretation, who are the restrained suppliers and the excluding firm? Standard is behind the exclusion, so it might be considered the excluding firm. But Standard itself is not a competitor of these gas stations, so it does not fit into the role of the excluding firm. Nor does Standard fit into the role of the restrained supplier, as it is supplying gasoline to these gas stations. In short, this framing does not work. It does not suggest a valid claim.

Figure 10.2 shows that a better formulation is to treat the independent refiners as the targeted rivals. In this formulation, Standard is the excluding firm and Standard's exclusive gas stations the restrained firms. The restrained input is the gasoline distribution services provided to refiners by gas stations.

Figure 10.2 Exclusive gasoline contracts

This formulation may initially seem peculiar, as Standard and other refiners deliver gasoline to retailers, who then resell it to consumers. The bubble diagram makes it seem as if the refiners are selling gasoline to consumers. On reflection, however, this formulation makes sense. Retailers provide a “distribution services” input to manufacturers and wholesalers. The implicit price they charge is the difference between the retail price they charge and the wholesale price they pay for the gasoline.

This formulation can also state a valid antitrust claim. By signing the gas stations to exclusive contracts, Standard prevents them from providing distribution services to the independent refiners. As a result, those refiners have to pay higher implicit prices for distribution services to the remaining stations, either because those stations have higher costs or because there are so few of them in any area that they have higher marginal costs or are able to tacitly coordinate. With higher costs of distribution, these independent refiners will have the incentive to raise their wholesale prices and/or shrink their output, either of which would allow Standard to charge higher wholesale prices.

Of course, the facts may not support this allegation. If Standard is not dominant—and even if it is—there may be a sufficient number of nonrestrained gas stations with sufficient capacity to prevent the independent refiners from having to bear higher distribution costs. In this case, there would not be any anticompetitive effects. Readers may recognize that such “parallel foreclosure” occurred in the real-world Standard stations, as discussed below.¹¹ If there are efficiencies from exclusivity, they would exert offsetting downward pricing pressure. Independent refiners might strike their own efficient exclusives, in which competition could be increased.

¹¹ *Standard Oil Co. v. United States*, 337 U.S. 293 (1949).

A third formulation would treat the gas stations that do not buy from Standard as the targeted rivals. In this case, Standard could be the restrained supplier and the exclusive gas stations the excluding firms. Standard might state a valid antitrust claim. Its validity depends on whether the competing gas stations can obtain gasoline from other refiners. If there were only a single other refiner, Standard's refusal to sell to other stations would endow the other refiner with monopoly power over those stations, and the exclusive arrangement could lead to higher retail gasoline prices. This formulation states a possible claim if there are only one or two other refiners. This analysis then raises the question of why Standard would limit its sales only to some stations. Why would it not increase the number of exclusive stations? If limiting the number of exclusive stations is intended as a way to increase the retail price, why would it not raise its wholesale price instead?

The basic analysis of foreclosure and its likely effects can be refined.

1. Complementary products

Input foreclosure analysis focuses on the exclusion of inputs. A similar (but slightly different) analysis applies to the foreclosure of complementary products that are sold directly to consumers. When the excluding firm forecloses access to consumers' access to a product that is complementary to a rival's product (by, say, raising its price), the rival will be disadvantaged. The targeted rival will have the incentive to somewhat reduce the price of its product to mitigate that price increase. However, it is likely that the total price of the bundle of the complement product and the rival's product would be higher than it was before the foreclosure, which would cause some diversion to the product of the excluding firm. As a result, the excluding firm would gain the ability and incentive to raise the price of its bundle. (The analysis of complementary product mergers and associated foreclosure concerns is discussed in the vertical merger chapter.)

2. Vertical integration

Foreclosure concerns would also be exacerbated if the excluding firm also operated in the input market. If it does, its ability to cease dealing with downstream rivals is another direct foreclosure instrument. This analysis also applies to the case of a firm that controls a dominant network or other ecosystem. By preventing a rival ecosystem from interoperating, it can reduce the quality of the rival. In this sense, the interoperability amounts to a critical input.

3. Partial foreclosure

Input foreclosure can be so severe that a targeted rival will not simply suffer materially higher costs but rather will exit from the market or be deterred from attempting entry. But a showing of total foreclosure of the input or exit by the rival is not necessary for there to be substantial harm to competition and consumers. Even if a targeted rival can cover its costs and remain viable, it may face higher costs and become a weaker competitor. The targeted competitor would then have the incentive to raise its prices and/or restrict its output.¹²

¹² See Thomas G. Krattenmaker and Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209, 246–47 (1986). (“Raising Barriers to Entry”).

The fact that the rival can earn sufficient revenue to cover its fixed costs and achieve minimum efficient scale does not eliminate these concerns. Input foreclosure can raise competitive concerns if it materially increases rivals' marginal costs or constrains their output or ability to expand. Similar results occur if the foreclosure reduces rivals' product quality. Raising rivals' costs or restricting their output to a lower level can permit a dominant firm or monopolist to profitably raise or maintain supra-competitive prices.¹³

Suppose, for example, that an entrant with a slightly differentiated product has constant marginal production costs of \$20 per unit (and no fixed costs) and would normally pay competitive distributors \$5 per unit, leading the entrant to charge a price of \$25 or more even at a very low scale. If the dominant firm were to foreclose its access to these distributors, forcing the entrant to rely on direct distribution or substitute less efficient distributors at a higher cost of \$15 per unit (rather than \$5), the entrant would have to charge at least \$35 per unit. As a result of the entrant's higher costs, the dominant firm would also be able to charge higher prices, harming competition and consumers. Economic efficiency would also be reduced, because the entrant would be using a less efficient distribution system and the dominant firm's higher price would cause a deadweight welfare loss.

4. *Parallel foreclosure*

Foreclosure analysis is affected by the presence of multiple foreclosing firms. In the Standard stations case, for example, Standard Oil had a share of only 23 percent of volume in the relevant geographic areas; six other refiners with exclusive requirement contracts had a collective market share of 42.5 percent.¹⁴ These seven refiners' stations accounted for 65.5 percent of total volume.

This parallel foreclosure complicates the analysis. On the one hand, the total market foreclosed to rival refiners included the cumulative number of these agreements, which could lead to higher distribution costs and entry barriers facing the independent refiners who would have limited gas stations to provide them with distribution. As a result of this shortage of stations, refiners might have to pay higher implicit prices to the remaining stations, either because those stations have higher costs or because there are so few stations in any area that they face rising marginal costs or are able to tacitly coordinate. The facts will matter.

On the other hand, even if the rival refiners had higher costs or exited, there would still be competition among the seven oil refiners that employ the exclusives. It is possible that this competition would be limited if these refiners were able to expressly collude or tacitly coordinate. However, if Standard Oil was the largest of the seven and its market share was only 23 percent, market concentration may have been sufficiently low to prevent tacit coordination. Absent express or tacit coordination, competition among the seven could have prevented consumer harm. If the exclusives were also efficient, such that they reduced costs or improved product quality, this continued competition could ensure that at least some of the efficiency benefits would be passed on to consumers.

¹³ Benjamin Klein, *Exclusive Dealing as Competition for Distribution "On the Merits,"* 12 GEO. MASON. L. REV. 119, 122-28 (2003) suggests that driving rivals below minimum viable scale should be required.

¹⁴ See C. Scott Hemphill and Tim Wu, *Parallel Exclusion*, 22 YALE L. J. 1182 (2012).

5. Input foreclosure involving labor services

Input foreclosure analysis also applies to labor markets. If the targeted rivals can easily substitute the foreclosed workers with equally cost-effective workers, rivals' costs will not be raised; there will be no harm to competitors, and the exclusionary strategy will fail to lead to market power downstream. Similarly, if the cost increase for the targeted input is small or the restrained labor input is not critical (i.e., it is a minor cost element for the rivals), the rivals' cost increase will not be material and the strategy will be less likely to harm competition downstream.

If the labor services are critical and substitution to other workers is impossible or limited, so that the excluding workers will gain the power to demand higher pay, the rivals' costs will be raised and they will have the incentive to reduce their output and/or raise their prices, making them weaker, less effective competitors. This behavior can lead the excluding firm to recapture the customers that leave the targeted rivals, which can then give it the market power to raise its own prices and increase its market share. The input foreclosure can also be so severe that a targeted rival will not simply suffer materially higher costs but rather will exit from the market or be deterred from attempting entry.¹⁵

This foreclosure could occur from a variety of types of exclusionary conduct. In *United Mine Workers v. Pennington*,¹⁶ for example, the large coal companies that used capital-intensive technology allegedly orchestrated an industry-wide agreement with the union to raise wage rates. That agreement raised the marginal costs of the smaller, labor-intensive coal companies by substantially more than the costs of large coal companies. The higher costs of these smaller marginal suppliers lead to higher coal prices. As the large companies required fewer workers per ton of coal, the price of coal rose by more than the average costs of the large coal companies. Because the market demand for coal is relatively inelastic and their market shares increased, their profits rose.

This analysis does not require that any of the large coal companies individually have market power. Even if all the coal companies (large and small) were pure price-takers, the higher costs of the small suppliers would shift up the market supply curve and lead to a higher competitive price.

United States v. Delta Dental of Rhode Island provides a similar analysis with respect to most favored nationals (MFN) provisions in health insurance supply contracts with dentists.¹⁷ In this case, the dominant dental insurer faced potential entry by an insurer that was going to offer a dental preferred provider organization (PPO) alternative plan to subscribers. The entrant intended to contract with a limited panel of dentists, paying them less than they charged through Delta but ensuring them a significant flow of patients who subscribed to the PPO. Members of the PPO paid less than they would otherwise have paid but faced less choice of dentists. In response to this potential entry, Delta required all dentists that participated in its plan (virtually all dentists in Rhode Island) to agree to an MFN contractual provision under which they would not charge any other insurer a lower fee than it

¹⁵ See Thomas G. Krattenmaker and Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209, 246–47 (1986). (“Raising Barriers to Entry”).

¹⁶ 381 U.S. 657 (1965). For further analysis, see Oliver E. Williamson, *Wage Rates as a Barrier to Entry: The Pennington Case in Perspective*, 82 Q.J. ECON. 85 (1968).

¹⁷ *United States v. Delta Dental of Rhode Island*, 943 F. Supp. 172 (D.R.I. 1996). I was the DOJ's expert economist in this case.

charged Delta. The dentists overwhelmingly accepted the MFN, because the PPO would not generate nearly as many patients as Delta did. This agreement created an entry barrier, because entry would fail if the entrant could not obtain discounts, as it was offering patients less choice of dentists.

Under labor law, a union is not permitted to agree with an employer to withhold its members' labor services to competitors; doing so constitutes an illegal secondary boycott. Outside of the union context, a dominant firm may prevent entry by making exclusive contracts with critical workers it engages as independent contractors or by hiring all the critical workers a rival would need. In such a case, the plaintiff would need to provide evidence that the restrained employees were critical because it is unable to hire substitute workers at comparable costs and its inability to do so would significantly increase its costs. The defendant would argue that it was simply fairly competing in the labor market and fully using the workers it hired rather than hiring more workers than it needed and warehousing them to prevent them from being available for the rival. It may be difficult to show anticompetitive effects if the workers are actually being used in the production process; hiring workers who are not utilized at all is even harder to justify. However, the defendant firm might argue that it had projected needing more workers than it actually needed at the time but did not layoff the workers because of severance costs and the likely need for them in the future.¹⁸

This latter point suggests an alternative possible formulation of the allegation. The plaintiff might allege instead that the defendant was engaged in predatory wage setting—that is, offering wage rates that exceeded the value to the firm of the marginal worker's productivity. Economists refer to the additional revenue produced by the marginal worker the *marginal revenue product of labor*. As a legal matter, the plaintiff would face a higher bar.¹⁹ In the *Weyerhaeuser* case, in which the plaintiff alleged that the dominant sawmill made predatory purchases of timber, the Court called for the same below-cost pricing standard as in *Brooke Group* (i.e., an output price that is below average variable cost). This comparison of price to average cost would permit overbuying that involved a price below the marginal cost of labor.²⁰

¹⁸ See Steven C. Salop, *Anticompetitive Overbuying* by Power Buyers, 72 ANTITRUST L.J. 669, 683-84 (2005). In the *Weyerhaeuser* case of a sawmill allegedly overbuying timber as "predatory overbidding" to cause rival sawmills to exit the market, the plaintiffs alleged that Weyerhaeuser purchased some timber that it did not use. The purchases apparently occurred outside the period in which the alleged predatory overbidding occurred. *Id.* at 712.

¹⁹ If the downstream market is perfectly competitive, the marginal value product (MVP) is equal to the product of the marginal worker's marginal product (MP) and the price of the downstream output (P). If the defendant instead has market power in the downstream market—which would be normal in such a case—the marginal revenue product (MRP) of labor is equal to the product of the marginal worker's marginal product (MP) and marginal revenue (MR) from the increase in output ($MRP = MR \times MP$). This MRP is smaller than the MVP because the marginal revenue is less than the output price.

²⁰ The marginal cost (MC) of increasing output by using more labor is equal to the wage rate (W) divided by the marginal product of labor (MPL). W is the additional cost of one more worker; the MPL is the additional output produced by that worker. W/MPL is the additional (i.e., marginal) cost of the additional output. If W exceeds the marginal value product (MVP), then the price is less than the MC. Manipulating the equations, $W > MVP = P \times MPL$ implies that $W/MPL > P$. Since $MC = W/MPL$, it follows that $MC > P$. But as in a perfectly competitive marginal cost exceeds average total cost, price might well exceed average total cost.

A dominant firm might also engage in input foreclosure by demanding or negotiating noncompetition agreements with employees. For example, a dominant local medical practice might include noncompetition provisions in the employment contracts of its physicians.

In *Beck v. Pickert*, for example, Pickert had an exclusive agreement to supply anesthesiology services to the Renown Regional Medical Center, the only trauma center in the region and the leading provider of complex surgical care.²¹ Pickert also promised not to supply anesthesiology services to others. In its Statement of Interest, the Department of Justice argued that the noncompetition agreements between the dominant anesthesiology practice and its anesthesiologists created barriers to entry into the Reno, Nevada market.

In such a case, the plaintiff would be required to show that the noncompetition provisions significantly raised rivals' cost and, as a result, permitted the defendant to achieve or maintain market power. It would also need to rebut the defendant's justification that the noncompetition agreement was reasonable to protect the defendant's intellectual property and its incentives to provide training for the workers. The common law analysis of noncompetition agreements is designed to balance the defendant's justification against the benefits to the worker from being able to compete. In this antitrust context, decision theory analysis would suggest a higher rebuttal burden on the defendant, because not only the restrained worker but also competition and consumers are harmed.²² Indeed, even if the worker's potential harm is neutralized by payment of a higher wage rate, the harm to competition and consumers remains.

A similar analysis can be applied to "no-poach" agreements (agreements among competing firms not to hire each other's employees). These agreements are usually analyzed as a mechanism to exercise monopsony power over workers, but they can also involve input foreclosure that raises barriers to entry. A seminal example involves the Major League Baseball owners, who adopted a no-poach agreement for players in 1879—called the *reserve clause*—initially to eliminate competition among themselves but later to raise entry barriers to rival leagues. The exclusionary effects of the reserve clause are discussed in more detail in the context of bottleneck monopolies.

D. Checklist of Structural Indicia of Successful Anticompetitive Exclusionary Conduct

The appendix contains a summary checklist that identifies three interrelated categories and the multiple factors in each that are conducive to profitable anticompetitive exclusionary conduct. These factors are provided to guide the economic analysis. It is not necessary that all of them be satisfied

²¹ *Beck v. Pickert Medical Group P.C., et al.*, No. CV21-02092 (Nev. Dist. Ct., Washoe County, filed Feb. 25, 2022).

²² *Beck v. Pickert* arose after Renown terminated its contract with Pickert based on Pickert's alleged failure to meet the agreed upon staffing levels. The plaintiff anesthesiologists likely hoped to be subsequently hired by Renown. In a similar case involving technical service employees supplied by contract to the Tennessee Valley Authority (TVA) by an employee supply firm (Butler Service Corp.), the court applied a free-rider analysis in justifying Butler's noncompetition agreements with the workers after it lost the TVA contract and its replacement firm, Consultants and Designers, attempted to hire those same employees. *Consultants and Designers v. Butler Service Group*, 720 F.2d 1553 (11th Cir. 1983).

for specific exclusionary conduct to be profitable or anticompetitive. The three categories are the following:

- the structure and importance of the upstream (input or complementary product) market
- the structure of the downstream market, including the market power of the putative excluding firm
- the cost to the excluding firm of the exclusionary conduct.

E. Case Law Examples of Input Foreclosure

1. Microsoft

*Microsoft*²³ involved a panoply of exclusionary conduct targeting Netscape and Java. The case provides a useful example of the creation of exclusionary conduct to create a strategic entry barrier. Microsoft's Windows operating system monopoly benefited from the "applications barrier to entry." Operating systems are not interoperable; applications programs written for Windows do not operate on other operating systems. To work on those systems, they need to be rewritten ("ported").

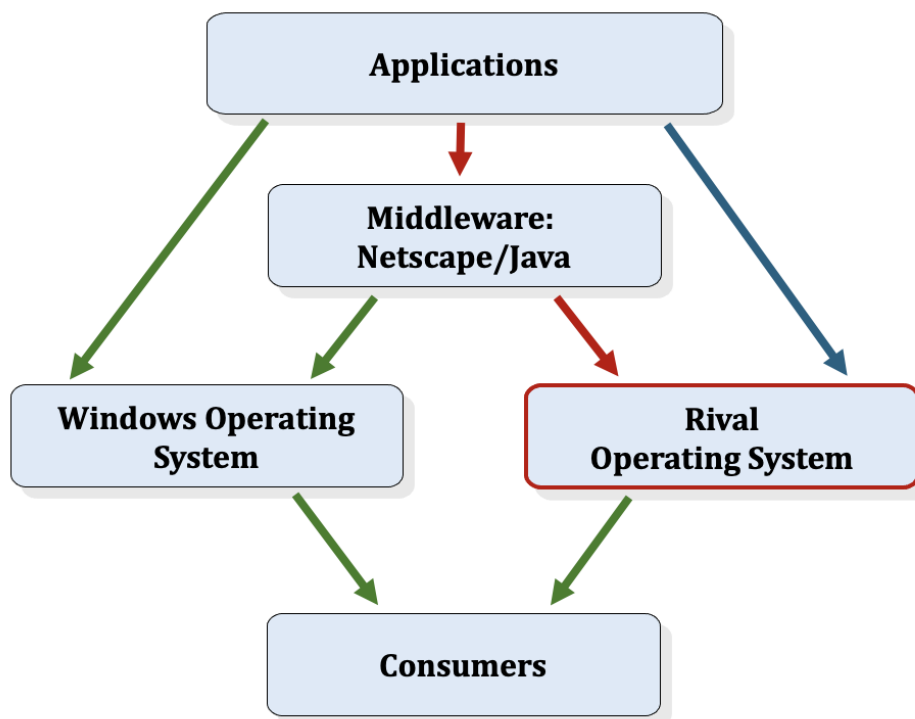
As the dominant operating system, Windows benefited from indirect network effects. As it had the most users, it attracted the largest number of applications from developers; with the largest number of applications, Windows gained more users, in a positive feedback process.²⁴ In order to gain enough users to be viable, a new entrant operating system would need to attract applications, but developers would be reluctant to write new applications unless they were confident that there would be sufficient users to reach breakeven scale. The new entrant would therefore need to subsidize the development of applications, in order to create the positive feedback process. This type of application barrier to entry is natural in the context of a market with network effects.

The development of "middleware," which consisted of Netscape's Navigator browser and Sun's Java programming environment, threatened to weaken the applications barrier to entry. The Netscape browser also contained application programming interfaces (APIs) that Internet content developers could access instead of using Windows-specific APIs. If the Netscape APIs were used, web applications would also work on other operating systems, because Navigator worked on other operating systems. The promise of Java was "write once, run everywhere." Application programs written in Java could be ported to operate on competing operating systems with a Java Virtual Machine (JVM). Netscape's browser contained the JVM and could be run on any operating system.

Figure 10.3 shows how middleware can reduce the applications barrier to entry. Instead of having to write two separate versions of the application, the application can be written for Sun's Java or Netscape's APIs, which would then run on multiple operating systems.

²³ See *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001) (en banc) (per curiam); *United States v. Microsoft Corp.*, 84 F. Supp. 2d 9 (D.D.C. 1999) (Findings of Fact); *United States v. Microsoft Corp.*, 87 F. Supp. 2d 30 (D.D.C. 2000) (Conclusions of Law).

²⁴ Direct network effects also played a role, as users could learn from one another.

Figure 10.3 Applications barrier to entry

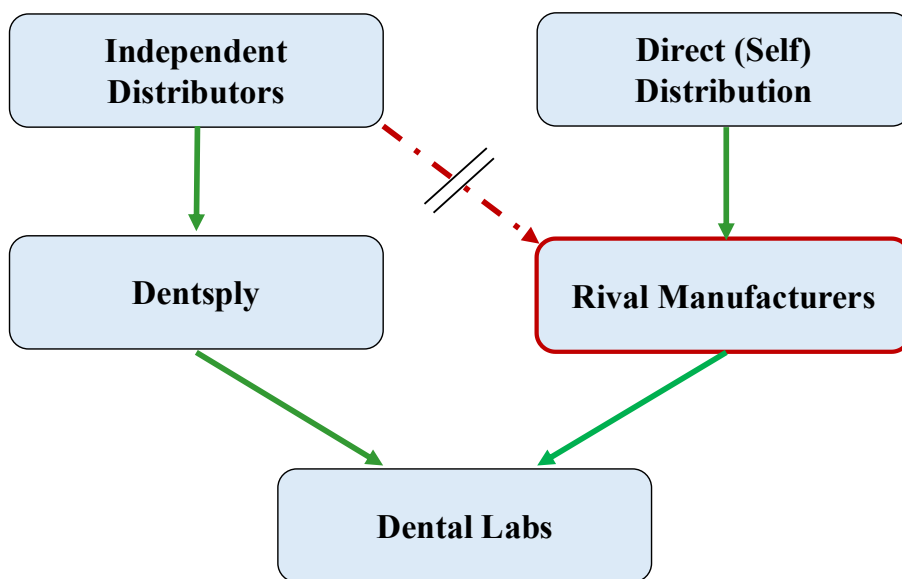
Microsoft recognized that the Netscape and Java middleware might have led to the development of a competing operating system, dissipating Windows' monopoly power. To ward off such an outcome, it engaged in a panoply of exclusionary conduct to destroy the middleware threat by preventing Netscape and Sun's Java from gaining enough usage to become attractive platforms for developers to write their applications on instead of or in addition to Windows. It coerced or negotiated exclusive or preferential contracts for its Internet Explorer browser with Internet access providers, such as AOL; original equipment manufacturers, such as Dell and HP; and software developers, such as Intuit. When IBM declined to accept its terms, Microsoft charged it a higher licensing fee for Windows. Microsoft then physically integrated ("technologically tied") Internet Explorer into Windows and made it nonremovable. It also created a noninteroperable version of Java (what someone characterized as "polluted" Java) and deceptively promoted it. It also coerced Intel and Apple not to support Java. Through this conduct, it was able to maintain the applications barrier to entry and its operating system monopoly. Absent Microsoft's conduct, applications could have been written to the Netscape/Java middleware that would have run on both Windows and rival operating systems. With the middleware threat eliminated, developers needed to write separate code to run on rival operating systems, allowing Microsoft to maintain its barrier to entry. Along with a lack of procompetitive justifications, these findings established the Section 2 violation.

2. Dentsply

*Dentsply*²⁵ illustrates foreclosure of rivals' access to a needed distribution services input through exclusive dealing. Dentsply was a monopoly manufacturer of artificial teeth with a 75–80 percent share of the relevant market.²⁶ It adopted a policy (known as “Dealer Criterion 6”) of refusing to sell to any dealer that added a competing artificial tooth line to its product offerings. Although competing manufacturers could, and did, sell directly to customers, the court found that distributing artificial teeth through dealers had lower transactions costs and other advantages over direct distribution and acted as the gateway to dental laboratory customers. The Third Circuit thus concluded that Dealer Criterion 6 was “a solid pillar of harm to competition” because “it help[ed] keep sales of competing teeth below the critical level necessary for any rival to pose a real threat to Dentsply’s market share.” It also found that the higher distribution costs had the effect of holding down competitors’ sales below the critical scale needed to threaten Dentsply’s dominance.²⁷

Figure 10.4 illustrates the market conditions and conduct. Dentsply’s exclusive contracts foreclosed distributors providing distribution services to rival manufacturers (as shown by the dotted arrow), allowing Dentsply to maintain its monopoly power over consumers.

Figure 10.4 Dentsply input foreclosure



²⁵ *United States v. Dentsply International Inc.*, 399 F.3d 181 (3d Cir. 2005).

²⁶ *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, 551 U.S. 877 (2007) (The difference between the price a manufacturer charges retailers and the price retailers charge consumers represents part of the manufacturer’s cost of distribution).

²⁷ *Id.* at 191.

3. *Gilbarco*

Case law does not condemn every instance of exclusive dealing that interferes with a rival's ability to get its product to market. In the 1997 *Omega Environmental, Inc. v. Gilbarco, Inc.* case, for example, the Ninth Circuit held that the record evidence was insufficient to support a jury's finding that Gilbarco's exclusive dealing with distributors violated Section 3 of the Clayton Act. Gilbarco had instituted a policy of dealing only with distributors who sold only its line of retail gasoline dispensers.²⁸ Unlike the situation in *Dentsply*, the court found that selling through distributors was not the only efficient route to market. Rather, it found that there was "undisputed evidence that direct sales to end-users was an alternative channel of distribution," noting that the number two manufacturer, Dresser, made 73 percent of its sales without the aid of a distributor. In addition, the majority concluded that Schlumberger was able to enter the gasoline dispenser market and successfully expand its sales, notwithstanding Gilbarco's exclusive dealing.²⁹ Given its findings, the court did not condemn the challenged arrangement.³⁰

4. *McWane*

McWane also involved an attempt to use exclusive dealing with key distributors to create a barrier to expansion.³¹ *McWane* was a monopolist in the domestic pipe fittings industry. Star Pipe Products entered on a small scale by purchasing a narrow line of high-volume products from contract manufacturers and began to grow its sales. Star's plan was to move beyond its nascent status and become large enough to build its own, lower-cost foundry and expand its product line in broader competition with *McWane*. *McWane*'s foreclosure strategy began after Star refused *McWane*'s offer to become a distributor of its product. *McWane* then forced the major distributors to deny access to Star. It had the power to do so, because Star did not produce the full line of products. By constraining Star's sales, *McWane* made it impossible for Star to achieve the necessary scale to build its own foundry and become a more effective competitor. Star's limited entry allowed *McWane* to maintain monopoly prices.

In reviewing the 3–1 decision by the Federal Trade Commission (FTC), the 11th Circuit applied the consumer welfare balancing standard from *Microsoft* and *Aspen Skiing*.³² The court observed that it was necessary for the FTC to establish that *McWane* "has engaged in anti-competitive conduct that reasonably appears to be a significant contribution to maintaining monopoly power."³³ There was direct proof that Star's entry did not cause *McWane* to reduce its price³⁴—exactly what would be expected when exclusionary conduct raises the entrant's cost and prevents it from becoming a

²⁸ *Omega Environmental, Inc. v. Gilbarco, Inc.*, 127 F.3d 1157 (9th Cir. 1997).

²⁹ *Id.* at 1163.

³⁰ *Id.* at 1164.

³¹ *McWane, Inc. v. FTC (McWane)*, 783 F.3d 814 (11th Cir. 2015).

³² *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001).

³³ *McWane*, 783 F.3d at 833.

³⁴ *Id.*

substantial competitor that reduces monopoly power.³⁵ However, the court did not require the FTC to “reconstruct the hypothetical marketplace absent a defendant’s anticompetitive conduct.”^{36, 37}

The court went beyond the calculation of the raw foreclosure rate to analyze whether the exclusive dealing raised Star’s cost and whether the increase helped facilitate McWane’s power over price. It rejected McWane’s rebuttal that there was not “total foreclosure.” It found that it was not practical for Star to use direct distribution with customers rather than relying on distributors and concluded that even though Star was not totally excluded and was still able to grow, “it is still perfectly plausible to conclude on this record that Star’s growth was meaningfully (and deliberately) slowed and its development into a rival that could constrain McWane’s monopoly power was stunted.”³⁸

The court rejected the suggestion of the lone FTC dissenter to require “clear evidence of anticompetitive effects” on the grounds that exclusive dealing arrangements are presumptively procompetitive. The court also rejected McWane’s procompetitive justifications as pretextual based on documents and emails.³⁹ It found “particularly powerful” evidence of anticompetitive intent in the record. McWane explicitly explained its exclusionary strategy. As the court explained:⁴⁰

For example, McWane executive Richard Tatman said that his “chief concern” with Star becoming a domestic fittings supplier was that “the domestic market [might get] creamed from a pricing standpoint,” and identified the biggest risk factor of Star’s entry as the “erosion of domestic pricing if Star emerged as a legitimate competitor.” In a document encouraging the adoption of an exclusive dealing arrangement, Tatman opined that not doing so would allow Star to “drive profitability out of our business.” And in an email, he stated, with regard to Star, “We need to make sure that they don’t reach any critical mass that will allow them to continue to invest and receive a profitable return.”⁴¹

II. Customer Foreclosure

Customer foreclosure involves the loss of efficient access to customers by a rival. Customer foreclosure by a dominant firm or would-be monopolist can injure competitors and harm competition.⁴² Predatory pricing may be said to foreclose access to customers through unconditional price cuts. The customer foreclosure analysis presented here has recently been applied to nonprice conduct or conditional pricing practices.⁴³

³⁵ *Id.* at 838-39.

³⁶ Thomas G. Krattenmaker and Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209, 246 (1986).

³⁷ *McWane*, 783 F.3d at 837.

³⁸ *Id.* at 840.

³⁹ *Id.* at 836.

⁴⁰ *Id.* at 840.

⁴¹ *Id.* at 841-42.

⁴² Distributors can be viewed as customers as well as providers of a distribution services input.

⁴³ Conditional pricing practices are discussed below.

A. Basic Economic Analysis

Customer foreclosure can harm competition in several ways:

- In the most extreme scenario, the customer base of an entrant or small rival may be limited to such a degree that it is unable to earn sufficient revenue to cover its costs and remain viable in the market. If anticipated sales would likely fall below its minimum viable scale (MVS), an entrant would lack an incentive to enter or some existing input competitors would have the incentive to exit.⁴⁴
- The input market entrant or competitor may remain viable but customer foreclosure may limit its output to a low level. This impact can occur even if the rival can achieve either the MVS or the cost-minimizing minimum efficient scale (MES) output level.⁴⁵
- Even if it remains viable, the ability to constrain the market power of the dominant firm may be reduced if the targeted firm's costs are higher, as a result of declining marginal costs or because the customer foreclosure is also accompanied by input foreclosure.⁴⁶ In short, customer foreclosure may permit the rival to remain in the market but may relegate it to something closer to a niche position at a low output level, where it will be marginalized, providing less of a constraint on the pricing of the excluding firm.
- Marginalizing rivals can have serious effects on dynamic competition. Even if the rival's marginal costs are not raised, the decline in its potential customer base from customer foreclosure may significantly reduce its incentives to invest and innovate over time, because its returns on investment will also be lower. As a result, it will fall farther behind over time and become even less of a competitive constraint on the monopolist firm, as discussed in more detail below.

Foreclosure of likely "lead customers" can raise barriers to entry. To see why, consider the situation in which a new entrant needs to obtain one or more customers to "sponsor" its entry into the market, in the sense of providing a baseload of sales to allow the entrant to achieve or move closer to MVS. The lead customer's willingness to purchase from the new entrant also attests to the expected reliability of the entrant's product, implicitly providing assurance to other potential customers. This

⁴⁴ For a sample of technical economic theory monographs related to customer foreclosure and the potential for harms from exclusive dealing, see Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80 AM. ECON. REV. 837, 839 (1990); Eric B. Rasmusen et al., *Naked Exclusion*, 81 AM. ECON. REV. 1137, 1140–43 and n.4 (1991); Ilya R. Segal and Michael D. Whinston, *Naked Exclusion: Comment*, 90 AM. ECON. REV. 296, 297 (2000); Michael D. Whinston and B. Douglas Bernheim, *Exclusive Dealing*, 70 J. POL. ECON. 64 (1998); Dennis W. Carlton and Michael Waldman, *The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries*, 33 RAND J. ECON. 194, 196 (2002).

⁴⁵ As explained in the 1992 Horizontal Merger Guidelines, "Minimum viable scale is the smallest average annual level of sales that the committed entrant must persistently achieve for profitability at premerger prices." 1992 Horizontal Merger Guidelines, § 3.3, at 28. This MVS concept is different from whether the entrant or competitor is able to achieve the MES.

⁴⁶ *Supra*, notes 112–113.

effect will reduce its costs, including marketing costs in selling to others. A related type of claim was made by AMD in its complaint against Intel.⁴⁷

This analysis makes it clear that the degree of foreclosure cannot be gauged primarily by the fraction of distributors or customers that are affected (i.e., by the gross foreclosure rate). It should be measured by the impact on competitors and competition in the downstream market. This harm does not require a showing of total foreclosure or likely exit.⁴⁸

B. Customer and Input Foreclosure Interaction

In some situations, including some of the cases discussed above, customer and input foreclosure analyses are complementary. In the *Jefferson Parish* tying case, the allegation focused on the foreclosure of East Jefferson Hospital, a customer of the plaintiff anesthesiologist, Dr. Hyde.⁴⁹ This foreclosure could have caused Dr. Hyde's output to fall below the MVS and caused him to exit as a result. Other anesthesiologists could have been similarly disadvantaged, leading to an overall reduction in competition among anesthesiologists.

Input and customer foreclosure can be seen as occurring simultaneously and being mutually reinforcing. Anesthesiology services are a complementary product to surgery services and can be characterized as an input for surgery. Reduced competition among anesthesiologists could lead rival hospitals (or the patients using rival hospitals) to face higher costs for anesthesiology services and become weaker competitors of East Jefferson Hospital. Their higher costs could cause diversion and increased market power for East Jefferson Hospital as well as the Roux anesthesiology group.

C. Marginalizing Competitors

If exclusionary input foreclosure conduct succeeds in raising the costs of one or more established downstream rivals, they will have direct incentives to raise their prices and/or reduce their output. If the cost increase is large enough, it may cause them to exit the market.

Input foreclosure can also have dynamic effects. If the rivals have higher costs and earn a lower margin, their investment incentives may be reduced, marginalizing them over time. With less investment, they may lower the quality of their output or face higher costs. They may invest less in a growing market, reducing their capacity to compete. If they were previously maverick firms, they may have less ability and incentive to disrupt tacit coordination.

Similar dynamic effects can occur from customer foreclosure arising from a dominant firm's exclusive dealing agreements with some customers. Even if the rival's marginal costs are not raised, a reduction in its likely potential customer base resulting from customer foreclosure may significantly reduce its

⁴⁷ *Advanced Micro Devices, Inc. v. Intel Corp.*, No. 05-441, ¶129 (D. Del. filed June 27, 2005), download.intel.com/pressroom/legal/amd/1-1_Complaint,%20Main%20Doc_AMD.pdf. I served as an economic consultant to Intel in the European Commission proceeding.

⁴⁸ *ZF Meritor LLC v. Eaton Corp.*, 696 F.3d 254, 283 (3d Cir. 2012) ("Total foreclosure' is not required for an exclusive dealing arrangement to be unlawful") (citation omitted); *United States v. Dentsply International Inc.*, 399 F.3d 181, 191 (3d Cir. 2005) ("The test is not total foreclosure, but whether the challenged practices bar a substantial number of rivals or severely restrict the market's ambit") (citation omitted).

⁴⁹ *Jefferson Parish Hospital Dist. No. 2 v. Hyde*, 466 U.S. 2 (1985).

incentives to invest and innovate, because a lower potential customer base resulting from the foreclosure leads to lower returns on investment, as discussed above. This lower return on investment will lead the profit-maximizing firm to invest less. As a result, the firm will fall farther behind over time and become even less of a competitive constraint on the dominant firm. These effects can be substantial.⁵⁰

This reduced investment from either type of foreclosure may also reduce the monopolist's own incentives to invest, slowing the overall pace of product improvement, cost reduction, and innovation. For all these reasons, consumers will be harmed by the impact of the foreclosure on marginalizing competitors, even if they do not exit the market.

D. Case Law Examples of Customer Foreclosure

1. Lorain Journal

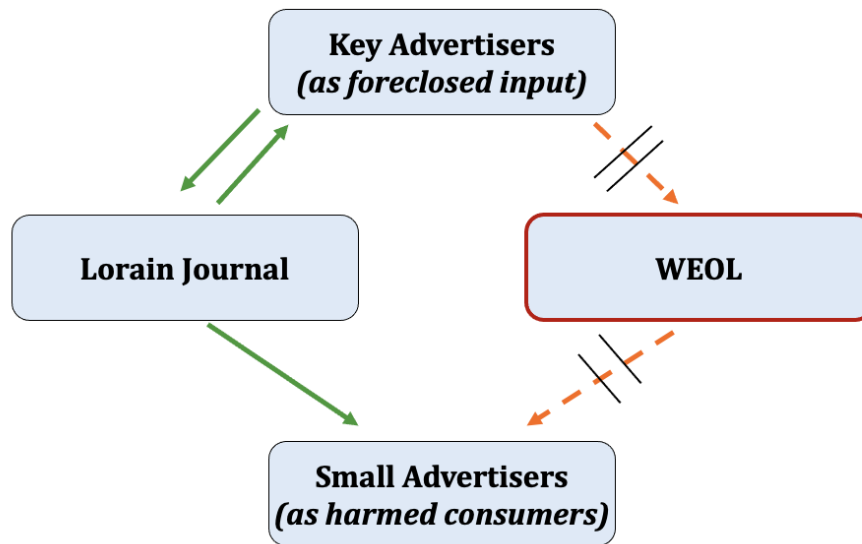
*Lorain Journal Co. v. United States*⁵¹ provides a classic example of customer foreclosure (it is also discussed in Chapter 10, as an example of a "bottleneck monopolist"). The *Journal* enjoyed a daily newspaper monopoly in both the subscriptions and local advertising markets in the area around Lorain, Ohio. It adopted a unilateral policy (not an agreement) of refusing to accept local advertising from any Lorain County advertiser that also advertised with WEOL, a radio station. The policy deterred many local merchants from advertising with the radio station, creating a dangerous probability of the radio station going out of business had the *Journal's* conduct not been enjoined by the lower court. The Supreme Court affirmed the lower court's holding that the exclusive dealing constituted an attempted monopolization in violation of Section 2 of the Sherman Act by depriving the radio station of a market for its advertising airtime.⁵²

Suppose hypothetically that the *Journal* demanded exclusives from a set of key local advertisers that WEOL needed to reach the critical scale required to effectively constrain the *Journal's* monopoly power. As a result, WEOL would fail to achieve this scale and likely exit, permitting the *Journal* to maintain its monopoly power over all advertisers, including the key advertisers. The dotted arrows in Figure 10.5 show WEOL being foreclosed from selling advertising to these local advertisers.

⁵⁰ The percentage reduction in investment typically exceeds the percentage reduction in the customer base from customer foreclosure. The underlying math is the following: Holding price constant, an R percent reduction in the customer base will reduce investment by a percentage equal to $R/(1 - e)$, where e denotes the firm's elasticity of demand with respect to its investment. Steve Salop and Keith Waehrer, *A Simple Pedagogical Model of the Impact of Foreclosure on Investment* (unpublished note, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5226613). This formal model is an extension of the classic advertising model of Robert Dorfman and Peter O. Steiner, *Optimal Advertising and Optimal Quality*, 44 AM. ECON. REV. 826 (1954). The "advertising" variable in their model can be reinterpreted as investment.

⁵¹ 342 U.S. 143 (1951) (hereinafter, *Lorain Journal*).

⁵² *Id.* at 150.

Figure 10.5 *Lorain Journal* customer foreclosure

Lorain Journal coerces exclusives from large “key” advertisers, which kills WEOL and allows it to achieve or maintain monopoly power over all advertisers. (The key advertisers are like an “input.”)

2. Meritor

Meritor involved customer foreclosure by Eaton, the dominant producer of heavy-duty truck transmissions.⁵³ The Third Circuit affirmed a decision finding Eaton liable for raising barriers to competition faced by a new entrant, ZF Meritor, causing the entrant to shrink and exit. Eaton’s long-term contracts offered rebates conditional on the original equipment manufacturer (OEM) customers purchasing a dominant share of transmissions from it. The rebates were conditional on purchases of at least 90 percent of the total units purchased by three of the truck manufacturers and at least 70 percent of the fourth OEM. The conditional rebates were the customer foreclosure mechanism. Those long-term contracts also required full repayment of accrued rebates if the OEM fell short of the purchase threshold in any year, which increased their foreclosure effects. Another contractual provision prohibited the OEMs from including Meritor in the “data book” used by customers to choose the most desirable transmission. Another provision required the OEMs to offer truck purchasers preferential pricing for Eaton transmissions—what have been termed “MFN-plus” provisions. These long-term agreements and their provisions were demanded by Eaton, not the OEMs.

Although conditional pricing was involved, the court did not apply the predatory pricing paradigm. It focused instead on the near exclusivity and applied the RRC paradigm. It did not require a showing of below-cost pricing.

The dissent criticized this approach, on two main grounds. First, it denied the credulity of Eaton’s threats, arguing that Eaton would not have enforced the terms of the contract if one of the large OEMs

⁵³ *ZF Meritor*, 696 F.3d at 264, 266–67.

had violated them, because Eaton needed the sales. This claim ignored the fact that Eaton probably had the dominant bargaining leverage: As there were four OEMs and Eaton was a monopolist, the OEMs very likely needed Eaton more than Eaton needed any single one of them if it came down to an all-or-nothing choice. Moreover, Eaton would have had a strong incentive to punish the first violator in order to establish a reputation for stern punishment to deter other violators.

Second, the dissent argued that the purchase thresholds were less than the OEMs' current purchase levels, which it claimed would have allowed Meritor room to grow. This analysis ignores the fact that Meritor likely would not have been able to grow large enough to be viable, given the purchase thresholds. Moreover, the other contractual provisions also constrained Meritor's sales. In fact, Meritor's sales shrunk and it exited. (*Meritor* also involved analysis of conditional rebates as an exclusionary device, as discussed below.)

3. Google Search

The *U.S. v. Google LLC* court found Google liable for having established vertical agreements that allowed it to gain exclusive default positions on distributors' search access points in exchange for compensation in the form of advertising revenue sharing. The lower search volume of Bing and other search engines reduced their product quality, making it harder for them to attract users. (Google's conduct can also be characterized as input foreclosure, in that these revenue-sharing payments meant that rivals would need to outbid Google for the default position, which would increase their distribution costs.⁵⁴)

Google's largest and most notable revenue-sharing agreement involved Apple. Google paid Apple \$20 billion in 2023 for making Google search the default on all search access points on Apple devices. Had Apple integrated into search itself or sponsored a competing search engine, Google would have lost those search revenues. Google did not provide a efficiency justification for these large payments that convinced the court. It was disclosed in court that Google provided Apple with 36 percent of the search revenue earned on queries from Apple devices.⁵⁵ This level of sharing is consistent with the fear by Google that it would lose 36 percent of its Apple search queries absent the payments (obtaining 64 percent of revenue on 100 queries yields the same total revenue as 100 percent of revenue on 64 percent of queries).

Effective sponsorship by Apple was possible. The Apple iPhone is extremely popular in the United States, and Apple controls so many search queries that it could have achieved scale fairly rapidly. The court found that almost 28 percent of all U.S. search queries originated on Safari browser on all Apple devices in 2019. The fraction of Safari search queries on mobile devices was even higher.^{56, 57}

⁵⁴ No. 20-cv-3010, 2024 WL 3647498 (D.D.C. Aug. 5, 2024).

⁵⁵ Plaintiffs' Initial Proposed Final Judgment § IV.E., *United States v. Google LLC*, No. 1:20-cv-03010-APM (D.D.C. Nov. 20, 2024), ECF No. 1062-1.

⁵⁶ *Google* at ¶297.

⁵⁷ Google's incentive to strike exclusive search default agreements with other search distributors is similar. A rival search engine would have the incentive to try to induce search distributors to forgo Google's exclusivity agreement by offering a revenue-sharing or other payment to use its search engine, either exclusively or nonexclusively.

This analysis raises the question of why rival search engine competitors such as Microsoft's Bing did not try to undo Google's exclusives by paying the distributors to adopt their search engine as the default. In fact, Microsoft did attempt such a counter-strategy. At one point, it offered Apple 100 percent of its advertising revenue in exchange for becoming its default search engine, an amount that Apple deemed insufficient.⁵⁸

The economic analysis of this type of competition for distribution is discussed in more detail in the counter-strategy section. The basics of this competition can be explained in the context of a model of bidding for the default position. If the rival search engine were the default, it would obtain more search queries, and its larger scale would increase the quality of its search links. It would also increase its click-through rate on paid ads by more effective ad targeting. But it would be competing in a more competitive duopoly market. As a result of the increased advertising competition, the market price per click on ads would fall. In response to the increased competition, Google might invest more, which would improve its own click-through rate. Competition would thus lead to higher quality, increased output (more clicks), and a lower market advertising price per click. However, as the example below illustrates, Google had the ability and incentive to deter the competition and maintain monopoly power by acquiring exclusive defaults.⁵⁹

In the hypothetical numerical example shown in Figure 10.6, the rival search engine's maximum bid in a bidding contest would equal its total duopoly profits of \$60. By contrast, Google would be willing to bid up to \$120, the difference between its monopoly and duopoly profits. Combined industry duopoly profits (here, \$160) tend to be lower than monopoly profits (here, \$200), as indicated in the lowest row. This is the Gilbert/Newbery effect from competition leading to downward pressure on prices and profits. As a result, Google could obtain the exclusive default position for a "take it or leave it" offer of a payment slightly above the rival's \$60 maximum bid, as indicated by the circled numbers in the right-hand column. A negotiated outcome would lead to a payment somewhere in the \$61–\$119 range, depending on the parties' bargaining power.

⁵⁸ It appears that Apple was using Microsoft to negotiate a higher revenue share from Google. See, for example, *Google* at ¶¶321-329.

⁵⁹ Rather than sponsoring entry by accepting the bid of the rival search engine, Apple might have considered entering the market itself. In this scenario, Apple could have competed with Google in licensing its search engine to Mozilla, wireless phone companies, and even other OEMs.

Figure 10.6 Competition for search engine distribution (\$)

Profits			
Competing Firms	Monopolist Wins	Rival Wins	Maximum Bids
Monopolist	200	80	120
New Entrant	20	80	60
Combined Profits	220	160	

Monopolist wins!

III. Foreclosure Analysis in Section 1 and Clayton Act Section 3

Up to now, the focus has been on Section 2. The same economic analysis applies to foreclosure concerns involving conduct or agreements that may not satisfy the Section 2 standards but instead would be alleged under Section 1 of the Sherman Act or Sections 3 or 7 of the Clayton Act.

Exclusive dealing can raise either input or customer foreclosure concerns, depending on the market in which the restrained firm competes. For example, the 1922 *Standard Fashions* Section 1 case involved customer foreclosure.⁶⁰ The exclusivity agreements prevented smaller rivals from providing additional patterns to supplement the patterns provided by Standard. In light of the economies of scale in producing patterns, preventing a competitor from selling in stores that bought Standard's patterns would make it more difficult for it to achieve sufficient scale to justify the increased investment to grow, even if the rival could achieve viability. As a result, Standard could maintain its position.

The underlying competitive concern in *Standard Stations* was customer foreclosure (i.e., the reduced customer base available to independent refiners).⁶¹ *Gilbarco* also involved customer foreclosure. By contrast, the exclusive dealing concern in *Paddock*⁶² was input foreclosure. In *Paddock*, the allegations involved concerns that the *Chicago Tribune's* exclusive access to certain syndicated news sources would reduce the availability or raise the cost of news content for smaller newspapers like the plaintiff (the *Daily Herald*), making it more difficult for them to grow.⁶³

⁶⁰ *Standard Co. v. Magrane-Houston Co.*, 258 U.S. 346 (2022).

⁶¹ *Standard Oil Co v. United States* ("Standard Stations"), 337 U.S. 293, 306-07 (1949).

⁶² *Omega Environmental, Inc. v. Gilbarco, Inc.*, 127 F3d 1157 (9th Cir. 1997).

⁶³ *Paddock Publications v. Chicago Tribune*, 103 F. 3d 42, 45 (7th Cir. 1996).

Because of the overhang from the Section 1 per se rule, tying cases typically focus on customer foreclosure. *Jefferson Parish*⁶⁴ was brought by Dr. Hyde, an anesthesiologist concerned about the loss of access to patients at East Jefferson Hospital. However, input foreclosure was also a concern, in that Roux's exclusive arrangement could have raised the cost of anesthesiology services at rival hospitals and permitted East Jefferson to gain market power.

Acquisition of firms producing vertically adjacent or complementary products can violate Section 7 (mergers) or Section 2 (monopolization). The exclusionary effects of vertical mergers can involve input and/or customer foreclosure.

These two types of foreclosure concerns can be illustrated by imagining a hypothetical merger between East Jefferson Hospital and the Roux and associates anesthesiology practice, instead of the tying agreement in the real world case.⁶⁵ As with the tying case, the merger might raise customer foreclosure concerns arising from East Jefferson's refusal to allow Dr. Hyde and others from practicing there, which might lead to some of those doctors exiting, thereby giving the Roux group the power to raise their prices at other hospitals. The merger might also raise input foreclosure concerns about the Roux group raising the price or refusing to serve competing hospitals, raising their costs and thereby giving market power to East Jefferson Hospital. If some other anesthesiologists exit or have higher costs from the customer foreclosure, the input foreclosure concerns would be reinforced.

Information transfers can also lead to exclusionary effects. If the Roux group continues to practice at rival hospitals, they might gain advance notice of innovations or other competitive strategies at those hospitals. In this case, East Jefferson might be able to respond more quickly or even preempt those strategies. Anticipating these responses might deter the rivals' competitive strategies, thereby reducing competition.⁶⁶

IV. Criticisms of Raising Rivals' Costs Foreclosure Conduct Claims

Several criticisms of this economic analysis of anticompetitive exclusion have been raised. One objection disputes the incentive to engage in foreclosure on the grounds that there is only a single monopoly profit,—that is, the monopolist can achieve its maximum profit level without any need to engage in foreclosure conduct. This objection ignores the fact that this single monopoly profit theory applies in only the very limited conditions discussed below.

A second objection disputes the need for antitrust enforcement on the grounds that the rivals can protect themselves from foreclosure in the market by using viable competitive counter-strategies that would prevent or deter the foreclosure. However, the rivals cannot generally do so, because the value to the excluding firm of maintaining substantial market power exceeds the value to the rival of obtaining more competitive profits and other reasons discussed below. A third objection concedes the incentives to foreclose but argues that protecting competitors furthers the consumer welfare goal

⁶⁴ *Jefferson Parish Hospital Dist. No. 2 v. Hyde*, 466 U.S. 2 (1985).

⁶⁵ Foreclosure concerns can also arise from the misuse of competitively sensitive information.

⁶⁶ Using one of the merging parties as an information messenger between the competing firms at the adjacent product level can facilitate collusive effects in the first market.

only when they are equally efficient. This objection is inconsistent with rigorous economic analysis. A fourth objection is that the foreclosure conduct leads to competitive benefits. Although competitive benefits may occur in some cases, there is no reason to think that the benefits systematically outweigh the market or monopoly power effects.

A. The Single Monopoly Profit Theory

Chicago School scholars in the 1960s and 1970s criticized anticompetitive foreclosure allegations involving a monopolist's tying, vertical mergers, or exclusive vertical agreements on the grounds that there is only a single monopoly profit. According to this theory, the monopolist can fully collect the monopoly profit from pricing the monopoly product and would not have an incentive to engage in exclusionary conduct to maintain or enhance monopoly power. Its only foreclosure incentive would be to achieve procompetitive cost reductions or product improvements.⁶⁷

This theory reached its high point in Justice O'Connor's *Jefferson Parish* concurrence, where she embraced it and its application to tying allegations as follows:

The existence of a tied product normally does not increase the profit that the seller with market power can extract from sales of the *tying* product. A seller with a monopoly on flour, for example, cannot increase the profit it can extract from flour consumers simply by forcing them to buy sugar along with their flour. Counterintuitive though that assertion may seem, it is easily demonstrated and widely accepted.⁶⁸

Justice O'Connor may have been unaware of the fact that the theory is valid only under very limited economic conditions, in which the tying product monopoly is perfectly protected by prohibitive entry barriers and all consumers purchase the two products in the same fixed proportions (i.e., no consumers purchase solely the tied or the tying product but not the other product), an assumption that likely would not hold if products are differentiated. Absent these highly limiting assumptions,

⁶⁷ For the classic statement, see Ward S. Bowman, Jr., *Tying Arrangements, and the Leverage Problem*, 67 YALE L.J. 19 (1957). See, also BORK at 229; Aaron Director and Edward H. Levi, *Law and the Future: Trade Regulation*, 51 NW. U. L. REV. 281 (1956). The theory recognizes an exception if the monopolist is regulated, in which case the merger can be used to evade regulation.

⁶⁸ *Jefferson Parish Hospital Dist. No. 2 v. Hyde*, 466 U.S. 2, 36 (1985) (referencing Robert Bork, THE ANTITRUST PARADOX 372-374 (1978)). Justice O'Connor also recognized that tying can be used to evade price regulation in a regulated market. *Id.* at n. 4.

tying can have anticompetitive effects in either the tying product or tied product market.⁶⁹ It is thus not necessarily competitively neutral or procompetitive.^{70,71}

The single monopoly profit theory could also be summoned in the context of exclusive dealing. An input monopolist could have an incentive to sell its input solely to a single downstream firm and foreclose other perfectly competitive rivals in order to monopolize the downstream market. But it could obtain all the monopoly profits by charging the monopoly input price, which would lead the downstream firms to charge the monopoly downstream price but with all the profits captured by the input monopolist. An identical story would apply to a vertical merger by the input monopolist. Here, too, the theory applies only under limited circumstances of an input monopolist protected by prohibitive entry barriers and usage of the input in fixed proportions.

1. Anticompetitive tying

Applied to tying, there are various scenarios in which the theory does not hold and profitable tying harms consumers. First, when there is some potential for entry into the tying product market, tying can be used to increase barriers to entry into that market by requiring the entrant to enter both markets simultaneously rather than relying on the existence of independent producers of the tied product market. For example, by tying Windows and Internet Explorer and eliminating the middleware provided by Netscape and Java, Microsoft was able to effectively tie applications to Windows, helping Microsoft maintain the applications barrier to entry.

Second, when the two products are not used in fixed proportions and some consumers purchase only the tied product, tying can eliminate or weaken competition in the tied product market by customer foreclosure. This analysis can be illustrated with Robert Gertner's extreme example of a resort island that has a large full-service hotel with extensive restaurant facilities and a limited number of independently owned villas. In his example, the hotel requires its guests to book the American Plan, which includes all meals as well as room accommodations.⁷² The local standalone restaurants would then be able to serve only the vacationers who rent the villas. Vacationers that have no desire to rent a villa face a monopoly hotel. For these guests, the hotel can earn its monopoly profits by charging a high price for the room without any need to tie meals through the American Plan. By contrast, tying

⁶⁹ The single monopoly profit theory result can be illustrated with a numerical example. Suppose that two products, A and B, are used in fixed proportions—that is, every consumer purchases one unit of each to create one unit of the AB “system.” Suppose that every consumer is willing to pay up to \$100 for the AB system, the monopoly price. Suppose the monopolist's marginal costs are \$40 for A and \$10 for B. Suppose the firm is a monopolist in product A, protected by prohibitive barriers to entry, but there is perfect competition for product B by firms with identical variable costs of \$10. In this scenario, if the monopolist sells only the AB bundle and charges a price of \$100, its costs will be \$50 (\$40 + \$10) and its unit profits \$50. If the monopolist instead sells only product A for \$90 and allows the competitors to sell it for \$10, its cost will be \$40 per unit and its unit profits will still equal \$50. Thus, it gains no profit by tying.

⁷⁰ See, for example, Louis Kaplow, *Extension of Monopoly Power through Leverage*, 85 COLUM. L. REV. 515 (1985).

⁷¹ The single monopoly profit theory also fails when the monopolist does not have perfect information about the costs of the rival seller of the tied product. This issue is discussed below in the context of vertical mergers.

⁷² Dennis W. Carlton and Michael Waldman, *The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries*, 33 RAND J. ECON. 194 (2002). The authors credit Robert Gertner for this example.

can give the hotel restaurant market power over the vacationers that rent villas. Because the sales of the standalone local restaurants will be substantially reduced by being limited only to vacationers that rent the small number of villas, and not any hotel guests, their sales may be insufficient to cover their fixed costs. Their marginal costs might also be higher if they have to purchase ingredients in smaller quantities. If as a result of these restraints, most of these restaurants exit and others raise their prices, more of these villa renters will choose to dine at the hotel. Facing less competition, the hotel restaurant will also gain the power to raise prices to these patrons. In short, the hotel will gain market power in the tied product market over consumers who do not purchase the tying product.

A possible application of this theory in *Microsoft* could be that by tying Internet Explorer to Windows and driving other browsers to exit, Internet Explorer could gain market power over users of fringe rival operating systems. As another example, if Microsoft had also been able to tie its own search engine to Internet Explorer and prevent Google search from gaining free access to Windows users, it might have been able to monopolize search engines usage on other operating systems.⁷³

Third, even if tied product rivals do not exit, the customer foreclosure might give the standalone tied product competitors incentives to tacitly price coordinate with the monopolist. If surviving tied market competitors are unable to grow much as a result of the tying, they would have less to lose by coordinating their prices with the monopolist's price. If, for example, Google's ability to grow were dramatically limited by Microsoft's tying of its search engine to Internet Explorer in 2001, it might have worked to coordinate advertising prices with Microsoft's search engine.

Fourth, tying can also be used to more effectively exploit monopoly power in the tying market by price discriminating and extracting more consumer surplus. For example, the tying product monopolist cannot directly observe customers' willingness to pay for its product. But suppose that use of the tied product is correlated with individual customers' willingness to pay for the tying product. In this case, the monopolist can extract higher profits from consumers with high willingness to pay by forcing them to purchase the tied product at a price above the competitive level. The overcharge on the tied product amounts to the higher price of the tied product.⁷⁴ This tying rationale might be treated as legitimate exploitation of monopoly power rather than anticompetitive exclusionary conduct.⁷⁵

2. Procompetitive tying

These examples are not intended to show that tying is always anticompetitive. It is not. Tying can increase consumer welfare in various ways. First, physical tying is a common way to reduce costs. It is less expensive to produce an automobile in a standard configuration than it is to sell every component separately and have the consumer choose the configuration. It is efficient to sell a printer that also serves as a copier and scanner.

⁷³ Google saved itself in 2000 by creating the Google Toolbar plug-in for Internet Explorer, which Microsoft was apparently unable or afraid to block. See *Google Launches the Google Toolbar* (December 11, 2000), available at <http://googlepress.blogspot.com/2000/12/google-launches-google-toolbar.html>.

⁷⁴ Frank G. Mathewson and Ralph A. Winter, *Tying as a Response to Demand Uncertainty*, 28 RAND J. ECON. 566 (1997).

⁷⁵ Meyer L. Burstein, *The Economics of Tie-In Sales*, 68 REV. ECON. STAT. 68 (1960).

Second, tying can be used to reduce distribution costs by permitting one-stop shopping.

Third, tying can be used to ensure interoperability between two complementary products. In *IBM*,⁷⁶ IBM's rationale for requiring customers to purchase its punch cards was that it wanted to ensure that the cards would not jam the machine. If they did, consumers might blame IBM instead of the card manufacturer. The Court found IBM liable, ruling that IBM could use the less restrictive alternative of setting mandatory performance standards. Although not discussed, the court apparently was not concerned that this monitoring might have been very expensive to carry out and enforce.

Fourth, tying can be used to price discriminate in a way that can benefit some consumers. If, for example, a printer manufacturer requires consumers to purchase its ink, it may charge a lower price for the printer and a supra-competitive price for the ink. This strategy would benefit consumers who do not use much ink.

Fifth, a related scenario in which discrimination is beneficial involves expected welfare-enhancing risk-sharing. Suppose a consumer does not know how intensively he will be using the printer. By purchasing a printer priced at a low level and agreeing to purchase expensive ink, the consumer and printer manufacturer share the demand risk, which can make both better off. Rather than paying a high fixed franchise fee and bearing the entire risk that demand is low, new franchisees may prefer to pay a lower fee and agree to purchase items from the franchisor at supra-competitive prices as a way to share the risk that the location of the store has high or low demand.

Finally, it is sometimes argued that tying can lead to an incentive to reduce prices when the producers of the tied product sell at a price above marginal cost. (This effect is termed *elimination of double marginalization*.) Although this justification may apply to the acquisition of the producer of the tied product it does not justify the tying arrangement. A now-integrated firm could achieve the same result simply by selling its version of the second product at a price equal to marginal cost without also requiring that second product to be purchased (i.e., tied). Justifying the tying requires something more such as imperfectly informed consumers blaming the seller of the one product for quality problems caused the independently-supplied second product.

B. Rival Counter-Strategies and Competition for Distribution

When exclusionary vertical agreements between the (actual or would be) monopolist and input suppliers or customers raises rivals' costs, critics have argued that the rivals can protect themselves with the competitive counter-strategy of outbidding the monopolist for exclusive or nonexclusive access to the inputs or customers in the market, what has sometimes been termed *competition for the contract*. For this reason, they argue, only a light-handed antitrust enforcement is appropriate.⁷⁷

Competition for exclusive contracts does not raise competitive concerns when the competing downstream firms are equally matched and there are numerous distributors, so that each is well positioned to obtain a significant share of exclusives. For example, law firms have exclusivity rights with their partners and associates, but there is no monopoly risk, because many viable law firms

⁷⁶ *IBM Corp. v. United States*, 298 U.S. 131 (1936).

⁷⁷ Easterbrook, *supra* note 2; *Paddock Pubs., Inc. v. Chicago Tribune Co.*, 103 F.3d 42, 47 (7th Cir. 1996).

compete for practitioners. If there are efficiency benefits from exclusivity, the competition for the contracts may even lead to a more desirable market outcome than nonexclusivity.

Even aside from procompetitive efficiency effects, a single buyer might also negotiate an exclusive contract as a way to intensify competition among its oligopoly suppliers. The resulting all-or-nothing choice facing those suppliers increases their demand elasticities and incentives to cut prices, as discussed below.

Competition for distribution generally does not lead to a procompetitive outcome when it involves a smaller rival competing for distribution against a dominant firm with substantial market power. A counter-strategy of bidding for exclusives or nonexclusives will not generally be a viable counter-strategy for preventing foreclosure. In this situation, economic analysis shows that such counter-strategies face severe impediments to success, as summarized in the following bullets:

- There may be no potential for a counter-strategy if the incumbent forecloses access to suppliers or customers with long-term exclusive agreements even before the entrant comes on the scene.⁷⁸
- Even if exclusives are short term or terminable at will, the dominant firm has a substantially greater bidding incentive, because it is attempting to preserve its monopoly profits whereas an entrant or small rival is attempting to obtain (lower) competitive profits. The potential monopoly profits provide the dominant firm with a “market power fund” to finance higher bids even if the entrant is equally efficient. This asymmetry also explains how this competition for exclusives does not amount to welfare-enhancing competition “on the merits.”
- It is not necessary for the dominant firm to totally foreclose the rival’s market access or cause it to exit; it need only raise its costs or sufficiently reduce its volume to marginalize its impact in the market and reduce its incentives to invest.
- Because suppliers and consumers cannot generally coordinate their responses, a potentially foreclosed entrant or small rival cannot rely on them to recognize its beneficial effects on competition and forgo the threats or entreaties of the monopolist. In this context, an expectation by suppliers or customers that the foreclosure will succeed will cause it to succeed (i.e., the expectations will be self-fulfilled).

Economic analysis thus indicates that antitrust law cannot rely on the potential for such rival counter-strategies to deter anticompetitive exclusionary conduct or prevent that conduct from reducing competition and causing consumer harm.⁷⁹

⁷⁸ For details of the analysis in this section, 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 (2017).

⁷⁹ *Paddock Publications, Inc. v. Chicago Tribune Co.*, 103 F.3d 42, 47 (7th Cir. 1996); *U.S. Healthcare, Inc. v. Healthsource, Inc.*, 986 F.2d 589, 594 (1st Cir. 1993); *Roland Machinery Co. v. Dresser Indus.*, 749 F.2d 380 (7th Cir. 1984).

1. Pre-entry exclusivity agreements

An entrant's counter-strategy is impossible if the monopolist forecloses access to needed distributors with long-term exclusive agreements in advance of the entrant coming on the scene. In this scenario, the entrant would not have the ability to counter. The monopolist might also not have to offer much compensation if the distributors do not anticipate the future entry. Thus, the exclusives may cause severe barriers to entry.

2. The monopolist's "market power fund"

Even if exclusives are short term or terminable at will, the dominant firm typically has a substantially greater bidding incentive, because it is attempting to preserve its monopoly profits whereas an entrant or small rival is just attempting to obtain (lower) competitive profits. This seminal point—which runs through all analyses of exclusionary conduct as well as competition for patents or other prizes—has been emphasized throughout this monograph. It is termed the *Gilbert/Newbery effect*, after the authors of the original article.⁸⁰

Consider a monopolization case in which the monopolist is attempting to acquire exclusives with key distributors or other input suppliers that a nascent entrant needs to compete effectively. The rival's attempted counter-strategy is to pay the suppliers enough to gain nonexclusive access to achieve viability. This counter-strategy will typically fail, because the monopolist gains larger profits from excluding the rival than the entrant's profits from not being excluded. The monopolist can use its extra monopoly profits as a "market power fund" to finance its higher bids for exclusive rights. The monopolist has both the ability and the incentive to pay distributors more to exclude the rival than the rival can pay to prevent exclusion. In a bidding contest for conduct that will raise entry barriers, the monopoly will generally win. Even if the rival is more efficient or offers a superior product, it may not be able to overcome the monopolist's *market power fund* and the higher cost entailed by the bidding.

The economic insight driving this result is that the monopolist's value of maintaining monopoly profits exceeds the entrant's (or small rival's) value of earning duopoly profits as long as profits at the monopoly outcome exceeds the sum of both firms' duopoly profits. Monopoly profits are generally higher because the entry tends to lead to post-entry price and nonprice competition that benefits consumers but reduces the profits of the competing duopolists. This impact of competition on lowering industry profits is reinforced in cases in which the rival has higher costs or both firms must invest more. This asymmetry in the financial stakes implies that in a bidding competition for

⁸⁰ For the original model, see Richard Gilbert and David M. Newbery, *Preemptive Patenting, and the Persistence of Monopoly*, 72. AM. ECON. REV. 514 (1982). Gilbert and Newbery originally applied this idea to R&D competition. It has much broader implications for antitrust analysis, where it is key to explaining why entrants and small competitors facing exclusionary conduct by monopolists generally will be unable to mount effective counter-strategies by paying suppliers or consumers not to exclude them. Thomas G. Krattenmaker and Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209, 268-72 (1986).

the input between the incumbent monopolist and the entrant, the monopolist will typically be able to outbid the entrant.⁸¹

This asymmetry has another implication. It is typically not necessary for the monopolist to bid an amount that makes its profits negative. Thus, its bid would not fail a *Brooke Group* average price/average variable cost or incremental revenue standard, even if the entrant is equally efficient.⁸²

This economic analysis can be illustrated by the simple numerical example shown in Figure 10.7 for the case of a rival attempting to gain a nonexclusive position at a key distributor, while the monopolist is attempting to achieve exclusivity. If the rival wins the bidding, it would expand and increase the net present value of its profits from \$20 to \$60. At the same time, that expanded competition would cause the monopolist's net present value of profits to fall from \$200 to \$100. Consistent with the idea that competition typically leads to lower prices and lower total industry profits, the total profits earned by both parties are assumed to fall from \$220 at the near-monopoly outcome to \$160 if the nascent entrant is able to expand.

⁸¹ This analysis also explains the mutual incentives of plaintiffs and a defendant monopolist to settle monopolization cases by sharing monopoly profits rather than carrying the case to an outcome in which the monopoly (and the monopoly profits) might be eliminated. Erik Hovenkamp and Steven C. Salop, *Litigation with Inalienable Judgments*, 52 J. LEGAL STUD. 1 (2023). It also explains why (and when) monopolists will be able to profitably acquire potential entrants, including in situations in which they face competing bidders. Steven C. Salop, *Potential Competition and Antitrust Analysis*, OECD Note (June 10, 2021), [https://one.oecd.org/document/DAF/COMP/WD\(2021\)37/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2021)37/en/pdf).

⁸² *Brooke Grp. Ltd. v. Brown and Williamson Tobacco Corp.*, 509 U.S. 209 (1993).

Figure 10.7 Rival counter-strategies in bidding for distribution (\$)

Profits			
Competing Firms	Monopolist Wins	Rival Wins	Maximum Bids
Monopolist	200	100	100
New Entrant	20	60	40
Combined Profits	220	160	

Monopolist wins!

**Monopolist bids for exclusivity;
Rival bids for non-exclusivity**

Consider next a bidding war over distribution.⁸³ The monopolist is willing to pay the distributor up to \$100 (i.e., the difference between its monopoly and duopoly profits) to prevent the expansion of the nascent entrant. By contrast, the entrant is willing to pay only up to \$40 (i.e., the increase in its profits from being able to compete more aggressively). Because the monopolist is willing to pay more, it will prevail in any sort of bidding or negotiation process, paying the critical distributor \$41–\$99. A payment in this range keeps the monopolist in the positive profit range but is large enough that its revenue falls below its costs.

This example is framed in the context of a monopoly maintenance matter. The same conclusion would apply to an attempt to monopolize case. In that version, the rival initially has access to the distributor, and the would-be monopolist is attempting to obtain an exclusive right from the distributor. The would-be monopolist's value of gaining the exclusive is the additional profits of \$100 from gaining the monopoly. The rival's value of maintaining access to the distributor is only \$40, the loss of profit it would suffer if it lost access. Once again, the would-be monopolist would be able to outbid the rival.

This result also does not depend on the entrant being less efficient than the monopolist. To see why, suppose the two competitors would each earn profits of \$80 each if the entrant wins the bidding, as illustrated in Figure 10.8. In this case, the monopolist would bid up to \$120 (\$200 – \$80), whereas the entrant would be willing to bid only \$80 (\$80 – \$0). Thus, the monopolist's bid for exclusivity

⁸³ Distributors would value an entrant's product solely as a supplementary rather than as a total replacement of the monopolist's product. This type of supplemental supply was likely the case in *Lorain Journal*, where radio advertising could supplement, but not replace, newspaper advertising. See *Lorain Journal Co. v. United States*, 342 U.S. 143, 149–50 (1951).

would prevail over the entrant's bid for a non-exclusive position and the monopoly would be maintained.

Figure 10.8 Rival counter-strategies when entrants are equally efficient (\$)

Profits			
Competing Firms	Monopolist Wins	Rival Wins	Maximum Bids
Monopolist	200	80	120
New Entrant	0	80	80
Combined Profits	200	160	

Monopolist wins!

**Monopolist bids for exclusivity;
Rival bids for non-exclusivity**

This result also does not require the presence of long-term exclusive contracts. Even if the contract could be terminated on short notice or at will, the entrant would be unable to dislodge the dominant firm's exclusive. The dominant firm has the incentive to pay more at every renewal point, in order to retain the exclusive. At every point, it will be able to preserve its monopoly profits by winning the exclusive, whereas the equally efficient entrant will obtain only the lower, duopoly profits.

More generally, the results do not depend on the distribution of profits between the parties. The same result occurs as long as the total profits when the rival wins are lower than the total profits when the monopolist wins. Suppose, for example, that the entrant were more efficient, so that the profits were reversed such that the entrant's duopoly profits if its gains were \$100 and the monopolist's profits were \$60. In this case, the entrant would be willing to pay up to \$80 (\$100 - \$20), but the monopolist would be willing to pay up to \$140 (\$200 - \$60). As \$140 exceeds \$80, the monopolist would still win the bidding.

As discussed in Chapter 8, the result that the monopolist bids more is reversed only in the more unusual scenario in which the total duopoly profits exceed the total profits at the monopoly outcome. That scenario might occur if the entrant has a much superior product, a very desirable differentiated product, or much lower costs.

Figure 10.9 explains this result for an example in which that the monopolist and entrant each earn profits of \$120 in the event that the nascent entrant expands—an increase of \$20 over the total monopoly profit when the monopolist wins the bidding (\$240 - \$220). In this scenario, the entrant

would be willing to pay up to 100 (\$120 – \$20), whereas the monopolist only would be willing to pay up to \$80 (\$200 – \$120). This configuration implies that the entrant would win the bidding with a payment somewhere in the \$81–\$99 range. However, there is one caveat even here. In this scenario, the entrant's prospect of having to engage in the counter-strategy of competing for distribution raises its costs of entry or expansion, which by itself can have competition deterring effects.

Figure 10.9 Rival counter-strategies that increase combined profits (\$)

Profits			
Competing Firms	Monopolist Wins	Rival Wins	Maximum Bids
Monopolist	200	120	80
New Entrant	20	120	120
Combined Profits	220	240	

Entrant wins!

**Monopolist bids for exclusivity;
Rival bids for non-exclusivity**

3. Raising rivals' costs without total foreclosure

Total foreclosure of the input or exit by the rival is not necessary for there to be harm to competition and consumers. Even if a rival can cover its costs and remain viable, it may be a higher-cost and weaker competitor if its distribution or other input costs are higher. A competitor will have the incentive to raise its prices and/or restrict its output when its marginal costs rise, even if it earns enough revenue to cover its costs and exceed MES. Input foreclosure can raise competitive concerns as long as it materially increases rivals' costs or constrains their output or ability to expand. Similar results occur if the foreclosure reduces rivals' product quality. Raising rivals' costs or restricting their output to a lower level can permit a dominant firm or monopolist to profitably raise or maintain supra-competitive prices.⁸⁴

Some commentators incorrectly argue that foreclosure can be an economic concern only if it prevents the targeted rival from reaching MES (the output level where a firm's average costs bottom out). Others incorrectly argue that economic concerns arise solely when the foreclosure prevents rivals

⁸⁴ This reasoning also explains why a total foreclosure standard would lead to false negatives. It is not necessary to cause a rival to exit for exclusive dealing to have anticompetitive effects.

from reaching MVS (the output level at which a firm can turn a profit at current prices and thus survive).⁸⁵

This narrowing of concerns is erroneous as a matter of economics.⁸⁶ Foreclosure can allow the defendant to achieve or maintain monopoly power and lead to anticompetitive effects even if the disadvantaged rival remains viable (i.e., its output exceeds MVS) and even if it is also able to exceed the MES output level.⁸⁷ Its costs nonetheless may be significantly raised by exclusionary conduct if it has to pay more for distribution or other inputs or if it has to use a more costly input or distribution method. In that sense, its costs will also not be truly minimized, regardless of scale, and its production efficiency will be reduced. Moreover, even if the entrant eventually becomes viable and grows, the exclusionary conduct may cause anticompetitive effects by delaying effective entry.⁸⁸

4. Lack of coordination among distributors

If the entrant needs relatively wide distribution to succeed, another serious impediment to a potential rival counter-strategy involves the fact that independent distributors do not offer a coordinated response. Distributors as a group may hope that the entrant succeeds, in order to increase demand for their services. But coordination among the distributors would violate Section 1. Indeed, this illegal coordination occurred in the *Apple*⁸⁹ ebooks case, where the publishers agreed to adopt the distribution contract that would facilitate Apple's entry to compete with Amazon.

Even absent the constraints created by Section 1, coordination would face communication and free-rider impediments. As a result, each distributor acting unilaterally would likely accept the monopolist's offer rather than take the risk that the entrant fails to obtain sufficient distribution from

⁸⁵ See, Benjamin Klein, *Exclusive Dealing as Competition for Distribution "On the Merits,"* 12 GEO. MASON L. REV. 119, 122–28 (2003); Joshua D. Wright, *Moving Beyond Naïve Foreclosure Analysis*, 19 GEO. MASON L. REV. 1163, 1163–64 (2012). It is clear that there can be harm to competition from exclusionary conduct that does not drive rivals to exit or fall below MVS. See, for example, Steven C. Salop and David T. Scheffman, *Raising Rivals' Costs*, 73 AM. ECON. REV. P&P 267 (1983); Thomas G. Krattenmaker and Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209 (1986).

⁸⁶ Daniel A. Crane and Graciela Miralles, *Toward a Unified Theory of Exclusionary Vertical Restraints*, 84 S. CAL. L. REV. 605, 646 (2011). The concepts of MES and MVS are different. The 1992 Horizontal Merger Guidelines explain the difference in the context of merger analysis: "The concept of minimum viable scale ('MVS') differs from the concept of minimum efficient scale ('MES'). While MES is the smallest scale at which average costs are minimized, MVS is the smallest scale at which average costs equal the premerger price." U.S. Department of Justice and FTC, *Horizontal Merger Guidelines* § 3.3, at 28 n.29 (1992). In the context of exclusivity by a monopolist, the relevant price might be the monopolist's pre-entry or post-entry price, depending on the question being analyzed. See also Steven C. Salop, *Measuring Ease of Entry*, 31 ANTITRUST BULLETIN 551 (1986).

⁸⁷ The positions of these commentators are likely driven by their antitrust policy preferences rather than their industrial organization economic analysis. They may have decision-theory rationales for the reduced enforcement that would flow from their position.

⁸⁸ As Hovenkamp notes, "A set of strategically planned exclusive dealing contracts may slow the rival's expansion by requiring it to develop alternative outlets for its products or rely at least temporarily on inferior or more expensive outlets. Consumer injury results from the delay that the dominant firm imposes on the smaller rival's growth." HERBERT HOVENKAMP, *ANTITRUST LAW* ¶ 1802c, at 64 (2d ed. 2002).

⁸⁹ *U.S. v. Apple, Inc.*, 791 F.3d 290 (2d Cir. 2015). See also Jonathan B. Baker, *Cartel Ringmaster or Competition Creator? The Ebooks Case Against Apple* (2013), John E. Kwoka, Jr. and Lawrence J. White, eds., *THE ANTITRUST REVOLUTION: ECONOMICS, COMPETITION, AND POLICY* (7th ed. 2019).

others as well as itself. It might take the safer route of sticking with the monopolist, with the intention of taking on the entrant's product if and when the entrant gained sufficient distribution from others. The monopolist can exacerbate this risk by warning each distributor that if it forgoes the exclusive and the entry fails, the monopolist will disfavor it in the future.

Because distributors typically cannot coordinate their responses, the expectation by most of the distributors that entry will fail—because other distributors will not support the entry—can create a self-fulfilling expectations equilibrium.⁹⁰

To grasp this point, consider an example based on a variant of the assumptions in Table 10.4, in which the entrant is assumed to be more efficient. Suppose that there are two distributors and the rival's profits will rise by \$100 if it gains distribution from both but will not grow at all if it gains a position with only one. To defeat the entrant, the monopolist needs only to outbid it at either one of the two distributors. As the monopolist would be willing to bid up to \$80 to defeat the entrant at either distributor, the rival's total cost of outbidding the monopolist by paying more than \$80 to both would be \$162 ($\$81 \times 2$). This cost exceeds the rival's incremental profits of \$100 from winning both these distributors. Thus, the rival would have no rational economic incentive to try to outbid the monopolist at either distributor. Its failure to try is not evidence of market negligence but rather rational foresight. It arises because of the distributor coordination problem. If the entrant could negotiate jointly with the two distributors, it would be willing to pay them up to \$100 (\$50 each), whereas the monopolist would be willing to pay them only \$80 (\$40 each). Absent binding coordination, the monopolist can induce defection by offering either of them more than \$50.

This coordination problem is not fatal in a scenario in which the rival would be viable from obtaining distribution from only a few of the distributors. Under these conditions, it is the monopolist that would need to win at so many distributors that its incremental profits would be dissipated from deterring the competition. As a result, the counter-strategy would succeed.

This scenario can be illustrated with an example based on a variant of the assumptions in Table 10.4. Suppose there are four distributors and the nascent entrant would succeed in raising its profits by \$60 (from \$20 to \$80) if it gained a position at any single one of four key distributors. In this case, the monopolist's total cost of outbidding the entrant at all four would be \$244 ($\61×4). This cost exceeds the monopolist's incremental profits of \$120 from preserving its monopoly. Thus, attempting to outbid the entrant to maintain its monopoly profits would not be profitable.

5. Consumer coordination impediments

The analysis of these counter-strategy impediments has been framed in the context of alleged input foreclosure of distributors (or perhaps some other critical input). But counter-strategies also face impediments in the case of customer foreclosure where the monopolist acquires exclusives with consumers. Consumers would also face severe coordination problems. If the entrant requires a

⁹⁰ See Thomas G. Krattenmaker and Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209, 268-76 (1986); Jonathan B. Baker, *Exclusion as a Core Competition Concern* 527, 568-572 (2013); Steven C. Salop, *The Raising Rivals' Cost Foreclosure Paradigm, Conditional Pricing Practices, and the Flawed Incremental Price-Cost Test*, 81 ANTITRUST L.J. 37192 (2017).

substantial customer base to survive, the expectation that the entry will fail unless enough other consumers reject exclusivity can lead to a similar self-fulfilling expectations equilibrium. Thus, the monopolist would not have to pay a substantial amount and might have to pay only a limited number of customers, if any.

C. Foreclosure of Less Efficient Competitors

It is sometimes suggested that exclusionary conduct should be considered a cognizable concern only if it would exclude competitors that are as efficient as the monopolist. Successful entry by even less efficient entrants into a monopoly market benefits competition by causing prices to fall as long as the entrants' costs are less than the monopoly price.⁹¹ By reducing price, successful entry also contributes to economic efficiency, by reducing the deadweight loss in consumer surplus from the monopolist's pre-entry pricing. Foreclosure conduct may also prevent an entrant from achieving the scale necessary to become an equally (or more) efficient competitor once it becomes established.

Similarly, even less efficient rivals can constrain the price charged by the dominant firm. If exclusionary conduct raises the rival's costs, this cost increase can permit the dominant firm to increase its prices, harming competition and consumers.

D. Potential Competitive Benefits

Economists have long recognized the potential for procompetitive benefits from vertical agreements and other cooperative conduct, even if it potentially forecloses rivals in nonmonopoly markets in a variety of ways. Similar effects might in principle benefit consumers and competition in monopoly markets. The benefits can flow from a variety of causes, including economies of scale or scope, exchange of proprietary information, complementary expertise, coordination of activities at multiple levels, elimination of free-riding, risk reduction, and increased trust.⁹²

1. Eliminating double marginalization

A firm that is vertically integrated (whether by ownership or contract) may gain the efficiency benefit known as *elimination of double marginalization* (EDM). EDM occurs when the upstream partner with some market power charges the downstream partner an input price equal to its marginal cost rather than a higher price that would earn it a margin over cost. In this way, the downstream firm's overall marginal cost is reduced to the efficient level, leading it to use the efficient amount of the input. As its

⁹¹ If the entrant were equally efficient, a price cut below the defendant's cost would also be below the entrant's costs. See RICHARD A. POSNER, *ANTITRUST LAW: AN ECONOMIC PERSPECTIVE* 194–95 (2d. ed. 2001). For the application to exclusive dealing, see Daniel A. Crane and Graciela Miralles, *Toward a Unified Theory of Exclusionary Vertical Restraints*, 84 S. CAL. L. REV. 605, 646 (2011). In *Eisai*, the court referred to the equally efficient competitor legal standard, but it did not require evidence that the plaintiff was equally efficient. *Eisai, Inc. v. Sanofi Aventis U.S., LLC*, 821 F.3d 394, 406 (3d Cir. 2016).

⁹² For a sampling of economics articles that raise possible efficiency claims, see Jonathan Jacobson, *Exclusive Dealing, Foreclosure, and Consumer Harm*, 70 ANTITRUST L.J. 311 (2002); Benjamin Klein and Andres V. Lerner, *Expanded Economics of Free-Riding: How Exclusive Dealing Prevents Free-Riding and Creates Undivided Loyalty*, 74 ANTITRUST L.J. 473 (2007); Benjamin Klein, *Exclusive Dealing as Competition for Distribution "On the Merits,"* 12 GEO. MASON. L. REV. 119, 122–28 (2003); Howard P. Marvel, *Exclusive Dealing*, 25 J.L. AND ECON. 1 (1982); Daniel P. O'Brien and Greg Shaffer, *Nonlinear Supply Contracts, Exclusive Dealing, and Equilibrium Market Foreclosure*, 6 J. ECON. AND MGMT. STRATEGY 755 (1997).

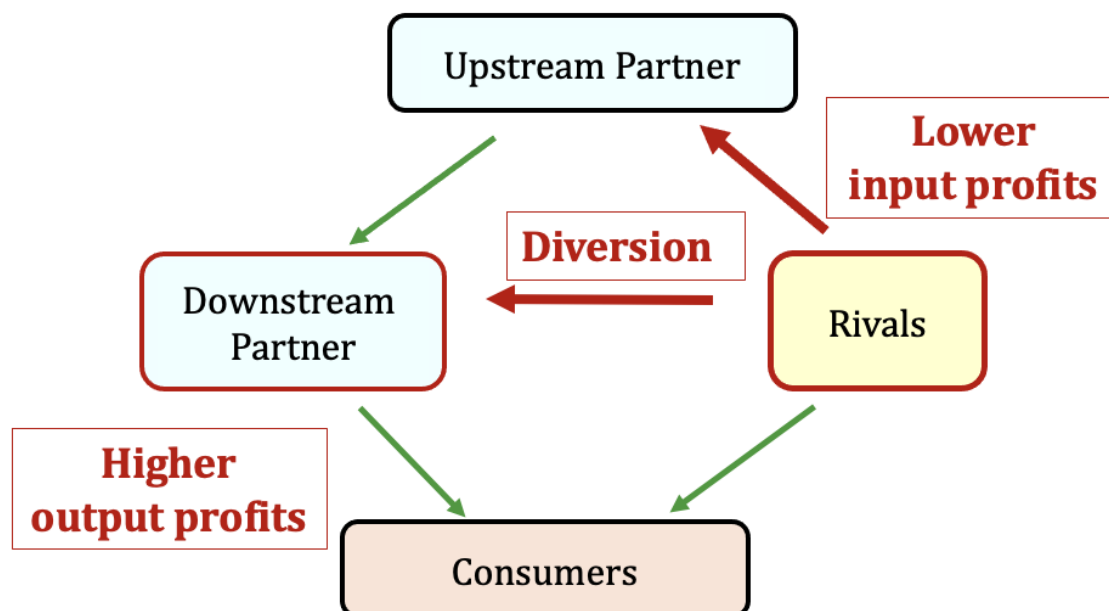
marginal cost is lower than it would be if the firm were not integrated, it would have the unilateral incentive to pass through some or all of the cost savings as a lower downstream price. In this way, downstream consumers benefit from vertical integration. The same potential benefit applies to integration of complementary products sellers, what economists have termed as solving the Cournot complements problem.⁹³

If the two firms are not commonly owned, the situation is somewhat more complicated. The sales contract charge would have to entail the combination of an input price equal to marginal cost plus a lump sum fee, what economists call a *two-part tariff*. In this way, the upstream firm can earn a profit even if the downstream firm purchases the efficient amount of the input at the price equal to marginal cost. The same effect can be accomplished by the upstream firm offering a volume discount schedule such that the price of the last ("marginal") units purchased is equal to the upstream firm's marginal cost. EDM can be partially achieved if the price of the marginal units purchased are reduced but not all the way down to marginal cost.

The incentive of a vertically integrated firm to reduce its downstream price is mitigated and might even be eliminated if the upstream partner's input continues to be sold to competitors. This situation occurs if the price reduction diverts sales from rivals that are purchasing the input from the upstream division at an input price above cost and contributing profits to the upstream partner. These upstream profits create an opportunity cost for the downstream partner's decision regarding whether and by how much to reduce the downstream price in response to the EDM.⁹⁴ Figure 10.10 illustrates this situation.

⁹³ Cournot first identified this issue in his classic book *RECHERCHES SUR LES PRINCIPES MATHÉMATIQUES DE LA THÉORIE DES RICHESSES (Ch. IX)* (1838).

⁹⁴ For details, see Steven C. Salop, *Invigorating Vertical Merger Enforcement*, 127 YALE L.J. 1962 (2018).

Figure 10.10 Opportunity costs of elimination of double marginalization pass-thru

This opportunity cost can be illustrated with a numerical example. Suppose that before a vertical merger, the downstream firm has a marginal production cost of \$1 plus a \$9 price for one unit of the input purchased from the upstream firm for a total marginal cost of \$10. Suppose that its profit-maximizing price is \$15 and it sells 10 units, for total profits of \$50 ($\5×10). Suppose that the upstream firm has marginal costs of \$1 per unit, so that it earns an \$8 margin ($\$9 - \1) on these 10 units, for a profit of \$80. In addition, suppose that the upstream firm sells eight units to rivals of the downstream firm and earns an additional \$64 ($\8×8).

Assume next that the two firms merge and the upstream partner reduces its input “transfer price” to the downstream partner down to its marginal cost of \$1. This move will not by itself change their total profits; it would only reallocate them between the two divisions of the integrated firm. The EDM would increase the downstream partner’s margin from \$5 ($\$15 - \10) to \$13 ($\$5 + \8), while the upstream partner’s margin on these sales would fall to \$0.

Given this set of conditions, assume next that the downstream partner responds to the EDM by reducing its price by (say) \$4 (half the input transfer price reduction). At this lower price, suppose that its sales increase by four units, three of which are diverted away from rivals who purchased its input from the upstream partner. In this scenario, the downstream partner’s profits rise by \$52 ($\13×4). However, the loss of those three units to rivals means that the upstream partner’s profits fall by \$24 ($\8×3). After subtracting this \$24, the net profit increase for the integrated firm is \$28, a reduction of almost half from the original \$52. The \$24 in lost upstream profit is the opportunity cost of lowering the price noted above. It would lead the firm to reduce the downstream price by less.

If the upstream firm were earning a sufficiently higher margin on sales to the rivals, the opportunity cost would be higher. In extreme cases, it could undo the incentive to reduce the downstream price at all. To grasp this point, suppose that all four units gained by the downstream partner were diverted

from rivals who purchased inputs from the upstream partner, and suppose that the upstream partner charged those rivals \$14 per unit, earning a margin of \$13. In this case, the opportunity cost would be \$52 ($\13×4), which is equal to the downstream partner's increased profits. The incentive to pass on the EDM with a downstream price reduction would thus be neutralized. Downstream consumers would gain no efficiency benefits from the EDM.

The incentive to pass on the cost reduction may also be mitigated or eliminated if the firm anticipates that its downstream price cut will cause competitors to cut their prices. If, for example, the downstream firms were tacitly coordinating, a newly integrated firm would not want to set off a disruptive, mutually harmful price war.

2. *Avoiding free-riding*

Free-riding involves obtaining a benefit from the costly activities of another market participant without sharing in the cost. It can occur in a variety of ways.

A classic example involves a new entrant with a competing product free-riding on the advertising of a competitor if retailers carry both brands and the competitor's advertising drives consumers to the retailer. The retailer might even free-ride on the brand reputation of the advertised product with bait-and-switch tactics, if selling the entrant's brand is more profitable. The competing manufacturer might deal with this issue by establishing an exclusivity agreement with the retailer.

The *Klors* case involved a discount retailer in the 1950s located across the street from Broadway Hale, a large retailer that provided floor space to exhibit color televisions, which were newfangled appliances at the time, and instruct customers on their use.⁹⁵ Klors did not provide these services, relying instead on consumers getting the information at Broadway Hale and then walking across the street to purchase from Klors at a lower price. In this sense, Klors was free-riding on Broadway Hale's costly activities. Broadway Hale made exclusivity agreements with several television manufacturers to eliminate this competition from Klors. The potential free-riding defense was not an issue in the actual case; Broadway Hale instead argued that it lacked market power. These exclusives were condemned under a per se rule against group boycotts.

The FTC's *Beltone* case did analyze the free-riding issue.⁹⁶ Beltone was a leading manufacturer of hearing aids. Its advertising included magazine inserts with postcards that interested consumers could fill out and send back to Beltone. Beltone then distributed these leads to its retailers, who then contacted the consumers. This practice created a potential free-riding issue if the retailer then sold the consumer a competing hearing aid. To prevent it, Beltone established exclusives with retailers. The FTC accepted the free-riding justification and did not find Beltone in violation of Section 5.⁹⁷

⁹⁵ *Klor's v. Broadway-Hale Stores*, 359 U.S. 207 (1959).

⁹⁶ *Beltone Elecs. Corp.*, 100 F.T.C. 68 (1982).

⁹⁷ For a detailed economic analysis, see Howard P. Marvel, *Exclusive Dealing*, 25 J.L. AND ECON. 1 (1982). Marvel was Beltone's economic expert. While at the FTC, I consulted with FTC Commissioner David Clanton on this matter.

Free-rider concerns can also lead to lower-quality products. If, for example, a software applications developer is not exclusive but intends to port its application to multiple platforms, it may sacrifice quality by programming for the lowest common denominator rather than using all the capabilities of the monopoly platform. Nintendo used this justification for its exclusive contracts with game developers for its original gaming platform.

Free-riding can also limit investment and information sharing that might otherwise improve product quality, provide ancillary services, or lower costs. For example, a firm may be reluctant to share proprietary information on product design or production to suppliers if those suppliers can then use the information to produce or improve rival products. Exclusives can avoid this free-riding and facilitate the parties' coordination of design and production in ways that create better products.

These claims can raise questions about where to draw the line between beneficial competition and harmful free-riding. Bold claims that exclusivity will lead to increased dealer loyalty may amount to nothing more than creation of barriers to entry that maintain monopoly prices rather than leading to product or service improvements that increase total market output and benefit consumers.

Microsoft defended its developer exclusives on the grounds that it would lead developers to focus on Microsoft's APIs. It apparently did not make a convincing argument that doing so would improve the quality of the software. As the court explained, "It wants to preserve its power in the operating system market. That is not an unlawful end, but neither is it a procompetitive justification for the specific means here in question, namely exclusive dealing contracts."⁹⁸

These examples also indicate that virtually any product imitation or competition can be viewed as free-riding. If, for example, an innovator produces the first or better mousetrap, which is then imitated by a new competitor, that competition could be characterized as free-riding. Indeed, if the invention of a mousetrap leads to the development of other novel uses of spring trap mechanisms unrelated to mice, those new products could also be characterized as free-riding. Thus, in a competitive market economy, the justification must be tempered.

3. Reducing risk and harmonizing incentives

Exclusives can potentially reduce risk and lower costs by giving a buyer a guaranteed source of needed input or input providers with a guaranteed outlet for their products. More generally, exclusivity can create trust and loyalty that can harmonize the participants' investment choices and incentives. This harmony would be strongest if the parties were commonly owned (vertically integrated). For this reason, the source of these efficiencies is sometimes abbreviated as vertical integration "by contract," though the harmonized incentives typically fall short of those of a vertically integrated firm.

To grasp the point, suppose that one railroad carries shipments from location A to location B and another railroad carries shipments from location B to location C. To better serve customers with shipments from location A to location C, the two railroads would have the incentive to jointly invest \$100 million in an improved terminal to interchange the products. The two railroads would need to

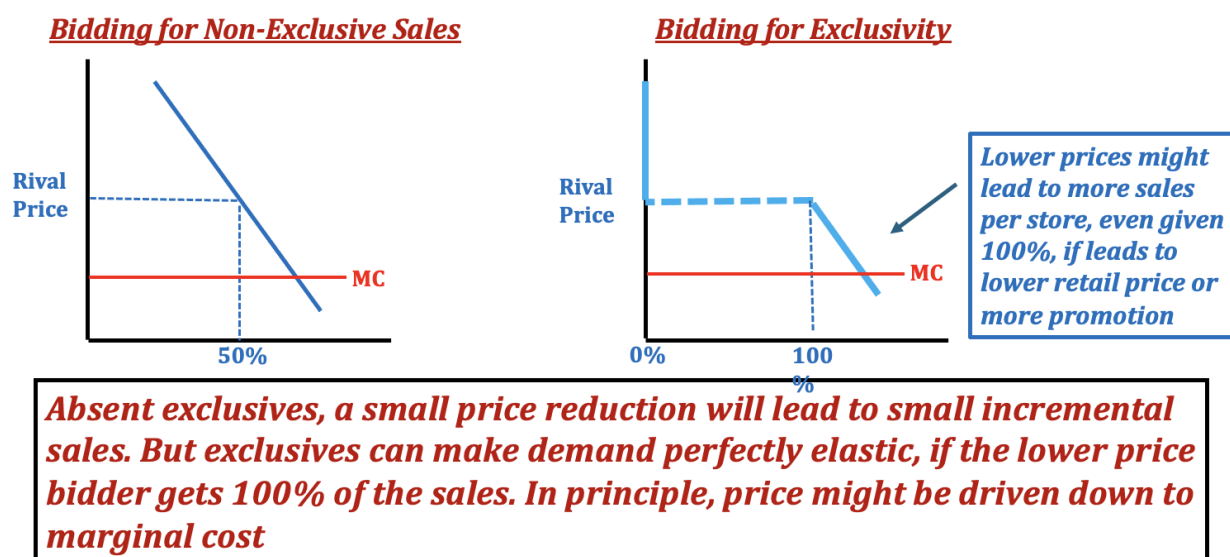
⁹⁸ *Microsoft* at 71.

share the costs, but they might disagree about the proper cost share. Each would have the incentive to claim that it would receive a smaller share of the benefits and should thus be permitted to pay less than half the cost. The result of these bargaining tactics may be a failure to reach agreement and build a terminal that has benefits of more than the \$100 million cost. This dissembling would not occur if the railroads were jointly owned by a unitary company.⁹⁹

4. Increasing competition with customer-driven exclusive dealing

An exclusive supplier arrangement might be a buyer-driven device to increase competition rather than a seller attempting to engage in anticompetitive customer foreclosure. To see why, consider the example of a fast-food restaurant deciding what beverage brands sold by Coca Cola, Pepsi Cola, and Dr. Pepper to offer. Suppose that consumers have heterogeneous preferences. If the retailer purchases and resells all differentiated competing brands nonexclusively, a small wholesale price reduction by one competitor will lead to only a small incremental sales volume. The impact of the downward-sloping demand leads to the standard market equilibrium with prices above costs, perhaps substantially above costs if the products are significantly differentiated, as indicated in the left-hand panel of Figure 10.11.

Figure 10.11 Impact of buyer-driven exclusives on price competition



By contrast, if the restaurant decides to offer only the brands of a single company, this exclusive dealing forces the competing suppliers into an all-or-nothing bidding situation for that restaurant. As illustrated in the right-hand panel of Figure 10.7, this move leads each seller's demand curve to become perfectly elastic at the price charged by the seller. In this configuration, if the seller sets its price slightly below the other, it will obtain 100 percent of the purchases. If it sets its price slightly above, it will obtain zero percent. Assuming no collusion, this demand structure incentivizes each seller to undercut the other step by step until the price is driven down to cost. Although some

⁹⁹ The conflict could occur in a single company if the leaders of the two railroad divisions are compensated on the basis of the profits of their divisions rather than the corporation as a whole.

consumers suffer some welfare loss from the lack of their preferred brand, the benefits of the increased price competition can be huge when the consumer preferences are highly differentiated.¹⁰⁰ Thus, it is no surprise that many fast-food chains and stadiums offer only the products of a single beverage company.¹⁰¹

5. Evaluating cognizability and the net effects on consumers

The existence of some procompetitive benefits does not automatically imply that the net effect of the vertical agreements and exclusionary conduct on consumers is procompetitive. Recall the general rule discussed above that to be treated as cognizable in antitrust law, the alleged benefit claims must generally be non-pretextual and supported by evidence. They also must lead to increased competition in the relevant market in which the alleged harm occurs.

Where valid cognizable procompetitive benefits are established, the court can then take the next step to determine if the cost savings or quality increases flowing from the exclusionary conduct leads to increased competition and consumer welfare overall. This comparison would involve analysis of the probability and magnitude of the opposing effects to evaluate whether the conduct is *unnecessarily restrictive* versus just *reasonably necessary*.¹⁰²

Another relevant economic issue is whether there is a less restrictive alternative that could lead to equally large benefits with reduced or no anticompetitive harms. Economic analysis might investigate whether the specific exclusionary conduct is *reasonably necessary*—that is, whether certain less restrictive conduct might lead to significantly less competitive harms at a small loss in benefits, such that consumer welfare would improve on balance. This more refined balancing analysis has met with skepticism as being difficult (or even impossible) in practice.¹⁰³

When exclusionary conduct by a monopolist raises the cost or reduces the quality of all its competitors, the likelihood that the anticompetitive effects dominate the benefits increases, because there is no other competition to protect consumers. In the monopoly maintenance context, the typical concern about harm to competition is not that prices will rise above the pre-conduct level but that

¹⁰⁰ The outcome will depend on the configuration of costs. If the firms have identical constant marginal costs and no fixed costs, the market equilibrium price will equal the marginal cost level. If one of the firms has lower marginal costs, the outcome will be a price slightly below the cost of the higher cost firm. If there are also fixed costs, it is possible that there may be no simple equilibrium.

¹⁰¹ See, for example, Benjamin Klein and Kevin M. Murphy, *Exclusive Dealing Intensifies Competition for Distribution*, 75 ANTITRUST L.J. 433 (2008); Richard M. Steuer, *Customer-Instigated Exclusive Dealing*, 68 ANTITRUST L.J. 239 (2000).

¹⁰² In principle, the underlying economic methodology would involve estimating the upward pricing pressure from the foreclosure and resulting power over price and comparing it with the downward pricing pressure from the competitive benefits. Where the conduct increases the quality of the products or service, the latter estimate would involve the quality-adjusted price.

¹⁰³ It has been quipped that this type of balancing is an overly difficult quest for a “nirvana” alternative. As the Court observed in *Trinko*, the Sherman Act “does not give judges *carte blanche* to insist that a monopolist alter its way of doing business whenever some other approach might yield greater competition.” *Trinko*, 540 U.S. at 415-416.

prices will fail to decline to a lower, more competitive level as a result of the exclusionary conduct.¹⁰⁴ As an economic matter, the proper antitrust benchmark is the price and market output that would occur but for the allegedly anticompetitive conduct.

When the foreclosure conduct involves some harm of competition that is said to be justified by procompetitive benefits, economic analysis and the consumer balancing legal standard demand that consumers benefit on balance from the restriction—that is, that the restriction does not raise quality-adjusted prices and reduce output.¹⁰⁵ As an economic matter, whether the exclusivity is reasonably necessary to achieve the claimed efficiency benefits could also be analyzed. Suppose, for example, that the dominant firm did not achieve any efficiency benefits from its exclusive dealing with suppliers but the exclusives raised rivals' costs and permitted the firm to enhance or maintain its monopoly power. In this case, the conduct would obviously not be reasonably necessary to achieve legitimate benefits.

Consider next the following scenarios. Suppose that a monopolist has exclusives with significantly more distributors or other input suppliers than it needs to achieve efficiency benefits. Suppose its exclusives with suppliers account for 60 percent of input sales and that the same (or virtually all) cost and quality benefits could be achieved from exclusives with just 30 percent of suppliers, leaving competition more intense, quality-adjusted prices lower, and consumers' welfare higher. In this scenario, the "less restrictive alternative" of only 30 percent exclusivity is clearly a superior competitive outcome. Where such an alternative is practical, it makes economic sense for antitrust to prohibit the more restrictive conduct. Indeed, in the original hypothetical, where there were no benefits, prohibition of all exclusivity could be termed as a less restrictive alternative. Whether this result is called *unnecessarily restrictive* or *not reasonably necessary* seems like a semantic difference that lacks an economic distinction.¹⁰⁶

Consider next a scenario in which a lower level of exclusivity would lead to most but not all of the efficiency benefits but to substantially more competition and higher consumer welfare—what might be termed a reasonably less restrictive alternative. This type of "unreasonableness" (or "unnecessarily restrictive") standard, which balances incremental benefits and harms, is used in tort law to define whether a defendant's conduct was negligent. It could also be applied to antitrust law instead of limiting the analysis only to dominant less restrictive alternatives.¹⁰⁷ As a purely economic matter, the antitrust goal is satisfied by holding the defendant liable when a practical less restrictive

¹⁰⁴ See, for example, Thomas G. Krattenmaker and Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209, 246–47 (1986); Steven C. Salop, *The First Principles Approach to Antitrust, Kodak, and Antitrust at the Millennium*, 68 ANTITRUST L.J. 187, 197 (2000). In that there are degrees of monopoly power, exclusionary conduct could lead to the enhancement as well as the maintenance of monopoly power.

¹⁰⁵ This total market output may not be appropriate if the effects benefit some consumers but harm others, as discussed below.

¹⁰⁶ *NCAA v. Alston (Alston)*, 594 U.S. 69 (2021). The opinion quotes the Areeda and Hovenkamp treatise in noting that a "legitimate objective that is not promoted by the challenged restraint can be equally served by simply abandoning the restraint, which is surely a less restrictive alternative" at 100, quoting 7 Areeda and Hovenkamp ¶1505, p. 428

¹⁰⁷ *United States v. Carroll Towing Co.*, 159 F.2d 169 (2nd Cir.1947).

alternative leads to substantially greater competition that outweighs the efficiency loss such that consumer welfare would rise. However, it is not clear how far the courts would be willing to take this analysis.¹⁰⁸

The analysis of reasonably less restrictive alternatives is more complex. It requires a detailed analysis of incremental competitive benefits and harms that might challenge a court. Certain alternatives might also be criticized as impractical for firms to negotiate or a court to evaluate. Suppose, for example, that the leading firms in a market operate a joint venture factory that produces and sells an input to the owners at a price equal to 10 percent above cost. Suppose that it refuses to sell the input to non-owners but insists on a price 50 percent above the venture's marginal cost. The joint venture might claim that a 10 percent margin would not have been sufficient to earn a reasonable return on its investment. Or it might argue that if a required 10 percent price-cost margin for sales to outsiders had been anticipated in advance, no producer would have been willing to invest into ownership of the venture, preferring instead just to purchase as an outsider.¹⁰⁹

If the venture's product were also sold to noncompetitors in a different industry, a more practical less restrictive alternative might be to demand that the competitors have access to the same price charged to noncompetitors. In this case, the venture might argue that doing so would lead to their charging higher prices to noncompetitors. A court might reject this rebuttal, because it involves effects in a separate market, not the market at issue in the plaintiff's antitrust case.

6. Applying the output test

Cartels increase prices and reduce output. This mantra leads to the common prescription that restraints are procompetitive if they increase output and anticompetitive if they reduce output. This output test raises several economic issues.¹¹⁰

First, in making this determination, it is important that the price and output effects be properly characterized. The output effect benefits consumers only if total market output, not the monopolist's output or market share, is increased. If, for example, the conduct increases the monopolist's output by 100 units but reduces the output of competitors by 150 units, total market output will fall by 50 units, which will cause prices to rise.

¹⁰⁸ *NCAA v. Alston* (*Alston*), 594 U.S. 69 (2021). The *Alston* decision included skeptical statements, including the following: "Courts should not second-guess 'degrees of reasonable necessity' so that 'the lawfulness of conduct turn[s] upon judgments of degrees of efficiency.' ... That would be a recipe for disaster, for a 'skilled lawyer' will have little difficulty imagining possible less restrictive alternatives to most joint arrangements." 11 Areeda and Hovenkamp ¶1913b, p. 398 (2018). Judicial acceptance of such imaginings would risk interfering "with the legitimate objectives at issue" without "adding that much to competition." 7 *id.*, ¶1505b, at 435–436." *Alston* at 98. The Court also stated: "To know that the Sherman Act prohibits only *unreasonable* restraints of trade is thus to know that attempts to " '[m]ete[r]' small deviations is not an appropriate antitrust function.'" Herbert Hovenkamp, *Antitrust Balancing*, 12 N. Y. U. J. L. AND BUS. 369, 377 (2016)." *Alston* at 99.

¹⁰⁹ The 10 percent requirement might well be impractical, as discussed in Chapter 3. The venture instead could set a 50 percent price cost margin for sales to owners and then return the profits to them as dividends.

¹¹⁰ See, for example, Herbert Hovenkamp, *The Slogans and Goals of Antitrust Law*, 25 NYU J. LEG. PUB. POL. 705 (2023).

Second, economic analysis shows that market output is not always a reliable proxy for consumer welfare, because the consumers are heterogenous. This heterogeneity means that a change in market conditions—or market conduct—can benefit some consumers while harming others.¹¹¹ It can also lead to a situation in which market output rises but consumers in the relevant market are harmed overall.

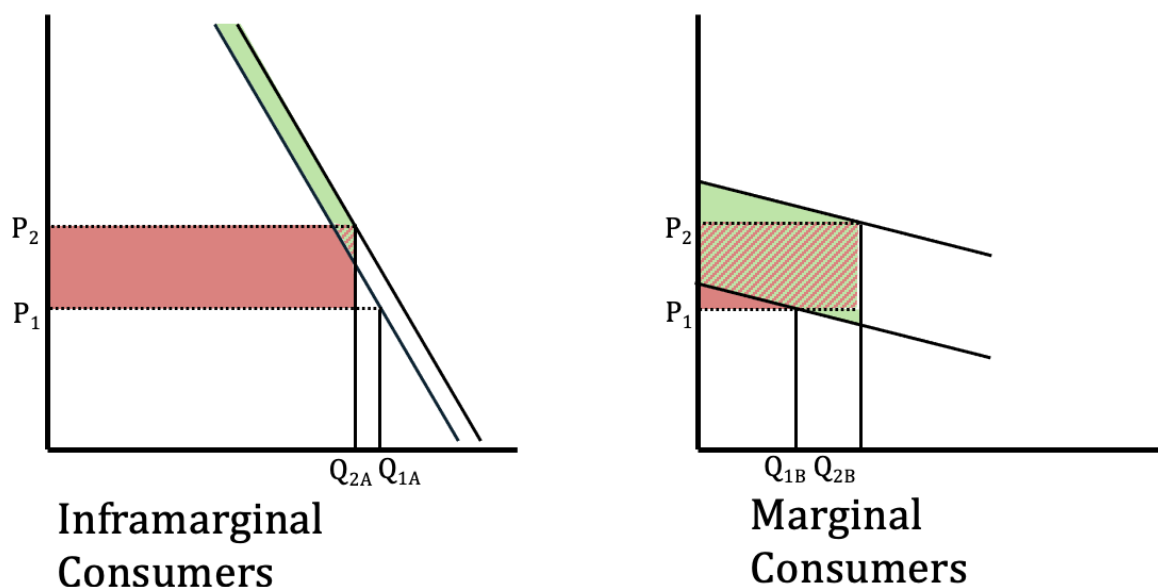
Consider a restraint such as resale price maintenance, which provides services that some consumers value and others do not. Consumers that highly value the services may gain more value than the retail price increase and increase their purchases as a result. Consumers who place less or no value on the services may be harmed and decrease their purchases, because the retail price increase exceeds the incremental value of the new or additional services. Whether total output is more likely to rise than fall is impossible to know in advance.

But even if output rises, consumers may not benefit overall. The increase in market output arising from a restraint flows would flow from benefits accruing to the “marginal” consumers—that is, consumers who would not have purchased the services absent the restraint or are now willing to purchase more units. There is no guarantee that the consumer surplus benefits they gain outweigh the consumer surplus losses suffered by the “inframarginal” consumers, who were purchasing the product absent the restraint.

This scenario can be illustrated by the following purposely extreme hypothetical example. Suppose that a monopolist of a nondurable device replaces its old product with a new version that has some additional features that are valued by the consumers who are not purchasing it but that experienced purchasers realize are not worth much. Suppose, for example, that a new injector device for a GLP-1 drug has a needle mechanism that slightly reduces pain for the small number of potential users with very sensitive nerve endings. Suppose that this new feature is substantially valued by consumers with very sensitive nerve endings who were just on the margin for the old version but did not purchase it. The demand curve for these consumers would shift up substantially. But suppose the new version is hardly (if at all) valued by the inframarginal consumers that were purchasing the old version, so their demand curve barely shifts at all. Because the features are highly valued by the marginal consumers, their welfare and total purchases rise, despite a possibly significant price increase. But since the features are not valued much by the inframarginal consumers, they are harmed by the price increase.

Figure 10.12 illustrates these conflicting effects and the negative net impact on consumer surplus, despite the increase in total market output. The pain-tolerant, mostly inframarginal consumers pictured in the left-hand panel place little incremental value on the improved product, as illustrated by the small upward shift in their demand curve. Because the price rises by significantly more than the increase in value, their purchases fall. Their consumer surplus also falls, as indicated by the substantial difference between the red increase in the cost and the green increase in value. (The brown triangle represents the area where the value and cost increases are equal).

¹¹¹ See, for example, Lawrence J. White, *Resale Price Maintenance and the Problem of Marginal and Inframarginal Customers*, III CONTEMPORARY POLICY ISSUES 17 (1985); William S. Comanor, *Vertical Price Fixing, Vertical Market Restrictions, and the New Antitrust Policy*, 98 HARV. L. REV. 983 (1985).

Figure 10.12 Higher market output but lower consumer welfare

By contrast, the pain-sensitive, mostly marginal consumers pictured in the right-hand panel place an incremental value on the new product that exceeds the price increase, causing them to increase their purchases. In fact, the increase in their purchases exceeds the decrease in purchases by the inframarginal consumers. Their consumer surplus rises. (The green area is larger than the red area; the brown area shows where the value and cost increases are equal.) The reduction in the consumer surplus of the pain-intolerant, mostly inframarginal consumers exceeds the increase in the consumer surplus of the pain-sensitive, mostly marginal consumers.

This extreme example highlights the conflicting effects in a very transparent way. But the result that total output and/or total consumer surplus fall does not require extreme assumptions.

In this example, the restraint was resale price maintenance, which incentivized the increase in services. A restraint more relevant to monopolization analysis would be a product improvement accompanied by exclusive contracts with input suppliers that raise rivals' costs. The restraint might also involve a dominant firm acquiring a relatively high-cost entrant and incorporating the entrant's patented feature. The acquisition would eliminate entry and so lead to a price increase that harms the consumers who do not value the new feature.

V. The "No Economic Sense" Test

The "no economic sense" (NES) test flows from the idea in predatory pricing that a firm would lack an incentive to engage in exclusionary conduct that involves a sacrifice in profits unless the conduct would lead to higher prices and profits, either in the future or at the same time. This test is difficult to implement, because it is not clear how to measure the defendant's hypothetical profits when it engages in the conduct but does not gain incremental monopoly power or maintain its pre-existing monopoly power. This difficulty can lead to an erroneous finding.

The test has been discussed as possible evidence that the conduct entails anticompetitive intent and/or is likely to have anticompetitive effects. It may be a useful “one-sided” test for inferring (but not for rejecting) a finding of anticompetitive intent. However, it has also been proposed as a required element of the plaintiff’s case to show that the conduct would have been unprofitable absent the monopoly power effect. This test is error-prone, because the conduct would be carried out and harm consumers as long as it increases profits when it does achieve, enhance, or maintain monopoly power and profits. If the courts wish to raise the plaintiffs’ burden in monopolization cases, a better approach would be to require the plaintiff to show disproportionate harm (relative to benefits) rather than apply the biased and error-prone NES test.¹¹²

The following sections explain and analyze the NES and discuss its use in then-Judge Gorsuch’s opinion in *Novell v. Microsoft*.¹¹³

A. The NES Test as Supportive Evidence of Anticompetitive Intent

Suppose that evidence shows that a firm’s exclusionary conduct would be unprofitable unless it increased the firm’s market share and led to higher prices. If the firm is a rational profit-maximizing entity and the conduct was not adopted in error, that evidence would suggest that the purpose of the conduct is to achieve or enhance its market power or maintain its monopoly power. In that evidence of intent is useful for inferring likely effects, the evidence also supports allegations of anticompetitive effects. Thus, evidence showing that the defendant’s conduct “fails” the NES test—in the sense that the conduct would be unprofitable but-for the anticompetitive harms—would support the plaintiff’s case. It might not be sufficient by itself, because the exclusionary conduct may have been mistakenly adopted or because market conditions prevented any anticompetitive effects even if they had been the goal of the action.

It might be argued that the NES test is less error-prone evidence of anticompetitive intent than reliance on ambiguous documents or evidence that simply uses “locker room” language such as “let’s kill our competitors.” However, documentary evidence can be reliable. Some documents may clearly set out the anticompetitive purpose of the strategy. In *McWane*, for example, an executive said that his “chief concern” with Star becoming a domestic fittings supplier was that “the domestic market [might get] creamed from a pricing standpoint” and identified the biggest risk factor of Star’s entry as the “erosion of domestic pricing if Star emerged as a legitimate competitor.” In a document encouraging the adoption of an exclusive dealing arrangement, he stated that not doing so would allow Star to “drive profitability out of our business.” In an email, he wrote, “We need to make sure that they don’t reach any critical mass that will allow them to continue to invest and receive a profitable return.”¹¹⁴

¹¹² Gregory J. Werden, *Identifying Exclusionary Conduct Under Section 2: The “No Economic Sense” Test*, 73 ANTITRUST L.J. 413 (2006); A. Douglas Melamed, *Exclusive Dealing Agreements and Other Exclusionary Conduct—Are There Unifying Principles?*, 73 ANTITRUST L.J. 435 (2006). For explication of the flaws in this standard, see Steven C. Salop, *Exclusionary Conduct, Effect on Consumers, and the Flawed Profit-Sacrifice Standard*.

¹¹³ *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064 (10th Cir. 2013).

¹¹⁴ *McWane*, 783 F.3d at 841-42.

The NES test can also be complex to administer. It requires that the exclusionary conduct be precisely defined. Suppose, for example, the defendant obtains exclusive distribution from three key distributors. Acquiring three rather than zero exclusives might pass the NES test. But acquiring three rather than one or two might fail it.

As another example, suppose that a dominant firm with monopoly power engages in exclusionary conduct that raises the costs of rivals and allows the dominant firm to increase its market share and monopoly profits but does not allow it to raise price. A determination must be made regarding whether this conduct passes the NES test (because there would be no price increase) or fails it (because the exclusionary conduct increases monopoly profits).

B. The NES Test as Required Evidence of Anticompetitive Intent and Effects

Some commentators have gone farther than the one-sided test for inferring (but not rejecting) anticompetitive purpose. They have suggested that finding the defendant liable should require evidence that the conduct would be unprofitable but for its effect on increasing market power and causing anticompetitive effects. This rule amounts to application of the generalized predation paradigm discussed in Chapter 7. Rather than simply treating the NES as possibly supportive evidence for the plaintiff, the NES test might be a required element of the plaintiff's case—that is, a court might treat evidence that the exclusionary conduct “passes” the NES test as dispositive exculpatory evidence for the defendant.¹¹⁵

Economic analysis suggests that this usage would lead to substantial false negatives. Passing the NES test does not establish a lack of anticompetitive purpose; it establishes only that reducing competition was not the sole purpose. It could be one of the purposes of the conduct and even the primary purpose.

Suppose, for example, that a dominant firm with monopoly power makes exclusive agreements with critical input suppliers that do not reduce its costs or improve its product, but the conduct raises rivals' costs, allowing the dominant firm to raise its price by \$10. Suppose it pays each input supplier \$3 more per unit in exchange for the exclusive. This conduct would fail the NES test. Moreover, as there are no cost savings from the exclusives, one could conclude that the sole purpose of the conduct is to exclude competitors and increase market power.

Consider next a somewhat less extreme example. Suppose that the exclusive agreements permit the dominant firm to reduce its costs by \$2 per unit but allow it to raise its unit price by \$10. As above, suppose the firm pays each input supplier \$3 more per unit in exchange for the exclusive. This conduct would also fail the NES test, because the \$2 per unit cost saving is less than the \$3 per unit payment. If the dominant firm could not raise its price at all, the exclusives would not make economic sense. In this example, even though one cannot conclude that the firm's sole purpose was to exclude, the conduct is clearly anticompetitive. The conduct here has multiple purposes, but a court might characterize its primary purpose as exclusion.

¹¹⁵ See, for example, Gregory J. Werden, *Identifying Exclusionary Conduct Under Section 2: The “No Economic Sense” Test*, 73 ANTITRUST L.J. 413 (2006).

These examples illustrate the validity of the rejection of the standard in *Alcoa*. As stated there, “Only in case we interpret ‘exclusion’ as limited to maneuvers not honestly industrial, but actuated solely by a desire to prevent competition, can such a course, indefatigably pursued, be deemed not ‘exclusionary.’ So to limit it would in our judgment emasculate the Act.”¹¹⁶

Consider next an even less extreme example. Suppose that the exclusive agreements permit the dominant firm to reduce its costs by \$5 per unit but allow it to raise its unit price by \$10. As above, suppose it pays each input supplier \$3 more per unit in exchange for the exclusive. This conduct would pass the NES test, because the \$5 per unit cost saving is larger than the \$3 per unit payment. Even if the firm could not raise prices at all, the exclusives would be profitable and thus make economic sense under the NES test. Despite passing the NES test, the conduct is still anticompetitive, however. It has multiple purposes, one of which is to raise rivals’ costs and increase its monopoly power. Permitting this conduct because another purpose is to reduce costs would lead to a false positive, because the conduct has clear anticompetitive effects.

Even if the alleged exclusionary conduct fails the NES test, the plaintiff must still prove that the conduct has anticompetitive effects. The NES test is a second hurdle and is both biased and error-prone. If courts wish to make it more difficult for plaintiffs to prevail in Section 2 cases because they place more weight on avoiding false positives than false negatives, decision theory would counsel that a better approach would be to address that issue more directly. One way to do so would be to require plaintiffs to prove that the competitive harms from the conduct are disproportionate to the benefits, as proposed by Areeda and Turner.¹¹⁷

C. Case Law Examples of the NES

1. Conwood v. U.S. Tobacco

A hypothetical based on the *Conwood Co. v. U.S. Tobacco Co.* provides a different type of example of how conduct that clearly harms competition and consumer welfare nonetheless can pass the NES test. In this case, the exclusionary conduct involved U.S. Tobacco employees or contractors ripping out and destroying the retail store displays used by its small competitors.¹¹⁸ Implementing the NES test would involve determining whether this exclusionary conduct would have been profitable in a hypothetical but-for world in which U.S. Tobacco did not gain any incremental monopoly power.¹¹⁹

This but-for world could be defined as one in which prices did not increase or failed to decrease. In this world, the resulting increase in U.S. Tobacco’s market share would have been profitable, given the low cost of ripping out the displays. The conduct would pass the NES test and would not be found to be anticompetitive.

In the actual case, the conduct of ripping out the displays in *Conwood* was treated as naked—that is, devoid of benefits. It would therefore not have been necessary to apply the NES test.

¹¹⁶ *Alcoa*, 148 F.2d at 431.

¹¹⁷ Phillip E. Areeda and Herbert Hovenkamp, *Antitrust Law* ¶ 651a, at 72 (2d ed. 2002).

¹¹⁸ 290 F.3d 768, 788 (6th Cir. 2002) (destroying competitors’ display cases).

¹¹⁹ *Conwood Co., L.P. v. U.S. Tobacco Co.*, 290 F.3d 768, 776–79 (6th Cir. 2002).

Suppose, however, that the defendant would gain cost savings after the exclusion from scale economies, such as reducing logistical or marginal production costs. Those cost savings could easily be sufficient to offset the low cost of paying the employees ripping out the displays to make the exclusionary strategy profitable at current prices yet likely insufficient to offset the loss in competition and consumer welfare from raising the competitors' cost, let alone causing them to exit. In defending the NES test, Gregory Werden appears to suggest that the increased profits created by the increased sales and scale economies should not count, because ripping out the displays was anticompetitive.¹²⁰

An analogous problematical result could occur in less egregious situations. Suppose, for example, that the dominant firm has marginal costs of \$5, initially charges a price of \$6, and sells 70 units, which corresponds to a market share of 70 percent. Suppose that by signing exclusives, it can use a new technology that has marginal costs of only \$3 on all units, but only if it can sell at least 80 units, and annual fixed cost are \$60. If it reduces its price by \$1 and sells 80 units at \$5 per units, its profits will rise from \$70 (\$1/unit margin times 70 units) to \$100 (\$2/unit times 80 units minus the \$60 annual cost of the new technology). These exclusive agreements benefit consumers, who will be charged \$1 per unit less on 80 of the 100 units sold in the market. But if the dominant firm's profits from the lower unit costs—which flow from the larger scale, which itself is engendered by the exclusion—are not counted, per Werden's rule, the new technology will fail the NES test. This failure is a false negative outcome. In fact, even if there were no exclusives involved but just a technology choice, the defendant would still fail the NES test.

2. *Novell v. Microsoft*

Aspen Skiing uses language that is consistent with the NES test as well as anticompetitive effects leading to consumer welfare harm. It notes that "the evidence supports an inference that Ski Co. was not motivated by efficiency concerns and that it was willing to sacrifice short-run benefits and consumer goodwill in exchange for a perceived long-run impact on its smaller rival." However, the Court also found evidence of consumer harm and appeared to reject Ski Co's justifications entirely. Thus, the NES test was not a necessary component of the liability. The Court did not suggest that it was intended to replace the consumer welfare balancing analysis if the test were passed (instead of failing it, as it did).¹²¹

In *Novell v. Microsoft*, then-Judge Gorsuch applied a form of the NES test based on his reading of *Aspen Skiing*.¹²² At one point, his opinion erroneously equated "profit sacrifice" with a sole purpose to exclude, not the usual but-for market power version of the NES test. As Judge Gorsuch stated, "The point of the profit sacrifice test is to isolate conduct that has no possible efficiency justification." At another point, he applied the but-for version, albeit in a seemingly inappropriate way. Commenting on and quoting from a Microsoft email, he stated:¹²³

¹²⁰ Gregory J. Werden, *Identifying Exclusionary Conduct Under Section 2: The "No Economic Sense" Test*, 73 ANTITRUST L.J. 413 (2006).

¹²¹ *Aspen Skiing v. Aspen Highlands Skiing*, 472 U.S. 585 (1985).

¹²² *Novell v. Microsoft*, 731 F.3d 1064 (10th Cir. 2013).

¹²³ *Id.* at 1077.

[A] desire to keep NSEs [certain useful APIs] from rivals “until we have a way to do a high level of integration [that] will be harder for the likes of Notes, WordPerfect to achieve, and which will give Office a real advantage.” This may suggest a hard-nosed intent to undo rivals in the applications field, to assure Microsoft a leg up, but it doesn’t suggest Microsoft intended to forgo profits. More nearly, it suggests just the opposite—a wish to increase the firm’s immediate profits—and in this way it tends to show that Microsoft’s conduct was hardly irrational but for its exclusionary tendencies.¹²⁴

This conclusion is inappropriate as an economic matter: The desire to delay WordPerfect until Office could gain advantages to dominate the market indicates a purpose to gain market power.

Judge Gorsuch framed his generalized predation analysis in terms of the “war of attrition” version of predatory pricing. As he explained:

Much as in predatory pricing doctrine, the animating concern here is that a dominant firm may be able to forgo short-term profits longer than smaller rivals, and it may have an incentive to take on those losses to drive rivals from the market or to discipline them for having the audacity to try competition on the merits rather than abide as price-takers under the monopolist’s umbrella.¹²⁵

Judge Gorsuch also appeared to reject liability if there would be “simultaneous recoupment” in a related line of business. He explained his reasoning as follows:

Novell’s theory. . . rests on the view that Microsoft’s withdrawal of NSEs allowed it to win significant profits in the sale of office suite applications—and to do so immediately. . . . Microsoft is an integrated firm with the goal of maximizing overall profits. And viewed overall, there’s no evidence that Microsoft took any course other than seeking to maximize the company’s net profits in the short as well as long-term.¹²⁶

As a matter of economic reasoning, simultaneous recoupment in an exclusion case does not mean that the conduct is not anticompetitive.

¹²⁴ *Id.* at 1078.

¹²⁵ *Id.* at 1075.

¹²⁶ *Id.* at 1077.

Annex 10A Checklist of Structural Indicia of Successful Anticompetitive Exclusionary Conduct

The appendix provides a checklist that identifies three interrelated categories and the multiple factors in each that are conducive to profitable anticompetitive exclusionary conduct. These factors are provided to guide the economic analysis. It is not necessary that all of them be satisfied for specific exclusionary conduct to be profitable or anticompetitive.

- Structure and importance of the upstream input market: The greater the increase in rivals' costs from loss of access to an input, the more vulnerable rivals will be, making profitable anticompetitive exclusion more likely. The following factors are relevant to this determination.
- Critical inputs: Exclusionary conduct that raises rivals' cost of critical inputs or (forecloses access to them) will increase the costs of the targeted rivals by more. An input is more critical if there no close substitutes can be accessed without bearing a large cost penalty.
- Input market share: If the excluding firm is vertically integrated into the market for the critical input and has a dominant or substantial share of that market, it will have a direct mechanism for raising the costs of downstream rivals by raising the price or foreclosing access to the input. In network markets, the input may include access to the network controlled by the putative excluding firm.
- Input market concentration: Higher concentration suggests that eliminating access to a subset of the input producers will tend to lead the remaining producers to increase their prices, either through unilateral or coordinated conduct.
- Maverick input supplier: If one of the input suppliers has been a maverick that has prevented coordination in the upstream market, making an exclusive agreement with that supplier can relax its constraining influence on coordination while protecting the excluding firm from cost increases.
- Barriers to entry: if there are barriers to entry into the input market, the targeted rivals will be unable to turn to new entrants to supply their needs.
- Structure of the downstream relevant output market: The greater the ability of the excluding firm to achieve incremental market power from the exclusion, the more likely profitable exclusion is. The following factors are relevant to this determination.
- Market share of the excluding firm: A larger market share generally implies that the firm will recapture more sales diverted from targeted rivals whose costs are increased and that will earn more profits from a given increase in output prices. If the exclusion affects all of its competitors, it would recapture all the customers that do not substitute for products outside the market. The larger market share also tends to give the firm greater power to raise prices.
- Closeness of competition with targeted rivals: If rivals whose costs are raised are closer substitutes for the excluding firm, the exclusion will lead to a larger share of diverted sales being recaptured by the excluding firm.

- Economies of scale and rivals' minimum viable scale: The greater the minimum viable scale for the targeted rivals relative to total market size, the more likely it is that the exclusionary conduct will lead to exit or marginalization of existing rivals or entry deterrence.
- Vertical integration: Rivals that are vertically integrated into the input market will not suffer cost increases and thus will constrain the profitability of the exclusionary conduct, implying that lack of vertical integration makes profitable exclusionary conduct more likely. If the targeted rivals cannot efficiently vertically integrate in response to the exclusion, the exclusionary conduct is more likely to be successful.
- Market concentration and coordination factors: If there are firms that are not targeted by the exclusion (e.g., because they are vertically integrated or utilize different inputs), exclusion is more likely to be profitable if there is a greater ability and incentive to coordinate with the excluding firm. Numerous factors are relevant here, including market concentration, product homogeneity, and open information.
- Maverick targeted rival: If a targeted rival is a maverick competitor that is disrupting coordination, raising its costs can facilitate improved coordination, which would make the exclusionary conduct more profitable.
- Barriers to entry: The exclusionary conduct may also raise entry barriers into the downstream market by potential entrants dependent on the input. (If there are other potential entrants that are not dependent on the input, exclusion is more likely profitable if those firms face other barriers to entry.)
- Market elasticity: The less elastic is demand (because there are fewer close substitutes for consumers), the more the output price will rise following an increase in rivals' costs.
- Cost of exclusion: If the exclusionary conduct raises the costs of the excluding firm, it is less likely to be profitable. The following factors are relevant to this determination.
- Targeted rivals' counterstrategy ability: The cost of exclusion is lower if the targeted rival(s) lack the ability to counter the exclusion, such as: when the exclusionary conduct is completed even before the entry of the targeted rival(s); when the excluding firm can coerce the input suppliers, for example, because they have a broader relationship that the input suppliers rely on.
- Targeted rivals' counterstrategy incentives: As a targeted rival may attempt to prevent its exclusion by contracting with certain input suppliers to forgo exclusion, the excluding firm will need to outbid the targeted rival. The excluding firm's cost of exclusion will be lower if those input producers earn only very low profits on their sales to targeted rivals. The cost will also be lower if a targeted rival's incentive to pay input suppliers to forgo exclusion is low, a condition that will occur if the rival is a less efficient competitor or if the rival needs multiple input suppliers (e.g., distributors) in order to be viable.
- Exclusion cost-benefit ratio: The relevant cost is gauged relative to the benefits of exclusion, implying that it is lower when the excluding firm's incremental profits from exclusion are

higher, a condition that obtains when the firm will achieve or maintain substantial market power from exclusion.