Review of Industrial Organization (2024) 65:269–302
https://doi.org/10.1007/s11151-024-09964-y

Potential Competition and the 2023 Merger Guidelines

Richard J. Gilbert[1,2] · **A. Douglas Melamed**[2,3]

Published online: 25 June 2024

Abstract

The 2023 Merger Guidelines devote a section to mergers that eliminate potential competition. This is an important contribution because agency guidelines have not discussed the subject in detail for almost 50 years. The new Guidelines follow the traditional distinction that has been upheld in the courts between a merger's effects on incumbent responses to perceived potential competition and the potential effects of actual entry. Antitrust enforcement should assess both possible aspects of potential competition in an integrated fashion because harm from a merger occurs not infrequently from the elimination of actual potential competition; and when the elimination of perceived potential competition has an effect, it often occurs along with and as a consequence of the elimination of actual potential competition. Economic studies suggest that the benefits of perceived potential competition are less than some courts have assumed and that the benefits of actual potential competition are greater. Rather than focusing solely on the probability of harm from the elimination of a potential entrant, antitrust enforcement should adopt a sliding scale that takes into account the magnitude of the benefits for consumers or suppliers if entry is successful. Mergers with potential and nascent competitors can be harmful even if the probability of actual entry absent the merger is small.

Keywords Antitrust · Competition · Mergers · Perceived potential competition · Actual potential competition

✉ Richard J. Gilbert
rjgilbert@berkeley.edu

A. Douglas Melamed
dmelamed@law.stanford.edu

[1] University of California, Berkeley, CA, USA

[2] George Washington Competition and Innovation Lab, Washington, D.C., USA

[3] Stanford Law School, Scholar in Residence, USC Gould School of Law, Los Angeles, CA, USA

JEL codes K21 · L12 · L13 · L41 · L44

The U.S. Department of Justice (DOJ) and Federal Trade Commission (FTC) 2023 Merger Guidelines arrived just before Christmas, bringing cheer to advocates of heightened merger enforcement and coal for others who are more satisfied with the status quo. The Guidelines make a number of contributions to the analysis of mergers. One of the more significant contributions is a section that is devoted to mergers that eliminate potential competition.[1]

A merger between two firms that do not presently compete with one another can harm potential competition in two ways: It can eliminate the possibility of future competition after entry by one or both of them into a market in which the entrant did not previously compete, which courts have called "actual potential competition"; and it can eliminate the present competitive pressure on firms that are already in the target market to reduce price or improve product quality in response to the threatened entry by one or both of the merging parties, which courts have called "perceived potential competition." To simplify exposition, we refer in this paper to price as a measure of competition—in effect, a proxy for the various possible dimensions of competition—unless otherwise noted.

The DOJ's horizontal merger guidelines issued in 1982 and 1984 identified theories of harm from mergers that eliminate actual and perceived potential competition. Agency merger guidelines that were issued between 1984 and the 2023 revision did not devote special attention to potential competition issues. The 1992, 1997, and 2010 Horizontal Merger Guidelines applied the same enforcement principles to mergers that eliminate potential and actual competition and did not distinguish between them.

For example, the 2010 Horizontal Merger Guidelines stated that "[a] merger between an incumbent and a potential entrant can raise significant competitive concerns." The 2010 Guidelines did not provide much detail with regard to the competition concerns other than to add that "[t]he lessening of competition resulting from such a merger is more likely to be substantial, the larger is the market share of the incumbent, the greater is the competitive significance of the potential entrant, and the greater is the competitive threat posed by this potential entrant relative to others."[2]

After 40 years of comparative silence, the 2023 Merger Guidelines are a welcome addition to guidance with regard to merger enforcement for potential competition. The Guidelines emphasize the distinction between perceived and actual potential competition. That distinction is largely a product of court decisions several decades ago. While mergers of potential competitors can result in the two different types of harm that is denoted by those labels, the legacy of the case law, which is reflected

[1] U.S. Department of Justice and Federal Trade Commission, Merger Guidelines, Guideline 4 (December 18, 2023).

[2] U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines (August 19, 2010) at § 5.3.

to some extent in the 2023 Guidelines, is to treat those two types of harm as distinct phenomena.[3]

Economic evidence shows, however, that the differences between the two types of harm are less important than the treatment of them as distinct phenomena suggests. Harm occurs not infrequently from the elimination of actual potential competition; and, when the elimination of perceived potential competition has an effect, this effect often occurs along with and as a consequence of the elimination of actual potential competition. Perhaps more important, economic analysis suggests that mergers with potential and nascent competitors can be harmful even if the probability of actual entry absent the merger is small and that courts have been too skeptical of cases that allege harm to actual potential competition.

Section 1 provides a high-level framing of the issues raised by mergers that involve potential competition. Section 2 addresses the economic evidence with regard to the competitive effects of potential competition and its implications for merger enforcement. Section 3 briefly reviews legal and economic considerations with regard to merger enforcement that is aimed at preserving potential competition and assesses the Guidelines' discussion of mergers that eliminate potential competition. Section 4 explores whether standards that are applied to the evaluation of potential competition as a merger defense should be different from the standards that are used to assess possible harm from mergers that eliminate potential competition. In Section 5, we observe that potential competition has elements in common with innovation competition, and we consider whether the treatment of potential competition in the 2023 Merger Guidelines provides much guidance for mergers that eliminate innovation competition.

1 Framing the Issues

A threshold question for analyzing mergers that might eliminate or weaken potential competition is whether the products or services that are supplied or are potentially supplied by the merging parties are substitutes for one another or complements. Mergers between firms that would, absent the merger, provide goods or services that are substitutes for one another raise antitrust issues that are horizontal in nature.

Mergers of firms that would supply complements—including inputs, necessary intellectual property rights, or downstream distribution services—raise vertical issues. While these mergers can have pro-competitive benefits by allowing the merged firm to be a more efficient supplier of an existing or yet-to-be-developed integrated product, they can also harm competition if the merged firm stops supplying the complement to one or more third parties that are actual or potential competitors of the incumbent or supplies them only on less attractive terms.[4]

[3] Tucker (2011) credits the 2010 guidelines for treating potential competition under a unifying theory of horizontal competition and for de-emphasizing the distinction between perceived and actual potential competition.

[4] The 2023 Merger Guidelines refer to these possible competitive effects in a number of places (e.g., Guidelines § 2.5), but they do not discuss them in detail. For a detailed discussion of potential anticom-

A merger between an incumbent and a supplier of a complement could also harm actual and perceived potential competition in a different way if the supplier of the complement is a potential entrant into the incumbent's market. In this scenario, the supplier is a potential competitor of the incumbent, and the antitrust theory with regard to the merger is horizontal in nature. Some mergers involve both complements and potential substitutes and raise both horizontal and vertical issues.

In this paper, we discuss only the horizontal issues. We note, however, that whether an acquired firm would supply a substitute, a complement, or a highly differentiated product or service can be a particularly vexing question for enforcement of acquisitions of potential competitors. The vertical issues add additional analytical elements with regard to the importance of the merging supplier to competitors of the merged firm and the post-merger incentives of the supplier.

At a general level, the harm from an acquisition of a potential competitor depends on the probability that, absent the merger, one or more of the merging firms would compete in a market in which the other firm would also compete; the effect of that new competition; the conduct undertaken by one of the merging firms in response to the threat of competition by the other; and any efficiencies or synergies that would result from the merger. The significance of potential competition between the merging firms depends on both the vitality of those firms and the existence of other actual and potential competitors and their likely contribution to competition in the relevant market(s).

Some acquisitions of potential competitors involve mature firms whose effects on competition, on the assumption that there was no merger and the merging parties competed with one another, can be assessed based on existing market information. However, the expected harm from the merger also depends on the probability that the firms would have competed absent the merger. Evidence that a mature firm has operated for a long time with no attempted entry can support an inference that the probability of future entry is small, absent evidence of a change in business strategy, regulation, or market fundamentals that would make entry more likely. Nevertheless, the existence of a mature firm at the edge of a market can cause an incumbent in that market to engage in conduct that would make entry unprofitable. A merger might eliminate a substantial competitive benefit from this perceived potential competition.

Many mergers that raise potential competition issues involve acquisitions of products or services that either are not commercially available at the time of the merger or are in a nascent state with the potential to evolve into a more potent competitor. Products in the first category include, for example, drugs, medical devices, and agricultural chemicals that must successfully demonstrate safety and efficacy before they can be sold. Products that are far along in this regulatory pipeline can have a predictable probability of success and competitive impact if they are approved for sale. They are prime candidates for enforcement based on the allegation that the mergers would eliminate actual potential competition from these new products.

Mergers of products (or services) that are in a nascent state raise issues that are more complex yet no less important for antitrust enforcement. By definition, nascent

petitive effects from acquisitions of suppliers of complements, see Salop (2021) and Moresi and Salop (2021).

products have the potential to become more significant competitors, but realization of that potential requires investment or at least a significant allocation of effort. A firm might have an incentive to abandon or suppress the development of a nascent product after a merger if that product would divert sales from an existing product sold by the other party to the merger. A merger that leads to abandonment or suppression of investment in an acquired nascent product is sometimes called a "killer acquisition" (Cunningham et al., 2021), while a merger that leads to abandonment or suppression of investment in a product that is owned by the acquiring firm is sometimes called a "reverse killer acquisition" (Crawford et al., 2020).

In some circumstances, analysis of the competitive effects from mergers of nascent products, which we discuss in more detail in Section 3.4 below, would require analysis of the incentives to invest in the development of the nascent product or in products that might compete with the nascent product in the but-for world without the merger. This adds complexity to the merger evaluation, but it does not imply that antitrust enforcers should ignore these types of mergers. The fundamental questions that antitrust enforcers and courts should address for mergers that eliminate potential competition do not depend on whether the potential competition is from a mature or nascent product.

2 Economic Learning Regarding the Effects of Potential Competition

Debates with regard to the competitive significance of potential competition for merger enforcement pre-date the 1914 Clayton Act. Early in his career, John Bates Clark, a founder of the American Economic Association who wrote extensively about the problem of powerful trusts, held the view that potential competition was an effective deterrent to monopoly power. In 1901 he wrote that:[5]

> 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 actual 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 certainly is to keep prices down.

Clark subsequently lost faith in the power of potential competition to police monopolistic conduct because he believed that monopolies could engage in unfair methods of competition that reduced the likelihood or efficacy of potential entry. Concerns about unfair competition, excessive size, and concentration led Clark and many of his colleagues to be enthusiastic supporters of legislative proposals that culminated in the Clayton Act.

[5] Clark (1901, p. 13).

2.1 Incentives of Potential Competitors and Incumbent Firms

The incentive and ability of firms to enter a new market depend on: the market's structural characteristics; the costs, technologies, and attributes of the potential competitors; and actions that incumbents might take before and after entry occurs. The benefits of entry, for consumers and the entrant, depend on the extent to which incumbents accommodate new entry by trying to induce some kind of market segmentation or oligopoly coordination or act aggressively to preserve their market share and possibly send a signal to future rivals that entry would not be profitable.

In some markets, incumbents need not take any action to deter potential entry because entry would not be profitable even if incumbents ignored its possibility. That can be the case if entry barriers are very high because entry requires large sunk costs or incumbents benefit from a strong reputation, proprietary technology, or large network effects that new rivals would not share.

In other cases, entry might be unprofitable even in the absence of large structural barriers. For example, suppose an incumbent and entrant have constant marginal costs, the entrant's marginal cost is not lower than the incumbent's, and the incumbent and a new rival would compete aggressively. Then even a small sunk cost would be sufficient to make entry unprofitable (Dasgupta & Stiglitz, 1988).

As a general matter, if the market is competitive, additional investment to enable new entry is unlikely to be profitable unless the entrant has lower costs or can provide higher-quality products than the incumbents.

In other markets, incumbents have incentives to take actions that are intended to deter potential entry. At a theoretical level, the effect of perceived potential competition on incumbent behavior is one of the most studied phenomena in the economic field of industrial organization (Tirole, 1988).

Efforts to model the effects of perceived potential competition began with the theory of limit pricing that was developed by Bain (1949, 1959) and Sylos-Labini (1957). The theory assumes that an incumbent can reduce the demand that is available to an entrant by setting a low price and thus deter entry. The limit price is the highest price below which an entrant cannot profitably compete. That price depends, inter alia, on the elasticity of demand and the entrant's minimum efficient scale of operation (Gilbert, 1989). If the limit price is greater than the incumbent's profit-maximizing price, entry is not a threat, and an incumbent can ignore potential competition in its ordinary course of business. Alternatively, the limit price might be so low that an incumbent would be better off setting a higher price that accommodates profitable entry.

The theory of limit pricing came under criticism by economists who argued that entry decisions should be based on the price and market structure that would prevail after entry occurs and not on the price that an incumbent charges prior to entry (Spence, 1977; Dixit, 1980). If potential entrants anticipate that incumbents will reduce prices in response to actual entry, incumbents need not respond to the threat of entry by cutting prices until they face actual competition.

A strand of research on the theory of entry deterrence addressed conduct that is profit-maximizing for incumbents and that deters potential entry when parties rationally predict the consequences of entry. Baumol et al. (1982) advanced the theory of contestable markets: A market is contestable if the incumbent sets a durable price prior to entry (as in the theory of limit pricing) and entry can occur without risk of loss, either because the entrant's minimum efficient scale is very small relative to the size of the market or because the entrant can recover any fixed costs it incurs from attempted competition. In a perfectly contestable market, potential competition forces an incumbent – even a monopolist – to price at a competitive level.

Support for the theory of contestable markets has waned because empirical evidence suggests that few if any industries meet its exacting requirements. Absent such empirical support, the theoretical literature focused instead on commitments that incumbents might make ex ante that cause entry to be unprofitable: for example, by investing in capacity that the incumbent would employ if entry occurred. Other examples include advertising, investments in technology, and product choice and variety.

Such commitments might or might not succeed in preventing entry. If they do succeed, their competitive effects can be ambiguous. While some ex-ante actions can benefit consumers by causing incumbents to reduce their profit-maximizing prices or improve product quality in response to the threat of entry, other actions, such as investing in excess capacity to deter entry, can reduce total economic welfare with little effect on price or output (Mankiw & Whinston, 1986).

Some forms of entry-deterring conduct that do not benefit trading partners, such as exclusive dealing arrangements that limit entrants' access to necessary inputs or downstream customers, might violate the antitrust laws. Other forms, such as seeking government-imposed entry barriers, might not; and it can be difficult to distinguish entry-deterring ex ante conduct that benefits consumers or suppliers from conduct that harms them. In any event, antitrust enforcement is imperfect, so it would be foolhardy to assume that the antitrust laws will ensure that incumbents will choose only entry-deterring conduct that enhances welfare.

Thus, it is erroneous to assume that consumers necessarily benefit from incumbent conduct that is in response to perceived potential competition. They might; but they also might not. In the latter case, all else equal, the response to perceived potential competition does not provide a basis for challenging a merger.

2.2 Economic Analysis of Mergers that Prevent an Increase in Competition

A firm might be motivated to acquire a potential rival for two related reasons, even if the acquisition will not generate efficiencies for the merging firms. Acquisition of potential new rivals can both prevent diversion of incumbent firm revenues to the new rivals and prevent an increase in market-wide competition that will reduce prices and margins for all firms in the market.[6] And the cost to acquire a potential new competitor can be modest, compared to the incumbent's profit at risk from entry, because the additional competition that is created by the new entrant can suppress the entrant's expected profit from entry and thus the amount that the acquiring firm must compensate the potential rival for relinquishing the opportunity to compete.

[6] Kwoka (2008) describes a number of ways in which an acquisition of a potential competitor can prevent a reduction in price.

For a formal illustration, we describe an incumbent's incentive to acquire a unique potential rival under the assumptions that, absent the acquisition, entry would occur with probability p and the probability is common knowledge. If entry does not occur, the incumbent has a pre-merger profit π_I. If entry occurs, the entrant earns a profit π_E and the incumbent's profit is π_I^E. The entrant's expected profit is $p\pi_E$. The incumbent's expected profit if it does not acquire the potential entrant is $(1-p)\,\pi_I + p\pi_I^E$.

We assume that the potential entrant is indifferent between accepting the risk of potential entry and a payment that is equal to its expected profit. The incumbent can acquire the potential entrant at a cost $K = p\pi_E$. Acquisition of the rival is profitable for the incumbent if $\pi_I - K > (1-p)\,\pi_I + p\pi_I^E$. Substituting for K, acquisition is profitable if[7]

$$\pi_I > \pi_I^E + \pi^E \tag{1}$$

Notably, whether inequality (1) is satisfied does not depend on the probability of successful de novo entry.[8] Although the acquiring firm's expected benefit from the acquisition of a potential rival is reduced as the probability of entry declines, so is its acquisition cost (on the assumption that the cost reflects the rival's opportunity cost: its expected profit from entry). The expected consumer harm from the acquisition of a potential competitor is also reduced as the probability of entry declines, whereas some cognizable efficiencies from the acquisition might not depend on the probability that de novo entry would have occurred absent the acquisition.

Nonetheless, the calculation shows that dominant firms with profits that are at risk from new competition can have incentives to acquire potential competitors in order to eliminate potential competition without regard to the probability that entry occurs; and the consumer harm from that elimination can be large if de novo entry would be successful, especially if the acquisition has no cognizable efficiencies.

This argument has limitations: An incumbent might acquire a potential entrant even if the acquisition appears unlikely to be profitable, and an optimistic entrepreneur might choose to enter rather than accept a buy-out offer that compensates the entrepreneur for the expected profit from entry.[9] A profitable acquisition of a potential entrant might not occur in an oligopoly market because all incumbents would benefit from the eliminated threat of new entry but each incumbent would prefer that another pays the acquisition price. Furthermore, acquisition of a potential rival that is not unique will not eliminate the risk of future competition. With multiple potential rivals, acquisition of one or more of them might neither harm competition nor be a profitable strategy.

[7] This calculation parallels the derivation of the monopoly incentive for pre-emptive patenting in Gilbert and Newbery (1982). Salop (2021) also describes how the theory of pre-emptive patenting relates to incentives for acquisition of a potential competitor.

[8] There is no entry threat if $p=0$.

[9] That firms might merge even if it is theoretically unprofitable is not a new observation; see Salant et al., (1983). Unprofitable mergers can occur for many reasons, including mistakes; managerial hubris; and a portfolio of uncertain acquisitions that is expected to be profitable overall but includes individual acquisitions that are themselves unlikely to be profitable.

Notwithstanding these qualifications, the purpose of this exercise is to demonstrate that, under some conditions, incumbents have incentives to pursue acquisition strategies to eliminate the risk of future competition without regard to the probability of de novo entry, and the consumer harm from such acquisitions can be significant. For this reason, as well as others discussed below, the reluctance of courts and antitrust authorities to challenge acquisitions of potential rivals absent proof of likely entry by the potential rival absent the acquisition seems unwarranted.[10]

2.3 Empirical Evidence

The extent to which potential competition benefits consumers by inducing entry-deterring conduct is ultimately an empirical question that depends on market circumstances. Airlines are a convenient test case of these theories because their most significant fixed assets (airplanes) are mobile, which reduces the risk of stranded fixed costs and makes markets more contestable. Goolsbee and Syverson (2008) find that incumbents responded to the threat of entry by Southwest Airlines on their routes by cutting prices before actual entry occurred. Prices fell further after Southwest entered, but Goolsbee and Syverson find that ex-ante price-cutting accounted for more than half of incumbents' price reductions on the routes that Southwest entered.

For such ex-ante price cuts to be rational where entry is nevertheless expected, there must be a link between lower prices before entry and the likelihood of entry or improved outcomes for incumbents after entry occurs. Goolsbee and Syverson find, at best, only weak evidence that lower prices are the result of incumbent investment in additional service capacity prior to entry. Instead, they find a significant increase in the number of passengers per unit of capacity, which they conclude is not consistent with the use of capacity investment as a preemptive action. They infer that price cutting prior to entry is an attempt to reduce the impact of entry by making incumbent customers more loyal and therefore less likely to switch to the new entrant, perhaps reinforced by frequent flier reward programs.

Contrary to the reactions of incumbent airlines to potential and actual competition from Southwest that is described by Goolsbee and Syverson (2008), in a litigated case that involved alleged predation by an incumbent airline, the court found that the airline added substantial capacity by moving aircraft from other routes to the contested routes and reduced capacity on the contested routes after the entrant exited.[11] The incumbent incurred additional costs when it added capacity in response to the threat of entry, but it also gave consumers additional flight time options and thus presumably improved product quality on the route.

The different response in that case, as compared to those studied by Goolsbee and Syverson, might have reflected the fact that the rival airlines were less well established than Southwest Airlines and thus were more likely to be driven to exit the market by an aggressive incumbent response.

[10] Kwoka (2001) observed that, after an initial interest in the doctrine of potential competition in the 1960s, "a deep skepticism had developed about this doctrine and, while not rejecting it out of hand, the courts proceeded to erect high hurdles for disapproval of mergers involving such firms."

[11] *United States v. AMR Corp.*, 335 F.3d 1109 (10th Cir. 2003).

Other studies have found empirical evidence of different types of entry-deterring incumbent conduct. In addition to studies of airlines (e.g., Morrison & Winston, 1987; Kwoka & Shumilkina, 2010; Kwoka & Batkeyev, 2019), they include examples of promotional advertising for branded pharmaceuticals in response to generic entry (Bergman & Rudholm, 2003; Ellison & Ellison, 2011) and capacity investment by hospitals (Dafny, 2005) and suppliers of titanium dioxide (Ghemawat, 1984; Koscianski & Mathis, 1995).

These and other empirical studies of industries facing potential entry lead to several conclusions. First, while some incumbents engage in entry-deterring conduct in some industries, such conduct is not observed by every incumbent in every industry. Lieberman (1987) found no evidence of incumbent investment in entry-deterring capital in the chemical industry. Polaroid, the pioneer of instant film, did not invest to deter competition from new digital technology because the company was reluctant to give up a business model that produced a reliable profit flow from sales of instant film, which it would lose if it led a transition to digital imagery (Gilbert, 2020, Ch 4). Polaroid pursued what Harrington and Porter (1989) call a "harvest strategy" by which incumbents in a declining industry choose to maximize cash flow rather than invest to deter new competition.

Studies that identify entry-deterring conduct in an industry typically do not find that all incumbents that are faced with potential competition choose entry-deterring strategies. Ellison and Ellison (2011) find that incumbents in mid-size pharmaceutical markets engage in entry-deterring conduct but find no evidence of such conduct for incumbents in small or large markets. Dafny (2005) reaches a similar conclusion for investments by hospitals in new technology to treat cardiac arrhythmias.

These results are consistent with economic theory: Incumbents need not engage in special conduct to deter entrants if markets are too small to sustain profitable entry; and in large markets, entry-deterrence can be too costly for incumbents compared to the cost of accommodating some new competition.

Furthermore, incumbent decisions to engage in entry-deterring activities can depend on the identity of potential entrants and other factors that are relevant to the incumbent's assessment of the likelihood of entry and its effects were entry to occur. In the airline industry, Goolsbee and Syverson (2008) found evidence of entry-deterring conduct by incumbent legacy carriers in response to potential entry by Southwest, but they did not find similar evidence for incumbent legacy carriers when faced with potential entry by other legacy carriers, presumably because legacy carriers often are reluctant to invade each other's markets and are less likely to be deterred by incumbent responses when they do want to enter. Case studies by Kwoka and Batkeyev (2019) demonstrate a variety of incumbent responses to potential and actual entry in different airline markets, which depend on the identity of the entrant and other factors.

If incumbents are not engaged in conduct that would deter actual potential entry, the implication is that the perception of potential competition is not motivating behavior that might benefit consumers. In that case, the competitive effect of a merger that eliminates a potential competitor depends only on its likely effect on actual future competition.

Second, while incumbent conduct that deters entry might have consumer benefits, such benefits are not assured, even where those responses might not be regarded as anticompetitive. For example, where entry-deterrence takes the form of investment in additional capacity, the result need not be significantly lower prices or higher quality. And some responses are more like anticipatory accommodation to expected entry rather than entry deterrence. In the pharmaceutical industry, there is evidence that incumbent manufacturers of branded drugs sometimes raise their prices in response to generic entry, to capture higher profits from patients who choose to remain with the brand rather than switch to the generic (Caves et al., 1991).

A third conclusion from the empirical literature is that entry deterrence and entry are not mutually exclusive: Entry-deterring conduct often coincides with observations of actual entry. Goolsbee and Syverson (2008) observed hundreds of routes that were threatened with entry by Southwest. Southwest entered most of these routes, notwithstanding conduct by established carriers in response to the threat of entry. Generics competed with most of the branded drugs that were studied by Ellison and Ellison (2011).

The observation that ex ante conduct in response to the threat of entry does not necessarily foreclose ex post entry is important both for the relevant theory and for antitrust enforcement. There is only sparse empirical evidence of instances of pro-competitive incumbent conduct – in contrast to anticompetitive foreclosure – that permanently forestalls entry. This is not to say that it never occurs, and such conduct has been alleged in antitrust cases.

Many industries have not been disrupted by new competition, but it is difficult to know empirically whether this is the result of strategic behavior by incumbents to deter new competition or a consequence of naturally occurring entry barriers that blockade new competition. For example, markets for mobile operating systems have not experienced significant new competition for at least the last two decades. This might well be the result, not of strategic conduct by Apple and Android (Google) to deter entry, but instead of network effects and economies of scale that impose high barriers to new competition.

One implication of the fact that entry deterrence is sometimes ineffective and sometimes not needed to prevent entry is that, even where entry deterrence is observed, it might not continue. Entry deterrence is costly. If it has been followed by entry, it is likely to be abandoned except to the extent that it is a profitable response to actual entry or a profitable response to the threat of additional new entry. If there has been no entry, it might be abandoned if the incumbents conclude that it is too costly or that it is no longer needed, or never was needed, to deter entry. Entry deterrence might cease to be necessary if the potential competitor finds waiting at the edge of a market to be costly and thus turns its business expansion focus elsewhere.

It is a mistake, therefore, to assume that, if a perceived potential entrant has had a procompetitive effect on incumbents in the market, blocking the merger will ensure continuation of that effect. If an acquisition of a potential competitor has cognizable pro-competitive efficiencies and the response to perceived potential competition is unlikely to continue, the elimination of perceived potential competition might not be sufficient to conclude that the merger is anticompetitive.

Other inferences from the theory that perceived potential entry benefits trading partners are consistent with, or at least not contradicted by, the empirical evidence. The studies are consistent with the intuitive notion that incentives to engage in entry-deterring behavior depend in part on the probability of entry. Goolsbee and Syverson (2008) find that, when Southwest has a presence at both ends of a route and could thus benefit from through or connecting traffic at both ends, both entry by Southwest and anticipatory price reductions by incumbents are more likely than on routes on which Southwest has a presence at only one end. The value of merger enforcement to protect potential competition can thus differ substantially depending on the location and characteristics of potential rivals.

The analysis of actual potential competition is different. New entry will affect price only if it affects structure or conduct in a market that exhibits monopolistic or oligopolistic pricing before entry. All else equal, entry is more attractive to the potential entrant in industries for which a de novo competitor would not cause an outbreak of new competition. The prospect of ex-post competition is itself a barrier to entry because it lowers the profit that an entrant can anticipate. On the other hand, entry has only a modest consumer benefit if incumbents accommodate the new entrant. Thus, an important question to evaluate the benefits of antitrust enforcement for mergers that eliminate actual potential competition is the extent to which incumbents are likely to accommodate a new entrant and forestall an outbreak of new competition.

The empirical evidence demonstrates that, even where incumbents engage in ex ante behavior such as price reductions to deter entry, entry often occurs ex post. On its face, this seems inconsistent with the theoretical argument that there should be no incentive to reduce price until entry occurs because the ability to reduce price should itself deter entry. But ex ante price reductions might reduce the likelihood of new entry by signaling to potential entrants that the incumbent intends to compete rather than accommodate new competition, and they might lessen the effect of new competition by making customers more loyal to incumbent suppliers.

A central conclusion is that entry deterrence and entry are not mutually exclusive. The empirical evidence shows that whether conduct that responds to perceived potential entry occurs and the nature of that conduct depend on market circumstances. Such conduct might or might not benefit consumers, and it might or might not forestall entry.

Goolsbee and Syverson, and others, find that the likelihood of entry-deterring conduct increases with the likelihood of entry; and there is little evidence that incumbents engage in entry-deterring conduct if the threat of entry has a low probability. These findings should be considered in conjunction with the proposition discussed in Section 2.2, above, that, even without regard to merger efficiencies, the profitability of an incumbent's acquiring an actual potential entrant does not depend on the likelihood of entry.

Together, they suggest a perhaps paradoxical conclusion that the likelihood of actual entry might be more important to assessing harm to perceived potential competition from an acquisition that eliminates a potential rival than to assessing harm to actual potential competition. While the probability of entry affects the expected harm from a merger that eliminates an actual potential competitor, it does not affect the likelihood that the acquisition was intended to prevent competition from the acquired potential competitor. Therefore, if there are no merger-specific efficiencies, the probability of entry is immaterial to determining whether the acquisition of the actual potential entrant is anticompetitive.

3 Merger Enforcement for Potential Competition

Courts, and some antitrust scholars, err, in our opinion, in two fundamental ways in their assessments of mergers that affect potential competition. Those errors might have influenced the 2023 Merger Guidelines.

First, courts and scholars have overstated the distinction between actual and perceived potential competition. To be sure, as a theoretical matter, a firm might enter the market after a time or, alternatively, provoke entry-deterring conduct by an incumbent that benefits trading partners. Courts and scholars often seem to treat these alternatives as two distinct phenomena, and they sometimes use language that suggests that they involve different entities. The Guidelines, for example, refer to "perceived potential entrants." In fact, however, the dichotomy between perceived and actual potential competition is not so clear. To the contrary, conduct in response to the threat of entry is often followed or accompanied by actual entry.

Second, courts have erred by viewing the benefits of perceived potential competition with too much favor and by underestimating the benefits of actual potential competition. As noted above, incumbent conduct in response to perceived potential competition can harm consumers or at least not make them much better off; and even if it does not harm consumers, it can reduce total economic welfare. By contrast, actual potential competition can prompt new competition and significantly benefit consumers. Preserving the prospect of actual potential competition is often worthwhile, even if the probability of actual entry is small.

3.1 Perceived Potential Competition

The Supreme Court recognized the significance of perceived potential competition in *United States v. Falstaff Brewing Corp*.[12] and *United States. v. Marine Bancorporation, Inc.*[13] Those cases offer little, if any, support for pro-competitive benefits from perceived potential competition.[14]

In *Falstaff*, the Court accepted the district court's finding that Falstaff had no intent to enter the New England beer market in which the acquired firm made sales. Nonetheless, the Court faulted the district court for failing to give separate consideration to "whether Falstaff was a potential competitor in the sense that it was so positioned on

[12] 410 U.S. 526 (1973).

[13] 418 U.S. 602 (1974).

[14] Nor does *United States v. El Paso Natural Gas Co.*, 376 U.S. 651 (1964). That case involved a merger between two firms, El Paso, and Pacific, that were located in different parts of the country. Pacific had been bidding for contracts in the California market that was served by El Paso but had not yet made any sales in that market. Although the Court at one point referred to Pacific "as a potential competitor in the California market," id., at 659, it recognized that "[u]nsuccessful bidders are no less competitors than the successful one," id., at 661, and decided the case on the ground that the merger would eliminate an actual competitor.

the edge of the market that it exerted beneficial influence on competitive conditions in that market."[15] The Court did not explain how potential entry could incentivize incumbent suppliers in New England to engage in conduct that benefits consumers if the assumed entry would never occur in the absence of that conduct.

The Court might have assumed that the incumbents would mistakenly regard Falstaff as a likely entrant and would continue to make that mistake in the future, or the Court might have thought that Falstaff would not enter because suppliers in the New England market had previously made investments to guarantee that de novo entry would be unprofitable. However, the Court did not articulate either explanation or suggest why either might be plausible.

Marine Bancorporation did not clarify the perceived potential competition doctrine espoused in *Falstaff*. Although the Court cited *Falstaff* and acknowledged the doctrine, it concluded that the doctrine had no relevance for *Marine Bancorporation* because regulatory barriers prevented the acquiring firm from competing de novo in the acquired firm's geographic market.

Several conditions must hold for the acquisition of a potential entrant to have an anticompetitive effect by causing incumbents to cease or diminish pro-competitive conduct that is undertaken in response to the threat of perceived potential competition. They include the following:

(i) The merger must involve a potential competitor that presents a particularly significant threat to affect market outcomes.
(ii) The incumbent (or incumbents) must engage in conduct that is intended to eliminate or mitigate the threat of entry from the potential competitor that they would end or do less of post-merger.
(iii) The entry-deterring conduct must benefit consumers such that they would be better off if the merger was prevented than they would be if the merger were permitted.
(iv) The entry-deterring conduct must be expected to persist if the potential entrant does not enter.

There is little empirical evidence to suggest that these conditions are likely to be satisfied as a general matter when an incumbent proposes to merge with a potential entrant.

Consider condition (i): If entry barriers are sufficiently modest and profit opportunities are sufficiently robust that there is a realistic threat of new entry, there might be multiple firms capable of entering the market. In that situation, a merger that eliminates the prospect of entry by one potential competitor might have little impact on the overall incentive of incumbent firms to engage in entry-deterring conduct.

The Appendix considers the case of identical potential entrants. Each has the same, statistically independent probability of entry, and the same competitive impact if it enters. If that probability is one-half and there are three potential entrants, the probability that at least one firm will enter is 88% (Table A.1). Acquiring one of the three entrants reduces the probability only to 75%. The reduction in the probability

[15] 410 U.S. 526, 533 (1973).

of entry from 88 to 75% is unlikely to be large enough to affect incumbent incentives for entry deterrence. The change in the probability that at least one firm would enter also would be modest if each firm had a different probability of entering, as indicated by the last two columns in Table A.1.

Acquisition would have more modest effects if entry decisions were positively correlated and not diminished by prior acquisitions. In that case, if an acquired firm would have entered but-for the acquisition, then it is more likely that one or more remaining potential entrants would enter relative to the case in which entry probabilities are statistically independent. An acquisition of one potential entrant in that case would thus reduce the likelihood of actual entry by at least one firm, and the incentive of incumbents to engage in entry-deterring conduct, by less than if the probabilities of entry were independent.

This does not mean that harm to competition by causing incumbents to cease or diminish pro-competitive conduct that is undertaken in response to the threat of perceived potential competition can happen only if a merger involves the only firm that presents a realistic threat to affect market outcomes. Depending on the circumstances, a merger that involves a firm that is likely to have a particularly significant impact if it does enter might be anticompetitive even if there are several other firms that, while equally likely to enter, are unlikely to have a similarly substantial impact on the market.

Assessment of a firm's potential to affect market outcomes, as a potential entrant that affects incumbent behavior or as an actual entrant, should take into account the structure of the relevant market and the capabilities of the firm. The potential entrant's capabilities include its tangible and intangible assets, including: intellectual property; financial resources; available products and products in development; human capital; and organization structure and internal reward mechanisms (Teece, 2023). That assessment should also take into account the firm's economic incentives and its business plans and strategies in order to evaluate the likelihood that the firm will choose to enter the market.

An understanding of these factors can be gained by: analyses of objective data; reviews of internal and external firm communications; interviews with knowledgeable individuals; evaluations of the firm's prior development activities and commercial ventures; and analyses of the relevant economic markets. It is important to appreciate that a profitable entry opportunity is not sufficient to make a firm a likely potential entrant.

Condition (ii) requires a causal connection between the threat of entry and pro-competitive conduct that is intended to deter entry and would be ended or diminished by the acquisition of a potential entrant. There are several reasons why this condition might not be satisfied.

First, as was noted above, the acquisition of a single potential entrant is unlikely to have a significant effect on the likelihood and effect of future entry unless the acquired firm poses a particularly significant entry threat. And if the acquired firm does not pose a special entry threat, its acquisition is unlikely to affect incumbent behavior in response to the remaining threat of potential competition.

Second, if there are multiple incumbents, they might have difficulty coordinating an entry-deterring strategy without explicit collusion. However, Gilbert & Vives

(1986) show that, under some circumstances, entry deterrence can be profitable for each firm in an oligopoly when it would not be profitable for a monopolist.

Third, competition among multiple incumbents can make entry unattractive by narrowing the market available to a new competitor, and it can reduce the effect of entry on both the market and the individual incumbents that would share the loss of sales that are diverted to the entrant. Such competition can thus reduce the value of, and thus the likelihood of, entry-deterring conduct.

Entry-deterring conduct is more likely, but not assured, when: a single firm dominates a market that is at risk from entry; there is a single potential entrant that is most likely to enter; new competition can have a significant competitive effect; and the potential competitor is close to entry because it offers a mature, proven product that it would profitably deploy with minimal investment in competition with the incumbent (which the 2023 Guidelines in Sect. 4.4.A call a "rapid entrant"). These conditions are likely to exist only infrequently.

Condition (iii) is important because, as theory and empirical evidence demonstrate, consumers do not necessarily benefit from conduct that deters entry. If entry-deterring conduct harms or does not benefit consumers, then blocking the merger cannot be justified on the ground that it will prolong the use of the entry-deterring conduct.

Condition (iv) is important because if an incumbent no longer fears entry or thinks the conduct is useless to deter entry and need not be repeated or continued there is no future waiting-in-the-wings effect to protect by blocking the merger. This condition might not be satisfied if the potential competitor would need continually to incur costly expenses to remain a potential entrant.

The studies that were discussed above do not find that incumbents often engage in conduct that successfully prevents the entry of new rivals. There are few instances of merger enforcement that appear to have had a procompetitive effect solely because they preserved benefits from perceived potential competition.[16] Although it is possible that antitrust authorities have overlooked benefits from perceived potential competition in some cases, examples of harm from the elimination of perceived potential competition appear to be much less common than examples of harm from the elimination of actual potential competition.

Given the stringent requirements that are necessary for pro-competitive effects from incumbent responses to perceived potential competition and the lack of experience that would suggest its value, it is far from clear that enforcement with respect to mergers that eliminate a potential competitor should emphasize harm from responses to perceived potential competition.

[16] Even the European Commission decision with regard to the proposed merger between Deutsche Börse and NYSE Euronext, which is a rare instance of enforcement that is based on alleged harm to perceived potential competition, also alleged more traditional harm from the elimination of both existing competition and actual potential competition. See subpart 3.3.

3.2 Actual Potential Competition

The Supreme Court has not affirmed the idea that the antitrust laws might be violated by mergers that reduce the likelihood of actual potential competition. One reason might be that predicting new competition is inevitably uncertain. We address this problem in subpart 3.3, below.

Another reason might be that Sect. 7 prohibits mergers that might "lessen competition" or "tend to create a monopoly." Consumers and suppliers can be harmed by mergers that eliminate potential competitors and consequently prevent an increase in competition, just as they can be harmed by mergers that eliminate existing rivals. Nonetheless, some defendants might argue that the term "lessen competition" means reduce competition compared to the status quo ante and thus that Sect. 7 does not encompass loss of actual potential competition. They might argue with respect to the "tend to create a monopoly" standard that, while blocking new entry by a potential competitor might maintain an existing monopoly, it would not "create" a monopoly.

The argument that Sect. 7 does not apply to mergers that prevent an increase in competition is not compelled by the statutory language. The statute can reasonably be construed to refer to lessening competition and creating a monopoly, compared to the but-for world.

Moreover, the argument that the statute contemplates only a comparison with the status quo ante is in tension with at least two Supreme Court decisions. In *United States v. General Dynamics Corp.*,[17] the Court held that market power should be assessed based on predicted market shares – not on past or present shares – and thus at least implicitly makes clear that Sect. 7 is concerned with mergers that harm competition that would otherwise take place in the future. And in *United States v. El Paso Natural Gas Co.*,[18] the Court remanded a Sect. 7 case for further fact findings without questioning the theory that a merger might be illegal if it prevents both firms from entering a new market and thereafter competing with one another.[19]

In any event, a merger is an agreement, so it can also be challenged under the Sherman Act, which clearly applies to preventing future competition and to maintaining an existing monopoly.[20]

The Guidelines do not address this legal issue. We expect that the agencies will explain in appropriate circumstances why the statute contemplates a comparison with the but-for world that would exist absent a merger or acquisition. We assume in this paper that harm to actual potential competition is cognizable under the antitrust laws.[21]

[17] 415 U.S. 486 (1974).

[18] 376 U.S. 651 (1964).

[19] See also *Illumina, Inc. v. Federal Trade Commission* (5th Cir., No. 23-60167, Dec. 15, 2023) (upholding finding of relevant market in Sect. 7 case based on "anticipated or expected" products and not on products that "currently exist").

[20] E.g., *United States v. Microsoft*, 253 F.3d 34 (D.C. Cir. 2001) (en banc).

[21] Bush and Massa (2004) observe that, given little guidance from the Supreme Court, lower courts have contributed to the confused state of merger policy for potential competition by creating different and conflicting factors to evaluate claims that the acquisition of potential competitor will violate Sect. 7 of the Clayton Act.

3.3 Actual Potential Competition Versus Perceived Potential Competition

Cases and commentators have tended to emphasize perceived potential competition more than actual potential competition. In our view, this is a mistake. For one thing, any benefit from entry-deterring conduct is inextricably linked to the possibility of actual entry of new competition absent the conduct. If there is not a threat of material new entry even in the absence of entry-deterring conduct, incumbents would have no incentive to engage in otherwise unprofitable conduct in order to deter entry. Incumbents might mistakenly believe that there is such a threat, but that mistaken perception is unlikely to persist.

In addition, as was explained above, some incumbent responses to threatened entry seem more intended to position the incumbent for post-entry competition than to deter entry. In those situations, the responses are more relevant for assessing the value of actual potential competition that might be preserved by blocking the merger than for assessing the value of preserving perceived potential competition.

Consequently, in our opinion, it would be appropriate to eliminate the idea that perceived and actual competition denote two, distinct legal categories. Instead, courts should consider whether the potential competitors pose a realistic threat of new competition and how incumbents might respond to that threat before or after entry. Not only is there no need to assign potential competition to two distinct categories, but doing so can obscure understanding the responses of incumbents to potential competition and, thus, the effects of mergers that might eliminate a potential competitor.

Some leading antitrust scholars have a different perspective on potential competition. Hovenkamp (2024), for example, concludes that there are few instances for which antitrust authorities should prevent a merger or acquisition because it eliminates the threat of actual potential competition. By contrast, he concludes that "the perceived potential entrant theory is sufficiently robust to justify condemning a merger when its rather strict conditions are met." Indeed, these conditions are so strict that, to our knowledge, consumer benefits that are solely from the preservation of perceived potential competition (absent evidence of actual potential competition) have only rarely been confirmed in an actual market circumstance.

Criticisms of antitrust enforcement for actual potential competition appear to be based on the belief that such competition cannot be predicted with any confidence. Sometimes future competition is inherently uncertain. Those who are skeptical about the actual potential competition theory might argue, in the language of probability theory, that the likelihood of entry is uncertain because it is unknowable. This kind of uncertainty, as first explained by Knight (1921), can be distinguished from the concept of risk, which corresponds to a situation in which outcomes and their probability are known. There is risk in assessing whether it will rain in Manhattan in August even though the probability of rain in that month and the likely amount of precipitation are known. Whether a terrorist attack will occur in Manhattan in August is uncertain.

We agree that merger enforcement for the preservation of potential competition should require sufficient evidence with regard to the likelihood that the potential entrant will actually enter absent the merger. But we do not agree with the suggestion that such situations are rare or necessarily too uncertain to justify enforcement.

Antitrust authorities have challenged numerous mergers and acquisitions on the ground that they would eliminate the prospect of actual competition from a potential competitor (Kwoka, 2001; Gilbert & Tom, 2001; Davis, 2003; Carrier, 2008; Sayyed, 2022). Many of these challenges have involved pharmaceuticals or medical devices for which potential competitors must complete a sequence of clinical trials. Phase III clinical trials are typically the final regulatory hurdle for market entry of a new drug. While the probability of commercial success at the point of initiating phase III trials varies by therapeutic category, it can be as high as 80%.[22] The probability of commercial success is lower at the initiation of earlier Phase II trials, but it can be as high as 30 to 40%.[23]

Challenges to mergers that eliminate actual potential competition have not been confined to industries with similar regulatory requirements. Since the 1990s, the FTC has challenged transactions that threatened to eliminate actual potential competition in markets for: energy products; healthcare; retail operations; manufactured products; chemical products; software; broadband services; and defense products (Sayyed, 2022).

The European Commission has in recent years challenged several mergers that it believed reduced the likelihood of new future competition in concentrated markets. Two of the challenges are in markets for agricultural pesticides.[24] These markets are similar to markets for new pharmaceuticals in that both require a sequence of regulatory approvals before products can be commercialized. But the Commission did not confine merger challenges that were based on the elimination of potential competition to markets with these regulatory characteristics. The Commission also applied potential competition theory to mergers of firms that supply industrial gases,[25] electricity,[26] and thermal power generation.[27]

The point is that there are many important markets for which entry occurs with a probability that can be estimated with reasonable confidence. There is risk associated with the threat of actual potential competition, but both probabilities and outcomes are often predictable. For many cases that involve potential entry, there is not uncertainty in the sense described by Knight.

Merger challenges that are based on evidence that an acquisition would eliminate procompetitive effects from perceived potential competition are less common. The European Commission decision with regard to the proposed merger between Deutsche Börse and NYSE Euronext is a notable exception because the Commission challenged the merger based in part on the elimination of perceived potential

[22] Carrier (2008) (Success varies by therapeutic category. A survey of several studies of clinical trials has mean percentage of reaching the market from the initiation of Phase III trials equal to 57%).

[23] Carrier (2008).

[24] European Commission, *Bayer/Monsanto*, Case M.8084 (2018); European Commission, *Dow/Dupont*, Case M.7932 (2017).

[25] European Commission, *Air Liquide/BOC*, Case COMP/M.1630 (2000).

[26] European Commission, *EDF/EnBW*, Case COMP/M.1853 (2001).

[27] European Commission, *General Electric/Alstom*, Case M.7278 (2015).

competition, although the Commission also alleged harm from the merger to existing competition and actual potential competition.[28]

Deutsche Börse and NYSE Euronext each operate exchanges for trading financial derivatives. The Commission alleged that the merger would create a near-monopoly for the trading of European financial derivatives. The Commission also alleged that the merger would eliminate the closest source of potential competition for each firm's services, and that the perception of such competition had had pro-competitive effects on the price and quality of the exchanges' existing services and on promoting innovation for new services.

As Hovenkamp has observed, the classification of a merger as one that involves the elimination of potential rather than actual competition can be characterized as a matter of market definition. If the market boundaries are large enough to include the potential competitor, the merger eliminates actual competition.

Werden and Limarzi (2010) would go further and would eclipse the potential competition doctrine entirely. They argue that, if a firm has the resources that are required to be an actual competitor, then acquisition of those resources should be deemed an acquisition of an actual competitor; the effect is to eliminate the distinction between actual competition and actual potential competition. This view is consistent with the definition of an "uncommitted" entrant in the 1992 Horizontal Merger Guidelines, which the guidelines treat as an actual competitor in the defined market. The 2010 and 2023 Guidelines continued this practice under the name of a "rapid" entrant.

We find little benefit from the ultimately semantic question of whether to regard a sufficiently likely potential entrant as an actual competitor in the market. Some likely potential competitors do not fit the description of actual competitors.

The empirical evidence is that there are many markets, such as for new pharmaceuticals, for which entry is likely but not certain and in which, pre-merger, the potential entrant needs to implement an important change in its business in order to compete with the incumbent. It does not matter whether drugs in clinical trials are classified as uncommitted or rapid entrants or given some other designation. Drugs that have successfully completed trials but not yet entered are likely entrants because most of the costs of drug development are sunk. Markets for new pharmaceuticals clearly demonstrate the importance of actual potential competition without regard to their classification as actual competitors, and they are not unique in this respect.

Moreover, while the focus on market definition might make sense in cases like *Falstaff* and *Marine Bancorp*, which involved the question whether well-established firms with mature products would enter a new geographic market, it is less useful in cases that involve existing firms that might become significant competitors only if they grow or evolve in new directions. Whether Facebook's acquisition of Instagram, for example, was anticompetitive turns on whether Instagram and Facebook would have become significant competitors absent the merger, not on whether Instagram's differentiated product in its nascent form was deemed to be in the same market as Facebook.

[28] European Commission, *Deutsche Börse/NYSE Euronext*, Case COMP/6166 (2012).

3.4 Nascent Competition

Some mergers involve firms that have little or no record of competitive significance and might, or might not, become effective competitors if they are not acquired. A concern with these mergers is that the acquiring firm might have an incentive to suppress or redeploy the acquired firm's assets, or its own assets that compete with the assets of the acquired firm, in order to prevent cannibalization of the incumbent's existing revenues.[29] Many have written recently about such mergers, referring to them as mergers involving "nascent competition" (e.g., Hemphill & Wu, 2020; Melamed, 2022).

Whether such mergers might injure competition depends on the likelihood that, absent the merger, the nascent competitor would have brought important new competition to the relevant market. That competition could be the result of: a new, innovative product; better implementation of an existing product or technology; or simply an effective new rival that shakes things up in the market. Whatever form the competition takes, it would require significant change or evolution of the nascent competitor. Even if the firm in its nascent form is an actual, fringe competitor of the incumbent firm, it is for all practical purposes a potential competitor with respect to its new and perhaps innovative form.

Focusing on nascent competitors not only calls into question the importance of labeling firms as actual or potential competitors, but also sheds light on how to think about what the plaintiff must show about the prospects for new competition absent the merger to justify blocking the merger. In our view, plaintiffs should not be required to show that new competition is more likely than not, or as the court put it in the *Facebook/Within* case, "noticeably greater than 50%."[30]

Requiring a high likelihood of actual entry or growth and evolution has several problems. In the first place, as was explained in Section 2.2, above, the incentive of an incumbent firm to acquire and eliminate a potential competitor does not depend on the probability of successful de novo entry. Although that analysis assumes the existence of a unique potential competitor, its conclusions extend to acquisitions of multiple nascent competitors if each potential competitor's expected profit, and therefore the cost that is required to eliminate the potential competitor, is sufficiently small.

Second, requiring a high likelihood in the individual case would permit an established firm to acquire multiple differentiated competitive threats, no one of which was more likely than not, even though there was a substantial likelihood that at least one of them would have become a significant competitor.

Third, having a required minimum likelihood for all mergers that involve potential competition would give a pass to many mergers even where the merger promised at most modest efficiency benefits and the eliminated potential competitor had a realistic, although unlikely, prospect of providing hugely valuable new competition by innovation or otherwise. While the merged firm would have some incentive to exploit the prospects of the potential competitor, it would have less incentive to do so than would a different owner that would not be motivated to kill, retard, or redirect the

[29] Nascent competitors can include established firms with a nascent business in a new sector.

[30] *FTC v. Meta Platforms Inc.*, 654 F. Supp. 3d 892, 927 (N.D. Cal. 2023).

potential competitor (or its own products that might compete with the products of the potential competitor) in order to protect its existing revenues or revenues from an acquired product.[31]

Fourth, requiring a high likelihood in all cases would make challenges to mergers that involve nascent competition all but impossible in most cases. Almost by definition, nascent competitors need to change significantly to become significant competitors. They need to find some way to attract customers, to change their business model, or to provide innovative changes to their products or services. These changes could significantly improve the performance of a highly concentrated market, and there is a value in preserving the possibility of such substantial benefits even if they are unlikely.[32]

Indeed, the uncertainty that is related to the competitive effect from the acquisition of a nascent competitor is not qualitatively different from the uncertainty that is related to the acquisition of a mature potential competitor. In the former case, the probability that the nascent competitor would be present as an independent rival (or acquired by a firm with no competing product) in a but-for world without the acquisition is often high, but the competitive effect from the acquisition is uncertain because it depends on the evolution of the nascent competitor or its product. In the latter case, the competitive effect from entry of a mature competitor is often easier to establish, but whether the mature firm would have entered de novo to compete with the acquirer absent the merger could be highly uncertain.

Both cases can have similar expected harm to competition: The product of the probability that the merger eliminates a competitor and the effect of that elimination can be similar for the acquisition of a nascent competitor and a mature potential competitor.

Rather than focusing solely on the probability of harm, antitrust enforcement should adopt a sliding scale that also takes into account the magnitude of the benefits for consumers or suppliers if entry is successful. The expected value of such benefits can be large even if their probability is small, particularly if the acquiring firm dominates the relevant market and the nascent competitor has a unique or almost unique ability to disrupt the market. In that circumstance antitrust enforcement should challenge the acquisition if there are no offsetting cognizable efficiencies or synergies. Merger enforcement should be focused on the expected value of the welfare of the merging parties' customers (or, if the potential or nascent competitor would have enhanced competition among buyers, the parties' suppliers) with and without the merger, taking into account both the possibility of harm to competition and any cognizable efficiencies and synergies from the transaction.

We recognize that expected values cannot be estimated with precision and that challenges to acquisitions of nascent competitors should generally face a higher hurdle than challenges to mergers that involve existing potential competitors that

[31] This insight dates at least to Arrow (1962).

[32] Acquisitions of nascent competitors might be successfully challenged under Sect. 2 of the Sherman Act even if there is a low likelihood of the feared harm. But a Sect. 2 theory would require that the acquiring firm has monopoly power, the anticompetitive motive for the acquisition can be demonstrated, and the merger has little if any efficiency benefits (Melamed, 2022). These requirements, too, are stringent.

are likely entrants, because nascent competitors must substantially change or evolve their products or services to become significant competitors of the acquiring firm. Such changes typically involve substantial investment to develop or improve a product or service. Thus, challenges to acquisitions of nascent competitors often require a more complex analysis of innovation competition than the analysis that is required for mergers of existing potential competitors. Still, courts should be willing to make antitrust decisions on the basis of expected values even if the estimates are imprecise and uncertain.

3.5 The 2023 Merger Guidelines

The 2023 Merger Guidelines make important contributions with respect to mergers that involve potential competition. At the most general level, the Guidelines' explicit discussion of such mergers signals an important increase in the agencies' focus on issues of potential competition.

The Guidelines also make the important contribution of framing the issue as whether one or both of the merging firms has a "reasonable probability" of entering the relevant market (Guidelines § 2.4.A.). The Guidelines neither define what they mean by "reasonable probability" nor make any effort to reconcile its use of that term with the cases that have described the standard as whether entry was likely or more likely than not.[33]

It seems clear, however, that the agencies intend to challenge mergers without the level of certainty about competitive harm that has generally informed merger enforcement in the past. This is a potentially important advance especially for mergers that involve potential and nascent competition. As was explained above, those mergers always involve risk and sometimes involve the less quantifiable dimension of uncertainty.

Blocking such mergers can promote the expected value of total and trading partner welfare where the benefits of new competition would be substantial even if they are unlikely. The benefits of new competition can be substantial if the market is dominated by one firm or a few firms that are engaging in oligopoly coordination or if the entrant is likely to have lower costs or superior products than the incumbents. The required probability of entry that is "reasonable" should depend on the facts of the case. The greater are the potential benefits of new competition, and the smaller are the efficiency benefits from the merger, the lower is the "reasonable probability" of actual entry that should be required to block the merger under either Sect. 7 of the Clayton Act or, if the incumbent has monopoly power, under Sect. 2 of the Sherman Act.

Thinking of "reasonable probability" as depending on the context suggests the following rules of thumb. If the acquired firm is a nascent competitor with the ability to disrupt a monopolized market, agencies should challenge a merger even if the firm has a small probability of successful entry, provided that the firm is unique or almost

[33] The "reasonable probability" standard for potential competition was included in the agencies' 2000 *Competitor Collaboration Guidelines* and in the 2017 *Antitrust Guidelines for the Licensing of Intellectual Property*, but neither defined the term.

unique in its ability to disrupt the market and that ability is not offset by efficiencies. Such a merger would eliminate the possibility of growth and development by a nascent competitor that, although unlikely, could significantly enhance competition in the monopolized market.[34]

Furthermore, absent offsetting efficiencies, a monopolist should not be permitted to make multiple acquisitions of potentially disruptive entrants in the same market even if each potential entrant has a small probability of actual entry. For example, suppose that there is only one chance in ten that a potential entrant would disrupt a market. If there are seven potential entrants, and probabilities are independent, the probability that at least one would successfully disrupt the market is more than 50%. Acquiring each potential entrant in succession would allow a monopolist to prevent disruption that otherwise would be more likely than not.

If actual entry would be pro-competitive but not disrupt a market with a dominant incumbent, the agencies should challenge an acquisition of a potential competitor only if the acquisition would materially lessen the expected benefit from actual entry. That standard would require that the acquisition eliminate one of only a very few potential entrants unless the acquired firm is differentiated from other potential entrants in ways that make it a substantially more likely or effective competitor.

The Appendix presents calculations that illustrate the effects of acquiring an actual potential entrant under several assumptions. When potential entrants have the same, statistically independent, entry probability, the calculations suggest that acquiring one of several potential entrants would reduce the probability that at least one would enter by more than 5 percentage points only if the number of potential entrants is four or fewer.

Following this example, courts could reasonably conclude that the acquisition of a single potential entrant does not have a material effect on actual potential competition if there are five or more equally capable potential entrants, unless actual entry by the acquired firm would have a greater effect on the relevant market than would entry by the other potential entrants. That conclusion would be reinforced by the inevitable imprecision regarding estimates of the probabilities of actual entry and the possibility that even successful entry would have a modest effect on market performance.

As discussed in Section 3.1, antitrust enforcement for mergers that affect incumbent responses to perceived potential competition should be less aggressive than the standards that are suggested here for enforcement with regard to actual potential competition.

The agencies will have to work hard to persuade courts to accept the Guidelines' framing of the likelihood issue. To do so and establish good legal precedents, the agencies would be well-advised to select cases with especially compelling facts and evidence that support the argument that sound merger enforcement should not always require proof that entry or harm is more likely than not. Bringing cases of that type

[34] Salop and Scott Morton (2021) recommend that acquisitions of nascent competitors by dominant firms should be regarded as presumptively anticompetitive; see also Salop (2021) and Salop (forthcoming). We would not go that far because the issues are too complex for a simple presumption. Whether acquisition of a nascent competitor is anticompetitive depends on a variety of factors, including: the likelihood of successful development of the competitor; its impact on the market if it is successful; the likelihood and importance of merger-specific efficiencies; and the number of nascent competitors in the relevant market.

will both help courts understand the importance of the “reasonable probability” framing and help dispel the concerns of courts and commentators that the term is hopelessly imprecise and will inevitably lead to abuse.

These recommendations are consistent with Guideline 6 of the new Merger Guidelines—entrenchment of a monopoly position—and Guideline 8— multiple acquisitions. Elsewhere the Guidelines’ discussion of potential competition is less helpful. The Guidelines seem to emphasize the dichotomy between perceived and actual potential competition. While the Guidelines acknowledge that “[b]oth of these risks (the elimination of actual potential competition and the elimination of perceived potential competition from a merger) can be present simultaneously” (Guidelines § 2.4), they discuss the two theories separately with little attention to the ways in which they are connected.

With regard to perceived potential competition (Guidelines § 2.4.B.), the Guidelines note that:

> A perceived potential entrant can stimulate competition among incumbents. That pressure can prompt current market participants to make investments, expand output, raise wages, increase product quality, lower product prices, or take other procompetitive actions. The acquisition of a firm that is perceived by market participants as a potential entrant can substantially lessen competition by eliminating or relieving competitive pressure.

As was explained above, however, consumers do not necessarily benefit from investments that are intended to deter rivals.

In addition, the Guidelines do not specify all of the conditions that seem necessary to establish a sound case of harm to perceived potential competition from the acquisition of a single potential entrant. They do not suggest that the potential entrant must offer a unique or almost unique prospect of future competition; to the contrary, they repeatedly refer to the possibility that the merging firm is “a potential entrant” (Guidelines § 2.4.B.). Acquisition of one among several potential entrants would not have a sufficient effect on the likelihood of entry to affect incumbent behavior unless the acquired entrant is substantially differentiated from other potential entrants.

Nor do the Guidelines address the circumstances under which incumbents might engage in ongoing entry-deterring conduct that benefits trading partners in the absence of actual entry. The whole point of a perceived potential competition theory is to prevent a merger from ending such conduct. Yet the threat of entry might evaporate in the absence of actual entry if it appears that the potential entrant either is unwilling to make the investments required to be a credible competitor or has focused its energies elsewhere.

It might be that the agencies anticipate that these omissions and complications will be addressed in the merging parties’ rebuttal efforts and need not be considered in establishing a prima facie case. That might make sense as a way to structure an investigation after the agencies have decided to pursue a substantial investigation; but we would expect the agencies to consider such factors before imposing the burdens of a substantial investigation on the merging parties. We hope that the agencies will make clear in subsequent statements or by inference from enforcement activities that, and how, they will assess these factors.

With regard to actual potential competition (Guidelines § 2.4.A.), the Guidelines note that:

> To determine whether an acquisition that eliminates a potential entrant into a concentrated market may substantially lessen competition, the Agencies examine (1) whether one or both of the merging firms had a reasonable probability of entering the relevant market other than through an anticompetitive merger, and (2) whether such entry offered a substantial likelihood of ultimately producing deconcentration of the market or other significant procompetitive effects.

Here, too, the Guidelines do not address whether acquisition of the potential entrant would have a material effect on the likelihood of future entry. There is thus a risk that the Guidelines will be thought to be overbroad because they would condemn a merger that eliminated one actual potential entrant when several others remain and the likelihood of new entry would not be materially reduced by the merger. The emphasis in the Guidelines on objective evidence of likelihood of entry could increase this risk if the relevant evidence concerns factors such as low entry barriers or generic assets that might be useful in entering the market and that are applicable to multiple potential entrants.

On their face, the Guidelines embody the framing in the cases of two distinct kinds of harm and legal theories. We hope that the agencies will, when implementing the Guidelines, ask not whether the firm is "a perceived potential entrant" or an "actual potential entrant," but instead the broader question whether the merger presents a sufficient risk of eliminating competition or pro-competitive incumbent conduct that might otherwise occur. The harm could take one or more of three forms: eliminating competition that would arise from future entry by one or both of the merging parties; eliminating increased competition as a result of evolution or expansion of existing competition; and eliminating welfare-enhancing entry-deterring strategies by established firms that feel threatened by the prospect of such new or enhanced competition.

Integrated assessment of these possibilities can help the agencies appreciate that: entry-deterring conduct depends in large part on the enduring likelihood of actual new or enhanced competition; not all entry-deterring conduct benefits trading partners; and acquisitions of what have been called potential and nascent competitors raise conceptually similar issues, even though the latter raise additional analytical difficulties.

4 Potential Competition as a Defense for Problematic Mergers

Mergers are sometimes challenged on the ground that they will eliminate the prospect of valuable new competition or innovation, but that is not the only role that potential competition plays in merger enforcement. The prospect of new competition is often raised as a defense for otherwise problematic mergers. Hovenkamp (2024) articulates the dilemma:

> Potential competition merger policy is stuck somewhere in the middle of our theories about the force of potential competition. If everyone is a potential competitor, then we do not need a potential competition merger policy. Price-increasing mergers will always be disciplined by new entry or firms' migration into the post-merger market. On the other hand, if no one is a potential competitor then there is no need for the doctrine either. We can simply evaluate horizontal mergers and be done with it.

Merger enforcement to preserve potential competition assumes that entry barriers are low enough that potential entry is sufficiently likely and potent to discipline price or other dimensions of competition in the relevant market. But if entry barriers are low enough, there might be a sufficient number of potential entrants to ensure that the merger will not harm competition in the market.

The Supreme Court accepted the elimination of potential competition as a possible merger offense in its *Falstaff* and *Marine Bancorp* decisions in the early 1970s. In the 1970s and for several years thereafter, courts made no mention of potential competition as a merger defense. As Sullivan and Su (2023) explain, 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 play a beneficial role. One theory cannot stand without the other."

Future entry as a defense consideration was acknowledged by the Second Circuit in *United States v. Waste Mgmt.*[35] In that 1984 decision, the Court pointed to the defensive role for potential competition as well as offensive concerns from a merger. The pendulum subsequently swung to focus on the defensive role. Merger guidelines published in the years that followed the *Waste Management* decision but before the 2023 revision paid little attention to the intricacies of consumer harm from mergers that eliminate potential competition, but they devoted considerable attention to ease of entry as a rebuttal to allegations of otherwise problematic mergers.

It seems clear (at least to us) that merger policy should give due consideration to both the possible harm from the elimination of potential competition and the role of potential competition to discipline adverse effects from a merger. However, as the 2023 Guidelines note (§ 2.4.C.), considering both the possible harm from the elimination of potential competition and the possible role of potential competition in ameliorating the harm of otherwise anticompetitive conduct does not mean that those two possibilities should be treated symmetrically.

Potential entry has a limited role in rebutting a claim of harm from a merger of existing competitors. The merger would have an immediate adverse effect on competition. Entry, if it occurs, is in the future, and Werden and Froeb (1998) show that, absent efficiencies, entry might not be profitable or sufficient to prevent a post-merger price increase. Generally, the extent to which entry can mitigate a post-merger price

[35] 743 F.2d 976, 982 (2d Cir. 1984).

increase depends on: the structure of the pre-merger market; the strength of new competition; the ways in which incumbents and entrants compete; and the magnitude of efficiencies, if any, from a merger (Cabral, 2002; Caradonna et al., 2024).

The Guidelines (§ 3.2.) retain the requirement that was specified in earlier guidelines that entry must be "timely, likely, and sufficient" to rebut an allegation of harm from a merger. That is an appropriate standard for evaluating an entry defense to a merger that is found to be presumptively anticompetitive because of its harm to existing competition, including competitive responses to perceived potential competition. In either event, a potential competition defense will require showing that the prospect of future entry will be sufficient to offset the immediate harm from the reduction in competition that is caused by the merger.

The analysis of post-merger entry to rebut the claim of harm from a merger that is thought to be anticompetitive because it eliminates the potential for future actual competition raises additional considerations. In that case, the harm is uncertain and not immediate, and one might imagine that an equally likely but uncertain prospect of future entry by a non-merging firm might be a sufficient defense. But the situations are not symmetrical.

The issue is not whether there are other firms that are equally likely to enter, but instead whether the merger materially reduces the likelihood of disruptive entry in the future. For example, if, before the merger, there are two potential entrants, each of which has an independent probability of entry of 30%, the likelihood that at least one would enter is 51%. If a merger eliminates one of those firms, the harm to actual potential competition can be offset by potential competition only if there is at least a 51% chance of new entry after the merger.[36] The harm to actual potential competition from the merger would be fully offset only if the merger leads to either an increase in the likelihood or the effect of entry by the remaining potential entrant or to additional potential entrants' coming into existence.

5 Implications for the Analysis of Innovation Effects of Mergers

The theory of actual potential competition addresses the possible de novo entry of a product or service into an existing market. The theory of perceived potential entry addresses the reaction of an incumbent to the possible entry of a product or service. Both of these theories have elements in common with the theory of innovation competition.

Consider an incumbent drug manufacturer that faces potential competition from a new drug in the same therapeutic category. If the new drug already has FDA certification, its entry is likely. The incumbent might respond by taking action to affect the probability of entry or its competitive effect, such as a change in promotional expenditures for its existing drugs that would compete with the new drug. Or an incumbent

[36] The calculations in the Appendix and the related example in text assume that each potential entrant would, if it enters, have an equal effect on competition in the relevant market. The analysis would of course be more complex if the potential entrants differed with respect to the effect that would result from their entry into the market.

might invest in new and better products that would reduce an entrant's expected profits, and thereby reduce the likelihood or effect of new competition. A merger could eliminate this kind of innovation benefit from perceived potential competition, as the European Commission alleged in the Deutsche Börse/NYSE Euronext merger in the context of exchanges for financial securities.

A merger that eliminates an actual potential competitor can reduce the likelihood of innovation if it enables the merged firm to retain substantial market power in a relevant R&D market. Let us return to the drug example above. Suppose that the new drug is a candidate molecule that has not yet established safety and efficacy through clinical trials. Acquisition of rights to the molecule can eliminate actual potential competition contingent on whether the molecule obtains FDA certification.

The acquisition can also affect incentives to develop the molecule to the point of FDA certification, as well as efforts by the acquiring company to improve its competitive therapies. Both of those incentives might be reduced because the new molecule could replace revenues from the incumbent firm that would own the molecule after the acquisition.

The Guidelines (§ 4.2.E.) note that a merged firm may have a reduced incentive to continue or initiate the development of new products that would have competed with the other merging party. Cunningham et al. (2021) find empirical evidence of such a risk for pharmaceutical mergers. The agencies should describe the possible harm to innovation from mergers in more detail and explain its connection to harm from the elimination of potential competition.

Mergers that threaten both harm to potential competition and harm to innovation can affect competition in markets that do not currently exist. For example, in 2014 the FTC challenged the proposed acquisition of Arbitron by Nielsen Holdings. Both companies were in the business of providing audience measurement services. The FTC alleged that both companies were also well-positioned to provide national syndicated cross-platform measurement services.[37] A syndicated cross-platform audience measurement service accounts for audience participation across multiple media platforms, including online and mobile platforms in addition to television and radio, and offers the data to subscribers.

No such service existed in 2014 at the time of the proposed acquisition. Nonetheless, the FTC believed that there was demand for such a service and that the merger would impede its development.

A footnote in the Guidelines (§ 2.4.A., n. 23) appears to contemplate this type of harm:

> Harm from the elimination of a potential entrant can occur in markets that do not yet consist of commercial products, even if the market concentration of the future market cannot be measured using traditional means. Where there are few equivalent potential entrants, including one or both of the merging firms, that indicates that the future market, once commercialized, will be concentrated.

[37] Federal Trade Commission, *In the Matter of Nielsen Holdings and Arbitron*, Docket No. C-4439, Complaint (Feb. 24, 2014).

> The Agencies will consider other potential entrants' capabilities and incentives in comparison to the merging potential entrant to assess equivalence.

Because of the substantial welfare effects of innovation, the agencies should give serious attention to the possible implications of mergers for innovation and the need, in some cases, to focus on markets that do not currently exist. We hope that the placement of this particular point in a footnote does not imply a relative indifference to innovation issues.

6 Conclusion

Harm to potential competition has been an underappreciated area of antitrust enforcement, and we applaud the attention that is given in the 2023 Merger Guidelines to this important issue. While actual and perceived potential competition are often treated as distinct phenomena, they are intertwined because, if firms act with rational expectations, the latter cannot persist without the former and because reactions to perceived potential competition are often accompanied by actual potential competition.

Economic studies suggest that the benefits of perceived potential competition are less than some courts have assumed and that the benefits of actual potential competition are greater. Antitrust enforcement should assess both possible aspects of potential competition in an integrated fashion.

The conceptual framework that is used for analyzing potential competition can be especially useful in assessing nascent competition and innovation issues. Even where the nascent competitors or potential innovators are existing competitors, the issues that are raised by them involve potential changes to their products or business methods that might bring increased or more direct competition in the future. Harm to potential, nascent, or innovation competition that is sufficient to block a merger should be assessed in expected value terms and should not require proof that the harm is more likely than not.

Appendix

Suppose there are N potential entrants. Pre-merger, each potential entrant has an independent probability p of competing in the incumbent's market. The probability that at least one new competitor enters the market is $P(N) = 1 - (1-p)^N$. We assume that new competition generates a consumer benefit B and does not change the probability p that another firm might enter. Then acquisition of a potential entrant lowers the probability of entry by at least one new competitor to $P(N-1) = 1 - (1-p)^{N-1}$. The magnitude of the reduction in the probability is $\Delta P(N) = p(1-p)^{N-1}$ and the expected harm from the acquisition is $\Delta P(N) * B$.

For each number of potential entrants, N, Table A.1 shows the probability that at least one firm would enter and the reduction in that probability from an acquisition of one of the potential entrants. The calculation is done in two ways: (i) assuming that $p=0.50$; and (ii) assuming that p is uniformly distributed between zero and one (and hence has an expected value of 0.50). This second calculation captures inherent uncertainty with regard to the actual probability of entry for each potential entrant, even if the expectation is that each potential entrant has an equal chance of entering or remaining outside the market.

The reduction in the probability of entry that results from the acquisition of a potential entrant, and therefore the reduction in the expected benefit from new competition, is less than five percentage points if there are more than four potential entrants when calculated either at $p=0.5$ or averaged over all probabilities.

These hypothetical numbers ignore four more general relevant considerations: First, even if the likelihood of entry by each of the firms is the same, the effect of entry might be very different. Some entrants might have a bigger effect on the market and confer greater benefits on consumers than others. Mergers that involve those firms are therefore more likely to be anticompetitive than mergers that involve firms that are less likely to have a significant effect on competition.

Second, these simple examples implicitly assume that the entry of one or more firms generates the same benefit B from new competition. That might or might not be the case. Consumers might derive a greater benefit if multiple firms enter, and

Table A.1 Reduction in the probability of entry from an acquisition of a single potential entrant

Number of Potential Entrants	$p=0.5$		p averaged from 0 to 1	
	Probability that at least one firm enters	Reduction in probability from acquisition of one firm	Probability that at least one firm enters	Reduction in probability from acquisition of one firm
1	0.500	0.500	0.500	0.500
2	0.750	0.250	0.667	0.167
3	0.875	0.125	0.750	0.083
4	0.938	0.063	0.800	0.050
5	0.969	0.031	0.833	0.033
6	0.984	0.016	0.857	0.024
7	0.992	0.008	0.875	0.018

acquisition reduces the probability of such outcomes. On the other hand, the expectation of competition from multiple entrants can make entry less attractive and reduce its probability. Third, the examples explicitly assume that the probabilities of entry for each of the firms are equal and statistically independent of one another. That will often not be correct. Fourth, the examples assume that entry does not change incumbent behavior that might raise (or lower) barriers to new competition.

In other respects, these calculations overestimate the effects of a merger on the likelihood of entry by at least one firm. For example, Table A.1 shows that a merger would reduce the probability of entry from 0.75 to 0.50 if there are two potential entrants, each of which has an independent probability of entry equal to 50 percent. If, instead, each firm has an independent probability of entry that is equal to 10 percent, a merger would lower the probability of entry from 0.19 to 0.10.

Acquisition would also have more modest effects if entry decisions were positively correlated and not diminished by prior acquisitions. In that case, if an acquired firm would have entered but-for the acquisition, then it is more likely that one or more remaining potential entrants would enter relative to the case in which entry probabilities are statistically independent. Therefore, an acquisition would be less likely in that case to reduce the probability of subsequent actual entry by at least one firm.

Taking account of these more general considerations will of course complicate the analysis in any particular case. The hypothetical examples discussed above nevertheless demonstrate the important point that acquisition of a potential entrant can be expected to have a substantial adverse effect on competition only if the merging potential entrant is one of only a few potential entrants or offers the prospect of a uniquely substantial effect on competition in the relevant market.

The effect of the acquisition of one of a number of potential entrants on the likelihood of entry might, even if modest, be enough to justify blocking the merger in order to preserve actual potential entry if the efficiencies are insubstantial and the effect of entry is likely to be significant. But a similarly modest effect on the likelihood of entry might not reduce the likelihood of entry-deterring conduct by incumbents and thus might not justify blocking the merger in order to preserve perceived potential competition.

Acknowledgements We are grateful to Mark Lemley and Steve Salop for helpful comments.

Author Contributions Both authors contributed equally to the article.

Funding The authors have received no external funding for this article.

Data Availability No datasets were generated or analysed during the current study.

Declarations

Competing interests The authors have no conflicts of interest to declare that are relevant to its content.

References

Arrow, K. J. (1962). Economic Welfare and the allocation of resources for Invention. *The rate and direction of inventive activity: Economic and social factors* (pp. 609–626). Princeton University Press.

Bain, J. S. (1949). A note on pricing in monopoly and oligopoly. *American Economic Review*, *39*, 448–464.

Bain, J. S. (1959). *Industrial Organization*. Wiley.

Baumol, W. J., Panzar, J. C., & Willig, R. D. (1982). *Contestable and the theory of industry structure*. Harcourt Brace Jovanovich.

Bergman, M., & Rudholm, N. (2003). The relative importance of actual and potential competition: Empirical evidence from the pharmaceuticals market. *Journal of Industrial Economics*, *51*(4), 455–467.

Bush, D., & Massa, S. (2004). Rethinking the potential competition doctrine. *Wisconsin Law Review*, *4*, 1035–1160.

Cabral, L. M. B. (2002). Horizontal mergers with free-entry: Why cost efficiencies may be a weak defense and asset sales a poor remedy. *International Journal of Industrial Organization*, *21*, 607–623.

Caradonna, P., Miller, N., & Sheu, G. (2024). Mergers, entry, and consumer welfare. Georgetown McDonough school of business research paper No. 3537135, Available at SSRN: https://ssrn.com/abstract=3537135 or https://doi.org/10.2139/ssrn.3537135.

Carrier, M. A. (2008). Two puzzles resolved: Of the schumpeter-arrow stalemate and pharmaceutical innovation markets. *Iowa Law Review*, *93*, 393–450.

Caves, R. E., Whinston, M. D., & Hurwitz, M. A. (1991). Patent expiration, entry, and competition in the U.S. pharmaceutical industry. *Brookings Papers on Economic Activity: Microeconomics*, 1–66.

Clark, J. B. (1901). *The Control of Trusts: An Argument In Favor Of Curbing The Power Of Monopoly By A Natural Method*. Kessinger Publishing (September 10, 2010).

Crawford, G., Valletti, T., & Caffarra, C. (2020). How tech rolls: Potential competition and 'reverse' killer acquisitions. *CPI Blogs* (December 1, 2020).

Cunningham, C., Florian, E., & Ma, S. (2021). Killer acquisitions. *Journal of Political Economy*, *129*, 649–702.

Dafny, L. S. (2005). Games hospitals play: Entry deterrence in hospital procedure markets. *Journal of Economics and Management Strategy*, *14*(3), 1975–2471.

Dasgupta, P., & Stiglitz, J. E. (1988). Potential competition, actual competition, and economic welfare. *European Economic Review*, *32*, 569–577.

Davis, R. W. (2003). Innovation markets and merger enforcement: Current practice in perspective. *Antitrust Law Journal*, *71*, 677–703.

Dixit, A. (1980). The role of investment in entry-deterrence. *The Economic Journal*, *90*, 95–106.

Ellison, G., & Ellison, S. F. (2011). Strategic entry deterrence and the behavior of pharmaceutical incumbents prior to patent expiration. *American Economic Journal: Microeconomics*, *3*, 1–36.

Ghemawat, P. (1984). Capacity expansion in the titanium dioxide industry. *Journal of Industrial Economics*, 33(2), 145–163.

Gilbert, R. J. (1989). The role of potential competition in industrial organization. *Journal of Economic Perspectives*, *3*, 107–127.

Gilbert, R. J. (2020). *Innovation matters: Competition policy for the high-technology economy*. MIT Press.

Gilbert, R. J., & Newbery, D. M. G. (1982). Preemptive patenting and the persistence of monopoly. *American Economic Review*, *72*, 514–526.

Gilbert, R. J., & Tom, W. (2001). Is innovation king at the antitrust agencies? The intellectual property guidelines five years later. *Antitrust Law Journal*, *69*, 43–86.

Gilbert, R. J., & Vives, X. (1986). Entry deterrence and the free rider problem. *Review of Economic Studies*, *53*(1), 71–83.

Goolsbee, A., & Syverson, C. (2008). How do incumbents respond to the threat of entry? Evidence from the major airlines. *Quarterly Journal of Economics*, *123*(4), 1611–1633.
Harrington, R. E., & Porter, M. E. (1989). End-game strategies for declining industries. *Readings in Strategic Management*. Macmillan Education UK.
Hemphill, C. S., & Wu, T. (2020). Nascent competitors. *University of Pennsylvania Law Review*, *168*, 1879–1910.
Hovenkamp, H. (2024). Potential Competition. U of Penn, Inst for law & econ research paper no. 23–36, *Antitrust Law Journal* (forthcoming) (2024), Available at SSRN: https://ssrn.com/abstract=4540413 or https://doi.org/10.2139/ssrn.4540413.
Knight, F. (1921). *Risk, uncertainty, and profit*. Houghton Mifflin.
Koscianski, J., & Mathis, S. (1995). Excess capacity and the probability of entry: An application to the US titanium industry. *Resources Policy*, 21(1), 43–51.
Kwoka, J. (2001). Non-incumbent competition: Mergers involving constraining and prospective competitors. *Case Western Reserve Law Review*, *52*(1), 173–209.
Kwoka, J. (2008). Eliminating potential competition. *Issues in Competition Law and Policy*, *2*, 1437–1454.
Kwoka, J., & Batkeyev, B. (2019). Strategic responses to competitive threats: Airlines in action. *Review of Industrial Organization*, *54*, 83–109.
Kwoka, J., & Shumilkina, E. (2010). The price effect of eliminating potential competition: Evidence from an Airline Merger. *Journal of Industrial Economics*, *58*(4), 767–793.
Lieberman, M. (1987). Excess capacity as a barrier to entry: An empirical appraisal. *Journal of Industrial Economics*, *35*(4), 607–627.
Mankiw, N. G., & Whinston, M. (1986). Free entry and social efficiency. *Rand Journal of Economics*, *17*, 48–58.
Melamed, A. D. (2022). Mergers involving nascent competition. In *Judging Big Tech: Insights on Applying U.S. Antitrust Law to Digital Markets*, 38 (Washington Center for Equitable Growth).
Moresi, S., & Salop, S. C. (2021). When Vertical is horizontal: How Vertical mergers lead to increases in effective concentration. *Review of Industrial Organization*, *59*, 177–204.
Morrison, S. A., & Winston, C. (1987). Empirical implications and tests of the contestability hypothesis. *Journal of Law and Economics*, *30*, 53–66.
Salant, S. W., Switzer, S., & Reynolds, R. J. (1983). Losses from horizontal merger: The effects of an exogenous change in industry structure on cournot-nash equilibrium. *Quarterly Journal of Economics*, *98*(2), 185–199.
Salop, S. C. (2021). Potential competition and antitrust analysis. Roundtable on the concept of potential competition. *OECD*. 10 June 2021.
Salop, S. C. (forthcoming). The 2023 merger guidelines: A Post-Chicago and Neo-Brandeisian integration. *Review of Industrial Organization*, this issue.
Salop, S. C., & Scott Morton, F. (2021). The 2010 HMGs ten years later: Where do we go from here? *Review of Industrial Organization*, *58*(1), 81–101.
Sayyed, B. (2022). Actual potential entrants, emerging competitors, and the Merger guidelines: Examples from FTC Enforcement 1993–2022 (December 20, 2022). Available at SSRN: https://ssrn.com/abstract=4308233 or https://doi.org/10.2139/ssrn.4308233.
Spence, A. M. (1977). Entry, capacity, investment and oligopolistic pricing. *The Bell Journal of Economics*, *8*(2), 534–544.
Sullivan, S. P., & Su, H. C. (2023). Antitrust time travel: Entry and potential competition. *Antitrust Law Journal*, *85*, 147–193.
Sylos-Labini, P. (1957). *Oligopoly Theory and Technical Progress*. Harvard University Press.
Teece, D. (2023). The dynamic competition paradigm: Insights and implications. *Columbia Business Law Review*, *2023*, 374–461.
Tirole, J. (1988). *The theory of Industrial Organization*. MIT Press.
Tucker, D. S. (2011). Potential competition analysis under the 2010 merger guidelines. *Sedona Conference Journal*, *12*, 273–284.
Werden, G. J., & Froeb, L. M. (1998). The entry-inducing effects of horizontal mergers; an exploratory analysis. *Journal of Industrial Economics*, *46*(4), 525–543.
Werden, G. J., & Limarzi, K. C. (2010). Forward-looking merger analysis and the superfluous potential competition doctrine. *Antitrust Law Journal*, *77*, 112–120.