ANTITRUST TIME TRAVEL: ENTRY & POTENTIAL COMPETITION

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How are claims of future entry, or its prevention, supposed to be addressed? To seriously engage with these claims, one must be prepared to engage in a type of analytical time travel. Modest attempts at time travel are familiar in antitrust. Some, like the inference of a firm's competitive significance from its market share, assume connections between past and present competition.[1] Others, like the evaluation of challenges to mergers under Section 7 of the Clayton Act, assume connections between present and future competition.[2] But nowhere in antitrust are the demands of time travel more explicit, the task more challenging, or the consequences more critical, than in the related doctrines of the defense of easy entry and the offense of lessening competition through acquisitions involving potential competitors.[3]

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[1] *See, e.g.*, United States v. Gen. Dynamics Corp., 415 U.S. 486, 501 (1974) ("Evidence of the amount of annual sales is relevant as a prediction of future competitive strength, since in most markets distribution systems and brand recognition are such significant factors that one may reasonably suppose that a company which has attracted a given number of sales will retain that competitive strength.").

[2] *E.g.*, Brown Shoe Co. v. United States, 370 U.S. 294, 332 (1962)("[T]he very wording of [s] 7 requires a prognosis of the probable future effect of the merger."); United States v. Philadelphia Nat. Bank, 374 U.S. 321, 362 (1963)("[T]he ultimate question under [s] 7 [whether the effect of a merger would be substantially to lessen competition] requires not merely an appraisal of the immediate impact of the merger upon competition, but a prediction of its impact upon competitive conditions in the future.").

[3] While our primary interest is the potential illegality of acquisitions involving potential competitors under Section 7 of the Clayton Act, the following applies in analogous ways to Section 1 and 2 offenses concerning acquisitions and exclusions of potential competitors.

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At a minimum, evaluating entry and potential competition theories require a form of forward time travel. The "actual potential competition" offense and what might be called the "corrective entry" defense involve predictions about the future competitive significance of rivalries not in existence at the time of evaluation. Sometimes, a more extreme form of time travel is attempted: backward time travel. The "perceived potential competition" offense and what might be called the "preventative entry" defense involve the same forward leap as above but then add to this a backward-leaping assessment of how the threat of future rivalries is influencing competitive behavior today. Here, the future competitors are effectively traveling backward through time to exert competitive influence in the current market.

Antitrust time travel is often contentious,[4] complicated,[5] and paradoxical.[6] These features are compounded by a tendency of courts to describe time travel theories briefly, without delving into the precise mechanics of how time travel is supposed to work. As we show here, there will never be a simple version of any of these theories—at least, not if we aspire to accuracy and internal consistency. That said, current time travel doctrines are needlessly burdened by some artificial bifurcations of related concepts. Ripped apart and stuffed into separate silos in antitrust analysis,[7] entry and potential competition theories have evolved in some peculiar ways—and have not evolved at all in others. The thesis of this Article is that a clearer and more accurate understanding of entry and potential competition analysis emerges from viewing these theories not as siloed doctrines but as related facets of the same underlying exercise in antitrust time travel.

This is, in fact, how both theories got their start. Part I demonstrates this in a brief correction of the record on entry and potential competition concepts. Contrary to modern practice, early struggles to understand the relevance of "potential competition" did not fixate on separating the harm that might arise

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[4] *Cf.* Jonathan B. Baker, *Responding to Developments in Economics and the Courts: Entry in the Merger Guidelines*, 71 ANTITRUST L.J. 189, 190 (2003) (commenting that "[n]owhere in [the process of drafting the 1992 merger guidelines] were the problems of steering between the demands of precedent and economic logic more difficult than in writing the section on entry.").

[5] *See infra* Part II.

[6] *See infra* Part III.

[7] *Compare* U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES § 1 para. 1 (August 19, 2010) [hereinafter 2010 HORIZONTAL MERGER GUIDELINES] (referencing federal antitrust enforcement practices with respect to "mergers and acquisitions involving actual or potential competitors"), *with id.* § 9 para. 2 (describing circumstances in which potential entry would "alleviate concerns about adverse competitive effects"). *Cf.* United States v. Waste Mgmt., Inc., 743 F.2d 976, 982 (2d Cir. 1984) (recognizing that the Supreme Court had "never directly held that ease of entry may rebut a showing of prima facie illegality under *Philadelphia National Bank*" but inferring that such a defense is implied by the Court's emphasis of injury to potential competition as a possible violation).

from effects on potential competition from the palliative effects that potential competition had for current or future competition. True, much of the current doctrine in this area developed only after potential competition theories were separated into those involving harms and those involving benefits. But it is hard to see where this modern approach is superior to the earlier, more fluid, approach—and there are obvious respects in which it is inferior.

Motivated by skepticism about current practice, Part II reconstructs the entry defense and potential competition offense from the unified perspective that both involve the same exercises in antitrust time travel. Relying on nothing more than modern economic models of entry and the time travel perspective, this reconstruction reveals several helpful insights. It highlights, for example, the importance of including strategic responses to potential entry in the evaluation of *all* time travel theories—entry defenses and potential competition offenses alike. It also unearths traps that have ensnared this area of law for decades, such as irrelevant philosophical arguments about what counts as a barrier to entry. In short, the time travel perspective clarifies the common requirements and complexities of both entry and potential competition theories.

Part III exploits this clear-eyed vantage point to survey some paradoxes of antitrust time travel. Some of these are artificial, as where doctrinal silos have permitted the asymmetric treatment of symmetric concepts. How else could the validity of the actual potential competition offense be doubted while the validity of the corrective entry defense goes unquestioned? Other paradoxes reveal deep truths about the fragility of all time travel stories. The most profound of these is what might be called the antitrust version of the *grandmother paradox* (the mind-warping puzzle of trying to decide what would happen if a person traveled back in time to kill his or her own grandmother). Across a range of assumptions and economic models, entry is least likely to occur when it would be most likely to cure competitive concerns; and is most likely to occur when its effects on competition would be least significant. This and other paradoxes recommend healthy skepticism when evaluating all time travel stories.

I. TIME TRAVEL OVER TIME

Today, the defense of easy entry is at little risk of being confused for the offense of acquiring a potential competitor. To any listener, these sound like separate concepts with different analytical goals. For much of antitrust history, however, a more fluid concept of "potential competition" embraced both theories. This reflects an important truth: the economics of what we today recognize as the entry defense are much the same as those of what we now

call potential competition doctrine. A brief historical review reveals just how long ago this common origin in economics was recognized and understood.

A. EARLY AND FLUID THINKING ABOUT POTENTIAL COMPETITION

The story of potential competition starts at the dawn of antitrust law. In the decades between the passage of the Sherman Act and the Clayton Act, the most influential thinker on the subject of potential competition was American economist John Bates Clark.[8] Across numerous articles and addresses, Clark extolled the power of potential competition to control the otherwise seemingly unchecked power of trusts and large firms.[9] While Clark's arguments hardly persuaded all of his contemporaries,[10] his views were inarguably influential during the time,[11] and they remain so today.

In a 1901 text titled *The Control of Trusts*, Clark championed the ability of potential competition to curb market power abuses by trusts and industry incumbents:

> When prices are unduly high, owing to the grasping policy of some trust, what happens? New competition usually appears in the field. . . . Readily, and sometimes almost recklessly, does it build new mills and begins to compete with trusts, when these consolidated companies do not know enough to proceed on a conservative plan. Let any combination of producers raise the prices beyond a certain limit, and it will encounter this difficulty. The new mills that will spring into existence will break down prices; and the fear of these new mills, without their actually coming, is often enough to keep prices from rising to an extortionate height. The mill that has never been built is already a power in the market; for if it surely will be built under certain conditions, the effect of this certainty is to keep prices down.[12]

Deconstructed for closer inspection, this claim reveals two related but distinct theories about the beneficial effects of potential competition.

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[8] *Cf.* GREGORY J. WERDEN, THE FOUNDATIONS OF ANTITRUST 139-155 (2020) (summarizing Clark's contributions to antitrust analysis); Luca Fiorito, *When Economics Faces the Economy: John Bates Clark and the 1914 Antitrust Legislation*, 25 REV. POL. ECON. 139 (2013) (similar, with emphasis on Clark's contributions to the Clayton Act and FTC Act).

[9] *See* WERDEN, *supra* note 8, at 141-48 (surveying some of Clark's contributions to the subject of potential competition).

[10] *See id.* at 158–60, 165 (discussing contemporaries of Clark who did not share his confidence in the ability of potential competition to constrain market participants).

[11] *See id.* at 148–50 (observing the influence of Clark's views in his time).

[12] JOHN BATES CLARK, THE CONTROL OF TRUSTS: AN ARGUMENT IN FAVOR OF CURBING THE POWER OF MONOPOLY BY A NATURAL METHOD 13 (1901).

The first describes the future curative effects of potential competition—an exercise in forward time travel. Here, the threat of potential competition is not assumed to deter price elevation by existing firms. Current prices may rise as a result of poor competitive conditions. But, when they do, potential competition will materialize in the form of future entry. New mills will "spring into existence,"[13] in Clark's words, and as they emerge their new competition will act to unwind whatever price elevation has occurred.[14] Thus, potential competition acts as a curative counterforce to exercises of market power. Even if prices rise temporarily, future entry will eventually drive them back down.[15] At least, this is the future corrective theory of potential competition.

The second theory folded into Clark's claim describes the current effects of potential future competition—backward time travel launching from the conclusion of the previous analytical exercise. Here, the incumbent trusts engage in the same reasoning as we have above. Seeing that price elevation will only attract future entry, however, they elect not to raise prices in the first place. Hence, in this theory, the threat of future entry reaches backwards through time to influence the behavior of current competitors. In Clark's words, "[t]he mill that has never been built is already a power in the market."[16] At least, this is the present preventative theory of potential competition.

In some of his writing, Clark described the present preventative theory of potential competition as nearly on par with the importance of competition among current competitors.[17] Other times, especially in his later remarks,[18] he equivocated on the strength of this effect, reasoning that incumbent firms could elevate prices a considerable amount before attracting new entry into

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[13] *Id.*

[14] John Bates Clark, *The "Trust": A New Agent For Doing An Old Work : Or Freedom Doing the Work of Monopoly*, 52 NEW ENGLANDER AND YALE REVIEW 223, 226 (1890) ("A too great rise in prices will tempt new capitalists and start new and rival establishments. This has actually happened again and again; and this fact has inspired among managers of Trusts a very wholesome respect for the potential competition of which we are speaking.").

[15] John Bates Clark, *Trusts, Present and Future*, 51 INDEPENDENT 1076, 1077 (1899) ("A radical increase in the price of an article was sure to bring new competitors into the field; and this would add to the supply of the article and soon would bring down the price of it."); *Id.* (conceding that "friction" did add some delay to this effect, as a "new mill cannot instantly spring into existence and begin putting its products on the market").

[16] CLARK, *supra* note 12, at 13.

[17] *Id.* at 75 ("If new competition is sure to spring up in the case prices are raised, they will not be raised. They will continue to be held down by a possible producing agent, and not by one that is actually present and acting.").

[18] *See* Fiorito, *supra* note 8, at 145-49 (chronicling the evolution of Clark's commentary on the potential competition).

their markets.[19] One possible reconciliation of these views was Clark's belief that incumbent trusts could act to strategically weaken the threat of future entry, a topic to which we will return to in a moment. Even allowing these tools of competitive suppression, though, Clark's economic narrative was missing some important details.

Commenting on Clark's analysis in 1902, English economist Arthur C. Pigou supplied many of the missing details.[20] Pigou questioned, for example, Clark's casual assertion that "in so far as legitimate rivalry in cheap production is concerned, it is safe enough to build a new mill."[21] It was difficult to reconcile this claim of quick and easy entry, Pigou noted, with the elsewhere popular idea that "economies of production" arose from the large size of incumbent trusts.[22] More importantly, Pigou identified a defect in Clark's presentation. The new mills that Clark said would "spring into existence" would not do so simply because current prices had been elevated:

> It is not enough for a potential rival to be able to compete with the prices at which the Trust at any time chooses to sell; he must be able to meet those at which, by abandoning all 'monopoly revenue' and contenting itself with 'normal profits' it could sell. Otherwise, even though all 'illegitimate' competition were made impossible, the risks before independent producers would still be so great, that prices might be kept well above the point at which they could reap a profit, without ever inducing them to come into the field.[23]

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[19] *E.g.*, *id.* at 13–14 ("The real and serious difficulty is the fact that the curbing influence of this latent competition cannot always be depended on to prevent a real and considerable extortion. There is often a considerable range within which trusts can raise prices without calling potential competition into positive activity."); *id.* at 78 ("Within limits a trust may raise the prices unduly, because the competitor cannot be drawn into the field except by large inducement. He must have a prospect of gain that will offset a peril."); Clark, *supra* note 14, at 226 ("As a rule [the trust] must push [its] gains to the limits of extortion before this check will operate efficiently.").

[20] *See generally* A. C. Pigou, *The Control of Trusts, by J. B. Clark*, 12 ECON. J. 63 (1902).

[21] *Id.* at 66 (quoting CLARK, *supra* note 12 at 28). Pigou was not alone in doubting the low cost of entry. *See, e.g.*, ARTHUR TWINING HADLEY, ECONOMICS: AN ACCOUNT OF THE RELATIONS BETWEEN PRIVATE PROPERTY AND PUBLIC WELFARE 152–53 (1896) ("[N]o new competitor will be called into being unless the price is high to afford a liberal profit, after paying interest, maintenance, and other charges on fixed capital invested under modern methods.").

[22] Pigou, *supra* note 20 at 66 ("[H]ow can [claimed low entry costs] be reconciled with the much vaunted 'economies of production' which Presidents of Consolidations so zealously described to the Industrial Commissioners?").

[23] *Id.*

Put another way, if the immediate consequence of entry was competition driving prices back to the competitive level, then the rational potential competitor would not be attracted to enter a market merely by the prospect of temporarily elevated prices. Something more was needed to provide at least a hope of profit in the newly competitive post-entry market. That something would need to contend with questions like "If the opportunity for profit were so apparent, why have we not seen entry already?" and "How did the incumbents acquire their trust positions if entry was easy in the first place?"[24] Such was the sophistication of early economic dialogue on the beneficial effects of potential competition.

But early thinking about the relevance of potential competition did not stop at its latent beneficial effects. As noted previously, Clark devoted considerable attention to the ways in which firms might work to foreclose future entry, and thus forestall these beneficial effects.[25] He was particularly agitated by the ability of trusts to use exclusive dealing arrangements and cross-subsidized predatory prices to drive new entrants from the market,[26] and to deter others from entering at all.[27] Potential competitors who were too scared to enter posed no threat to incumbent trusts, and so provided none of the benefits they would otherwise have conferred.[28]

Clark therefore advocated for the protection of potential competition,[29] and for antitrust laws that would prohibit certain types of conduct that would obstruct future entry. "What is needed," he said, "is to make each one of the practices by which competitors are terrorized legal evidence of the existence of a monopolistic power, and to condemn, under the common law, any corporation that shall afford this evidence."[30] Protecting the future entry of potential competitors preserved both the future effects of curative entry and the current effects of trusts moderating their behavior in order to avoid enticing entry.

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[24] *See infra* notes 120-127 and accompanying text (exploring these questions).

[25] Clark, *supra* note 14, at 226 ("An actual Trust of a strong type has the power to make outside rivalry perilous.").

[26] *E.g.*, CLARK, *supra* note 12, at 59–66.

[27] *Id.* at 74 ("By these means the trust can often crush a rival; and *the prospect that it will resort to them often terrorizes the rival in advance and prevents him from appearing in the field.*" (emphasis in original)).

[28] *Id.* at 75 ("The certainty that a competitor will be ruined, if he appears, takes away all probability of his appearance; and this probability affords the only natural check of any importance on the action of the monopoly.").

[29] Clark, *supra* note 15, at 1077 ("Potential competition is the name of the force that holds monopolies in check; it is the force that must ever be kept alive. The difference between a good system of industry and a radically bad one is made by this influence.").

[30] CLARK, *supra* note 12, at 79.

The difficulty, as Clark conceded, was in finding a way to structure this protection so that it would cut off the ability of trusts to avoid "fair competition" in dealing with entrants while not acting to "shield an independent producer from any legitimate rivalry."[31]

B. CONTINUED FLUIDITY FOR SEVERAL DECADES

As just described, early treatment of potential competition did not distinguish sharply between its beneficial effects and the need to protect these benefits from being squelched by incumbents. Both ideas arose from the same underlying theory, so sharp distinction between them would probably have seemed strange. Early discussion also did not clearly differentiate between forward and backward time travel (though, here, additional analytical separation would have been helpful). Fluid thinking about potential competition persisted as antitrust began to mature, making sporadic but increasingly frequent appearances throughout the first half of the 1900s.[32]

Several of these appearances sounded versions of Clark's concern about strategic efforts to blunt the beneficial consequences of potential competition. In 1911, the Supreme Court's review of the *American Tobacco* case listed among the factors showing "wrongful purpose and illegal combination" several practices whereby entry-critical assets had been consolidated in the hands of a few cooperating entities, erecting "perpetual barriers to the entry of others into the tobacco trade."[33] The Court returned to this reasoning in 1946 when American Tobacco and others stood convicted of a conspiracy to "establish a substantially impregnable defense against any attempted intrusion by potential competitors."[34] Noting the tremendous advertising and other expenses that an entrant would need to pay to compete with incumbent firms, the Court found it easy to understand why a conspiracy would form to exclude potential competitors. "Prevention of all potential competition," the Court reasoned, would be a natural object in this market, since obstruction of future entry would be "cheaper and more effective than any amount of 'cure.'"[35]

Other cases described anticompetitive concerns arising from an incumbent firm's acquisition of a potential competitor—not a major subject of Clark's writing, but a logical extension of his worry about trusts strategically foreclosing entry by potential competitors. In 1922, the Third Circuit decided a dispute between the Aluminum Company of America (Alcoa) and the Federal Trade

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[31] *Id.* at 31.

[32] *Cf.* Herbert Hovenkamp, *The Invention of Antitrust*, __ S. CAL. L. REV. __, 46-54 (forthcoming) (surveying scholarly commentary, judicial opinions, and survey evidence reflecting the evolving attitudes toward potential competition around this time).

[33] United States v. Am. Tobacco Co., 221 U.S. 106, 182-83 (1911).

[34] Am. Tobacco Co. v. United States, 328 U.S. 781, 800 (1946).

[35] *Id.* at 797.

Commission.[36] Because the company whose stock Alcoa was acquiring was new and had not yet begun competing, Alcoa reasoned that the acquisition did not involve a concern engaged in commerce, and thus fell outside the scope of Section 7. The Third Circuit rejected this argument.[37] Supporting the Commission's finding of illegality, the court emphasized both the merger's effect on present competition and its "[destruction of] potential competition in a way later to make actual competition impossible."[38]

In 1948, the Supreme Court addressed a similar claim that Columbia Steel's acquisition of another company would "preclude and restrain substantial potential competition in the production and sale of [steel products]."[39] The Court agreed with the government that "any acquisition of fabricating equipment eliminates some potential competition from anyone who might own or require such facilities."[40] It also accepted that "potential competition from producers of presently non-competitive articles . . . may be taken into consideration in weighing the effect of any acquisition of assets on restraint of trade."[41] Thus, though the defendants ultimately prevailed on the facts (the Court refused to speculate about entry without the support of record evidence), the opinion expressed no doubt that reductions in future competition brought about by the acquisition of a potential competitor were within the reach of Section 7.[42] Indeed, any hesitancy on that point would have been startling. Hardly a decade earlier, the Court had identified injury to potential competitors a jurisdictional focus of the FTC Act:

> It is obvious that the word 'competition' imports the existence of present *or potential competitors*, and the unfair methods must be such as injuriously affect or tend thus to affect the business of these competitors—that is to say, the trader whose methods are assailed as unfair must have present *or potential rivals* in trade whose business will be, or is likely to be, lessened or otherwise injured.[43]

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[36] Aluminum Co. of Am. v. Fed. Trade Comm'n, 284 F. 401 (3d Cir. 1922).
[37] *Id.* at 408.
[38] *Id.*
[39] United States v. Columbia Steel Co., 334 U.S. 495, 528 (1948).
[40] *Id.*
[41] *Id.*
[42] *Id.* at 528–29.
[43] Fed. Trade Comm'n v. Raladam Co., 283 U.S. 643, 649 (1931) (emphasis added).

By the mid-1950s, charges of harm to potential competition were commonplace. In 1957, Jesse Markham observed that over 80 percent of recent public actions had charged "injury to both actual and potential competition."[44]

Concerns about the elimination of potential competitors were thus a fixture over several decades. In other cases, potential competition was seen to play the curative and preventative roles that Clark had earlier articulated. In 1939, the Seventh Circuit addressed this view of potential competition in its review of the case against SOCONY Vacuum.[45] The opinion saw potential competition from outside rivals as raising questions about the competitive significance of the challenged acts:

> [T]here are many large refiners outside the Mid-Western area but so near the territory that the product is readily obtainable. In many cases the freight rate from these outside refiners to important points within the territory is actually less than from refiners located within the territory. . . . [I]t is argued, not without logic, that potential competition from outside the territory would preclude the raising of prices within the territory to high and arbitrary levels.[46]

Other examples of defensive thinking used the existence of a fringe of potential competitors to narrow market power inquiries. In *Addyston Pipe*, then-Judge Taft reasoned that potential competition from distant manufacturers constituted an imperfect constraint on the ability a cartel to raise prices: the conspirators "could not impose prices on the public in excess of [the price at which more distant producers would be price competitive]," but "within that limit, could fix prices as they chose."[47] Similar reasoning motivated Judge Hand's observation in *Alcoa* that "for aught that appears there may well have been a practically unlimited supply of imports as the price of ingot rose," yet "within the limits afforded by the tariff and the cost of transportation, 'Alcoa' was free to raise its prices as it chose."[48]

As *Addyston Pipe* and *Alcoa* illustrate, defensive interpretations of potential competition were not necessarily distinguished from simple market power

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[44] Jesse W. Markham, *Merger Policy under the New Section 7: A Six-Year Appraisal*, 43 VA. L. REV. 489, 519 (1957).

[45] United States v. Socony-Vacuum Oil Co., 105 F.2d 809 (7th Cir. 1939), *rev'd*, 310 U.S. 150 (1940).

[46] *Id.* at 828.

[47] United States v. Addyston Pipe & Steel Co., 85 F. 271, 292 (6th Cir. 1898), *aff'd as modified*, 175 U.S. 211 (1899).

[48] United States v. Aluminum Co. of Am., 148 F.2d 416, 426 (2d Cir. 1945).

analysis. This is probably attributable to the still-nascent status of market definition at the time.[49] The language of "entry" makes little sense outside the context of a well-defined relevant market—one must know the boundaries of a relevant market to be able to say which firms could and would enter it.[50] The modern language of entry analysis, grounded in market definition, thus awaited the Supreme Court's introduction of tests for defining markets in the late 1950s and 1960s.[51] An early example of more modern entry language is the report of the 1955 Attorney General's National Committee to Study the Antitrust Laws, recommending attention be paid to entry as a limit on monopoly and a factor tending to support "workable" or "effective" competition.[52] Of course, these considerations simply relabeled the defensive implications of potential competition, particularly the future curative effects of entry by potential competitors.[53]

C. SEPARATION OF ENTRY AND POTENTIAL COMPETITION

The long reign of fluid and embracing references to potential competition appears not to have been marked by rampant confusion of harms and benefits. Still, this period could be criticized for inadequately separating these implications. In 1958, James Rahl launched just such an attack. Rahl complained of opportunities for confusion when the term "potential competition" was used to mean different things in different contexts:

> We are, I believe, inviting endless trouble and confusion in merger cases unless we note the two legally different uses of the term ["potential competition"]. I believe that these two uses are to describe: 1. A condition of freedom of future entry in the market concerned. 2. An existing positive competitive force supplied by the immediate threat of new entry by an identified firm.[54]

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[49] *See* Hovenkamp, *supra* note 32, at 54-60 (describing the interdependent evolution of potential competition and relevant market analysis).

[50] *See* Franklin M. Fisher, *Economic Analysis and "Bright-Line" Tests*, 4 J. COMPETITION L. & ECON. 129, 131 (2008) ("[O]ne might reasonably say that [entry analysis] requires one to know what it is that is being entered.").

[51] *See* Sean P. Sullivan, *Modular Market Definition*, 55 U.C. DAVIS L. REV. 1091, 1098–1117 (2021) at 1098–1107 (describing the Supreme Court's approach to market definition during the late 1950s and early 1960s).

[52] STANLEY N. BARNES & S. CHESTERFIELD OPPENHEIM, ET AL, ATTORNEY GENERAL'S NATIONAL COMMITTEE TO STUDY THE ANTITRUST LAWS 319-338 (1955).

[53] *Cf. id.* at 323.

[54] James A. Rahl, *Applicability of the Clayton Act to Potential Competition*, 12 SECTION OF ANTITRUST LAW 128, 132 (1958).

Rahl apparently meant the first of these uses to describe an assessment of barriers to entry in competitive effects analysis, and the second to describe a violation resulting from the acquisition of a potential competitor.[55] Haltingly, over the next several decades, Rahl's suggested bifurcation came to shape, defined, and constrict this area of law.

Concerns about the obstruction of potential competition—particularly, the acquisition of a potential competitor as a theory of antitrust injury—were the first to be peeled away from the potential competition trunk. As has been well documented in other writing,[56] Supreme Court cases of the 1960s and 70s identified, in situations involving mergers with potential competitors, two distinct theories of harm.

The first theory—and the only one to attain explicit Supreme Court sanction—was that involving backward time travel.[57] Where the threat of future entry was preventing current firms from exercising market power, the elimination of that threat through acquisition would eliminate a present procompetitive influence.[58] Cases about the harm of eliminating independent competitors "standing in the wings,"[59] were extracted from the general concept of potential competition and assigned the awkward titles of harm arising from "the wings effect"[60] or from the elimination of "perceived potential competition."[61]

The second theory—infamously discussed but never sanctioned by the Supreme Court—concerned forward time travel.[62] Where a potential competitor's future entry promised curative effects for any exercise of market power, the elimination of that potential competition through acquisition reduced the

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[55] *Id.* at 132–33.

[56] *See* Gregory J. Werden & Kristen C. Limarzi, *Forward-Looking Merger Analysis and the Superfluous Potential Competition Doctrine*, 77 ANTITRUST L.J. 109, 112–20 (2010) (summarizing the development of modern potential competition doctrine).

[57] United States v. Marine Bancorporation, Inc., 418 U.S. 602, 625 (1974) ("The elimination of . . . present procompetitive effects [of a potential competitor] may render a merger unlawful under s 7.").

[58] *Id.* (considering whether the presence of a potential entrant "tempered oligopolistic behavior on the part of existing participants in that market"); United States v. Falstaff Brewing Corp., 410 U.S. 526, 534 (1973) (discussing the possibility that a potential competitor, "on the fringe of the market," could influence the behavior of existing competitors).

[59] *Marine Bancorporation*, 418 U.S. at 640.

[60] *Id.* at 625.

[61] *E.g.*, United States v. Siemens Corp., 621 F.2d 499, 509 (2d Cir. 1980) (discussing "the 'perceived' potential competition doctrine"); *see also Marine Bancorporation*, 418 U.S. at 625 (referring to "perceived potential entry").

[62] *Marine Bancorporation*, 418 U.S. at 625 (1974) (commenting, in the Court's last word on the subject to date, that it "not previously resolved whether the potential-competition doctrine proscribes a market extension merger solely on the ground that such a merger eliminates the prospect for long-term deconcentration of an oligopolistic market").

chances of future competitive improvements. Creaky Supreme Court skepticism notwithstanding, this theory lives on in several circuits (often burdened with an asterisk).[63] It, too, has been peeled away from the general concept of potential competition and awarded a specific label: the fascinatingly self-contradictory title of harm to "actual potential competition."[64]

In contrast to these offensive implications of potential competition, Supreme Court cases of the 1960s and 1970s did not explicitly comment on defensive implications of potential competition. Lack of endorsement by the Court was for years grounds for arguing that future entry was not a valid defensive consideration in antitrust analysis.[65] As is clear upon even a moment's reflection, however, complete rejection of the defensive implications of potential competition is logically untenable. For acquisitions involving potential competitors to result in harm, the presence of potential competitors must likewise play a beneficial role. One theory cannot stand without the other.

In 1984, the Second Circuit relied on essentially this reasoning in holding that, despite the silence of the Supreme Court on the topic, possible entry by potential competitors could mitigate the competitive concerns of mergers:

> The Supreme Court has never directly held that ease of entry may rebut a showing of prima facie illegality under Philadelphia National Bank. However, on several occasions it has held that appraisal of the impact of a proposed merger upon competition must take into account potential competition from firms not presently active in the relevant product and geographic markets. … Under [Falstaff], therefore, potential entrants must be considered in appraising a merger.[66]

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[63] *See* Yamaha Motor Co. v. FTC, 657 F.2d 971, 980 (8th Cir. 1981) (assuming this theory of harm to be actionable); Mercantile Texas Corp. v. Bd. of Governors of Fed. Rsrv. Sys., 638 F.2d 1255, 1265–66 (5th Cir. 1981) (similar); *see also* Fraser v. Major League Soccer, L.L.C., 284 F.3d 47, 70–71 (1st Cir. 2002) (analyzing without deciding if the theory is actionable); Tenneco, Inc. v. FTC, 689 F.2d 346, 352 (2d Cir. 1982) (similar); F.T.C. v. Atl. Richfield Co., 549 F.2d 289, 294 (4th Cir. 1977) (similar); *see also* Werden & Limarzi, *supra* note 56, at 120 ("No court of appeals has ever held . . . "actual potential" competition . . . was not legally cognizable.").

[64] *E.g.*, *Mercantile Texas Corp.*, 638 F.2d at 1264 (discussing "actual potential competition doctrine").

[65] *See, e.g.*, Janusz A. Ordover & Daniel M. Wall, *Proving Entry Barriers: A Practical Guide to the Economics of New Entry*, 2 ANTITRUST 12, 12 (1988) (commenting that, a decade before writing, "[a]lmost without exception the courts . . . flatly rejected ease of entry as a mitigating factor in a merger on the ground that the existence of potential competition does not justify or excuse elimination of actual competition" (internal quotation marks removed)).

[66] United States v. Waste Mgmt., Inc., 743 F.2d 976, 982 (2d Cir. 1984).

The Supreme Court quickly signaled agreement in opinions describing conditions of easy entry as precluding antitrust injury.[67] In *Baker Hughes*, the D.C. Circuit further emphasized the defensive role of potential entry in merger analysis. Thus, by the early 1990s, defensive implications of potential competition had become a discrete and important step in nearly all competitive effects analysis.[68] As this happened, the relevant analysis was again stripped away from the potential competition trunk and given a separate label: the language of "entry," "ease of entry," or "absence of barriers to entry" came to identify the defensive implications of potential competition.

In contrast to offensive considerations, however, little effort was ever made to distinguish between forward time travel (future curative effects of entry) and backward time travel (current preventative effects of the threat of entry). In *Waste Management*, the Second Circuit articulated both types of time travel in the span of one reporter page—not obviously appreciating (or caring) about the significant economic differences between these theories.[69] Current practice is little better. The 2010 Horizontal Merger Guidelines loosely describe entry as alleviating competitive concerns when entry "will *deter or counteract* any competitive effects."[70] Fair enough. But these are very different theories about the beneficial effects of potential competition.

In short, offensive and defensive implications of potential competition did not diverge into distinct doctrinal lines until the 1960s. Theories of harm from the elimination of potential competition were the first to get pulled out. These

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[67] *E.g.*, Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 591 n.15 (1986) ("Respondents offer no reason to suppose that entry into the relevant market is especially difficult, yet without barriers to entry it would presumably be impossible to maintain supracompetitive prices for an extended time."); Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 226 (1993) ("If market circumstances or deficiencies in proof would bar a reasonable jury from finding that the scheme alleged would likely result in sustained supracompetitive pricing, the plaintiff's case has failed. In certain situations—for example, . . . where new entry is easy . . . —summary disposition of the case is appropriate.").

[68] *See, e.g.*, Ordover & Wall, *supra* note 65, at 12 ("Ten years ago, entry barriers had a negligible role in antitrust law."); *id.* ("Today very few antitrust attorneys would contest the importance of entry barrier analysis in merger cases . . . ."); Mark Leddy, *Entry Issues in Merger Analysis*, 54 ANTITRUST L.J. 1257, 1257 (1985) ("It's fair to say . . . that over the past five years or so "supply side" issues in merger analysis, including but not limited to ease of entry, have taken on a far more important role than in the past."); Richard Schmalensee, *Ease of Entry: Has the Concept Been Applied Too Readily*, 56 ANTITRUST L.J. 41, 41 (1987) ("The concept of ease of entry has certainly been applied with increasing frequency in the last few years.").

[69] *Waste Management*, 743 F.2d at 983 ("[W]e believe that entry into the relevant product and geographic market by new firms or by existing firms . . . is so easy that any anti-competitive impact of the merger before us would be eliminated more quickly by such competition than by litigation."); *id.* ("The existence of haulers in Fort Worth, therefore, constrains prices charged by Dallas haulers, much as Falstaff constrained pricing by northeast breweries.").

[70] 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 7, § 9 para. 2 (emphasis added).

theories differentiated (for no interesting reason) between forward and backward time travel. Defensive implications of potential competition became a highlight of antitrust analysis in the 1980s. These defensive theories did not differentiate between forward and backward time travel, and it is still uncommon to see this temporal distinction emphasized today.

II. MECHANICS OF TIME TRAVEL

As the previous discussion suggests, potential competition doctrine and the defense of easy entry arise from a common origin in economics. The underlying analysis differs little between these theories. This overlap is obscured, however, by a current overemphasis on litigation posture. We can see more clearly if we turn the focus away from the uninteresting question of who wins or loses if a theory is proved (the litigation posture) and instead direct our attention to the type of time travel involved in a given theory (whether forward or backward time travel is being attempted). This perspective reveals glaring holes in current doctrine. It also lays bare the remarkable economic fragility of all time travel narratives in competitive effects analysis.

A. BARRIERS TO ENTRY AND TO COMPETITIVE SIGNIFICANCE

In a few more pages, we will turn to the distinct economic mechanics of forward and backward time travel. To do so efficiently, however, we start with some common dependencies shared by both types of time travel. In short, every time travel theory launches from the same foundational premise. Whatever the legal consequence of the claim, and whatever the timing of effect, the theory always begins with a prediction that future entry would inject substantial competition into a relevant market.[71]

This prediction can be decomposed (at the cost of some redundancy) into two constituent claims. First, barriers to entry must be small enough, relative to the profits to be gained from entry, that the potential competitor is at least a plausible future entrant.[72] Second, the future competition that would result from this entry must be significant enough, given the probability of entry occurring, to warrant basing a claim or defense upon the possibility of that future entry. Since both of these claims must be assessed at some point in *any* time travel theory, we develop them here for later reference.

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[71] *See supra* note 16 and accompanying text (observing that any present effects of potential competition derive from incumbent firms' recognition of the probable competitive significance of future entry by the potential competitor).

[72] Set aside, for now, the separate question of how probable future entry must be. We return to the subject of evidentiary standards in Part III.B.

1. *Barriers to entry*

Start with the first condition: low barriers to entry. To state either a violation or a defense on the basis of potential competition, there must be at least a plausible basis for thinking that a potential competitor could and would actually enter a relevant market in the future. Some markets may be inherently difficult, if not impossible, to enter because of certain features like patent protection, regulatory requirements, or infrastructure requirements. Even if a firm wanted to enter, it may determine that it cannot practicably do so because of these features. To be viable, any time travel theory must account for and address such features.

Even assuming that no barriers that make entry infeasible, however, there still remains the question whether a firm would choose to enter. Profit maximizing firms do not enter markets without the expectation of a profitable outcome.[73] So, all else equal, the probability of entry is an increasing function of the expected revenue opportunities of entry and a decreasing function of the expected costs.[74] When evaluating time travel theories, this means that anything that decreases the benefits of entry, or that increase the costs of entry, is a *barrier to entry* that weighs against the time travel theory.

Two implications of this observation warrant emphasis. First, this same understanding of barriers to entry applies to *every* type of time travel. Entry defenses and illegal acquisitions, future benefits and effects on current competition—*all* can be defeated by barriers to entry in the simple and functional way that the term is defined here. Second, this simple and functional definition is the *only* understanding of barriers to entry that matters for time travel analysis.

We concede that scholars have devoted much time and many pages to the battling definitions of barriers to entry proposed by Joe Bain, George Stigler, and others.[75] But the time travel perspective reveals these debates to have been a waste of time. No great mystery stands to be unlocked by searching for abstract definitions of what constitutes a barrier to entry. No list of factors is needed.[76] Nothing of importance hangs upon whether a barrier is "natural" or

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[73] *See, e.g.*, William J. Baumol & Robert D. Willig, *Fixed Costs, Sunk Costs, Entry Barriers, and Sustainability of Monopoly*, 96 Q. J. ECON. 405, 418 (1981) ("Entry can be expected to be profitable only if the profits expected in the event of success outweigh the unrecoverable entry costs that will be lost in the case of failure.").

[74] Where a potential competitor could enter and exit in quick succession, it makes sense to pay special attention to unrecoverable entry costs, typically called sunk costs. We return to this point in Part II.C, *infra*.

[75] *E.g.*, Harold Demsetz, *Barriers to Entry*, 72 AM. ECON. REV. 47 (1982); Ordover & Wall, *supra* note 65; Schmalensee, *supra* note 68; Gregory J. Werden, *Network Effects and Conditions of Entry: Lessons from the Microsoft Case*, 69 ANTITRUST L.J. 87 (2001).

[76] *Cf.* Rebel Oil Co. v. Atl. Richfield Co., 51 F.3d 1421, 1439 (9th Cir. 1995) (attempting to enumerate "[t]he main sources of entry barriers").

"unnatural,"[77] "purposeful" or "innocent."[78] As noted above, every time travel theory bottoms out on a foundational prediction that that future entry will result in a significant injection of competition into a relevant market. Anything that reduces the attractiveness of entry likely reduces the probability of entry; and anything that reduces the attractiveness of entry is thus a barrier to entry in the only sense that matters for evaluating a time travel theory.

This understanding of barriers to entry is both simplifying and complicating.[79] It simplifies by freeing us of irrelevant semantics and definitional arguments.[80] It complicates by revealing that there are far more barriers to entry than casual inspection might reveal. Many considerations can reduce the attractiveness of entry to a potential competitor, and each is a potential barrier to entry. Without attempting exhaustion, potential barriers include exogenous features of competition, strategic considerations surrounding entry, and strategic efforts by incumbent firms to preclude entry.[81]

Exogenous features of competition. Background characteristics of competition can constitute significant barriers to entry. One example is when im-

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[77] *Cf.* ROBERT H. BORK, THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF 331 (2021) ("Capital requirements exist and certainly inhibit entry—just as talent requirements for playing professional football exist and inhibit entry. Neither barrier is in any sense artificial or the proper subject of special concern for antitrust policy.").

[78] Steven C. Salop, *Strategic Entry Deterrence*, 69 AM. ECON. REV. 335, 335 (1979) ("An innocent entry barrier is unintentionally erected as a side effect of innocent profit maximization. In contrast, a strategic entry barrier is purposely erected to reduce the possibility of entry.").

[79] We are by no means the first to endorse this broad view of barriers to entry. *See, e.g.*, A. Michael Spence, *Entry, Capacity, Investment and Oligopolistic Pricing*, 8 BELL J. ECON. 534, 543–44 (1977) ("Entry barriers are a combination of structural and technological factors on the one hand, and obstacles that are put in place by the existing industry on the other. The latter include more or less irreversible investments in a variety of kinds of capital."); Baumol & Willig, *supra* note 73, at 418 ("The additional expected revenue that a potential entrant requires as compensation for the excess of its incremental cost and incremental risk over those of the incumbent becomes an entry cost as defined here, and permits the incumbent to earn corresponding profit (rent).").

[80] The time travel perspective also reveals the damage that definitional arguments have done in antitrust cases. *Cf.* Ordover & Wall, *supra* note 65, at 13 ("The disagreement among economists as to the conditions which constitute meaningful entry barriers has important ramifications for antitrust litigation. A case can be won or lost depending on whether a court is convinced to take a broad or narrow view of entry barriers.").

[81] The inclusion of strategic considerations among the list of barriers to entry is more novel in antitrust law than it is in economics. See, e.g., Roger Sherman & Thomas D. Willett, *Potential Entrants Discourage Entry*, 75 J. POLITICAL ECON. 400, 403 (1967) ("[I]n addition to technological determinants of the entry decision, we urge investigation of strategic considerations as well.").

portant factors of production are in limited supply. The protection of incumbent firms by critical patents illustrates this vividly.[82] Unless outside firms can invent around these patents, or license them, they may have no viable path to entry. Regulatory approval requirements can have similar effects.[83] Upon reflection, though, these are only the tip of the iceberg.

The same reasoning applies to less severe obstacles. Potential competitors face barriers to entry when incumbent firms have an advantage in access to raw materials or possession of prime locations.[84] Potential competitors face barriers to entry when incumbent firms enjoy experience-based knowhow advantages.[85] Potential competitors face barriers to entry when incumbent firms enjoy brand loyalty or reputation advantages.[86] And when scale or network effects must be overcome quickly for a new entrant to remain viable in a relevant market, the costs of scaling up and growing a network can constitute a

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[82] *See* Ordover & Wall, *supra* note 65, at 16 (discussing "valuable patents, . . . regulatory constraints, . . . advantageous raw material sources, strategic plant locations").

[83] Regulatory barriers have long been recognized by courts. *See* United States v. Citizens & S. Nat. Bank, 422 U.S. 86 119 n.30 (1975) ("The banking business is, of course, riddled with state and federal regulatory barriers to entry."); United States v. Marine Bancorporation, Inc., 418 U.S. 602, 629 (1974) ("[R]egulatory barriers to entry include federal and state supervisory controls over the number of bank charters to be granted . . . ."); S. Pac. Commc'ns Co. v. Am. Tel. & Tel. Co., 740 F.2d 980, 1001 (D.C. Cir. 1984) ("[T]he costs and delays of the regulatory process clearly constitute barriers to entry.").

[84] *See* Ordover & Wall, *supra* note 65, at 15 ("A natural absolute cost advantage can stem from better access to scarce assets (such as low cost natural resources or choice location), ownership of a patent, or government regulation."); see also K. Sridhar Moorthy, *Using Game Theory to Model Competition*, 22 J. MARKETING RESEARCH 262, 269 (1985) ("One way in which the first-mover advantage is manifested is in the first-mover's preemption of the "best" locations in attribute space. This preemption is effective because it is costly for the incumbent to change its product locations").

[85] Joseph E. Stiglitz, *Potential Competition May Reduce Welfare*, 71 AEA PAPERS AND PROCEEDINGS 184, 184–85 (1981) ("[I]f the costs of production are lowered by experience (the "learning-by- doing" hypothesis), then a monopolist will produce beyond the point where marginal revenue equals current marginal cost of production; the firm takes into account that increasing production this period lowers production costs in subsequent periods.").

[86] Advertising and brand loyalty are often related. *See* Demsetz, *supra* note 75, at 50 ("Because of brand loyalty, new rivals, seeking to sell as much as existing firms, may need to advertise more than existing firms (or offer some other special compensating advantage).") Demsetz objected to calling this a barrier to entry, but on grounds not relevant here. Reputation may be an even more formidable barrier. *See* John C. Hilke & Philip B. Nelson, *The Economics of Entry Lags: A Theoretical and Empirical Overview*, 61 ANTITRUST L.J. 365, 368 (1993) ("In some markets, entrants have to build up a reputation for product quality, reliable delivery, and service before they have a significant impact on the pricing of other firms in the market, which can extend the entry period well past the time when the entrant produces and/or sells its first unit of output.").

barrier to entry, at least when combined with the strategic considerations discussed below.[87]

Courts and scholars have sometimes doubted whether these exogenous features of competition should count as barriers to entry since they are borne by incumbent firms as well as entrants. This framing device is objectionable for the implicit suggestion that the costs and benefits of entry would be static over time. But a more fundamental objection is that it simply focuses on an irrelevant distinction. As the time travel perspective clarifies, the only question of consequence is whether the potential competitor could and would attempt to enter the market. In appropriate circumstances, any of the above factors could reduce the chances of a firm profiting by entry. As profit opportunities fade, so does the prospect that a firm will elect to enter. All of these are thus barriers to entry in the only sense that matters for evaluating a time travel theory.

Strategic considerations surrounding entry. Strategic properties of competition may also constitute barriers to entry. Just like exogenous features of competition, strategic considerations act as barriers to entry when they reduce the expected profitability of entry. This type of barrier can be simultaneously intuitive and difficult to evaluate empirically.

One example is the availability of several potential competitors. It is often assumed that more potential competitors means a higher probability of future entry.[88] This is not a safe assumption. The profitability of future entry depends on both the price responses of incumbent firms and the entry decisions of other potential competitors. Every potential competitor that elects to enter a market drives down the profitability of entry to all other potential competitors.[89] The threat of entry by other potential competitors is thus a risk that decreases the

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[87] *See* Ordover & Wall, *supra* note 65, at 15 (noting that scale economies are not a barrier if the potential competitor will be accommodated by incumbent firms after entry but can constitute a barrier to entry otherwise).

[88] *Compare* Donald F. Turner, *Conglomerate Mergers and Section 7 of the Clayton Act*, 78 HARV. L. REV. 1313, 1379 (1965) ("As has been pointed out, two potential entrants make actual new entry more probable than when there is only one."), *with* Sherman & Willett, *supra* note 81, at 403 ("That an increase in the number of potential entrants can raise rather than lower the entry-preventing price conflicts with the widespread view that entry should be kept open to as many firms as possible.").

[89] Sherman & Willett, *supra* note 81, at 400 ("The entry decision is greatly complicated when additional potential entrants are considered … Each potential entrant's profit depends not only on the response of existing firms but also on whether other firms enter as well. Multiple entry could impose losses on all."). The profit-suppressing consequences of entry are vividly apparent in the pharmaceutical context. *See, e.g.*, Fed Trade Comm'n v. Actavis, Inc., 570 U.S. 136, 143–44 (2013) (noting that most of a generic drug's profits may accrue during the brief period of exclusivity before other generics enter the market).

attractiveness of entry to every potential competitor.[90] And, in some cases, an increase in the number of potential competitors can lead to a decrease in the probability of entry by any potential competitor. Partha Dasgupta and Joseph Stiglitz state the takeaway with pith: "[T]here are some circumstances . . . where markets may be less competitive, the greater number of potential competitors."[91]

Another example involves consumer expectations. In durable goods markets, consumer expectations about entry may act as self-fulfilling prophecies.[92] Where consumers expect future entry to lead to better prices or other terms of trade, they may rationally delay their purchases to wait for future entry.[93] This unfilled demand constitutes a recognizable sales opportunity for potential entrants, increasing the profit opportunity for an entrant and thus leading to future entry—just as consumers had hoped.

The same logic works in reverse. Where consumers doubt that future entry will occur, and thus satisfy their demand for durable goods through purchase from incumbent firms, the available universe of future sales opportunities contracts, shrinking the profit opportunities of entrants and thus deterring future entry—just as consumers had feared. The properties of this simple model do not generalize to every situation, but they reflect another way in which strategic properties of competition may act as barriers to entry.[94]

Strategic efforts to preclude entry. Finally, incumbent firms are unlikely to sit dumbly by and wait for entry to occur. Instead, they should be expected to obstruct entry wherever it is cost justified to do so.[95] Cost justification is a question of both the costs to incumbent firms of undertaking deterrence measures and the benefits to those firms of preventing entry. This cost-benefit

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[90] *See* P. Dasgupta & J. E. Stiglitz, *Potential Competition, Actual Competition, and Economics Welfare*, 32 EUR. ECON. REV. 569, 573 (1988) ("[A] firm's incentive to undertake the risk of entering a market, to take away some of the profits of the incumbent firm will be diminished if it believes that if it is initially successful in doing so, other firms will simply enter the market, to take its profits away.").

[91] *Id.*

[92] Jaehong Kim, *Fulfilled Expectations of Entry*, 24 RAND J. ECON. 681, 685 (1993) ("[W]hen the consumer expects future entry, the equilibrium allows entry, and when he believes a monopoly will prevail in the future, entry is deterred at equilibrium.").

[93] Hilke & Nelson, *supra* note 86, at 368 ("In some markets it is also possible for consumers to delay purchases until the entrant's facilities are completed.").

[94] The basic tension is more general than this simple model might suggest. *See* Sanford J. Grossman, *Nash Equilibrium and the Industrial Organization of Markets with Large Fixed Costs*, 49 ECONOMETRICA 1149, 1171 (1981) ("[T]he existence of fixed costs can create an 'externality' across the potential customers of the entrant. The entrant can enter only if enough customers jointly agree to leave the existing firm.").

[95] Cost justification will not be a high hurdle where cheap modes of exclusion are available. *See generally* Susan A. Creighton, D. Bruce Hoffman, Thomas G. Krattenmaker, & Ernest A. Nagata, *Cheap Exclusion*, 72 ANTITRUST L.J. 975 (2005).

calculus leads to a perverse relationship. As Donald Turner put it, "the more threatening the [competitive effects of potential] entry the more likely that existing sellers will act to discourage it."[96]

Strategic efforts to deter entry can take myriad forms. One of the most commonly theorized patterns is irrevocable investment, by an incumbent firm, in assets or activities that will serve to drive down the incumbent's post-entry marginal cost curves.[97] This guarantees the incumbent to be a tough post-entry competitor, reducing the profit motive for entry and thus reducing the probability of entry. One example of this strategy is over-scaling by incumbent firms. By sinking resources into maintaining significant excess capacity, an incumbent firm presents potential competitors with the credible threat of aggressive post-entry competition, should they choose to enter the market.[98] Another example is over-investment in cost-reducing technology, leading to a

[96] Turner, *supra* note 88, at 1385; *see also* Avinash Dixit, *The Role of Investment in Entry-Deterrence*, 90 ECON. J. 95, 95 (1980) ("[F]aced with an irrevocable fact of entry, the established firm will usually find it best to make an accommodating output reduction. On the other hand, it would like to threaten to respond to entry with a predatory increase in output. Its problem is to make the latter threat credible given the prospective entrant's knowledge of the former fact.").

[97] *E.g.*, Salop, *supra* note 78, at 337 ("[T]he common feature that the monopolist creates an incentive to choose post-entry actions to the detriment of entrants. Technically, this incentive is created by irreversibly altering his profit function."); Dixit, *supra* note 96, at 96 ("[A]n irrevocable choice of investment allows it to alter its post-entry marginal cost curve, and thereby the post-entry equilibrium under any specified rule.").

[98] *E.g.*, Spence, *supra* note 79, at 534–35 ("[E]xcess capacity permits existing firms to expand output and reduce price when entry is threatened, thereby reducing the prospective profits of the new entrant who operates on the residual demand curve to zero."); Avinash Dixit, *A Model of Duopoly Suggesting a Theory of Entry Barriers*, 10 BELL J. ECON. 20, 30–31 (1979) (presenting a similar model); *see also* Turner *supra* note 88, at 1365 ("[T]he threat of potential entry may well have considerable influence upon the decision of oligopolists whether to expand capacity . . . . With no threat of new entry they may well tend to act conservatively, allowing the expansion of capacity to lag behind the growth of demand in order to minimize the risks of overestimating the trend. The threat of new entry renders it more likely that they will accelerate expansion in order to keep the new entrant out.").

similarly credible threat of painful post-entry competition.[99] Another is strategic over-accumulation of knowhow through research and "learning by doing."[100] Another is over-investment in advertising.[101]

Two properties of these strategic acts of deterrence are noteworthy. First, while looking in some respects like desirable competition,[102] the above examples of strategic efforts to deter entry actually involve *inefficient* behavior. These incumbents waste resources trying to deter future entry. They scale too much, learn too fast, and advertise too much, sometimes with the effect that outcomes are socially worse than if there had been no threat of potential entry in the first place.[103] Second, these acts by incumbent firms constitute barriers to entry in the same sense as all previous barriers we have considered. Credible threats of costly post-entry competition decrease the profit incentive for potential competitors to enter the market, and therefore decrease the probability of future entry.

Just like exogenous features of competition, courts have sometimes balked at the idea of counting the threat of aggressive future competition as an entry barrier.[104] The obstacle is devotion to a belief that only "natural" or structural features of competition rank among the accepted examples of barriers to entry according to some imagined platonic definition of that term. As already noted,

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[99] *E.g.*, Drew Fudenberg & Jean Tirole, *Capital as a Commitment: Strategic Investment to Deter Mobility*, 31 J. ECON. THEORY 227 (1983).

[100] *See* Partha Dasgupta and Joseph Stiglitz, *Learning-by-Doing, Market Structure and Industrial and Trade Policies*, 40 OXFORD ECON. PAPERS 246, 247 (1988) ("'[L]earning' may well be used for the creation of entry-barriers"); Stiglitz, *supra* note 85, at 184 ("[P]otential competition forces the existing firm to undertake research at a sufficient rate to deter the entry of the rival."); Spence, *supra* note 79, at 68 ("The learning curve creates entry barriers and protection from competition by conferring cost advantages on early entrants and those who achieve large market shares. . . . The effects are similar to (though more pronounced than) those caused by economies of scale."); *see also* B. Curtis Eaton & Richard G. Lipsey, *Exit Barriers are Entry Barriers: The Durability of Capital as a Barrier to Entry*, 11 BELL J. ECON. 721 (1980).

[101] *E.g.*, Spence, *supra* note 79, at 542–43; Salop, *supra* note 78, at 336.

[102] *See, e.g.*, United States v. Penn-Olin Chem. Co., 378 U.S. 158, 174 (1964) (interpreting "expansion undertaken by [incumbent firms] as soon as they heard of the interest of [potential competitors]" as competition incentivized by the presence of potential competitors, as opposed to efforts by these incumbents to prevent entry).

[103] Kofi O. Nti, *Potential Competition and Coordination in a Market-Entry Game*, 71 J. ECON. 149, 150 (2000) (summarizing a number of papers on the "relationship between the number of competitors and certain market-performance variables" as generally supporting the claim that "competition may not be served by increasing the number of potential competitors").

[104] *E.g.*, United States v. Syufy Enterprises, 903 F.2d 659, 667 (9th Cir. 1990) ("[T]he government trots out a shopworn argument we had thought long abandoned: that efficient, aggressive competition is itself a structural barrier to entry."); *id.* at 668 ("The government is not claiming that Syufy monopolized the market by being too efficient, but that Syufy's effectiveness as a competitor creates a structural barrier to entry, rendering illicit Syufy's acquisition of its competitors' screens. We hasten to sever this new branch that the government has caused to sprout from the moribund Alcoa trunk.").

the time travel perspective betrays the error in this belief. If credible threats of aggressive post-entry competition are sufficient to deter potential competitors from entering, then they are barriers to entry in the only sense that matters for time travel analysis.[105]

2. *Barriers to competitive significance*

Next, consider the second condition of the foundational requirement for time travel: competitive significance of a potential competitor after entry. To state either a violation or a defense based on potential competition, the potential competitor's entry must constitute a significant source of post-entry competition.[106] Entry must matter. It would go too far to require that a new entrant immediately meet or exceed the competitive significance of incumbent firms.[107] But a potential competitor that enters a relevant market only to fail or flounder as a rival (or, worse yet, only to accommodate existing exercises of market power) would not significantly increase future competition and thus would not supply a justification for relying on its presence in either a claim or defense.

Barriers to competitive significance are features of competition that reduce the likely competitive impact of future entrants. These are analytical cousins of barriers to entry and sometimes arise from the same sources. But they have distinct relevance in evaluating time travel theories: barriers to competitive significance do not so much prevent entry as dampen its effects.

Entry lags are a prime example. Often, there will be a significant delay between the point at which a potential competitor decides to enter a relevant market and the point at which it constitutes a significant competitor in the market. This delay could reflect the need to acquire assets and construct physical plants, the need to acquire regulatory approval, the need to design new

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[105] *See* Richard J. Gilbert, *The Role of Potential Competition in Industrial Organization*, 3 J. ECON. PERSPECTIVES 107, 109 (1989) ("Modest entry barriers could translate into large incumbent profits if entrants expect that entry would trigger aggressive price-cutting behavior.").

[106] *See, e.g.*, Turner *supra* note 88, at 1382 ("[T]here is a further problem of establishing with some degree of assurance that the loss of the acquiring firm as an independent new competitor probably has or would have significance.").

[107] Some commentators nevertheless demand this. *See, e.g.*, Rahl, *supra* note 54, at 133 ("[I]t should be a necessary part of the burden of proof to show that the potential element about which complaint is made possessed positive substantial competitive force of such degree as to rank with actual competition . . . .").

products, or the need to acquire contracts, know-how, and other inputs of competition. During this period of delay, the potential competitor does not represent a significant constraining influence on incumbent firms in the market.[108]

Reputational barriers illustrate this effect. In areas of competition where a reputation for quality, consistency, or safety is paramount to consumers, new and untested suppliers may not represent a realistic option for buyers.[109] Reputational hurdles can, of course, be overcome with time and effort. New competitors can work to establish the kind of reputation buyers value. Significant buyers may sponsor the development of this reputation through small projects and continuous qualification of the new competitor's products. But reputation development takes time.[110] And until this happens, the new entrant is at best only a promising future source of competitive constraint.[111]

As alluded to already, there can be significant overlap between entry lags and entry barriers. It seems reasonable to assume that entry costs will increase with the duration of entry lags in many cases; and if entry lags can be abbreviated by spending more for faster entry, then the distinction becomes even more ethereal.[112] But the most direct impact of entry lags is that they represent intervals of time over which the constraining influence of a potential competitor will not curtail exercise of market power by incumbent firms even if the potential competitor did commit to enter a relevant market.[113] In direct and

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[108] Hilke & Nelson, *supra* note 86, at 367 ("The term "entry lag" could be defined as the period between the time when a monopolistic price increase is implemented and the time when profitable price constraining entry has been completed.").

[109] *Id.* at 368 ("In some markets, entrants have to build up a reputation for product quality, reliable delivery, and service before they have a significant impact on the pricing of other firms in the market, which can extend the entry period well past the time when the entrant produces and/or sells its first unit of output."); Demsetz, *supra* note 75, at 51 ("A reputable history is an asset to the firm possessing it and to the buyer who relies on it because information is not free.").

[110] Hilke & Nelson, *supra* note 86, at 371–72 ("Long entry lags are sometimes present because the entering firm needs time to build its reputation as a quality supplier . . . .").

[111] *See infra* notes 119-120 (discussing specific timing considerations in forward time travel); 147-155 (discussing specific timing considerations in backward time travel).

[112] Hilke & Nelson, *supra* note 86, at 370 ("[E]ntry costs tend to rise with the length of the entry lag."); *id.* at 371 ("[W]hen entry lags are long, the recoupment of any introductory losses (or investments) are postponed for a considerable period, causing the present value of preentry losses at the time entry is completed to rise.").

[113] Colorado Interstate Gas Co. v. Nat. Gas Pipeline Co. of Am., 885 F.2d 683, 696 (10th Cir. 1989) ("Barriers to entry are market characteristics which make it difficult or time-consuming for new firms to enter a market."); F.T.C. v. Elders Grain, Inc., 868 F.2d 901, 905 (7th Cir. 1989) ("And since entry into the industry is slow—it takes three to nine years to design, build, and start operating a new mill—colluding sellers need not fear that any attempt to restrict output in order to drive up price will be promptly nullified by new production."); Ball Mem'l Hosp., Inc. v. Mut. Hosp. Ins., Inc., 784 F.2d 1325, 1335 (7th Cir. 1986) ("To put these points a little differently, the lower the barriers to entry, and the shorter the lags of new entry, the less power existing firms have.").

necessary effect, entry lags are thus barriers to competitive significance wherever they occur.

A related barrier to competitive significance is presented when production or service provision exhibits significant economies of scale. An entrant that is unable to obtain at least minimum viable scale for the industry may be forced to exit, but even those that attain viable scale may impose only limited competitive constraints upon larger-scale incumbent firms. Depending on the context, the relevant concept of scale can comprehend anything from plant size, to geographic footprint, to size of customer base.

Strong network effects can be seen as a special and potentially severe form of scale effect. Where the value of a dominant incumbent's products is enhanced and insulated by strong network effects, potential competitors may need to invest heavily in growing their own market share to have any chance at all of competing with the incumbent firm.[114] An entrant in a relevant market that exhibits strong network effects thus begins life at a disadvantage. Without some disruptive technical innovation, the new firm may have little prospect of succeeding.[115] In short, even when strong network effects do not deter entry (act as a barrier to entry), they may constitute a serious obstacle to a new entrant becoming a significant competitive threat to an already established firm (act as a barrier to significance).

Finally, entrants that struggle to overcome reputational barriers, scale effects, network effects, and other competitive obstacles may soon elect to exit a relevant market. Statistically, failure and rapid exit are the fate of many new entrants.[116] This hardly disapproves the competitive significance of some entrants and potential competitors. But firms that exit relevant markets cease to be competitive constraints, and the prospect of failure upon entry may act as a barrier to entry and may be seen as a barrier to competitive significance.

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[114] Werden, *supra* note 75, at 108 ("Network effects are among the determinants of the conditions of entry in many industries, and they can create a truly formidable entry obstacle, sufficient to permit prices to persist above competitive level for a substantial period of time without attracting entry.").

[115] *Id.* at 91-92 ("Without some offsetting advantage, the potential entrant has no prospect of success, and the stronger the network effects, the greater the potential entrant's offsetting advantage must be.").

[116] See JOHN R. BALDWIN, THE DYNAMICS OF INDUSTRIAL COMPETITION: A NORTH AMERICAN PERSPECTIVE 17–21 (1995) (providing empirical summaries of entry lifecycles and noting that "greenfield entrants have a high infant mortality rate," though some do persist for decades); Timothy Dunne, Mark J. Roberts, & Larry Samuelson, *Patterns of Firm Entry and Exit in U.S. Manufacturing Industries*, 19 RAND J. ECON. 495, 513 (1988) (presenting data in which failure rates for newly entered firms range from around 50–60 percent in the first five years of competition to 70–80 percent within a decade of entry).

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As a reminder, the point of this aside on barriers to entry and competitive significance has been to set the stage for efficient discussion of specific time travel arguments. While the mechanics of time travel differ in important ways by type of time travel (forward or backward), barriers to entry and competitive significance are of similar importance in every time travel argument. With this common foundation in place, we now turn to considerations that depend upon the type of time travel in question.

B. FORWARD TIME TRAVEL

The focus of forward time travel is future competitive effects. Forward time travel asks whether a potential competitor would enter a relevant market in the future. Assuming that this entry occurred, forward time travel then asks how the entry of this competitor would affect competition in that future state of the relevant market. The legal significance of this exercise in time travel comes from how it changes the assessment of some challenged act of current conduct. Perhaps it suggests that the challenged conduct poses little threat because entry is so easy that any harm would be quickly corrected (a defensive implication). Perhaps it suggests that challenged conduct poses a greater threat than meets the eye because it forecloses the beneficial future competition that would have resulted from the independent entry of a potential competitor (an offensive implication). Either way, the focus is on the future entry of a potential competitor and what this entry would mean for future competition.

The questions outlined above reveal the economic fragility of forward time travel stories. Future entry is unlikely to occur if barriers to entry are too large relative to profit opportunities.[117] Unless large returns are expected, even modest barriers to entry may suffice to make entry unappealing and therefore unlikely.[118] And even if potential competitors do in fact enter the market, they may still fail to introduce significant competition.[119] Barriers to significance, like construction or reputational lags, can depress the competitive pressure of entrants upon incumbent firms, at least in the early years of entry. Indeed, even if a potential competitor enters a market and could significantly influence competition, it should not be uncritically assumed that post-entry competition

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[117] *See supra* Part II.A.1 (discussing barriers to entry).

[118] *See* Gilbert *supra* note 105, at 109 ("Modest entry barriers could translate into large incumbent profits if entrants expect that entry would trigger aggressive price-cutting behavior."); Ordover & Wall, *supra* note 65, at 14 (noting that "entry occurs because it is potentially profitable, not merely because it is possible").

[119] *See supra* Part II.A.2 (discussing barriers to competitive significance).

would have that result. Nothing prohibits entrants and incumbents from accommodating one another in continued exercises of market power.[120] In fact, the primary motive to enter may well have been the hope of mutual accommodation and participation in ongoing exercises of market power.

Alone, these combined considerations supply ample reason to doubt that a potential competitor will enter a relevant market in the future in a competitively significant way. But these are not the only challenges facing forward time travel theories. Some further challenges apply asymmetrically to offensive and defensive considerations (a point to which we will soon return), but one important challenge is generic to all instances of this form of time travel. That challenge arises from a wrinkle in how entry and significance considerations interact in the forward time travel narrative.

Here is the wrinkle. As discussed previously, a profit maximizing firm will not enter a market if it cannot expect to earn an adequate profit by doing so.[121] In Part II.A.1, we discussed a number of barriers to entry arising from threats to the profitability of the potential competitor. But that discussion omitted one important factor: the competition introduced by a potential competitor's entry is itself an impediment to the entrant's own post-entry profitability. In forward time travel theories, entrants supply their own barriers to entry.

Many discussions of future entry miss this point. In doing so, they fall victim to the same trap that caught Robert Bork when he claimed that, upon entering a previously monopolized market, "available profits [would] more than cover the costs of advertising" for the new competitor.[122] Pigou warned about this error decades earlier.[123] If entry by the potential competitor injects substantial competition into the market (as it must for that entry to matter in competitive effects analysis) then that future entrant cannot rationally expect to continue reaping pre-entry profits after it enters.[124] Its own competition in the post-entry market reduces the profitability of entry.

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[120] Dasgupta & Stiglitz, *supra* note 90, at 573 ("[O]nce the entrant has entered, it may pay the incumbent firm to accommodate to that entry; in particular, the perfect equilibrium may entail collusion.").

[121] *See supra* notes 73–74 and accompanying text.

[122] BORK, *supra* note 77, at 325-26 ("The entrant can find an advertising agency just as easily as the monopolist. Indeed, he will have agencies clamoring for the account. Since the incumbent has, by hypothesis, been taking a monopoly profit, the available profits more than cover the costs of advertising.").

[123] Pigou, *supra* note 20 at 66.

[124] Jonathan B. Baker, *The Problem with Baker Hughes and Syufy: On the Role of Entry in Merger Analysis*, 65 ANTITRUST L.J. 353, 363 (1997) ("If the committed entry solves the competitive problem, the postmerger price will quickly return to the premerger level or fall below it.

Indeed, if future entry by the potential competitor is significant enough to correct whatever exercise of market power attracted it to enter, then the entrant will soon find itself needing to subsist on nothing more than a competitive rate of return.[125] This invites a troubling empirical question: if the potential competitor would find entry profitable when limited to a competitive rate of return, then why had it not entered the relevant market long ago?[126] Is not its absence from a relevant market evidence that it would not find future entry profitable? And, if so, is this not strong reason to doubt that the potential competitor would really enter the relevant market in the future?

Satisfying responses to these questions are possible in some situations. The potential competitor's recent invention of new, disruptive technology could, for example, explain why it is not a competitor today but would still find it profitable to enter in the future. Or perhaps a demand shock in an adjacent market has made entry into the relevant market attractive. In cases where current exercises of market power arise from the exit of an independent competitor, opportunities for profit may also be present despite competitive post-entry conditions. Mergers leading to output suppression are an example.[127] Finally, as noted previously, nothing compels post-entry behavior to be highly competitive.[128] In some circumstances, modest competitive improvements following future entry may be consistent with both entry motives and antitrust significance—a point to which we will return shortly.

But even these responses cannot unseat the cause for doubt. In addition to various exogenous and strategic barriers to entry, a potential competitor must account for its own profit-reducing competition in the post-entry market. The non-entered status of a potential competitor is, in many cases, powerful evidence against the claim that future entry will be probable for that firm. And this is *still* not the end to the challenges facing forward time travel theories. Here, however, it becomes important to differentiate between defensive and offensive implications of forward time travel.

Thus, the prospective committed entrant must determine whether its entry plan would be profitable assuming that it would receive no more than the premerger price.").

[125] Steven C. Salop, *Comments and Discussion* on Robert D. Willig, *Merger Analysis, Industrial Organization Theory, and Merger Guidelines*, 1991 BROOKINGS PAPERS ON ECON. ACTIVITY: MICROECONOMICS 282, 313-316.

[126] *See* Baker, *supra* note 124, at 364 ("If entry at premerger prices would be profitable after the transaction, wouldn't it have been profitable before? And wouldn't the firm have entered already? In short, does the "likelihood" analysis guarantee that we will never find a likely entrant because all likely entrants already would be incumbents?").

[127] *E.g.*, Janusz A. Ordover & Jonathan B. Baker, *Entry Analysis under the 1992 Horizontal Merger Guidelines*, 61 ANTITRUST L.J. 139, 143 (1992) ("If the merger has the feared anticompetitive effect, industry output will decline, thereby creating additional potential sales for an entrant beyond what had previously been available.).

[128] *See supra* note 120 and accompanying text.

Start with the defensive implication of forward time travel: the "corrective entry" argument that a potential competitor's future entry would quickly correct any exercise of market power that was attempted by incumbent firms.[129] Suppose, for example, that there is credible evidence that a horizontal merger will lead to near term price elevation. When would corrective entry suffice to justify this merger? Logically, the corrective entry theory would need to establish two things. First, future entry would need to introduce enough competitive pressure to make substantial post-entry price elevation unsustainable. Second, future entry would need to cause this correction quickly.

The need for both elements is inherent in the claim of the defense. If future entry were not sufficient to undo the anticompetitive effect of the merger, then it would only soften the harm of the merger and would not generally suffice to defeat illegality. If future entry were sufficient to undo price elevation, but not until years after the potential competitor had entered,[130] then the defense would again be insufficient. Harm would still accrue in the interim years. The incredulity of some courts notwithstanding, future entry really does need to be "quick and effective" to support a defense to illegality.[131]

Interestingly, the offensive implications of forward time travel are not saddled with this demanding standard. Suppose, for example, that an incumbent firm's acquisition of a potential competitor is challenged on the grounds that it forecloses the possible benefits that would flow from the potential competitor's independent future entry into the relevant market. The claimed injury requires that the future competitive significance of the potential competitor be greater than zero, but nothing requires that it be of any particular magnitude to establish illegality.[132] A loss of even modest future competition is still a loss. There is also no special need for the benefits of that future competition to be rapidly felt in the relevant market. True, the loss of earlier benefits implies a greater injury. But even if the benefits of future entry were not felt for

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[129] *See* Colorado Interstate Gas Co. v. Nat. Gas Pipeline Co. of Am., 885 F.2d 683, 695–96 (10th Cir. 1989) ("If the evidence demonstrates that a firm's ability to charge monopoly prices will necessarily be temporary, the firm will not possess the degree of market power required for the monopolization offense.").

[130] Gilbert, *supra* note 105, at 124 ("A host of studies find that some industries change in ways that are consistent with the dynamic limit pricing model. Profits are eroded over time as new entry occurs, but the success rate of new entrants is low and above-normal profits persist for a long time.").

[131] *Cf.* United States v. Baker Hughes Inc., 908 F.2d 981, 987 (D.C. Cir. 1990) (wrongly rejecting as a "novel and unduly onerous standard" the logical requirement that future entry be "quick and effective" to state a defense).

[132] *See* Brown Shoe Co. v. United States, 370 U.S. 294, 321 (1962) (commenting that Congress "did [not] adopt a definition of the word 'substantially,' . . . by which a merger's effects on competition were to be measured").

several years, foreclosure of those future benefits would still constitute a loss of future competition. The logical implication is that it is easier to prove harm in a forward time travel theory than it is to prove a defense, at least in this respect.[133]

Proving harm to future competition from the acquisition of a potential competitor does, however, entail one element not so keenly felt in the defensive posture: there must not be other potential competitors with equal or better prospects of entering the market. The need for this is obvious. If many potential competitors were equally situated to enter the relevant market, then the acquisition of any one of these potential competitors would have little consequence for future competitive conditions.

This additional step in proving injury does require attention but tends to be overstated in descriptions of "actual potential competition" doctrine.[134] Other potential competitors will often face the same entry barriers as the acquired firm, if not more. These other potential competitors will also face any profit-suppressing influences that the acquired firm's assets will have when added to the post-acquisition market—perhaps lending excess capacity to an incumbent firm, for example. Even a modestly strong case for future independent entry by the potential competitor may thus suffice to establish its distinctiveness as a potential future entrant.

Another deficiency in current doctrine is an uncritical tendency to assume that uniqueness is irrelevant in evaluating the defensive implications of entry. As previously discussed, it is wrong to assume that more potential competitors necessarily equates to a stronger entry defense. There are cases in which the probability of entry falls with the number of potential entrants.[135] In any event, the substantive force of the corrective entry defense depends on the likelihood of entry actually occurring. The mere identification of a potential competitor is not itself evidence that this firm would enter in the way that the corrective entry defense requires. Nor is evidence that one potential competitor would enter a relevant market generally persuasive evidence that other potential competitors would enter as well.

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[133] Of course, the more distant the claimed future benefits of entry become, the less confident we will be in the accuracy of our assessment of those benefits. Offensive and defensive implications of forward time travel share this sensitivity. As we forecast ever deeper into the future, prediction eventually devolves into speculation.

[134] *Cf.* Turner, *supra* note 88, at 1382 ("Unless a firm possesses unique capabilities, its preparation to enter a market . . . suggests that the market presents attractive opportunities that at least one other firm will be likely to seek . . . .").

[135] *See supra* notes 89–91 and accompanying text.

C. BACKWARD TIME TRAVEL

The focus of backward time travel is current competitive effects. By definition, a potential competitor is not a current competitor, and so its actions are not directly affecting competition in a relevant market. Instead, the theory of backward time travel centers on predictions made by current competitors about alternate states of future competition, and their adjusting market behavior based on such predictions. The story goes that incumbent firms predict that significant exercises of market power will attract entry by potential competitors. Seeing a potential competitor on the horizon, and not wanting to cause its entry, these incumbent firms moderate their conduct and decline to exercise the market power they otherwise possess. In this way, the potential competitor exerts a current procompetitive constraint, even though it has not yet entered the relevant market.

Backward time travel is an intuitively appealing narrative because the prediction ostensibly comes from the market participants themselves; the trier of fact does not need to engage in his or her own scrying. Perhaps that explains why it has found such ready acceptance among courts and commentators.[136] The economic basis for the story is, unfortunately, not a happy justification for its acceptance. Upon even brief reflection, it becomes clear that backward time travel depends upon the satisfaction of two unlikely conditions. First, the potential competitor must be a future entrant, satisfying all the relevant requirements of forward time travel.[137] Second, something unusual about the mode of entry must make it rational for incumbent firms to react to the potential competitor before it enters, rather than in response. In practice, evaluation of the second condition subsumes the first condition, so the second condition is the place to focus our attention.

There is no general justification for expecting incumbent firms to moderate their conduct in order to discourage entry by potential competitors.[138] For one

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[136] *Cf.* United States v. Marine Bancorporation, Inc., 418 U.S. 602, 624 (1974) ("Unequivocal proof that an acquiring firm actually would have entered de novo but for a merger is rarely available. Thus, . . . the principal focus of the doctrine is on the likely effects of the premerger position of the acquiring firm on the fringe of the target market." (footnote omitted)); Rahl, *supra* note 54, at 138 ("A mere showing that the acquired firm might enter . . . would not qualify. Imminent entry, with full capability to enter, and with demonstrated present effective *restraint* upon the acquiring company's conduct must be shown." (emphasis in original)).

[137] *See* PHILIP E. AREEDA & HERBERT HOVENKAMP, 5 ANTITRUST LAW ¶ 1121b, at 57 (4th ed. 2016), (noting that the "'harder' present effect tests [backward time travel] would be satisfied by few mergers that have not already been condemned under the 'easier' future effect tests [forward time travel]").

[138] *See* Moorthy, *supra* note 84, at 275 (explaining this point and exceptions to it).

thing, doing so is costly. One alternative to moderated conduct is the profitable exploitation of market power for however long it takes potential competitors to enter—*if* they enter.[139] Another alternative to moderated conduct, already mentioned above, is to engage in strategic efforts to exclude entry, which, while not costless, may be less costly. For another thing, one has to explain why the exercise of pre-entry market power (or the refusal to exercise it) changes anything in the entry calculus of potential competitors.[140] As previously discussed, a profit maximizing potential competitor enters a relevant market when it expects to earn adequate post-entry profits.[141] High pre-entry prices are no better signal of high post-entry profit opportunities[142] than artificially low pre-entry prices are of low post-entry profit opportunities.[143]

For backward time travel to make sense, some property of competition must therefore make it rational for incumbent firms to react in a competitive manner to the presence of potential competition before entry has even occurred. As noted, there is overlap between the hypothesized behavior and strategic entry-prevention behavior (though it would be a mistake to interpret entry-prevention strategies as efficient forms of competition).[144] There is also overlap between the hypothesized behavior and costly signaling in entry games with incomplete information.[145] But the most analogous formalization of the backward time travel narrative entails limit pricing and the economic theory of contestable markets.

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[139] Paul Milgrom & John Roberts, *Limit Pricing and Entry under Incomplete Information: An Equilibrium Analysis*, 50 ECONOMETRICA 443, 444 (1982) ("[A]ny attempt at limit pricing would serve only to squander pre-entry profits and so there would be no limit pricing. Friedman's argument will be generally valid in any complete-information, game-theoretic model . . . . In such a model, then, the intuitive idea underlying the traditional concept of limit pricing—that potential entrants would read the pre-entry price as a signal concerning the price and market shares they can expect to prevail after entry—finds no formal justification." (referencing James W. Friedman, *On Entry Preventing Behavior and Limit Price Models of Entry*, *in* APPLIED GAME THEORY, (S. J. Brams, A. Schotter, & G. Schwodiauer, eds., 1979)).

[140] Milgrom & Roberts, *supra* note 139, at 443 ("If the entrant is a rational decision maker with complete information, pre-entry prices will not influence its entry decision, so the established firm has no incentive to practice limit pricing.").

[141] Gilbert, *supra* note 105, at 110 ("If equilibrium after entry is unaffected by the behavior of incumbent firms before entry, there is no scope for limit pricing. In this case, entry will be prevented only if the market cannot sustain an additional firm when established firms act without regard to the effects of their behavior on entry.").

[142] *See supra* notes 117–118 and accompanying text.

[143] A potential competitor that expects to enter an arrangement of tacit collusion after entry has no general reason to care that incumbent firms feign competition in the pre-entry period.

[144] *See supra* notes 94–104.

[145] *See* Milgrom & Roberts, *supra* note 139 (presenting entry models in which limit pricing is possible under incomplete information); *see also* Kim, *supra* note 92 (presenting entry models in which limit pricing is possible in the presence of time-dependent demand).

Stated simply, contestable market theory posits a situation in which incumbent firms react to the possibility of fast and easy entry by limiting their prices to just below the point at which new firms would be incentivized to enter.[146] This is good news in that it identifies an economic basis upon which backward time travel is at least theoretically possible. It is bad news in that the strength of the assumptions required by contestable market theory is positively eye watering. Competitive conditions must permit ephemeral flashes of competition from outside firms: "hit-and-run entry" in standard lingo.[147] The assumptions required for hit-and-run entry to occur are roughly these:[148]

1. Potential competitors must be able to enter the market instantly and at any scale of operation.
2. Consumers must be able to respond instantly to the new competitors' entry and pricing, while incumbent firms must be *unable* to change prices or terms until after a lag of non-trivial duration.
3. Newly entered firms must be able to exit instantly, cashing out at no (or very little) sunk cost.

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[146] *See generally* WILLIAM J. BAUMOL, JOHN C. PANZAR, & ROBERT D. WILLIG, CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE (1982); William J. Baumol, *Contestable Markets: An Uprising in the Theory of Industry Structure*, 72 AM. ECON. REV. 1 (1982); Baumol & Willig, *supra* note 73.

[147] Marius Schwartz and Robert T. Reynolds, *Contestable Markets: An Uprising in the Theory of Industry Structure*, 73 AM. ECON. REV. 488, 488 (1983) ("The crucial feature of a perfectly contestable market is its vulnerability to hit-and- run entry. A potential entrant could exploit even the most transient profit opportunity by instantaneously entering, collecting his profit, and exiting before incumbents could lower price . . . ."); Gilbert, *supra* note 105, at 112 ("[W]hen 'contestable market' is used in the active voice, it presumes the existence of 'hit and run' entrants who are able and willing to enter an industry whenever profit opportunities arise. Such entry makes sense only if the potential entrant has little at risk.").

[148] *See, e.g.*, Schwartz & Reynolds, *supra* note 147, at 488 ("[P]erfect contestability requires two implausible conditions: (i) in response to high prices, an entrant can enter instantaneously at any scale, that is, there is no entry lag; and (ii) an entrant can undercut an incumbent's price and exit with no loss of fixed costs before the incumbent can adjust price, that is, the incumbent's price adjustment lag exceeds the exit lag."); Michael Spence, *Contestable Markets and the Theory of Industry Structure: A Review Article*, 21 J. ECON. LIT. 981, 986 (1983) ("[F]or hit-and-run entry one needs essentially two assumptions: (1) If t is the response time required for incumbents to make price changes and if τ is the period for which a new entrant's costs are sunk, after which the investment is costlessly reversible, then $t > \tau$. (2) Demand responds instantaneously to price changes or to price differentials."); William G. Shepherd, *Potential Competition Versus Actual Competition*, 42 ADMIN. L. REV. 5, 16–17 (1990) ("'Contestability's' three assumptions are heroic: . . . [1] The entrant can duplicate immediately and replace entirely any existing firm, . . . [2] the entrant can establish itself before an existing firm makes any price response. . . . [3] Exit is perfectly free, at no sacrifice of any cost. Sunk cost is zero for the entrant, so it can depart freely.").

None of these assumptions can generally be relaxed without changing the behavioral predictions of the theory.[149] This makes backward time travel about as plausible as each of these three assumptions on the facts of a case.[150]

The first assumption is difficult to defend in almost any practical context. It may fit areas of trade in which economies of scale are insignificant, or where scale is important but can be treated as a variable cost of production. In most settings, however, one struggles to imagine a new firm deciding to enter a market and being in that market, days later, at the same scale and competitive importance as the incumbent firms in the market.[151] Scale that is purchased with significant sunk cost violates the third assumption and so is not a solution to this problem.[152]

For different reasons, the second assumption is difficult to defend. Where nontrivial delay would separate a potential competitor's decision to enter and its first act of competition, incumbent firms would not be constrained to limit prices to competitive levels.[153] Even where entry was instantaneous, however, it is difficult to imagine the additional facts that would be necessary to prove that consumers would be able instantly to respond to the presence of the new competitor while incumbent firms could not.[154] Without some delay between the pricing decisions of entrants and the response of incumbent firms, incumbents are again not constrained to limit prices in the pre-entry period.[155] They would do better to keep prices high until immediately after entry occurs.

Finally, the implausibility of the third assumption bears special emphasis. Because hit-and-run entry is ephemeral, the focus of entry analysis is not on the profitability of permanent entry (comparing entry costs against streams of

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[149] *See* Schwartz & Reynolds, *supra* note 147, at 488 ("If these conditions are relaxed even slightly, the results can differ dramatically from those obtained under perfect contestability."); *id.* at 489 ("[O]nce we deviate even slightly from the strict assumptions of per-fect contestability, pricing and entry deci-sions depend upon the nature of firm inter-actions.").

[150] *Cf.* Turner, *supra* note 88, at 1362–63 (propounding inadequately restrictive "minimum conditions" for backward time travel to occur).

[151] *See* Spence, *supra* note 148, at 986 (noting that "[a] certain amount of controversy has centered around the notion of hit-and-run entry and its relation to scale economies" particularly as scale economies relate to the assumption of zero sunk costs).

[152] *See* Richard Schmalensee, *Sunk Costs and Antitrust Barriers to Entry*, 94 AM. ECON. REV. 471, 474 (2004) (noting that "[s]cale economies associated with sunk costs can deter new competition").

[153] *See* Hilke & Nelson, *supra* note 86, at 369 ("[E]ntry lags may allow established firms to profitably raise prices above competitive levels for a substantial period of time before entry forces prices back to competitive levels.").

[154] Shepherd, *supra* note 148, at 23 (criticizing the internal inconsistency of assuming entrants are small enough to be disregarded by incumbent firms while also assuming entry to be significant enough to replicate the competition of an incumbent firm).

[155] Schwartz & Reynolds, *supra* note 147, at 489 (noting that instantaneous price responses by the incumbent allow for monopolistic pricing).

future revenues) but the profitability of short bursts of competition (comparing short-term revenues against whatever entry costs remain after the entrant terminates its leases and liquidates its assets upon exit). It is hard to imagine any interesting market which could be entered and exited at *zero* sunk cost.[156]

True, sufficiently small sunk costs can be consistent with the theory, but as the magnitude of sunk costs rises, the significance of potential competition as a constraint on pre-entry behavior quickly fades.[157] When balanced against modest profit opportunities, even small sunk costs can limit the competitive significance of potential competitors in backward time travel. Put another way, small sunk costs can be all that is required for incumbent firms to rest comfortably engaging in significant exercises of market power.[158]

In sum, the mechanics of backward time travel involve an exquisitely fragile story. This story is perhaps a bit more tenuous in an offensive use of backward time travel, since proving causality requires showing the acquired firm to be in some way unique in satisfying the requirements of contestable market theory,[159] a constellation of facts that is hard to imagine. But the dubious basis for inferring harm on the basis of backward time travel applies nearly as forcefully to arguments defending challenged conduct on the basis of competition waiting in the wings. The basic fragility of the underlying theory is the same for both offensive and defensive implications.

Whether backward time travel ever materializes is an interesting question. Gregory Werden and Kristen Limarzi note that perceived potential competition (offensive backward time travel) "is such a rare bird that neither [the Supreme] Court nor any appeals court has ever seen it."[160] Thomas Leary once

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[156] *See* Schmalensee, *supra* note 68, at 47 ("[T]he case of no sunk costs is an empty box."); Spence, *supra* note 148, at 987 ("I am not yet persuaded that sunk costs are negligible for most goods. But my impressions should not substitute for empirical research.").

[157] *See* Ordover & Wall, *supra* note 65, at 16–17 (observing this property).

[158] *See* Dasgupta & Stiglitz, *supra* note 90, at 575 ("Potential competition may be relatively ineffective in the presence of even small sunk costs. Expenditures on R&D, and the process of improvement in production capabilities through learning by doing, fundamentally entail sunk costs."); *id.* at 576 (noting that "even small barriers to entry can give rise to large degrees of monopoly power").

[159] *See supra* note 134 and accompanying text (discussing the related requirement in forward time travel).

[160] Werden & Limarzi, *supra* note 56, at 119; *id.* at ("Two sightings by district courts have been reported, but neither can be confirmed because the reports did not include direct evidence of the tempering effect the Supreme Court required.").

remarked that uncommitted entrants (an articulation of defensive backward time travel) "have proven as elusive as the Abominable Snowman."[161]

The underlying economics offer few hints where to look and little hope of finding these elusive creatures.[162] There is a not coincidental parallel between this situation and an old challenge to those who believe that humans will one day develop the technology for backward time travel. "If backward time travel is really possible," the challenge goes, "where are all the time travelers?"[163]

III. TIME TRAVEL PARADOXES

Antitrust time travel is replete with complexities and paradoxes. As Thomas Schelling once noted in anticipation of entry deterrence strategies by incumbent firms, "these tactics . . . rest on the paradox that the power to constrain an adversary may depend on the power to bind oneself."[164] This oddity does not stand alone. In what follows, we discuss five paradoxes of antitrust time travel. The first three are artificial consequences of asymmetries in the treatment of different types and implications of time travel. The final two are inescapable truths of the economic machinery that makes time travel possible—both cast shadows over the apparent promise of potential competitors to serve public ends.

A. ASYMMETRIC ACCEPTANCE

One remarkable paradox in the treatment of potential competition is the maintenance of logically inconsistent positions regarding the legal recognition of different forms of time travel. We have discussed one example of this already. From the 1960s to the 1980s, precedent recognized that antitrust injury could flow from acquisitions of potential competitors without clearly recognizing the defensive implications of potential competition.[165] Thus, one finds categorical statements like that of the FTC in *Ekco Products*:

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[161] Thomas B. Leary, *The Essential Stability of Merger Policy in the United States*, 70 ANTITRUST L.J. 105, 121 (2002).

[162] *See supra* note 148 and accompanying text (describing the unlikely circumstances needed for backward time travel to work as predicted). In fairness, there do exist a few empirical reports consistent with potential competitors exerting effects on incumbent firms. *See* John Kwoka, *Eliminating Potential Competition*, *in* 2 ABA SECTION OF ANTITRUST LAW, ISSUES IN COMPETITION LAW AND POLICY 1437, 1444–46 (W. Dale Collins ed., 2008).

[163] Stephen Hawking famously illustrated this question with an experiment. He threw a party with an invitation to all time travelers but did not announce the party until after it had ended. Attendance from the future was apparently thin.

[164] THOMAS C. SCHELLING, THE STRATEGY OF CONFLICT 22 (1981); s*ee also id.* ("[I]n bargaining, weakness is often strength, freedom may be freedom to capitulate, and to burn bridges behind one may suffice to undo an opponent.").

[165] *See supra* note 65 and accompanying text.

> A merger may violate Section 7 even though there do not appear to be formidable barriers to entry into the market affected by the acquisition; the existence of potential competition does not justify or excuse elimination of actual competition.[166]

As we noted previously, harm from the elimination of potential competitors cannot be recognized without also acknowledging the benefits created by potential competition.[167] Rejection of one implication cannot stand alongside acceptance of the other. Of course, courts have since come to accept the role of entry defenses in competitive effects analysis. But, in doing so, they have promoted a new and equally absurd inconsistency.

This new inconsistency emerges from continued doubts about the legal recognition of "actual potential competition" (the offensive implications of forward time travel) as a theory of harm. In *Falstaff*, the Supreme Court infamously left "for another day" the question whether an acquisition would be "challengeable under [Section] 7 only on grounds that the company could, but did not, enter de novo . . . and that there is less competition than there would have been had entry been in such a manner."[168] Nearly fifty years later, that day still has not come.[169] And so, while at least one circuit apparently does unconditionally recognize challenges based on the elimination of actual potential competition,[170] others continue to wince at the possible invalidity of this theory.[171] Doubts that the statutory language of Section 7 covers loss of future competition are a frequently cited basis for this hesitancy.[172]

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[166] In the Matter of Ekco Products Co, 65 FTC 1163, 1208 (1964). The opinion provides some defense for this claim in assertions that future entry would not correct the loss of competition because it would take too long and that current pressure from potential competitors might not suffice to hold prices as low as current competition would. *Id.*

[167] *See supra* Part I.C.

[168] United States v. Falstaff Brewing Corp., 410 U.S. 526, 537 (1973).

[169] The Court reserved the question once again in its last case on potential competition. United States v. Marine Bancorporation, Inc., 418 U.S. 602, 639(1974) ("[S]ince the preconditions for that theory are not present, we do not reach it, and therefore we express no view on the appropriate resolution of the question reserved in Falstaff.").

[170] *See* Yamaha Motor Co. v. FTC, 657 F.2d 971, 980 (8th Cir. 1981); *see also* Mercantile Texas Corp. v. Bd. of Governors of Fed. Rsrv. Sys., 638 F.2d 1255, 1265 (5th Cir. 1981) ("[T]he doctrine has logical force and is consonant with the language and policy of the Clayton Act.").

[171] *E.g.*, Fraser v. Major League Soccer, L.L.C., 284 F.3d 47, 70 (1st Cir. 2002) ("It is uncertain how the Supreme Court will ultimately resolve the issue [whether actual potential competition is cognizable]. Plaintiffs' view bumps up against the most straightforward reading of the phrase 'may ... lessen competition' in which 'competition' is understood to refer to the existing level of competition prior to the merger in question.").

[172] *E.g.*, *id.*; AREEDA & HOVENKAMP, *supra* note 137, ¶1124 at 62 ("Where the outside firm is relevant only because it might otherwise enter in the future and thereby increase competition at that time, the merger does not reduce competition; it only eliminates a future opportunity to

Strong arguments can be made for the validity of actual potential competition theories,[173] but no justification could be stronger than simple observation of the absurdity that results from simultaneously recognizing the defensive implications of future corrective entry while doubting that reductions of this same benefit constitute a competitive harm. One implication of forward time travel cannot stand without the other. To make that point less abstractly, the Second Circuit cannot logically reserve judgment on the validity of actual potential competition theory[174] while invoking that same theory to justifying a merger on the grounds that future entry would cure anticompetitive effects.[175]

As two implications of the same underlying exercise in forward time travel, recognition of these doctrines must stand or fall together. Courts may elect to recognize both future corrective entry and challenges to the elimination of actual potential competition.[176] Or courts may elect to recognize neither future corrective entry nor challenges to the elimination of actual potential competition. What courts cannot do is bless one without the other.

B. ASYMMETRIC CREDULITY

A different but related asymmetry arises in responses to the evidentiary difficulty of assessing time travel theories. Beyond the diversity of barriers to entry and competitive significance that must be considered,[177] there are further difficulties in evaluating those barriers on the basis of available evidence,[178] and still further difficulties in resolving competing economic interpretations

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increase it."); Rahl, *supra* note 54, at 143 (similarly asserting inconsistency with the statutory language of Section 7).

[173] *E.g.*, Werden & Limarzi, *supra* note 56, at 120 (suggesting that "the proper understanding of 'lessen competition' entails a forward-looking comparison of competition with and without a challenged merger."); Turner, *supra* note 88, at 1379–80 (similarly noting that the linguistic issue is solved be adopting an appropriate frame of reference).

[174] Tenneco, Inc. v. FTC, 689 F.2d 346, 352 (2d Cir. 1982) (avoiding judgment on validity); BOC Int'l, Ltd. v. FTC, 557 F.2d 24, 25 (2d Cir. 1977) (same).

[175] United States v. Waste Mgmt., Inc., 743 F.2d 976, 983 (2d Cir. 1984) ("[E]ntry into the [relevant market] . . . is so easy that any anti-competitive impact of the merger before us would be eliminated . . . quickly by such competition . . . .); *see also* note 66 and accompanying text (noting *Waste Management*'s reliance on potential competition doctrine as the justification for considering the possibility of entry as a defense).

[176] This assumes the evidence satisfies an appropriate standard. In merger cases, for example, *Brown Shoe*'s reminder that Section 7 is concerned with probabilities, not ephemeral possibilities, precludes reliance on speculative offensive time travel stories. Brown Shoe Co. v. United States, 370 U.S. 294, 323 (1962). And if speculation cannot support an offensive implication of time travel, then it should not support a defensive implication either.

[177] *See supra* Part II.A.

[178] *See* Ordover & Wall, *supra* note 65, at 17 ("The difficulties in identifying and measuring the significance of entry barriers are manifold."); Schmalensee, *supra* note 68 at 41 ("[W]hile entry is important, entry is also difficult to assess as a practical matter and, thus, presumptions, burden of proof, and the way evidence is weighed in this area are critical").

of the evidence, particularly where relevant models involve strategic dynamics and other opportunities for indeterminacy. Since all time travel theories involve predictions about future states of competition, what little can be measured in this context is at best only raw material for an unavoidably subjective predictive exercise.[179]

In the case of offensive implications of time travel, this uncertainty has been unflinchingly held against plaintiffs in the form of judicial refusals to engage in speculation. The Supreme Court adopted a firm anti-speculation stance as early as 1948, in the *Columbia Steel* decision.[180] It reaffirmed this position in *Brown Shoe*, requiring evidence to establish at least "a reasonable probability that the merger will substantially lessen competition,"[181] and applied that requirement in *Marine Bancorporation* to reject the government's forward time travel argument about the acquisition of a potential competitor as "little more than speculation."[182] Lower courts have found no shortage of opportunities to follow in rejecting offensive time travel claims on the basis of speculation.[183]

Indeed, the complexity of offensive time travel has been cited by some courts and commentators as justifying the requirement that plaintiffs meet an unusually high bar in proving harm to potential competition.[184] Decades ago, Turner's bald assertion[185] that acquisitions of potential competitors should not be found to violate Section 7 without "clear proof that the firm would in fact

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[179] In 1965, Turner remarked that "Except in the most obvious cases, economic theory simply does not permit confident judgments on these issues even when all the economically relevant facts have been duly assembled." Turner, *supra* note 88, at 1318. This remains accurate today.

[180] United States v. Columbia Steel Co., 334 U.S. 495, 528–29 (1948) (expressing concern that "[t]he government's argument . . . takes us into highly speculative situations" and ultimately concluding that the evidence failed to support the government's theory of harm).

[181] Brown Shoe Co. v. United States, 370 U.S. 294, 325 (1962).

[182] United States v. Marine Bancorporation, Inc., 418 U.S. 602, 641 (1974).

[183] *E.g.*, Tenneco, Inc. v. FTC, 689 F.2d 346, 354 (2d Cir. 1982) ("unsupported speculation"); United States v. Siemens Corp., 621 F.2d 499, 510 (2d Cir. 1980) ("lack of sufficient evidence, as distinguished from speculation"); BOC Int'l, Ltd. v. FTC, 557 F.2d 24, 29 (2d Cir. 1977) ("uncabined speculation"); Mercantile Texas Corp. v. Bd. of Governors of Fed. Rsrv. Sys., 638 F.2d 1255, 1266 (5th Cir. 1981) (struggling to decide whether more evidence would "separate probabilities from 'ephemeral possibilities'").

[184] *Cf.* Rahl, *supra* note 54, at 137 (suggesting that "the burden of proof on the plaintiff" in potential competition cases should "be a very heavy burden").

[185] The surrounding text gives few clues why Turner thought a heightened standard was required here. *See* Turner, *supra* note 88, at 1384 ("Given the less than overwhelming case for prohibition to begin with, [the existence of alternatives to entry] come close to annihilating it. I therefore conclude that when the only alleged anticompetitive consequence of a merger is the elimination of what would have been a new entrant in a tight oligopoly, there must, in order to support prohibition, be clear proof that the firm would in fact have entered . . . .").

have entered"[186] was cited by the Fourth Circuit to support requiring a "higher burden of proof to show anticompetitive effect" in acquisitions of potential competitors.[187] The Second Circuit similarly relied upon Turner's assertion in expressing a preference for "clear proof" in this context,[188] and at least one FTC opinion went so far as to require it as well.[189]

Not every court holds plaintiffs to a heightened standard in this context,[190] and not every challenge can be evaporated with the label of "speculation."[191] But winning challenges to acquisitions of potential competitors remains an unquestionably difficult task. Joseph Bauer complained as far back as 1978 that "[b]oth branches of the potential competition doctrine [had] lost their effectiveness."[192] Over thirty years later, Werden and Limarzi confirmed Bauer's prognosis with the observation that "it has now been three decades since a federal court has held a merger unlawful on the basis that it eliminated 'potential' competition."[193]

This judicial incredulity toward offensive time travel implications contrasts with the limited factual inquiries that have sufficed to establish defenses on the basis of easy future entry. The decision of *Waste Management* prompted an obviously exasperated Mark Leddy to complain:

> The Antitrust Division had lost something like nineteen out of twenty potential competition cases because we couldn't convince courts to preserve potential entrants as present and future independent competitive forces in the market. Then we win a straightforward horizontal merger suit in the trial court . . . and Judge Winter says that potential entrants will guarantee there will be no ill effects from the merger.[194]

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[186] *Id.*

[187] F.T.C. v. Atl. Richfield Co., 549 F.2d 289, 295 (4th Cir. 1977).

[188] United States v. Siemens Corp., 621 F.2d 499, 506 (2d Cir. 1980).

[189] B.A.T. Industries Ltd., 104 F.T.C. 852, 926 ("Our review of the legal and economic bases for the actual potential competition doctrine has persuaded us that clear proof that independent entry would have occurred but for the merger or acquisition should be required to establish that a firm is an actual potential competitor.").

[190] *E.g.*, Yamaha Motor Co. v. FTC, 657 F.2d 971, 977 (8th Cir. 1981) ("We stress the word 'probably' . . . because the question . . . is not whether competition was actually lessened, but whether it 'may be' lessened substantially.").

[191] *See, e.g.*, *id.*

[192] Joseph P. Bauer, *Challenging Conglomerate Mergers under Section 7 of the Clayton Act: Today's Law and Tomorrow's Legislation*, 58 B.U. L. REV. 199, 225 (1978).

[193] Werden & Limarzi, *supra* note 56, at 141.

[194] Leddy, *supra* note 68, at 1258.

Indeed, the court in *Waste Management* did not insist upon clear proof of future entry or any similarly heightened standard,[195] and it engaged in such cursory review of the relevant evidence as to be accused of speculation in its entry analysis.[196] A decade later, the D.C. Circuit accepted an entry defense on a similarly sparse record in *Baker Hughes*.[197] The court balked at the suggestion of holding defendants to a demanding standard in making the defense, explaining—apparently without irony—that to require such a "degree of clairvoyance" would be "alien" to Section 7.[198]

The tendency of courts of the 1980s and early 90s to uncritically accept entry defenses did not go unnoticed or uncriticized.[199] Changes to the Horizontal Merger Guidelines have helped to correct this flawed approach by injecting a *bit* more rigor into the analysis of defensive time travel theories.[200] But palpable differences in difficulty of proof remain between offensive and defensive implications of time travel. Distrust of the "rather peculiar theory" of harm to actual potential competition[201] still sits uncomfortably close to Bork's colorful promise that potential competitors would enter "in sky-darkening swarms" at the first hint of profit opportunity.[202]

To state the obvious: these positions cannot both be true. The time travel perspective makes transparent that whatever evidentiary standard is appropriate for an offensive implication of time travel must also be appropriate for a defensive implication, and the reverse. Yes, there are modest differences in the mechanics of offensive and defensive implications of time travel. We have discussed, for example, how future corrective entry is more demanding than actual potential competition theories in the required speed and significance of

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[195] United States v. Waste Mgmt., Inc., 743 F.2d 976, 983 (2d Cir. 1984) (treating the possibility of "entry by potential competitors" as part of "appraising whether a merger will 'substantially lessen competition' without any further statement of standard).

[196] *Id.* at 983–84 (devoting a hair more than one reporter page to evidence on potential entry with opposing evidence rejected on the basis of judicial assumptions).

[197] United States v. Baker Hughes Inc., 908 F.2d 981, 988–89 (D.C. Cir. 1990).

[198] *Id.* at 987.

[199] *E.g.*, Robert Pitofsky, *Merger Analysis in the 90's; The Guidelines and Beyond—Overview*, 61 ANTITRUST L.J. 147, 148 (1992) (sharply criticizing "the way the enforcement agencies and the courts were willing to buy stories about entry" throughout the 1980s).

[200] *See id.* (noting that the 1992 guidelines were revised to address uncritical review of entry arguments); Fed. Trade Comm'n v. Cardinal Health, Inc., 12 F. Supp. 2d 34, 54–58 (D.D.C. 1998) (relying on the revised merger guidelines in a careful review of evidence and ultimate rejection of an entry defense).

[201] B.A.T. Industries Ltd., 104 F.T.C. 852, 919 (1984) ("The actual potential competition doctrine represents a rather peculiar theory of competitive injury . . . the *actual* potential competition doctrine postulates that a merger or acquisition may prevent the relevant market from *becoming* as competitive as it might otherwise become." (emphasis in original)).

[202] BORK, *supra* note 77, at 240.

entry while less demanding in not expressly requiring proof of uniqueness.[203] But these narrow and technical differences do not justify broad asymmetries in treatment like differential standards or evidentiary requirements. As different facets of the same underlying exercise, offensive and defensive implications of time travel should rise and fall together. They deserve and require the same degree of credulity in antitrust analysis.

C. ASYMMETRIC REFORM EFFORTS

The previous point takes on special significance as a warning about efforts to change one implication of time travel but not another. Today, for example, there is growing consensus among antitrust scholars on the desirability of stronger enforcement of Section 7 against acquisitions of potential competitors,[204] especially in cases where the acquiring company is seen to occupy a dominant position.[205] Efforts to deliver this result are apparent in recent legislative proposals[206] and Agency policy discussions.[207] The background to this recent activity is decades of maintained advocacy on the need for stronger enforcement against acquisitions of potential competitors.[208]

The problem with these calls for reform is not that the changes they request are intrinsically problematic. To the extent that the result is a leveling of the previously noted asymmetry in treatment between offensive and defensive time travel implications,[209] the anticipated reforms would be an improvement for antitrust law. And to the extent that the result is more searching study and

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[203] *See supra* notes 130–135 and accompanying text.

[204] Carl Shapiro, *Antitrust in a Time of Populism*, 61 INT'L J. INDUS. ORGAN. 714, 741 (2018) (commenting that "there would be a big payoff in terms of competition and innovation" if enforcement agencies could "selectively prevent" appropriate mergers involving potential competitors).

[205] *E.g.*, Kevin A. Bryan & Erik Hovenkamp, *Startup Acquisitions, Error Costs, and Antitrust Policy*, 87 U. CHI. L. REV. 331 (2020); C. Scott Hemphill & Tim Wu, *Nascent Competitors*, 168 U. PA. L. REV. 1879 (2020); Eleanor M. Fox, *Platforms, Power, and the Antitrust Challenge: A Modest Proposal to Narrow the U.S.–Europe Divide*, 98 NEB. L. REV. 297 (2019); Carl Shapiro, *Protecting Competition in the American Economy: Merger Control, Tech Titans, Labor Markets*, J. ECON. PERSPS. Summer 2019, at 69, 78.

[206] *E.g.*, Competition and Antitrust Law Enforcement Reform Act, S. 225 117th Cong. § 4(b) (2021) (compelling courts to find a basis for illegality when, among other things, a firm with a 50 percent share of a relevant market acquires another firm that "have a reasonable probability of competing with the acquiring person in the same relevant market").

[207] *E.g.*, U.S. DEPT. OF JUSTICE & FEDERAL TRADE COMM'N, REQUEST FOR INFORMATION ON MERGER ENFORCEMENT 6 (Jan. 18, 2022) ("What changes in standards or approaches would appropriately strengthen enforcement against mergers that eliminate a potential competitor?").

[208] Bauer, *supra* note 192, at 226 ("Success in challenging conglomerate mergers will thus require increased reliance upon alternative approaches, changed judicial attitudes and, ultimately, legislative reform."); Eleanor M. Fox, *Toehold Acquisitions, Potential Toehold Acquisitions, and Section 7 of the Clayton Act*, 42 ANTITRUST L.J. 573, 584 (1973) (similarly suggesting a need for reform in this area).

[209] *See supra* Part III.B.

more willing challenge to acquisitions of potential competitors, this too could be a net improvement. But we understand at least some of these proposals to go further than that: to envision a new regime in which acquisition of potential competitors could be blocked on less proof than would be required to state an entry defense. This asymmetry lacks economic grounding and risks unintended consequences.

Lack of economic grounding is essentially the same point addressed in the previous paradox, only with the inequality reversed. Just as there is no warrant for holding offensive implications of time travel to a higher standard than defensive implications, there is no warrant for holding offensive implications of time travel to a lower standard than defensive implications. Excessive focus on the different legal consequences of challenges to acquisitions and invocations of entry defenses masks the critical point that both arise from the same underlying concept of potential competition.

Unintended consequences of the effort may flow from at least two sources. One is a change in the viability of entry defenses. To the extent that recent cases evidence a tempering of judicial confidence in the ability of entry to cure competitive problems,[210] renewed enthusiasm for the importance of potential competitors as a check on market power seems intuitively likely to embolden parallel enthusiasm about the strength of entry defenses. If so, we warn that the total effects of potential competition reform could look quite different than proponents might expect. The second source of unintended consequences is the next subject we address—a paradox in its own right.

D. EFFICIENCY PARADOX

Senator Amy Klobuchar's recently proposed *Competition and Antitrust Law Enforcement Reform Act* proclaims that "nascent or potential rivals—even those that are unprofitable or inefficient—can be an important source of competitive discipline for dominant firms."[211] The parenthetical part of this claim is questionable at best.[212] But the basic idea that potential competitors can act to constrain the behavior of incumbent firms is correct, provided that necessary conditions are met for the relevant form of time travel.[213]

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[210] *See supra* notes 199–201 and accompanying text.

[211] Competition and Antitrust Law Enforcement Reform Act, S. 225 117th Cong. § 2(a)(20) (2021).

[212] In terms of backward time travel, for example, conditions that would render the potential competitor "unprofitable or inefficient" are hard to reconcile with the assumptions of contestable market theory. *See supra* notes 148–150 and accompanying text.

[213] *See supra* Parts II.B–C.

That raises, but does not answer, the larger policy question implicated by legislation modifying the treatment of potential competitors: Do we want antitrust policy to preserve or even affirmatively encourage the presence of potential rivals in relevant markets?[214] Surprisingly, the answer to this question is "Not necessarily." While the presence of potential competition can indeed have important implications for antitrust analysis, this does not mean that potential competition necessarily inspires efficiency. Paradoxically, potential competition can in some cases be less efficient than no competition at all.

One reason to pause before rushing too eagerly to encourage potential competition is uncertainty about whether entry would improve social welfare. Given the high rate of business failure by new entrants,[215] one question is whether entry may sometimes be driven by overconfidence rather than socially productive profit opportunities. In a simple experiment to test this question, Colin Camerer and Dan Lovallo report substantial evidence of overconfidence-induced entry, with one treatment showing so much excess entry than the average subject lost money nearly 70 percent of the time.[216]

Those experimental results run parallel to what are often called "excess entry theorems." Even without cognitive biases in the works, several common models of competition exhibit the property that free entry by potential competitors results in too many firms entering a market from a social welfare perspective.[217] This result is not generic to all forms of competition. It does not necessarily hold in differentiated product spaces,[218] or where vertical interactions are incorporated in the entry model.[219]Influences like price discrimination can either mute or exacerbate the excess entry effect.[220] But the message of excess entry theorems is worth keeping in mind: when entry is costly and

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[214] *See, e.g.*, S. 225 § 4(b) (making it more difficult for firms with market power to acquire potential competitors); § 9 (creating new prohibitions on conduct by incumbent firms that would "materially disadvantage" potential competitors).

[215] *See supra* note 116 and accompanying text.

[216] Colin Camerer & Dan Lovallo, *Overconfidence and Excess Entry: An Experimental Approach*, 89 AM. ECON. REV. 306 (1999).

[217] *E.g.*, C. C. von Weizsacker, *A Welfare Analysis of Barriers to Entry*, 11 BELL J. ECON. 399 (1980); N. Gregory Mankiw & Michael D. Whinston, *Free entry and Social Inefficiency*, 17 RAND J. ECON. 48 (1986); Kotaro Suzumura and Kazuharu Kiyono, *Entry Barriers & Economic Welfare*, 54 REV. ECON. STUD. 157 (1987); Hideki Konishi, Masahiro Okuno-Fujiwara, & Kotaro Suzumura, *Oligopolistic Competition and Economic Welfare: A General Equilibrium Analysis of Entry Regulation and Tax-Subsidy Schemes*, 42 J. PUB. ECON. 76 (1990).

[218] Kotaro Suzumura, *Excess Entry Theorems After 25 Years*, 25 JAPANESE ECON. REV. 152, 165-66 (2012).

[219] Arghya Ghosh & Hodaka Morita, *Free entry and social efficiency under vertical oligopoly*, 38 RAND J. ECON. 541 (2007).

[220] *See* Mark Armstrong, *Price Discrimination*, *in* HANDBOOK OF ANTITRUST ECONOMICS 433, 449, (Paolo Buccirossi ed., 2008).

incumbent firms accommodate entry by reducing their own output, entry is not necessarily an efficient or desirable thing as a matter of economic policy.

Will incumbent firms readily accommodate entry? This, too, raises a question about the efficiency of potential competition. As discussed previously, incumbent firms, facing the risk of entry by potential competitors, may act to discourage entry in a variety of ways.[221] These deterrence tactics may lead to inefficiencies.[222] Long ago, Michael Spence noted this feature of potential competition: "[The threat of entry] does not necessarily improve resource allocation. The price may not fall. In some instances it may rise."[223] Not even consumers are guaranteed to fare better in the presence of potential competition than in its absence.[224] The underlying economics do not support a simple more-is-better policy stance.[225] As Stiglitz summarized the situation nearly forty years ago: "Both the pure monopoly and the monopoly faced with potential entry act in ways which are not socially optimal, but there is no presumption that one is better than the other."[226]

E. GRANDMOTHER PARADOX

We turn now to one final paradox of time travel. This paradox is not unique in casting doubt upon the credibility of a time travel narrative. In offensive implications of time travel, for example, inherent suspicion lurks in the agreement of potential competitors to enter by acquisition as opposed to some other means.[227] And in both offensive and defensive implications of time travel, any persistent period of market-power exercise is itself compelling evidence that potential competition is unlikely to prevent or correct subsequent exercises of

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[221] *See supra* notes 96–105 and accompanying text.

[222] *See supra* note 103 and accompanying text.

[223] Spence, *supra* note 79, at 544.

[224] Stiglitz, *supra* note 85, at 188 ("In a variety of circumstances I have been able to establish that consumers are unambiguously worse off. Moreover, the monopolist is worse off, and, since R&D competition drives profits of entrants to zero, they are indifferent: *potential competition may be Pareto inferior*." (emphasis in original)).

[225] Dasgupta & Stiglitz, *supra* note 90, at 571 ("Just as there is no clear relationship between potential competition and economic welfare, the relation between potential competition and actual competition is also complex.").

[226] Stiglitz, *supra* note 85, at 185.

[227] Bauer, *supra* note 192, at 207–08 ("The proposed merger itself gives contradictory evidence: it indicates some interest in the product and geographic market of the acquired firm, but, at the same time, suggests that the acquiring company has considered and rejected competitively preferable alternatives.").

market power.[228] But there is an even deeper and more profound contradiction at the center of the time travel story.

In discussions about the possible physics of human time travel, the *grandmother paradox* confounds efforts to rationalize backward time travel. In brief, it asks "What would happen if a person traveled back in time to kill their own grandmother?" Different answers have been suggested, but the puzzle forces believers in time travel to reckon with uncomfortable tensions between the exercise of time travel (here, backward time travel) and the possibility of time travel in the first place.

Antitrust time travel exhibits a similar paradox. As previously discussed, a profit maximizing potential competitor only enters a relevant market when there exists an adequate profit motive to do so. This means that—for both forward and backward time travel, across a range of economic models—entry is least likely to occur when the post-entry market would be most competitive, and is most likely to occur when the post-entry market would be least competitive.[229] Put another way, the future entry of a potential competitor is most credible when it would not have the competition-enhancing effects for which an antitrust litigant is invoking the time travel theory. And it is least credible when it would have the effects for it is invoked. From an antitrust perspective, legally significant entry by a potential competitor would often kill its own grandmother. This leaves time travel theories, like the grandchild who could never have been born, flittering in the twilight of impossibility.

IV. CONCLUSION

Entry and potential competition arguments tell complicated, often paradoxical, competition stories. Nothing in this Article changes that. These doctrines are, however, currently stunted by artificial bifurcation into separate doctrinal silos. This separation fails to acknowledge the common analytical foundation of entry and potential competition arguments and operates to mask important economic differences between forward and backward time travel theories. This Article illustrates the clarity that comes from focusing less on litigation consequences and more on underlying economic mechanics in entry and po-

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[228] 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 7, § 9 para 3 ("Lack of successful and effective entry in the face of non-transitory increases in the margins earned on products in the relevant market tends to suggest that successful entry is slow or difficult."); Ordover & Wall, *supra* note 65, at 14 ("If past attempts at entry (or announced planned entry) triggered significant weakening in industry prices, then future entrants may be deterred from entering by the fear of a strategic retaliatory response by incumbents.").

[229] *See* Dasgupta & Stiglitz, *supra* note 90, at 572 ("A general principle emerges: *the more competitive ex post competition* (competition is after entry) *the less effective is the market discipline provided by potential competition*." (emphasis in original)).

tential competition analysis. These mechanics overlap in some respects between forward and backward time travel theories but differ in other important respects. Whether the time travel perspective ultimately enhances or detracts from the apparent credibility of entry and potential competition arguments, it serves to advance one property that we believe should be axiomatic throughout antitrust law. It forces the symmetric treatment of symmetric stories.