Startup acquisitions and merger policy*

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Abstract

This article critically examines recent economic theories on the relationship between startup acquisitions and innovation. We argue that the prevalence of *killer acquisitions* is likely overstated, even from a purely theoretical perspective. We further show that the *entry-for-buyout* effect may not always hold: relaxing merger control does not necessarily lead startups to invest more or pursue more disruptive innovation. Effective merger policy must adopt a dynamic perspective, balancing short-term competitive harms against long-term innovation benefits. The article concludes with practical policy recommendations for the design and enforcement of merger control.

Keywords: acquisition, innovation, merger policy, startup

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1 Introduction

Innovation has become a buzzword in public discourse, and rightfully so; it plays a central role in driving economic growth and shaping the future of society. Competition policy has not been immune to this trend. Over the past five to ten years, there has been a surge of interest in how innovation interacts with mergers and acquisitions, particularly in response to the wave of acquisitions in innovation-driven sectors like information technology and pharmaceuticals. This growing interest is driven not only by past concerns that competition authorities failed to address the acquisition-induced competition risks in these sectors,[1] but also by more recent fears that enforcement may now be swinging too far in the opposite direction, adopting an overly aggressive, heavy-handed approach.[2]

Recent discussions about merger control, especially in tech and pharmaceutical sectors, differ in important ways from the traditional analysis of mergers between established firms. In particular, the acquisitions at the center of current public and policy debates share three distinctive features that reflect the central role of innovation in these cases. First, these mergers often involve a significant asymmetry in market power and capabilities between the acquiring firm and the target firm. In particular, many of these target firms are still in early development stages, far from commercial maturity.[3]

[1]See e.g., Crémer, J., De Montjoye, Y . A., & Schweitzer, H. (2019). "Competition policy for the digital era." Publications Office of the European Union. https://op.europa.eu/en/publication-detail/-/publication/21dc175c-7b76-11e9-9f05-01aa75ed71a1/language-en; Scott -Morton, F., Bouvier, P., Ezrachi, A., Jullien, B., Katz, R., Kimmelman, G., ... & Morgenstern, J. (2019). "Committee for the study of digital platforms." *Report, Stigler Center for the Study of of the Economy and the State*. https://research.chicagobooth.edu/-/media/research/stigler/pdfs/market-structure---report-as-of-15-may-2019.pd; Furman, J., Coyle, D., Fletcher, A., McAuley, D., & Marsden, P. (2019). "Unlocking digital competition: Report of the digital competition expert panel." *UK government publication, HM Treasury*, 27. https://assets.publishing.service.gov.uk/media/5c88150ee5274a230219c35f/unlocking_digital_competition_furman_review_web.pdf

[2]See Cabral, L. (2021). "Merger policy in digital industries." *Information Economics and Policy*, 54, 100866. https://doi.org/10.1016/j.infoecopol.2020.100866.

[3]For example, Bottan and Gautier (2025) show that among the 362 acquisitions made by Alphabet, Amazon, Apple, Meta, and Microsoft between 2018 and 2023, the most common target age was just 3 years, with a median of 5 years and an average of 7.5 years. See Bottan, D. and Gau-

Second, the focus tends to be on innovation initiated by small startup firms, rather than by the large acquiring firms. This reflects the growing prevalence of major breakthroughs emerging from small, independent firms with bold, high-risk ideas. As a result, concerns often relate to whether these fragile innovation efforts will be stifled by acquisition.

Third, many of the target firms are not direct competitors to incumbents. Instead, they tend to offer complementary products or occupy adjacent markets that share technological or customer bases with the acquiring firm. They may not pose immediate competitive threats, but their acquisition can raise concerns about the loss of nascent or potential competition, especially in sectors where future rivalry may emerge only after a long and uncertain innovation process.

Reflecting these concerns, competition authorities have increased scrutiny of such deals. Recent examples include the UK Competition and Markets Authority (CMA) ordering Meta to unwind its acquisition of Giphy (2020), and the European Commission blocking Booking's acquisition of eTraveli (2023). The U.S. Federal Trade Commission (FTC) challenged Adobe's attempted acquisition of Figma (2022), which was subsequently abandoned, and raised concerns over Amazon's proposed acquisition of iRobot (2024), leading to its termination. Investigations into Meta's acquisition of Within (2021), Google's acquisition of Fitbit (2021), and Microsoft's acquisition of Activision Blizzard (2022) similarly highlight growing regulatory attention on large technology companies' acquisitions. In the pharmaceutical sector, the Illumina-GRAIL case (2021-2024), challenged by both the European Commission and the U.S. FTC, illustrates how mounting concerns about innovation and future competition can lead to the blocking of vertical mergers, even though such mergers have traditionally been viewed as pro-competitive.

Sound merger policy must rest on rigorous and transparent economic reasoning. To this end, the academic research on startup acquisitions has expanded rapidly, offering both theoretical models and empirical studies on how mergers affect inno-

tier, A. (2025). "Tech Giants and Startup Acquisitions: Insights From the Evolution of Acquired Products". *Antitrust Chronicle*, April 2025. https://www.pymnts.com/cpi-posts/tech-giants-and-startup-acquisitions-insights-from-the-evolution-of-acquired-products/.

vation and dynamic competition.[4] This line of research provides valuable tools for identifying when startup acquisitions are likely to harm, or enhance, innovation.[5]

Within the literature, an important distinction has emerged between pre-acquisition and post-acquisition innovation. Pre-acquisition innovation refers to R&D activity undertaken before the acquisition is proposed to the antitrust authority, while post-acquisition innovation concerns what happens to innovation efforts after the agency has made the approval or blockage decision. The research on post-acquisition innovation typically examines whether the incumbent has incentives to continue, shelve, or terminate the R&D project initiated by the startup. By contrast, the pre-acquisition literature focuses on how the prospect of being acquired influences the startup's innovation direction and effort.

For policymakers, it is essential to assess, for each type of innovation, whether an acquisition's impact on innovation aligns with or diverges from its impact on competition. Furthermore, if they diverge, the policymaker must determine the likely net effect on consumer welfare and overall efficiency. This article addresses this challenge by building on recent economic research on both pre- and post-acquisition innovation to clarify when the newly developed theories of harm or benefit should apply to merger enforcement involving startup acquisitions. In particular, we highlight the trade-offs between short-term competition and long-term innovation, and explore their implications for designing merger policies.

It is worth emphasizing that we use the term "startups" to refer broadly to firms innovating in areas that are, or could become, complements or substitutes to the incumbent's product. Notably, large companies often acquire early-stage startups from adjacent or even unrelated markets. In such cases, complementarity or substitutability may only emerge over time.[6] When these acquisitions are frequent and

[4]Motta and Peitz provided an excellent review of early contributions to the study of startup acquisitions. See Motta, M. and Peitz, M. (2021). "Big tech mergers". *Information Economics and Policy*, 54, 100868. https://doi.org/10.1016/j.infoecopol.2020.100868.

[5]Lefouili and Madio provided a complementary review of the literature on mergers and innovation which also covers mergers between established firms. See Lefouili, Y., & Madio, L. (2025). "Mergers and Investments: Where Do We Stand?" *Toulouse School of Economics Working Paper*. https://www.tse-fr.eu/sites/default/files/TSE/documents/doc/wp/2025/wp_tse_1617.pdf.

[6]See Cabral, L. (2024). "Big tech acquisitions." *International Journal of Industrial Organization*,

follow discernible patterns, they can raise concerns about dominant firms preempting future competition from neighbouring markets.

2 Post-acquisition innovation

Economic research on post-acquisition innovation focuses on what happens to innovation and competition if a proposed acquisition is approved. To evaluate this, one must consider and compare innovation efforts in two hypothetical scenarios: one where the acquisition goes ahead, and one where it is blocked.

Arguably, the most important question concerns how the acquiring firm will treat the acquired R&D project. The most notable paper in this line of research is the one by Cunningham, Ederer, and Ma (2021, hereafter CEM).[7], whose study introduces the concept of killer acquisitions, where dominant firms acquire startups primarily to shut down the latter's R&D projects and avoid future competition. They provide empirical evidence from the pharmaceutical industry, showing that a significant number of acquisitions appear to be motivated by a desire to eliminate future competition.

The findings are deeply rooted in the *Arrow replacement effect*.[8] In his seminal work, Kenneth Arrow, the 1972 Economics Nobel Prize Laureate, suggested that incumbents often have less incentive than entrants to innovate, because doing so cannibalizes their existing profits. In contrast, an entrant has everything to gain and nothing to lose. Therefore, an incumbent who acquires a startup working on a promising project may discontinue the project after acquisition, even though the startup would have continued developing it had it remained independent.[9]

However, applying this logic in merger enforcement requires caution. This is because the replacement effect was originally derived from assuming homogeneous

103127. https://doi.org/10.1016/j.ijindorg.2024.103127.

[7]Cunningham, C., Ederer, F., & Ma, S. (2021). "Killer acquisitions." *Journal of Political Economy*, 129(3), 649-702. https://doi.org/10.1086/712506.

[8]See Arrow, K. J. (1962). "Economic welfare and the allocation of resources for invention" (pp. 219-236). *Macmillan Education UK*.

[9]Despite this, the incumbent may still prefer to acquire the startup as it removes a potential future competitor.

firms engaging in a process innovation, where the innovation reduces the marginal costs of production. In such cases, a monopolist benefits less from marginal cost reductions than a competitive firm, because competitive pressure forces the latter to supply a larger quantity, even when it serves the entire market after a successful innovation.

This logic does not necessarily extend to product innovation, where the innovation leads to the creation of a new product, which startups often engage in.[10] Gilbert (2006) argues that a monopolist who replaces its own product with a superior version can raise prices without losing customers, thereby capturing the full value of the improvement. In contrast, a competitive firm introducing the same superior product benefits less from a price increase, as its smaller customer base limits the gains from innovation.[11] Similarly, Chen and Schwartz (2013) show that a monopolist who can keep both old and new products may have stronger innovation incentives because it can coordinate pricing to minimize the cannibalization of profits between old and new products. In contrast, a competing firm that only owns the new product has to compete aggressively with the incumbent's old product, which reduces its incentive to innovate.[12]

Furthermore, the replacement effect assumes that the monopolist and the competitive firm have the same innovation costs and likelihood of success in innovation. In practice, large firms typically possess superior research infrastructure and greater resources than startups. Consequently, given the same R&D idea, they are often more likely to succeed in developing it, and can do so at a lower cost.[13]

[10]The Arrow replacement effect may also not hold when comparing the innovation incentives of a monopolist to that of entrants when there are multiple entrants. See the discussion in Pan, L., Teh, C., & Wang, C. (2025). "Innovation Incentives with Multiple Entrants". *Mimeo*. https://www.dropbox.com/scl/fi/dghyej3tdzjrgrhw7ehsa/Multi_Arrow.pdf?rlkey=6gx5buda1i22c5put3qbbz8aq&st=t8454bls&dl=0

[11]Gilbert, R. (2006). "Looking for Mr. Schumpeter: where are we in the competition–innovation debate?" *Innovation Policy and the Economy*, 6, 159-215. https://doi.org/10.1086/ipe.6.25056183.

[12]Chen, Y., & Schwartz, M. (2013). "Product innovation incentives: Monopoly vs. competition." *Journal of Economics & Management Strategy*, 22(3), 513-528. https://doi.org/10.1111/jems.12026.

[13]One example is that startup acquisitions relax the financial constraint for R&D investment. See the related discussion in Fumagalli, C., Motta, M., & Tarantino, E. (2022). "Shelving or

Based on the discussion above, even only from a theoretical perspective, the replacement effect, the foundation of the killer acquisition concept, should be viewed as a possibility rather than a universal principle. Moreover, there is little empirical evidence that acquisitions in the tech industry are made for the primary purposes of (directly) eliminating future competition. Gautier and Lamesch (2021) find that leading tech firms discontinue a notable share of acquired startups, but they cannot precisely determine the motives behind these discontinuations.[14] Crandall and Hazlett (2022) argue that the effect of many tech acquisitions are at worst ambiguous and at best pro-competitive.[15] Ivaldi et al. (2024) examined eight major GAFAM acquisitions reviewed by the European Commission and found no evidence that they led to the elimination of the target's products or a reduction in market competition.[16]

Acquisitions can also affect non-target firms' post-acquisition R&D incentives. For example, as argued by Caffarra, Crawford and Valletti (2020), acquisitions, being less costly than internal development, may crowd out the incumbent's incentive to engage in in-house innovation, potentially reducing competition and product variety.[17] Acquisitions can also influence the entry decisions of non-target startups. Denicolo and Polo (2024) argue that repeated acquisitions can lead to an entrenchment of the incumbent's market power over time, making it more difficult for future startups to enter and compete.[18]

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developing? The acquisition of potential competitors under financial constraints." *IGIER Working Paper Series*, No. 680. https://repec.unibocconi.it/igier/igi/wp/2022/680.pdf.

[14]Gautier, A., & Lamesch, J. (2021). "Mergers in the digital economy." *Information Economics and Policy*, 54, 100890. https://doi.org/10.1016/j.infoecopol.2020.100890.

[15]Crandall, R. W., & Hazlett, T. W. (2022). "Antitrust in the Information Economy: Digital platform mergers." *The Journal of Law and Economics*, 65(S2), S499-S518. https://doi.org/10.1086/721487.

[16]Ivaldi, M., Petit, N., & Unekbas, S. (2024). "Killer Acquisitions: Evidence from European Merger Cases." *Antitrust Law Journal*, 86(2). https://publications.ut-capitole.fr/id/eprint/49784/.

[17]Caffarra, C., Crawford, G., & Valletti, T. (2020). "How tech rolls': Potential competition and 'reverse' killer acquisitions." *Antitrust Chronicle*, 2(2), 1-9. https://cepr.org/voxeu/blogs-and-reviews/how-tech-rolls-potential-competition-and-reverse-killer-acquisitions.

[18]See Denicolo, V., & Polo, M. (2024) "Acquisitions, Innovation and the Entrenchment of Monopoly." *SSRN Working Paper Series*. https://ssrn.com/abstract=3988255.

3 Pre-acquisition innovation

Merger control influences more than just market structure or post-merger conduct. It also shapes firms' innovation strategies, especially those of startups, well before any acquisition takes place. These effects matter greatly, as the *innovation direction* chosen in this early stage can have a significant impact in determining which technologies develop, which firms become relevant competitors, and how competition unfolds.

In general, a startup's pre-acquisition R&D decision revolves around whether to direct its innovation towards products that are complements, substitutes, or adjacent to the incumbent's offering, and the degree of these cross-product externalities. This decision is shaped by the startup's perceived likelihood of being acquired by the incumbent, and the expected acquisition price. This matters as many startups innovate with the view of acquisition as their main exit strategy.[19] Thus, the prospect of acquisition can influence not just the intensity, but also the direction of startup innovation.

A complementary product raises a startup's strategic value to the incumbent, increasing both the likelihood and price of acquisition. For example, app developers build tools for iOS or Android; chip startups design processors tailored to NVIDIA's platforms; biotech firms develop diagnostics that match major drugs; and cybersecurity startups optimize for integration with AWS or Azure. Aligning with an incumbent's ecosystem makes startups more attractive acquisition targets. Failing to acquire the startup may mean that the incumbent misses out on valuable synergies, or worse, seeing a rival acquire the startup and gain a competitive edge.

A substitutable product poses a competitive threat to the incumbent. Conditional on innovating for a substitute, the more substitutable the product, the greater the threat to the incumbent, and hence the higher the price the incumbent may be

[19]See Sokol, D.D., (2018). "Vertical mergers and entrepreneurial exit." *Florida Law Review*, 70, p.1357, https://scholarship.law.ufl.edu/flr/vol70/iss6/5/. and Lemley, M. A., & McCreary, A. (2021). "Exit strategy." *Boston University Law Review*, 101, 1. https://www.proquest.com/scholarly-journals/exit-strategy/docview/2502251304/se-2.

willing to pay to remove this competitive threat by acquiring the startup.[20] This is the essence of *entry-for-buyout*, first proposed by Eric Rasmusen, which suggests the prospect of being acquired by an incumbent can motivate a potential entrant to invest and enter the market.[21]

It is important to recognize, though, the logic of entry-for-buyout is only partially true. The central problem we want to understand is that whether a startup is more likely to choose a more disruptive innovation direction when a relaxed merger policy makes being bought by the incumbent easier. Since the startup will receive part of the joint gain from the acquisition if the acquisition is successful, startup. ultimately, the comparison reduces to comparing whether the more disruptive innovation direction (call it x'' and a less disruptive direction x') increases the total gain from acquisition. For a particular innovation direction x, the total gain from the acquisition is equal to the monopoly profit following the acquisition $\pi^M(x)$ lessened by the joint duopoly profit when the firms stay independent $\pi_I^D(x) + \pi_E^D(x)$. So the gain from acquisition for a given x is $\Delta(x) \equiv \pi^M(x) - (\pi_I^D(x) + \pi_E^D(x))$.

Naturally, a more disruptive innovation direction reduces the incumbent's duopoly profit, i.e., $\pi_I^D(x'') < \pi_I^D(x')$. But, we still cannot conclude that relaxing the merger control will cause the startup to choose the more disruptive innovation direction, i.e., $\Delta(x'') > \Delta(x')$. This inequality trivially hold if the disruptiveness of innovation direction does not alter the monopoly profit and the startup's duopoly profit, i.e., $\pi^M(x'') = \pi^M(x')$ and $\pi_E^D(x'') = \pi_E^D(x')$. There is no guarantee these equalities will hold in general. In particular, if the gain in the startup's duopoly profit, $\pi_E^D(x'') - \pi_E^D(x')$, is much greater than the gain in the monopoly profit, $\pi^M(x'') - \pi^M(x')$, the relaxed merger policy may instead steer the startup to choose the less disruptive innovation direction.[22]

[20] See Gilbert, R. J., & Katz, M. L. (2022). "Dynamic merger policy and pre-merger product choice by an entrant." *International Journal of Industrial Organization*, 81, 102812. https://doi.org/10.1016/j.ijindorg.2021.102812. See also Callander, S., & Matouschek, N. (2022). "The novelty of innovation: Competition, disruption, and antitrust policy." *Management Science*, 68(1), 37-51. https://doi.org/10.1287/mnsc.2021.4101.

[21] See Rasmusen, E. (1988). "Entry for buyout." *The Journal of Industrial Economics*, 281-299. https://doi.org/10.2307/2098468.

[22] See Teh, C. and Wang, C. (2025). "Startup Acquisition and Innovation." *Monash University*

The literature on startup acquisitions have largely focused on the choice of the degree of sustainability, and ignored the choice of developing a complement or a substitute to the incumbent's product.[23] The complexity of this issue can be illustrated using a similar comparison as above. Let x'' denote developing a substitute and x' denote developing a complement. Compared to a substitute, a complement often leads to a greater monopoly profit and a greater incumbent profit in the duopoly, i.e., $\pi^M(x'') < \pi^M(x')$ and $\pi_I^D(x'') < \pi_I^D(x')$. A relaxed merger policy will direct the startup towards developing a complement over the substitute if $\Delta(x') > \Delta(x'')$, which is equivalent to $\pi^M(x'') - \pi^M(x') - (\pi_E^D(x'') - \pi_E^D(x')) < \pi_E^D(x'') - \pi_E^D(x')$. Depending on the value of the term $\pi_E^D(x'') - \pi_E^D(x')$, this inequality may or may not hold. This is exactly why determining how a less stringent merger regime affects the choice between complements and substitutes is difficult.

The anticipation of acquisition can also affect the pre-acquisition innovation incentives for incumbents and non-target startups. On the incumbent's side, there can be an *incumbency-for-buyout* effect where the incumbent, anticipating an acquisition opportunity, directs its own R&D efforts towards the direction of the related area to capture rents, potentially discouraging the entrant from doing the same.[24]

On the non-targeted startups' side, if the incumbent is expected to continue developing the acquired project, then non-targets may redirect their innovation to avoid competing with the incumbent.[25] If instead the project is likely to be shelved, then other startups may invest more aggressively, anticipating less future competition.[26]

Department of Economics Working Paper for a more elaboration.

[23]The only exceptions we are aware of is Motta and Shelegia (2021) and Teh and Wang (2025). See Motta, M., and Shelegia, S. (2021). "The "Kill Zone": Copying, Acquisition and Start-Ups." *CEPR Discussion Paper No. DP16151, 2021.* https://cepr.org/publications/dp16151

[24]Dijk, E. S., Moraga-González, J. L., & Motchenkova, E. (2024). "How do start-up acquisitions affect the direction of innovation?" The Journal of Industrial Economics, 72(1), 118-156. *https://doi.org/10.1111/joie.12349*

[25]See Affeldt, P. and Kesler, R. (2023). "Competitors' Reactions to Big Tech Acquisitions: Evidence from Mobile Apps." *DIW Discussion Papers* 1987. https://www.diw.de/documents/publikationen/73/diw_01.c.831752.de/dp1987.pdf.

[26]See Teh, C., Banerjee, D. S., & Wang, C. (2022). "Acquisition-induced kill zone." *Monash University Department of Economics Working Paper.* https://monash-econ-wps.s3.amazonaws.com/RePEc/mos/moswps/2022-24.pdf. See also the evaluation of these effects in the software market by Eisfeld, L. (2023). "Entry and acquisitions in software markets." *Unpublished Manuscript.*

4 Implications for merger policy

As Shelanski and Katz (2006) observed, "When it comes to merger policy, innovation is tricky stuff." They identified two major challenges in designing merger policies that account for innovation, both of which are closely related to the economic theories discussed above. The first is assessing how a merger will affect innovation. The second is balancing potential long-term innovation gains against short-term losses in competition.[27]

Policy discussions have so far focused primarily on how acquisitions affect post-acquisition innovation. Much of this debate centers on the recently developed killer acquisition theory of harm, which links acquisitions to the entrenchment of incumbents and the termination of future competition. However, our earlier discussion of the replacement effect suggests that such acquisitions may occur less frequently than is often claimed. When applying the theory of killer acquisitions in practice, we recommend adopting a case-by-case analytical approach:

- Identify the nature of the startup's R&D, whether it involves process innovation or product innovation.
- For process innovation, the acquisition should be a suspect for a killer acquisition only if the acquirer's post-acquisition success rate and innovation costs are similar to or worse than those of the target.
- For product innovation, one must first demonstrate that the acquirer has a weaker incentive to innovate on the same R&D project compared to the target. If this condition holds, then, as in the process-innovation case, the acquisition can be suspected as a killer acquisition only if the acquirer's post-acquisition success rate and innovation costs are similar to or worse than those of the target.

https://luiseeisfeld.github.io/assets/docs/JMP_Eisfeld_TSE.pdf.

[27] See Shelanski, H. A., & Katz, M. L. (2006). "Mergers and Innovation." *Bepress Legal Series*, 1132. https://law.bepress.com/expresso/eps/1132.

Although we have noted that the entry-for-buyout effect may not always arise when merger control is relaxed, it remains crucial to emphasize the dynamic perspective in the design and enforcement of merger laws. Since acquisitions serve as the primary exit strategy for startups, their R&D direction, i.e., what type of product to develop and which market to enter, is often shaped by expectations about potential acquisition opportunities and valuations. Properly calibrated merger policies can therefore play a dual role: not only constraining short-run competitive harm but also enhancing long-run consumer welfare by fostering more valuable innovation and more vigorous competition through R&D.

To illustrate this, consider the following simple example.[28] Suppose a startup is choosing between two innovation directions: "Path A" and "Path B". If it expects that an acquisition will be allowed, it may choose Path B, because the dominant firm values it more and is more likely to pay a high price. If, however, acquisition is likely to be blocked, the startup may choose Path A instead.

A purely *static policy*, which the antitrust authority has to commit to, would compare the benefits of acquisition versus no acquisition at the point when the innovation direction has been determined and the acquisition has been proposed. If, for both Path A and Path B, the acquisition leads to worse competition outcomes (possibly in terms of consumer welfare), the static policy will always deny the acquisition, irrespective of which innovation direction has been taken by the startup. But a policy like this ignores how merger policy influences the startup's initial choice of innovation direction in the first place. It is possible that while blocking the acquisition would improve outcomes on Path A, committing to approving the acquisition would lead the startup to choose Path B early on, resulting in greater welfare benefits than choosing Path A. The latter captures the dynamic value of a forward-looking policy.

How should competition agencies weigh the dynamic benefits to innovation against the static losses in competition? Consider a real-world parallel: a startup deciding

[28]This is a simplified version of the idea illustrated in Gilbert, R. J. and Katz, M L., 2022. "Dynamic merger policy and pre-merger product choice by an entrant." *International Journal of Industrial Organization*, 81, p.102812. https://doi.org/10.1016/j.ijindorg.2021.102812

whether to innovate in search engines or generative AI. If the dominant search company is unlikely to be allowed to acquire any challengers, the startup may avoid that space entirely and focus on AI instead. But what if consumers would benefit the most from having a high-quality competing search engine? A more lenient merger policy, i.e., one that clears acquisitions with weaker conditions, could shift the startups' innovation toward more socially valuable, but currently under-contested, search engine market. At the same time, the acquisition will only be cleared with a probability less than one, preserving a degree of competition. The optimal merger approval rate should be set at a level where the incremental benefit of encouraging startups to innovate in search technologies equals the incremental expected loss from the risk that an acquisition will ultimately be approved, reinforcing the incumbent's market dominance in search and eliminating a potential contributor to AI innovation. The bottom line is that, to maximize the dynamic welfare, the optimal approval rate can be set above zero even if an acquisition following either path is anti-competitive in a static view.

Ideally, merger policy should take on a forward-looking view that explicitly considers how the rules affect startups' innovation incentives. In practice, however, courts tend to use a static standard, asking whether a merger would reduce competition compared to what would happen if the deal were blocked. This approach misses how merger policy shapes market structure and innovation directions over time. A dynamic and less extreme approach instead could strengthen incentives for startups to enter difficult but important markets, while still blocking a significant number of deals that genuinely threaten competition.

Of course, competition agencies are bound by competition law and cannot approve mergers that are likely to substantially lessen competition solely on the grounds of potential innovation spillovers to other firms. With this in mind, we recommend the following practical steps to help incorporate more forward-looking perspectives into merger assessment:

- Provide a clear guideline of how it views the trade-off between long-run innovation benefits and short-run competition loss. This provides more certainty

to the industry and so ensures strong incentives to innovate in important and challenging areas.

- Lower evidentiary thresholds in acquisitions with a heavy innovation element at the initial screening stage. This provides competition agencies with more leeway in considering claims of innovation benefits, without relaxing their obligation to block harmful mergers.

- Incorporate innovation explicitly into the "net public benefit" test. This allows competition agencies to approve a merger with long-term innovation value, even if it fails a strict competition test, by appealing to broader economic benefits. This approach could be flagged to the courts or included in regulatory guidance to encourage more dynamic assessments.

5 Conclusion

Startup acquisitions influence innovation in complex ways, shaping not only the innovation outcomes of acquired projects, but also the strategic direction of pre-acquisition innovation efforts. As this article has demonstrated, these effects, and their subsequent consequences for welfare, can be nuanced and contrast some popular arguments made in the literature. This calls for the importance of applying a case-by-case approach to more effectively differentiate between acquisitions that suppress innovation and those that foster it, and to ensure that enforcement is grounded in a nuanced understanding of innovation incentives and evolving market structures.

A key implication of our analysis is that a static merger policy, one that focuses narrowly on the immediate competitive effects of acquisitions, risks overlooking their long-term consequences for innovation. Instead, a dynamic merger policy, which explicitly considers how the prospect of acquisition influences firms' innovation choices, is essential to fostering innovation that benefits society over time. Such a policy must strike a delicate balance between preventing anti-competitive mergers and encouraging innovation in under-contested yet socially valuable markets. Achieving this

balance requires clearer policy guidelines, probabilistic enforcement thresholds, and a greater willingness to factor innovation impacts into the net public benefit test.