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Foreclosure is a prominent concept in the antitrust laws and across economics. In the world of exclusionary conduct—whether an American-style monopolization claim or the European abuse-of-dominance variant—foreclosure is *the* concept. The only other arguable contender is establishing monopoly power or dominance itself. But the debates over proving monopoly power or dominance can at least enjoy well-known definitions, well-understood methods, and a common language. Foreclosure, despite its prominence in antitrust law and economics—including taking center stage in the Department of Justice's complaint against Google—is still a relatively unsettled area of the law. Foreclosure does not enjoy a commonly understood definition. There is no agreed upon method for measuring it. And there is no well-settled threshold at which antitrust concerns are triggered. And to the extent that antitrust law and industrial organization economics mean different things when they discuss foreclosure, there has been little success in marrying the concepts. In short, foreclosure analysis is a mess.

As a matter of industrial organization economics, it is well understood that foreclosure relates to raising rival's costs as a mechanism for a firm to maintain or acquire market power. Jean Tirole's "*Primer on Foreclosure*," defines the concept as when "a dominant firm's denial of proper access to an essential good it produces, with the intent of extending monopoly power from that segment of the market (the bottleneck segment) to an adjacent segment (the potentially competitive segment)." Left open are questions about what sort of access is "proper"? As a matter of economics, foreclosure is often simply described as the amount of an input covered by a dominant firm's contract, and often ignores whether the resulting contract was the outcome of an open and competitive process.

As a legal concept, foreclosure is incoherent at best. In part this is because the landmark Supreme Court cases on the issue—cases like *Tampa Electric*[1] and *Standard Stations*[2]—predate the economic revolution in antitrust. The modern doctrine traces its origins to *Standard Stations*, where the Court made "foreclosure[] in a substantial share" of the market the test, without really elaborating further in any meaningful capacity.[3] The operative legal language is confined to a single paragraph, which first notes that there was widespread adoption of the practice in the industry and that there was no evidence of competitive effects. The Court then proceeded to affirm the requirement contract at issue was illegal. The Court says little more beyond holding that the "substantially lessen competition or tend to create a monopoly" language of the Clayton Act is satisfied with "proof that competition has been foreclosed in a substantial share

[1] Tampa Electric Co. v. Nashville Coal Co., 365 U.S. 320 (1961).

[2] Standard Oil Co. of California v. United States (*Standard Stations*), 337 U.S. 293 (1949).

[3] *See id.* at 314.

of the line of commerce affected."[4] That remains the test to this day; a showing of "substantial foreclosure" is required for any antitrust liability in these cases.

But it is not until *Tampa Electric*, twelve years later, that the Court fills in the gaps a little, when it tried to clarify what "substantial foreclosure" actually means; however, the Court's substantive foreclosure analysis remained terse, taking up a slightly beefier single paragraph.[5] These two cases have been read to stand for what one of us have described as the "naïve foreclosure approach"—one that looks to the share of outlets foreclosed as the primary determinant of anticompetitive effect, as an outcome-based approach—with the ends either condemning or justifying the means. This measure of foreclosure is fundamentally "naïve" because it is disconnected entirely from the modern theory of competitive harm in exclusion cases: Conduct that deprives rivals of the *opportunity to compete* for distribution, sufficient to achieve minimum efficient scale. The naïve measure spits out the same result whether the dominant firm would enjoy the same share of distribution with or without the contracts at issue. It does not even attempt to measure the *impact* of any allegedly unlawful contracts, implicitly assuming that the dominant firm would get zero distribution in their absence. It simply presumes that high foreclosure shares are correlated with the ability to exclude rivals.

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[4] *Id.* ("We conclude, therefore, that the ["substantially lessen competition or tend to create a monopoly"] qualifying clause of [Section 3 of the Clayton Act] is satisfied by proof that competition has been foreclosed in a substantial share of the line of commerce affected. It cannot be gainsaid that observance by a dealer of his requirements contract with Standard does effectively foreclose whatever opportunity there might be for competing suppliers to attract his patronage, and it is clear that the affected proportion of retail sales of petroleum products is substantial. In view of the widespread adoption of such contracts by Standard's competitors and the availability of alternative ways of obtaining an assured market, evidence that competitive activity has not actually declined is inconclusive. Standard's use of the contracts creates just such a potential clog on competition as it was the purpose of [Section 3] to remove wherever, were it to become actual, it would impede a substantial amount of competitive activity.").

[5] *See* Tampa Elec. Co. v. Nashville Coal Co., 365 U.S. at 334–35 ("The remaining determination, therefore, is whether the pre-emption of competition to the extent of the tonnage involved tends to substantially foreclose competition in the relevant coal market. We think not. . . . There is here neither a seller with a dominant position in the market as in Standard Fashions; nor myriad outlets with substantial sales volume, coupled with an industry-wide practice of relying upon exclusive contracts, as in Standard Oil; nor a plainly restrictive tying arrangement as in International Salt. On the contrary, we seem to have only that type of contract which may well be of economic advantage to buyers as well as to sellers. In the case of the buyer it may assure supply, while on the part of the seller it may make possible the substantial reduction of selling expenses, give protection against price fluctuations, and offer the possibility of a predictable market. The 20-year period of the contract is singled out as the principal vice, but at least in the case of public utilities the assurance of a steady and ample supply of fuel is necessary in the public interest. . . . [I]n judging the term of a requirements contract in relation to the substantiality of the foreclosure of competition, particularized considerations of the parties' operations are not irrelevant. In weighing the various factors, we have decided that in the competitive bituminous coal marketing area involved here the contract sued upon does not tend to foreclose a substantial volume of competition.").

Naïve foreclosure is an "outcome-based" measure. The foreclosure share is calculated by the fraction of outlets foreclosed—To paint a picture, this is the practical equivalent of walking down the supermarket soda aisle, looking at how much Coke and how much Pepsi are on the shelves. But what naïve foreclosure cannot account for are the details that would explain the status quo—it ignores important pieces of the puzzle like the "competition for the contract" element of distribution—the fact that Coke and Pepsi compete to get on the shelf in the first place, by offering discounts, services, and payments to retailers. Fundamental to modern antitrust—and Section 2 in particular—is the notion that the antitrust laws protect the competitive process and not outcomes.[6] The naïve approach to foreclosure assesses competition exclusively by the Coke-to-Pepsi ratio, without regard to whether, or how intensely, they competed to get there.

To refine it a bit further, assume Coke and Pepsi are the only competitors for supermarket soda shelf space. They compete each month to enter into 30-day contracts with supermarkets. Suppose that Coke wins every time, because it offers superior terms, like lower prices or better promotional support. In equilibrium, Coke gets 75 percent of the shelf space and Pepsi the remaining 25 percent. Very few would describe Pepsi as foreclosed from access to competition in a meaningful way. Yet, the naïve foreclosure measure would conclude the foreclosure share is 75 percent—with likely liability and treble damages soon to follow.

The alternative to outcome-based, naïve foreclosure measures are "process-based" foreclosure measures. These attempt to measure the share of an input *actually foreclosed* from the competitive process by looking not only at outcomes, but the competitive process through which distribution is allocated. Process-based measures of foreclosure evaluate how Coke and Pepsi compete for shelf space, and how the allegedly unlawful contracts impact the competitive process for distribution, rather than merely counting up how often Coke or Pepsi won that competition.

Krattenmaker & Salop, in their seminal exposition of modern exclusion theory, point out the disconnect between that theory (based upon raising rival's costs) and the "discredited foreclosure theory" which predominated in the early antitrust cases.

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[6] Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 407 (2004) ("The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system. The opportunity to charge monopoly prices—at least for a short period—is what attracts "business acumen" in the first place; it induces risk taking that produces innovation and economic growth. To safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive *conduct*.") (emphasis in original).

Unlike other important areas of the law involving vertical restraints, the Supreme Court has not taken an exclusive dealing case in the modern era. Lower courts and the antitrust agencies are left with an uncomfortable fit between modern antitrust's largely economic approach to exclusion and exclusive dealing on the one hand, and the key antitrust legal concept governing it—foreclosure—on the other. But the wait for an update of exclusive dealing law specifically, and the Court's approach to foreclosure more generally, may soon be over. The DOJ's Google case—if it survives the appellate climb—has a high likelihood of being the vehicle for a reexamination of foreclosure doctrine.

The naïve approach remains quite common in courts to this day; many continue to apply naïve foreclosure analysis when confronted with tying and exclusive dealing cases alleging foreclosure from distribution sufficient to deprive rivals the opportunity to compete for minimum efficient scale. One notable example is the D.C. Circuit's opinion in *United States v. Microsoft.* In the section of the opinion looking at exclusive deals with independent software vendors (ISVs), the court leaned heavily on Microsoft's foreclosure of the two primary channels to find a prima facie showing of anticompetitive effect.[7] Another example is the Third Circuit's opinion in *Dentsply*.[8] There, the court also emphasized the naïve foreclosure approach,[9] and called it error for the district court to have looked at possibilities that minimum efficient scale had not been denied to rivals.[10]

As discussed, the intellectual framework for understanding exclusion cases has evolved significantly, particularly as the Raising Rivals' Costs ("RRC") economic

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[7] *See* United States v. Microsoft Corp., 253 F.3d 34, 72 (D.C. Cir. 2001) ("The District Court did not specifically identify what share of the market for browser distribution the exclusive deals with the ISVs foreclose. Although the ISVs are a relatively small channel for browser distribution, they take on greater significance because, as discussed above, Microsoft had largely foreclosed the two primary channels to its rivals. In that light, one can tell from the record that by affecting the applications used by "millions" of consumers, Microsoft's exclusive deals with the ISVs had a substantial effect in further foreclosing rival browsers from the market. . . . Because, by keeping rival browsers from gaining widespread distribution (and potentially attracting the attention of developers away from the APIs in Windows), the deals have a substantial effect in preserving Microsoft's monopoly, we hold that plaintiffs have made a prima facie showing that the deals have an anticompetitive effect.").

[8] United States v. Dentsply Int'l, Inc., 399 F.3d 181 (3d Cir. 2005).

[9] *Id.* at 191.

[10] *See id.* at 196 ("Dentsply's grip on its 23 authorized dealers effectively choked off the market for artificial teeth, leaving only a small sliver for competitors. The District Court erred when it minimized that situation and focused on a theoretical feasibility of success through direct access to the dental labs. While we may assume that Dentsply won its preeminent position by fair competition, that fact does not permit maintenance of its monopoly by unfair practices.").

paradigm emerged in the 1980s.[11] Courts have not completely ignored these developments. Modern monopolization cases often require courts and agencies to go beyond naïve foreclosure analysis in favor of process-based foreclosure measures to assess whether the defendant's distribution contracts substantially foreclose rivals from a critical input for a period sufficient to decrease market output and raise market prices.[12]

Process foreclosure methods can take many forms, but are typically some form of an explicitly counterfactual approach to measuring foreclosure; Krattenmaker and Salop's seminal article proposed one, by framing the relevant antitrust question in terms of a "net foreclosure rate."[13] The authors defined net foreclosure rate as "the percentage of the suppliers' capacity that was available to rivals before the exclusionary rights agreement was adopted but that is no longer available as a result of the agreement." Crucially, Krattenmaker and Salop recognized that "agreements with a sufficiently small impact upon the share of distribution foreclosed are not likely to be motivated by anticompetitive exclusion nor are they likely to generate increases in the cost of acquiring inputs sufficient to impact the competitive process."[14] One of us has proposed another specific innovation for calculating foreclosure in a manner that better captures competition for distribution: but-for foreclosure ("BFF").[15] The "BFF rate is defined as the difference between the percentage share of distribution foreclosed by the allegedly exclusionary agreements or conduct and the share of distribution in the absence of such an agreement."[16] These are just examples; there are other ways incorporate process-based approaches to foreclosure more closely aligned with modern exclusion theory. One can think of the shorthand courts use to supplement reliance upon foreclosure rates—like short-term contracts and switching costs—as a crude form of process-based foreclosure analysis. The value lies not in any one method but in going "under the hood" of the foreclosure rate to understand whether the competitive process itself is open and relating the actual impact of the allegedly unlawful contracts

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[11] *See generally* Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209 (1986); Steven C. Salop & David T. Scheffman, *Raising Rivals' Costs*, 73 AM. ECON. REV. 267 (1983). The roots of the modern RRC theory were anticipated by Aaron Director and Edward H. Levi. *See generally* Aaron Director & Edward H. Levi, *Law and the Future: Trade Regulation*, 51 NW. U. L. REV. 281 (1956).

[12] *See* Joshua D. Wright, *Moving Beyond Naïve Foreclosure Analysis*, 19 Geo. Mason L. Rev. 1163, 1163–64 (2012).

[13] *See* Krattenmaker & Salop, *supra* note 11, at 259.

[14] *Id.*; Wright, *supra* note 12, at 1170–71.

[15] Wright, *supra* note 12, at 1186.

[16] *Id.*

to market conditions.

Courts have increasingly been entertaining process foreclosure measures and methods. This is not surprising given the overall trend in antitrust analysis toward effects-based analysis and the preference of substance over form. Process-based foreclosure measures better isolate the competitive effects of the agreement from other extraneous factors, and the types of counterfactual analysis they entail are already standard fare across the rest of antitrust—but, more importantly, process foreclosure analysis is much more consistent with the RRC framework that modern exclusion is built upon. Outcome based, naïve foreclosure—by definition—counts units as foreclosed, whether the excluded firm competes for them or not; whether the dominant firm would have got them with or without the conduct at issue; and, in some cases,[17] even when the *rival* received the relevant shelf space. The outcome approach doesn't ask whether the units were foreclosed from competition—it is overinclusive because it penalizes those that win competition for distribution on the merits. This "[c]ompetition-for-the-contract" is a "form of competition that antitrust laws protect rather than proscribe, and it is common."[18] To punish competitors for their successes flies in the face of the purpose of the antitrust laws, including *Trinko*, which were plainly "enacted for the protection of competition not competitors. . . It is inimical to the purposes of these laws to award damages for the type of injury claimed" by losers of competition on the merits.[19]

Consider one example. Judge Chen of the Northern District of California relied upon qualitative factors to modify the naïve foreclosure rate calculation in *Church & Dwight Co. v. Mayer Laboratories, Inc.*,[20] when finding that Church & Dwight's shelf space contracts did not substantially foreclose rivals and thus did not create antitrust injury.[21] Church & Dwight's planogram agreements involved shelf space share discounts or "a percentage rebate off its wholesale price in exchange for a retailer's commitment to devote a certain percentage of the condom shelf space to [Church & Dwight] products."[22] In assessing foreclosure, the court rejected three variations of the naïve measure—finding that each overestimated the competitive impact of the

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[17] *See* McWane, Inc. v. F.T.C., 783 F.3d 814 (11th Cir. 2015).

[18] Paddock Publications, Inc. v. Chicago Tribune Co., 103 F.3d 42, 45 (7th Cir. 1996) (Easterbrook, J.).

[19] Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc., 429 U.S. 477, 488 (1977).

[20] Church & Dwight Co. v. Mayer Labs., Inc., 868 F. Supp. 2d 876 (N.D. Cal. 2012), *order vacated in part on reconsideration*, No. C-10-4429 EMC, 2012 WL 1745592 (N.D. Cal. May 16, 2012). Wright provided economic expert testimony on behalf of Church & Dwight.

[21] *Id.* at *28.

[22] *Id.* at *1.

arrangements,[23] as the agreements lasted only for one year; were easily terminable; did not require retailers to allocate to Church & Dwight any specified amount of shelf space; and a substantial portion of the condom retail market was not covered by these agreements.[24] Wider recognition of process methods is showing up at the circuit level, too; the Second Circuit recently paused with little fanfare to inventory a number of relevant process factors in an otherwise unremarkable summary judgment decision on a foreclosure case; they suggested the presence of barriers to entry in the market; evidence that customers prefer a competitor's product but remain the offender's customers; or direct price effects.[25]

Process-based foreclosure analysis is not limited to exclusive dealing cases. Areeda & Hovenkamp identify a category of tying cases involving "zero foreclosure," arising when either no rival sellers exist, or rivals would not supply (or consumers would not buy) the tied product absent the tie. Both of these zero foreclosure circumstances derive from explicitly counterfactual process thinking, and formed the basis of the Seventh Circuit's decision in *Reifert v. South Central Wisconsin MLS Corp.*, when it refused to condemn a tie after concluded the tie had no foreclosing effect. The court noted that the defendant was the only Realtors association in the area and that "without evidence of competitors in the market for services offered by the Realtors [a]ssociation, there can be no foreclosure of competition."

Evaluating Foreclosure in DOJ v. Google

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[23] Applying the *Omega* court's foreclosure approach, the court reasoned that Church & Dwight had a 75-percent market share and 66.1 percent of its sales came from convenience store and planogram contracts, resulting in a foreclosure rate of 49.6 percent. Church & Dwight, 2012 WL 1231801, at *29; Omega Envtl., Inc. v. Gilbarco, Inc., 127 F.3d 1157, 1163-64, 1173 (9th Cir. 1997). The court also applied the same calculation using Church & Dwight's average contracted shelf space share of 72 percent and 60 percent in convenience stores. *Id.* Using the fact that Church & Dwight derived 44.1 percent of its sales from planogram stores and 22 percent of its sales from convenience stores, this resulted in a foreclosure rate of 45 percent. *Id*. In its final iteration, the court "attempt[ed] to calculate the approximate total shelf space in the condom market dedicated to [Church & Dwight] through either the [planogram] or [convenience store] contracts." *Id.* This method required "multiply[ing] the percentage of the total condom market occupied by [planogram] retailers (51.6%) by [Church & Dwight's] average shelf share in those retailers (72%), which is 37%." *Id.* (footnote omitted). This number was added to the product of "the percentage of the total condom market occupied by [convenience] stores (22.5%) by [Church & Dwight's] average shelf share in that market (60%)" resulting in a total percentage of 50.5 percent foreclosure. *Id.*; *see* Wright, *supra* note 12, at 1176–77.

[24] *Church & Dwight*, 2012 WL 1231801, at *21.

[25] *See* Maxon Hyundai Mazda, et al. v. Carfax, Inc., 726 F. App'x 66, 69 (2d Cir. 2018) (noting "barriers to entry," "evidence that some dealers preferred Carfax's competitor but nonetheless remained Carfax customers," and "proving higher prices in the market as a whole" as relevant considerations).

The Google complaint puts the outcome/process divide in stark relief because the DOJ *needs* a court to adopt a naïve foreclosure and use count-on-its-fingers antitrust to win. So, while the complaint references these high foreclosure rates for searches covered by the allegedly unlawful browser default agreements, the *real* questions for the court are going to be: "Is this enough to show foreclosure?" And "What is foreclosure, anyway?"

These agreements beg for a process-based approach to query whether there really is healthy competition for distribution. This is for a number of reasons.

First, and perhaps most glaring in this context, is the issue of consumer preferences. The contracts at issue are not exclusive but rather specify default status. They certainly promote Google search over rivals. But they do not prevent customers from accessing rival search engines at relatively low cost. If a majority of consumers when choosing freely would pick Google anyway, are rivals foreclosed from access to consumers at all?

The second reason is switching costs. In search, unlike, arguably, in the *Microsoft* case, switching costs for users are fairly low. To figure out whether there is foreclosure requires interrogating the costs to customers of switching, but also a more general inquiry into how we arrived at the status quo in the first instance. Coupled with consumer preferences, these reasons suggest questions that go to the heart of whether there is any foreclosure at all.

A third reason is the case is ripe for counterfactual thinking and but-for-foreclosure analysis. Is there a reason to think Google would have a significant share without the contracts? You bet. The DOJ complaint actually concedes as much; there is some "default" competitive share Google would enjoy regardless of the allegedly exclusionary contracts, and all indications are that share would be pretty high. If Google is going to get substantively the same share of search queries with or without these agreements, is there even an antitrust injury here? Counterfactual thinking is standard fare throughout the rest of antitrust analysis, but often escapes foreclosure analysis. The DOJ complaint seems ripe for this approach – after all, we are interested in understanding the impact of the contracts at issue.

Fourth is competition for distribution. What does one make of the 1.59 trillion-dollar gorilla in the room—Microsoft—and its enormously deep pockets? If Microsoft could easily compete for, and win, browser default contracts, but simply chooses not to—or gets outbid—has any foreclosure occurred? Lower courts occasionally look to whether the competitive process for distribution is working and take evidence that a

significant potential bidder either chose to stay on the sidelines or bid aggressively and lost as evidence that the resulting outcome is best characterized as competition on the merits rather than foreclosure.

A fifth reason to favor a process-based foreclosure inquiry here is that looking at the competitive process rather than merely the shares covered by the agreements suggests a deeper inquiry into what happens with those large payments from Google to Apple or Android phone makers through revenue sharing agreements? Does the competitive process result in pass-through of those payments in the form of lower phone prices or other features than would prevail otherwise?

As the last major law-defining case on exclusive dealing, *Tampa Electric*, nears its sixtieth birthday, the black letter law of naive foreclosure has an increasingly unbearable disconnect with modern economic antitrust methods. Courts are left with relatively little guidance as to how to understand the competitive effects of a world with and without the contracts being challenged—and the naïve approach is precisely of zero help on that question. Courts have adapted on their own to bridge the gap between the foreclosure analysis in the early cases—built from discredited foreclosure theory—and modern economics by adopting process-based foreclosure inquiries. But-For Foreclosure gets you much closer to the answer, as do process-based approaches generally—which should be of no surprise, given counterfactuals and process-based approaches are the overwhelming norm throughout the rest of social science and antitrust. Given the centrality of the foreclosure analysis in the DOJ's complaint against Google, those inquiries will be front and center.