SAVING AI INNOVATION FROM ANTITRUST LAG

Kevin Frazier*

I. INTRODUCTION 3

II. AI'S INHERENT TENDENCY TOWARD CONSOLIDATION 12
- *A. Economies of Scale* *12*
- *B. Economies of Scope* *14*
- *C. Network Effects* *15*
- *D. Vertical Foreclosure* *17*

III. WHY CURRENT MERGER DOCTRINE WILL NOT PREVENT AI CONCENTRATION 19
- *A. The Error Cost Framework in Merger Analysis* *21*
- *B. Complications Arising from Startup Acquisitions* *24*
- *C. Consumer Harm and Distorted Innovation from Underenforcement* *25*
- *D. The Failure of Market Self-Correction in Startup Acquisitions* *28*
- *E. Screening Startup Deals: The Acquisition Risk Indicators (ARI)* *29*

IV. APPLYING THE ARI FRAMEWORK TO AI 32
- *A. Acquirer's Market Power in the AI Space* *33*
- *B. Transactions in the AI Space* *36*
- *C. Pattern of Acquisition and Exclusionary Conduct* *40*
- *D. Ramifications* *43*

V. AI AUCTIONS 46
- *A. The Fundamental of Auctions* *47*
- *B. Auctions in AI Context* *50*
- *C. Counterarguments, Limitations, and the Need for Further Inquiry* *53*

VI. CONCLUSION 56

* Kevin Frazier is the AI Innovation and Law Fellow at the University of Texas School of Law. He also serves as a senior editor at Lawfare and co-host of the Scaling Laws podcast. Prior to joining Texas Law, Professor Frazier was an assistant professor at the St. Thomas University College of Law, where he taught constitutional law, administrative law, and civil procedure.

ABSTRACT

Artificial intelligence holds immense transformative potential, but its development trajectory is rapidly consolidating within a few dominant firms, placing the future of innovation and equitable economic benefit at significant risk. Current antitrust merger law, fundamentally ill-equipped for dynamic technology markets and biased toward non-intervention by the prevailing error-cost framework, systematically permits acquisitions that entrench incumbent power and stifle nascent competition in the critical AI sector. This doctrinal inadequacy fails to account for AI's unique concentration drivers—scale economies, network effects, and control over essential inputs—allowing potentially anticompetitive consolidation to occur before its harms become manifest. Identifying these high-risk transactions requires new diagnostic tools, such as the Acquisition Risk Indicators (ARI) framework analyzing acquirer power, deal value, and exclusionary conduct patterns. Critically, addressing these risks demands creative remedies beyond simple merger challenges. This analysis explores one such solution: mandatory technology license auctions, designed to ensure rivals can access key innovations acquired by dominant players, thereby fostering diffusion and preserving competitive dynamism. Facing the limitations of existing law, a fundamental modernization of antitrust is imperative—adopting proactive, structurally-aware approaches is crucial if competition policy is to effectively shape the AI revolution for broad progress rather than incumbent entrenchment.

I. INTRODUCTION

No one can accurately predict how artificial intelligence (AI) will transform the economy. Even superforecasters hedge their bets when mapping out the next two years of AI innovation and diffusion. Yet, forecasting the level of concentration in AI-heavy markets is drastically easier. Application of antiquated antitrust principles to this century's most dynamic sector will inevitably result in a handful of firms dominating key areas.

The contemporary economic landscape is undergoing a seismic transformation precipitated by advancements in AI. This burgeoning sector is experiencing an unprecedented surge in activity, reflected in staggering market growth projections and record levels of investment.[1] Global AI market valuations, estimated in the hundreds of billions of dollars in 2024, are forecasted to soar well into the trillions within the next decade.[2] This staggering sum will likely grow given substantial venture capital invest, which exceeded $100 billion globally in 2024 alone, constituting roughly a third of all such funding.[3] This economic dynamism is rapidly translating into operational integration within the corporate sphere. Reports indicate near-universal adoption among Fortune 500 companies, particularly for functions such as recruitment, management, and customer engagement.[4] Surveys reveal

---

1. Jeremy D. Glaser & Kevin M. Yao, *The State of the Funding Market for AI Companies: A 2024 - 2025 Outlook*, MINTZ: INSIGHTS CTR. (Mar. 10, 2024), https://www.mintz.com/insights-center/viewpoints/2166/2025-03-10-state-funding-market-ai-companies-2024-2025-outlook [https://perma.cc/SX63-NRFH] (reporting record venture capital funding for AI in 2024); *see, e.g.*, *Artificial Intelligence Skyrocketing, Shaking the Market*, GLOBENEWSWIRE (Feb. 11, 2025, at 10:10 ET), https://www.globenewswire.com/news-release/2025/02/11/3024340/0/en/Artificial-Intelligence-Skyrocketing-Shaking-the-Market-with-3-680-47-Bn-by-2034.html [https://perma.cc/8R6X-J26A] (reporting that global AI market value is projected to substantially increase over the next ten years).

2. *E.g.*, GlobeNewswire, *supra* note 1; Shivani Zoting, *Artificial Intelligence (AI) Market Size, Share, and Trends 2025 to 2034*, PRECEDENCE RSCH. (June 2, 2025), https://www.precedenceresearch.com/artificial-intelligence-market [https://perma.cc/PN3R-F8R7] (reporting a projected market growth by approximately 20% over the next ten years).

3. Glaser & Yao, *supra* note 1; *see* Swagath Bandhakavi, *Global AI Venture Capital Reaches $110bn in 2024, Driven by Foundational Models*, TECH MONITOR (Feb. 12, 2025), https://www.techmonitor.ai/digital-economy/ai-and-automation/global-ai-venture-capital-110bn-2024-driven-foundational-models [https://perma.cc/FH33-XB26] (reporting $110 billion in venture capital investment in AI in 2024, accounting for one-third of total venture capital funding).

4. *See, e.g.*, Naveen Kumar, *How Many Companies Use AI in 2025? (Global Data)*, DEMANDSAGE (Apr. 16, 2025), https://www.demandsage.com/companies-using-ai/ [https://perma.cc/NH6J-9HUU] (claiming that 99% of Fortune 500 companies use AI, particularly for management and customer engagement but also for recruitment); Alysa Taylor, *AI-Powered Success—with More than 1,000 Stories of Customer Transformation and Innovation*, MICROSOFT: THE MICROSOFT CLOUD BLOG (July 24, 2025), https://blogs.microsoft.com/

that a significant majority of commercial entities worldwide—upwards of seventy percent—are now utilizing AI in at least one business function, driven by demonstrable gains in productivity and operational efficiency.[5] Beyond the enterprise, AI's pervasive integration into quotidian tasks is accelerating.[6] Already underpinning functions ranging from ubiquitous search engine algorithms and navigation systems to consumer finance fraud detection and personalized online experiences, AI is poised for deeper entrenchment.[7] Near-term forecasts anticipate AI-driven enhancements in areas as diverse as predictive personal healthcare monitoring facilitated by wearable technology, automated home management ecosystems, and hyper-personalized content generation, suggesting a fundamental reshaping of daily routines and interactions is imminent.[8]

---

blog/2025/03/10/https-blogs-microsoft-com-blog-2024-11-12-how-real-world-businesses-are-transforming-with-ai/ [https://perma.cc/X34P-YLL2] (claiming that over 85% of Fortune 500 use Microsoft AI solutions for uses such as reinventing customer engagement and reshaping business processes).

5. *E.g.*, ALEX SINGLA ET AL., THE STATE OF AI: HOW ORGANIZATIONS ARE REWRITING TO CAPTURE VALUE 1 (2025), https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai [https://perma.cc/RJ59-658Z] (reporting that more than three-quarters of survey respondents say their organizations use AI in at least one business function); Bhavi Mehta et al., *AI in Financial Services Survey Shows Productivity Gains Across the Board*, BAIN & CO. (Dec. 2024), https://www.bain.com/insights/ai-in-financial-services-survey-shows-productivity-gains-across-the-board/ [https://perma.cc/8QSG-EU2M] (reporting average productivity gains of 20% from generative AI usage in surveyed financial service firms); Alexander Bick, Adam Blandin & David Deming, *The Impact of Generative AI on Work Productivity*, FED. RSRV. BANK OF ST. LOUIS: ON THE ECONOMY BLOG (Feb. 27, 2025), https://www.stlouisfed.org/on-the-economy/2025/feb/impact-generative-ai-work-productivity [https://perma.cc/D8U6-DT6R] (quantifying time savings and productivity increases from generative AI use with statistical data).

6. *See Everyday Examples and Applications of Artificial Intelligence (AI)*, TABLEAU, https://www.tableau.com/data-insights/ai/examples [https://perma.cc/99HK-2MAZ] (last visited July 1, 2025) (providing a wide variety of examples of new ways AI is being increasingly integrated into the completion of daily tasks).

7. *See id.* (providing specific examples of AI implementation into search engine algorithms, navigation systems, fraud prevention, and personalized online shopping recommendations); Kseniia Burmagina, *Artificial Intelligence Usage Statistics and Facts*, ELFSIGHT: BLOG, (Aug. 5, 2025, at 04:23 ET), https://elfsight.com/blog/ai-usage-statistics/ [https://perma.cc/M59L-LBT5] (mentioning examples of AI use in virtual assistants, streaming search engine recommendations, and personalized chatbots).

8. *See, e.g.*, Asokan Ashok, *How Artificial Intelligence (AI) Will Reshape Our Everyday Life*, UNFOLDLABS: ARTICLES (Apr. 4, 2025), https://unfoldlabs.com/blogs/how-artificial-intelligence-will-reshape-our-everyday-life.html [https://perma.cc/2PQM-H5K4] (predicting advanced personal assistants, AI-driven healthcare diagnostics, personalized educational content generation); *Guide: The Future of AI in Home-Based Care*, ALAYACARE: BLOG (Feb. 18, 2025), https://alayacare.com/blog/the-future-of-ai-in-home-based-care/ [https://perma.cc/3DB2-VNEC] (detailing predictive analytics and real-time monitoring in home healthcare); Jhilton (@jhilton), *AI in Everyday Life: What to Look Out For in the Next 5 Years*, THE SANTA CLARITA

Notwithstanding this manifest economic momentum and widespread integration, profound uncertainties inherent in the technology itself, compounded by volatile geopolitical and socio-economic factors, render long-term forecasts regarding AI's trajectory exceptionally speculative.[9] Technologically, the path of AI development is notoriously difficult to predict.[10] Advanced models exhibit "emergent capabilities"—novel behaviors and skills neither explicitly programmed nor anticipated, arising unpredictably from system complexity.[11] This inherent unpredictability was underscored by the advent of models like DeepSeek, which demonstrated near state-of-the-art performance emerging from a relatively small, unexpected player, suggesting innovation can arise from unforeseen quarters with potentially disruptive efficiency gains.[12] Conversely, while some foresight analyses posit the potential for recursive self-improvement leading to rapid capability escalations—such as the development of an AI "supercoder" capable of accelerating AI progress itself[13]—fundamental limitations loom. The specter of "model collapse," wherein models trained on increasingly ubiquitous AI-generated synthetic data suffer performance degradation, raises concerns about the sustainability of current training paradigms, and these concerns are exacerbated by the underlying scarcity of sufficiently vast and diverse high-quality human-generated data.[14]

VALLEY SIGNAL (Nov. 19, 2024, at 12:49 ET), https://signalscv.com/2024/11/ai-in-everyday-life-what-to-look-out-for-in-the-next-5-years/ [https://perma.cc/7FGH-3DUJ] (explaining forecasted innovations in AI pertaining to personal healthcare, automated smart-homes, and personalized content generation).

9. *See* Katharine Campbell, *Navigating the AI Revolution: State of the Technology Today and Potential Future Trajectories*, CAMBRIDGE ASSOCS.: MKT. INSIGHTS (July 2025), https://www.cambridgeassociates.com/insight/state-of-the-technology-today-and-potential-future-trajectories/ [https://perma.cc/DQ5J-2TTQ] (discussing difficulties in the predictability of future AI innovation resulting from the unprecedented nature of its technology and its significant societal, political, and regulatory impact).

10. *See id.*

11. *See* Thomas Woodside, *Emergent Abilities in Large Language Models: An Explainer*, GEO. UNIV. CTR. FOR SEC. & EMERGING TECH. (Apr. 16, 2024), https://cset.georgetown.edu/article/emergent-abilities-in-large-language-models-an-explainer/ [https://perma.cc/59C2-Z5EL].

12. *See* Peter Hanbury et al., *DeepSeek: A Game Changer in AI Efficiency?*, BAIN & CO.: TECH. (Feb. 4, 2025), https://www.bain.com/insights/deepseek-a-game-changer-in-ai-efficiency/ [https://perma.cc/T2U9-BEUT]; Aili McConnon, *DeepSeek's Reasoning AI Shows Power of Small Models, Efficiently Trained*, IBM: THINK (Jan. 27, 2025), https://www.ibm.com/think/news/deepseek-r1-ai [https://perma.cc/LX3K-VGQ6].

13. *See, e.g.*, Daniel Kokotajlo et al., *AI 2027*, AI 2027 (Apr. 3, 2025), https://ai-2027.com/ [https://perma.cc/QQ56-KMMY] (presenting a scenario involving advanced AI agents capable of autonomous coding and research acceleration).

14. Sascha Brodsky, *Examining Synthetic Data: The Promise, Risks and Realities*, IBM: THINK (Aug. 20, 2024), https://www.ibm.com/think/insights/ai-synthetic-data [https://perma.cc

These technological variables are intertwined with significant geopolitical risks. The intense concentration of advanced semiconductor fabrication capacity, particularly for the leading-edge chips essential for AI hardware, in geopolitically sensitive regions like Taiwan presents a critical single point of failure, vulnerable to disruption from regional conflict or instability.[15] Furthermore, national policies governing the flow of expert personnel, such as evolving American immigration regulations, inject uncertainty into the global competition for AI talent, potentially impacting national innovative capacity.[16] Trade policies and export controls add another layer of complexity, affecting crucial chokepoints in the supply chain, such as the provision of specialized manufacturing equipment by firms, like ASML, and thereby influencing the global distribution and pace of AI hardware deployment.[17] Finally, socioeconomic factors introduce further unpredictability. While enterprise adoption rates are increasing, the ultimate pace and depth of AI integration remain contingent on fluctuating public perception, societal trust, ethical considerations, and the development of regulatory frameworks, creating mixed signals regarding long-term demand and societal acceptance.[18] These multifaceted uncertainties collectively

/WP5W-7RTX]; *see, e.g.*, John Burden et al., *Model Collapse and the Right to Uncontaminated Human-Generated Data*, HARV. J.L. & TECH.: JOLT DIG. (Mar. 8, 2025), https://jolt.law.harvard.edu/digest/model-collapse-and-the-right-to-uncontaminated-human-generated-data [https://perma.cc/64HM-FSYR].

15. *See* WILLIAM ALAN REINSCH & JACK WHITNEY, SILICON ISLAND: ASSESSING TAIWAN'S IMPORTANCE TO U.S. ECONOMIC GROWTH AND SECURITY 1–2 (2025), https://csis-website-prod.s3.amazonaws.com/s3fs-public/2025-01/250110 Reinsch Silicon Island.pdf?VersionId=NHFvZm1L9pnYppK.SFGijnuzhZLGhkNE [https://perma.cc/8VEJ-HAKA] (discussing Taiwan's intense concentration of semiconductor production as critical to the global technology industry and threats Taiwan faces from China).

16. *See* Kevin Frazier, *A Self-Imposed AI Brain Drain*, LAWFARE (Feb. 21, 2025, at 13:15 ET), https://www.lawfaremedia.org/article/a-self-imposed-ai-brain-drain [https://perma.cc/V5QU-F9L9]. *See generally* COUNCIL OF ECON. ADVISORS, AI TALENT REPORT (2025), https://bidenwhitehouse.archives.gov/cea/written-materials/2025/01/14/ai-talent-report/ [https://perma.cc/CMC4-CJ3Y] (linking the international flow of AI talent to national innovative capacity); TINA HUANG & ZACHARY ARNOLD, GEO. UNIV. CTR. FOR SEC. & EMERGING TECH., IMMIGRATION POLICY AND THE GLOBAL COMPETITION FOR AI TALENT (2020), https://cset.georgetown.edu/publication/immigration-policy-and-the-global-competition-for-ai-talent/ [https://perma.cc/PFS7-K5EQ] (discussing the impact of immigration policies on the free flow of expert AI talent and uncertainty in global competition for such talent).

17. *See* Muslim Farooque, *ASML Holds Forecast Despite Miss on Orders and Tariff Headwinds*, YAHOO!: FINANCE (Apr. 16, 2025), https://finance.yahoo.com/news/asml-holds-forecast-despite-miss-123703207.html. [https://perma.cc/7EB5-4H6M] (discussing the impact of trade policies and export controls on ASML's ability to deploy AI hardware).

18. *See* Michal Wachstock, *The State of Generative AI Adoption in 2025: Benchmarking the Hype vs. Reality*, AKOODA: BLOG (Mar. 6, 2025), https://www.akooda.co/blog/state-of-generative-ai-adoption [https://perma.cc/4ZSH-YLF3]; Araz Taeihagh, *Governance of Generative AI*, 44 POL'Y & SOC'Y 1, 2–7 (2025).

counsel caution against definitive predictions, highlighting the contingent and potentially volatile future of AI development despite its current ascendance.

Paradoxically, the profound uncertainties surrounding AI's future trajectory have not significantly dampened investor appetite; rather, venture capital has continued to flow into AI-focused startups at an unprecedented rate.[19] Global venture capital investment directed towards AI companies surpassed $100 billion in 2024, marking a historic high for the sector and accounting for approximately one-third of all venture funding worldwide.[20] This trend intensified in early 2025, with preliminary data suggesting AI and machine learning startups captured well over half—nearly sixty percent—of global venture capital disbursements in the first quarter, indicating a pronounced skew within investment portfolios towards the sector.[21] While multi-billion dollar funding rounds for prominent foundational model developers garner significant attention,[22] a substantial portion of this capital influx supports a burgeoning ecosystem of startups targeting specific applications and niche market demands across diverse industries—including healthcare diagnostics, financial services automation, cybersecurity, robotics, enterprise software development tools, and synthetic data generation, among others.[23] This persistent, high-volume investment in nascent AI ventures,

19. *See* Glaser & Yao, *supra* note 1.

20. *Id.*; Gené Teare, *Startup Funding Regained Its Footing in 2024 as AI Became the Star of the Show*, CRUNCHBASE: NEWS (Jan. 7, 2025), https://news.crunchbase.com/venture/global-funding-data-analysis-ai-eoy-2024/ [https://perma.cc/LML4-Z9QM]; Megann Freston, *Venture Capital Trends 2025: Outlook & Insights*, ALLVUE: BLOGS (Mar. 9, 2025), https://www.allvuesystems.com/resources/top-trends-in-venture-capital/ [https://perma.cc/HL72-D4BL] (citing Pitchbook data that AI startups received one-third of global venture capital investments in 2024).

21. Coin World, *AI Startups Capture 57.9% of Global Venture Capital in Q1 2025,* AINVEST: NEWS (Apr. 17, 2025, at 5:01 ET), https://www.ainvest.com/news/ai-startups-capture-57-9-global-venture-capital-q1-2025-2504 [https://perma.cc/A3TP-LQEE] (reporting Pitchbook data); *AI Startups Capture Nearly 60% of Global VC Investment in Q1 2025*, OPENTOOLS: NEWS (Apr. 18, 2025), https://opentools.ai/news/ai-startups-capture-nearly-60percent-of-global-vc-investment-in-q1-2025 [https://perma.cc/H7LX-RZRU] (reporting 57.9% global venture capital share for AI startups in the first quarter of 2025).

22. *See, e.g.*, Sherin Shibu, *Almost Half of VC Funding Raised Last Year Went to Startups in One Category*, ENTREPRENEUR: BUSINESS NEWS (Jan. 7, 2025), https://www.entrepreneur.com/business-news/ai-startups-raised-almost-half-of-all-funding-in-2024/485250 [https://perma.cc/3CYR-UYWB] (noting multi-billion-dollar funding rounds for xAI, OpenAI, and Anthropic); Iuri Struta, *GenAI Funding Hits Record in 2024 Boosted by Infrastructure Interest*, S&P GLOB.: MKT. INTEL. (Jan. 22, 2025), https://www.spglobal.com/market-intelligence/en/news-insights/articles/2025/1/genai-funding-hits-record-in-2024-boosted-by-infrastructure-interest-87132257 [https://perma.cc/JY8X-XHR6] (discussing billion-dollar rounds for Databricks and CoreWeave).

23. Teare, *supra* note 20 (stating that two-thirds of AI funding in 2024 went to sectors beyond foundational models, including infrastructure, autonomous driving, healthcare, robotics,

despite the acknowledged technological and market risks, underscores a pervasive belief in the sector's transformative potential and perhaps reflects a competitive pressure among investors not to miss the perceived next wave of technological disruption.[24]

This influx of capital into AI startups, while indicative of perceived opportunity, mirrors historical patterns where significant investment in nascent technologies ultimately facilitated market concentration rather than sustained competition.[25] The trajectory of social media provides a salient, if cautionary, example.[26] Facebook's (now Meta Platforms, Inc.) acquisitions of Instagram in 2012 for approximately $1 billion[27] and WhatsApp in 2014 for $19–22 billion[28] occurred when both targets were viewed primarily as adjacent mobile applications with limited revenue, rather than direct, formidable competitors to Facebook's established platform.[29] Consequently, those acquisitions proceeded following regulatory review without significant challenge from antitrust enforcers at the time.[30] In retrospect, however, these

---

and security); Shibu, *supra* note 22 (reporting Crunchbase data that the majority of funded AI startups focused on applications in sectors like healthcare, security, and robotics); *see 10 Hottest AI Startups to Watch 2025*, ACCT. CLOUD: BLOGS (Dec. 2024), https://accountancycloud.com/blogs/10-hottest-ai-startups-to-watch-2025 [https://perma.cc/XP4M-5T2H] (highlighting startups in synthetic data, robotics, healthcare AI, cybersecurity AI, and environmental AI). *See generally* Sanjeev Verma, *80+ AI Business Ideas in 2025: Investment Opportunities in USA*, BIZ4GROUP: BLOG (July 11, 2025), https://www.biz4group.com/blog/ai-business-ideas [https://perma.cc/W7ZX-GQ3B] (listing niche AI business applications).

24. *See AI Startups Dominate VC Funding in 2025 as Investors Rush to Avoid 'FOMO' Fallout*, MITRADE: INSIGHTS (Apr. 17, 2025, at 05:41 ET), https://www.mitrade.com/insights/news/live-news/article-3-766642-20250417 [https://perma.cc/E974-P3Q4] (attributing investment trends partly to "AI FOMO").

25. *See* Jon Robinson, *What 200+ Years of Data Teaches About Market Concentration*, BLUEPRINT INV. PARTNERS: BLOG (Oct. 16, 2024), https://blueprintip.com/blog/what-200-plus-years-of-data-teaches-about-market-concentration/ [https://perma.cc/TR76-EHF2].

26. *See infra* text accompanying notes 27–33.

27. Nathan Reiff, *Top 3 Companies Owned by Facebook (Meta)*, INVESTOPEDIA: ARTICLES (Apr. 21, 2025), https://www.investopedia.com/articles/personal-finance/051815/top-11-companies-owned-facebook.asp [https://perma.cc/7PBD-6EA6].

28. The Investopedia Team, *WhatsApp: The Best Meta Purchase Ever?*, INVESTOPEDIA: INVESTING (Apr. 28, 2025), https://www.investopedia.com/articles/investing/032515/whatsapp-best-facebook-purchase-ever.asp [https://perma.cc/N6KS-X8Y9].

29. *See* CHRIS RENNER, AN ANTICLIMACTIC ENDING IN THE "ROADMAP FOR AN ANTITRUST CASE AGAINST FACEBOOK": AN ANTITRUST ENFORCEMENT ACTION AGAINST FACEBOOK'S LONG-CONSUMMATED ACQUISITIONS WOULD BE UNWISE 3 (Competition Pol'y Int'l 2020), https://www.competitionpolicyinternational.com/wp-content/uploads/2020/08/North-America-Column-August-2020-2.pdf [https://perma.cc/4EFW-HAF7].

30. *See* Cody Combs, *Meta FTC Lawsuit: How Instagram and WhatsApp Might Be Affected*, THE NAT'L: FUTURE (Apr. 11, 2025), https://www.thenationalnews.com/future/technology/2025/04/11/meta-ftc-lawsuit-how-instagram-and-whatsapp-might-be-affected/ [https://perma.cc/54JF-FL7N] (quoting Meta's defense that the FTC reviewed and allowed both acquisitions to close years ago).

transactions are widely cited as pivotal moments that potentially eliminated nascent competitive threats, entrenched Meta's dominance in social networking and mobile communications, and harmed innovation.[31] This reassessment, amplified by congressional investigations and subsequent enforcement actions,[32] has catalyzed widespread calls for antitrust reform specifically targeting acquisitions of potential or nascent competitors by dominant digital platforms. Under this proposed approach, regulators would take a more skeptical and forward-looking approach to merger review in dynamic technology markets.[33]

These calls for reform arise from perceived deficiencies in the application of existing merger control statutes and enforcement policies, particularly concerning acquisitions involving startups in dynamic markets.[34] The primary statutory authority governing mergers in the United States is section 7 of the Clayton Act, which prohibits transactions whose effect "may be substantially to lessen competition, or to tend to create a monopoly."[35] Enforcement

---

31. *See, e.g.*, Jody Godoy & Katie Paul, *Meta's Zuckerberg Eyed Instagram Spinoff amid Antitrust Scrutiny, Document Shows*, ARIZ. DIGIT. FREE PRESS (Apr. 16, 2025) (providing an article that was originally reported by Thomson Reuters), https://arizonadigitalfreepress.com /metas-zuckerberg-eyed-instagram-spinoff-amid-antitrust-scrutiny-document-shows/ [https:// perma.cc/FH9K-XEHV] (discussing FTC allegations that the acquisitions were part of a "buy or bury" strategy to maintain an illegal monopoly).

32. *See, e.g.*, STAFF OF H. SUBCOMM. ON ANTITRUST, COM. & ADMIN. L. OF THE H. COMM. ON THE JUDICIARY, 117TH CONG., INVESTIGATION OF COMPETITION IN DIGITAL MARKETS: REPORT AND RECOMMENDATIONS 2 (Comm. Print 2020) (detailing the investigation on competition in digital markets); Complaint for Injunctive & Other Equitable Relief at 2–9, FTC v. Meta Platforms, Inc., No. 20-cv-03590 (D.D.C. Dec. 9, 2020); *see also* Press Release, H. Comm. on the Judiciary, Judiciary Committee Publishes Final Report on Competition in the Digital Marketplace (July 19, 2022), https://democrats-judiciary.house.gov/media-center/press-releases/judiciary-committee-publishes-final-report-on-competition-in-the-digital-marketplace [https://perma.cc/8UEF-VPSP] (concluding that current antitrust law is not sufficient to prevent monopolies in the digital market).

33. *See, e.g.*, Press Release, Amy Klobuchar, U.S. Sen. for Minn., Klobuchar Reintroduces Bill to Promote Competition and Improve Antitrust Enforcement (Jan. 16, 2025), https://www.klobuchar.senate.gov/public/index.cfm/2025/1/klobuchar-reintroduces-bill-to-promote-competition-and-improve-antitrust-enforcement [https://perma.cc/ZSL2-AEWZ] (proposing to shift burdens for acquisitions of nascent competitors by dominant firms); Steve Albertson, Thomas Ensign & Mark S. Ostrau, *The No-Longer Nascent Use of Nascent Competition Theory*, FENWICK: INSIGHTS (Jan. 8, 2024), https://www.fenwick.com /insights/publications/the-no-longer-nascent-use-of-nascent-competition-theory [https://perma. cc/2HPH-WGXJ] (discussing increased focus on nascent competitor acquisitions). *See generally* STAFF OF H. SUBCOMM. ON ANTITRUST, COM. & ADMIN. L. OF THE H. COMM. ON THE JUDICIARY, 117TH CONG., INVESTIGATION OF COMPETITION IN DIGITAL MARKETS: REPORT AND RECOMMENDATIONS 399–410 (Comm. Print 2020) (recommending legislative reforms including structural separations and prohibiting acquisitions by dominant platforms).

34. *See* sources cited *supra* note 33.

35. Clayton Act, Pub. L. No. 63-212, 38 Stat. 730, 731–32 (1914) (codified as amended at 15 U.S.C. § 18).

responsibility is shared by the Federal Trade Commission (FTC) and the Department of Justice (DOJ) Antitrust Division, guided by Merger Guidelines—most recently updated in 2023—that outline the agencies' analytical frameworks, though these guidelines are not legally binding on courts.[36] Significant scholarly criticism, however, contends that this established framework is ill-suited to address the unique competitive dynamics presented by startup acquisitions, especially those undertaken by dominant incumbents.[37]

A central concern is the difficulty of applying the "substantial lessening of competition" standard prospectively to potential or nascent competitors that may lack significant current market share or revenue, yet possess disruptive potential.[38] Critics argue that conventional merger analysis often relies on static assessments of market structure and concentration, potentially underestimating the loss of future innovation and dynamic competition when promising startups are absorbed.[39] This critique is particularly pointed regarding potential "killer acquisitions," a term coined to describe acquisitions allegedly motivated by an incumbent's desire to preempt a future competitive threat by discontinuing the target startup's innovative projects.[40]

---

36. U.S. DEP'T OF JUST. & FED. TRADE COMM'N, MERGER GUIDELINES 1–2 (2023), https://www.ftc.gov/system/files/ftc_gov/pdf/2023_merger_guidelines_final_12.18.2023.pdf [https://perma.cc/79KN-EG4U] [hereinafter 2023 MERGER GUIDELINES]; *see* Memorandum from Omeed Assefi, Acting Assistant Att'y Gen., Antitrust Div., U.S. Dep't of Just., to Antitrust Div. Staff 1 (Feb. 18, 2025), https://www.justice.gov/atr/media/1389861/dl?inline [https://perma.cc/AV3R-4A45] (confirming continued use of the 2023 Merger Guidelines); Loper Bright Enters. v. Raimondo, 603 U.S. 369, 369 (2024).

37. *See, e.g.*, Mark Glick & Catherine Ruetschlin, *Big Tech Acquisitions and the Potential Competition Doctrine: The Case of Facebook* 3 (Inst. for New Econ. Thinking, Working Paper No. 104, 2019), https://www.ineteconomics.org/uploads/papers/WP-104-Glick-and-Reut-Oct-10.pdf [https://perma.cc/Z2NY-42NC] ("We argue that present merger law is ill-equipped to address the tech firms' acquisition of start-ups when the motive is to insulate themselves from future competitive threats.").

38. *See* Albertson, Ensign & Ostrau, *supra* note 33; Andrew Elzinga et al., *Economic Issues in Assessing Potential and Nascent Competition*, CPI ANTITRUST CHRON., Feb 2022, at 3, https://www.cornerstone.com/wp-content/uploads/2022/02/Economic-Issues-in-Assessing-Potential-and-Nascent-Competition.pdf [https://perma.cc/G8XM-E6GP].

39. *See* Glick & Ruetschlin, *supra* note 37, at 3, 13–14 (arguing that the potential competition doctrine's standard of proof is impractical for dynamic digital markets); Ginger Zhe Jin, Mario Leccese & Liad Wagman, *The Draft Merger Guidelines Risk Reducing Innovation*, PROMARKET (Oct. 18, 2023), https://www.promarket.org/2023/10/18/the-draft-merger-guidelines-risk-reducing-innovation/ [https://perma.cc/T2SZ-66NK] (warning of anticompetitive effects from the enforcement of the 2023 Merger Guidelines).

40. Colleen Cunningham, Florian Ederer & Song Ma, *Killer Acquisitions*, 129 J. POL. ECON. 649, 649 (2021). *See generally* C. Scott Hemphill & Tim Wu, *Nascent Competitors*, 168 U. PA. L. REV. 1879 (2020) (defining nascent competition and arguing for a program of antitrust enforcement that protects it). The meaning of the term of since expanded to refer generally to anti-competitive acquisitions. One author of the original paper, Florian Ederer, has

The challenges inherent in proving future competitive harm under existing legal doctrines, such as the potential competition doctrine, have led commentators to argue that the current framework results in systematic underenforcement against competitively significant startup acquisitions in the technology sector and beyond.[41]

The potential for such underenforcement is particularly salient, and the consequences potentially far more severe, within the rapidly evolving domain of AI. Given AI's unique technological characteristics, its profound economic potential, and the sheer velocity of investment and innovation—including the proliferation of startups targeting niche applications—the application of ill-fitting merger control standards risks cementing market concentration at a critical juncture. Addressing this emergent challenge requires an analytical lens sharpened by recent scholarship examining both the structural tendencies of AI markets and the specific antitrust quandaries posed by acquisitions of nascent firms

This essay begins with a survey of recent scholarship. Part II looks to Professor Daniel Crane's article, *Antitrust After the Coming Wave*,[42] to detail why the technological and economic characteristics of AI tend toward consolidation.[43] Next, Part III examines *Startup Acquisitions, Error Costs, and Antitrust Policy*[44] by Kevin A. Bryan and Erik Hovenkamp to further explain why existing merger principles will fail to prevent that outcome. Part IV then applies Bryan and Hovenkamp's framework for heightened scrutiny of mergers involving startups to AI deals. Concluding that AI deals indeed warrant a different kind of merger analysis, Part V outlines a proposal for mandatory auctions for licenses to a startup's technology upon a dominant AI company seeking to acquire that firm.[45] The essay concludes with the

---

acknowledged and welcomed that expansion. *See generally* THE VISIBLE HAND PODCAST: *Episode 1: Florian Ederer on Killer Acquisitions* (The Visible Hand Jan. 18, 2021) (discussing the history and evolution of nascent competition as a term of art).

41. *See, e.g.*, Steven Berry, Martin Gaynor & Fiona Scott Morton, *Do Increasing Markups Matter? Lessons from Empirical Industrial Organization*, 33 J. ECON. PERSPS. 44, 59–63 (2019) (providing examples of concerns about under enforcement); Hemphill & Wu, *supra* note 40, at 1881, 1891 (advocating for a stronger enforcement policy); Oliver Latham, Isabel Tecu & Nitika Bagaria, *Beyond Killer Acquisitions: Are There More Common Potential Competition Issues in Tech Deals and How Can These Be Assessed?*, CPI ANTITRUST CHRON., May 2020, at 3, https://media.crai.com/wp-content/uploads/2020/09/16164722/CPI-Latham-Tecu-Bagaria.pdf [https://perma.cc/9Z57-HE4Q] ("[T]ransactions have not received any rigorous antitrust review (because the deal size fell below reportable thresholds, or because of a lack of clear horizontal overlaps).").

42. Daniel Crane, *Antitrust After the Coming Wave*, 99 N.Y.U. L. REV. 1187 (2024).

43. *See id.* at 1192, 1221 & n.164.

44. Kevin A. Bryan & Eric Hovenkamp, *Startup Acquisitions, Error Costs, and Antitrust Policy*, 87 UNIV. CHI. L. REV. 331 (2020).

45. *Infra* Part V.

importance of recognizing and mitigating AI's tendency toward concentration at an early stage in the technology's development.[46]

II. AI'S INHERENT TENDENCY TOWARD CONSOLIDATION

The technological processes involved in developing and deploying AI, as well as the underlying economics of creating and selling AI products, appear inherently disposed toward market consolidation.[47] This tendency, driven by factors deeply embedded within the nature of AI itself, challenges the structural assumptions upon which traditional antitrust analysis rests.[48] This Part reviews and supplements Professor Daniel Crane's analysis of AI and related "coming wave" technologies to sketch out this proclivity toward concentration.[49] An overview of how powerful economies of scale, expansive economies of scope, reinforcing network effects, and the significant potential for vertical foreclosure manifest in the context of AI supports the conclusion that AI-heavy markets may naturally gravitate toward dominance by a limited number of firms. In turn, these markets may demand heightened attention from antitrust regulators.

A. Economies of Scale

A fundamental economic principle contributing to market concentration is the presence of significant economies of scale.[50] When average production costs decline as output increases, larger firms gain a cost advantage over smaller rivals, potentially deterring entry and enabling incumbents to solidify dominant positions.[51] This dynamic can undermine the competitive landscape by making it difficult for less capitalized or newer firms to achieve the minimum efficient scale necessary for survival.[52] Precisely defined, economies of scale refer to the reduction in cost per unit of output that arises

46. *See infra* Part VI.

47. Crane, *supra* note 42, at 1192, 1221 & n.164.

48. *Id.* at 1189 (arguing that AI and related technologies exhibit characteristics, such as near-infinite scalability and strong network effects, that likely result in extreme market concentration and disruption of antitrust law's structural assumptions).

49. *See generally* Crane, *supra* note 42 (exploring the effects of a new technology wave on antitrust law).

50. *See id.* at 1233 ("[E]conomies of scale and scope do not need to merge to become dominant. Smaller competitors that cannot keep up with the efficiency of the market leaders or their AI-driven pricing and commercial strategies will exit the market.").

51. *See* Joe S. Bain, *Economies of Scale, Concentration, and the Condition of Entry in Twenty Manufacturing Industries*, 44 AM. ECON. REV. 15, 16 (1954) (linking economies of scale to concentration and entry barriers); *see also* 2023 MERGER GUIDELINES, *supra* note 36, at 19 (recognizing that scale can create barriers to entry).

52. *See* 2023 MERGER GUIDELINES, *supra* note 36, at 20–21.

from an increased scale of production.[53] These cost advantages can stem from various sources, including the ability to spread substantial fixed costs (such as research, development, and infrastructure) over a larger volume of output, bulk purchasing discounts for inputs, or efficiencies gained through specialized labor and technology deployed at scale.[54] The semiconductor industry provides a stark technological example outside of AI; the astronomical fixed costs required to build and operate state-of-the-art fabrication plants—often running into the billions of dollars—create immense barriers to entry and favor large incumbents like Intel, which has historically dominated the microprocessor market due in significant part to its ability to leverage scale.[55]

This phenomenon of scale economies is particularly pronounced, and potentially amplified, within the context of AI, as Professor Crane observes.[56] AI development often involves massive upfront investments in data acquisition, model training (requiring immense computational power), and specialized hardware, representing substantial fixed costs.[57] Once developed and trained, however, AI systems can often be deployed or scaled at relatively low marginal cost, especially for software-based applications.[58] Crane argues that AI exhibits potentially "near-infinite scalability," driven not only by this cost structure but also by powerful data network effects, where the system's performance improves as it processes more data from more users, creating a

53. N. GREGORY MANKIW, PRINCIPLES OF ECONOMICS 284 (Amy Porubsky, Jane Tufts & Charles J. Dierker eds., 2d ed. 2001) ("When long-run average total cost declines as output increases, there are said to be economies of scales.").

54. *See* Andrew Loo, *Economies of Scale*, CFI: RESOURCES, https://corporatefinance institute.com/resources/economics/economies-of-scale/ [https://perma.cc/DU7V-YWM9] (last visited July 9, 2025); Kate Gibson, *How to Leverage Economies of Scale to Grow Your Platform Business*, HARV. BUS. SCH. (June 11, 2024), https://online.hbs.edu/blog/post/economies-of-scale [https://perma.cc/4KD8-VQ5L].

55. DAVID KING, SIZE MATTERS: BARRIERS TO ENTRY IN THE MICROELECTRONIC INDUSTRY 5–6 (2003), https://apps.dtic.mil/sti/pdfs/ADA422057.pdf [https://perma.cc/42YJ-76JR]; *see* Gaurav Tembey et al., *Navigating the Costly Economics of Chip Making*, BOSTON CONSULTING GROUP (Sep. 28, 2023), https://www.bcg.com/publications/2023/navigating-the-semiconductor-manufacturing-costs [https://perma.cc/77EZ-SSCE].

56. *See* Crane, *supra* note 42, at 1216–23.

57. *See id.* at 1217, 1229 (explaining that AI models can continue to develop provided additional computing and storage capacity is added and that AI and other emerging technologies will shift cost structures from variable to fixed); CALEB WATNEY, R STREET POLICY STUDY NO. 153: REDUCING ENTRY BARRIERS IN THE DEVELOPMENT AND APPLICATION OF AI 6 (2018), https://www.rstreet.org/wp-content/uploads/2018/10/No.-153.pdf [https://perma.cc/DQ3T-ZZBL].

58. *See* Martin Fleming, Wensu Li & Neil C. Thompson, *The Last Mile Problem in AI*, BROOKINGS (Aug. 29, 2024), https://www.brookings.edu/articles/the-last-mile-problem-in-ai/ [https://perma.cc/38KG-ACH9]; Crane, *supra* note 42, at 1237 (asserting that "post-wave" megafirms will experience "relatively high fixed costs and low marginal costs").

virtuous cycle that benefits larger-scale operations.[59] This inherent scalability, potentially exceeding that of prior digital technologies, suggests a powerful tendency toward market concentration, as firms achieving initial scale advantages may find it progressively easier to outpace rivals and dominate markets.[60]

B. Economies of Scope

Complementing the effects of scale, economies of scope represent another significant factor driving market concentration, particularly in technology-driven industries.[61] By enabling firms to produce a variety of different products or services more cheaply together than separately, economies of scope can confer substantial advantages upon diversified incumbents, erecting barriers to entry for specialized competitors and fostering consolidation.[62] Economies of scope arise when cost savings result from the breadth, rather than the volume, of enterprise activity.[63] These efficiencies typically occur when a single firm can utilize shared inputs—such as common manufacturing facilities, distribution networks, proprietary datasets, technological platforms, or managerial expertise—across the production of multiple distinct outputs.[64] A prominent historical example can be found in the diversification strategy of General Electric (GE) during much of the late 20th century.[65] GE leveraged core competencies and shared

59. Crane, *supra* note 42 at 1191–92, 1217.

60. *Id.* at 1217–18.

61. *See* Paul KOH & DEVESH RAVAL, ECONOMIES OF SCOPE FROM SHARED INPUTS 2 (2025), https://deveshraval.github.io/scopeEconomies.pdf [https://perma.cc/3S8T-U6VY].

62. *See* W. Chan Kim & Peter Hwang, *Global Strategy and Multinationals' Entry Mode Choice*, 23 J. INT'L BUS. STUD., no. 1, 1992, at 29, 34–35 (noting economies of scope as a potential barrier to entry); JASPER BLEES ET AL., BARRIERS TO ENTRY: DIFFERENCES IN BARRIERS TO ENTRY FOR SMES AND LARGE ENTERPRISES 99–100 (2003), https://core.ac.uk/download/pdf/7074647.pdf [https://perma.cc/HK8G-6QWZ] (analyzing the durability of economies of scope as an advantage larger firms can wield over smaller competitors).

63. *See* John C. Panzar & Robert D. Willig, *Economies of Scope*, 71 AM. ECON. REV. 268, 268 (1981) ("There are economies of scope where it is less costly to combine two or more product lines in one firm than to produce them separately."); David J. Teece, *Economies of Scope and the Scope of the Enterprise*, 1 J. ECON. BEHAV. & ORG. 223, 224–25 (1980) (examining instances in which a firm may realize economies of scope). *See generally* Volker Brühl, *Big Tech, the Platform Economy and the European Digital Markets*, 58 INTERECONOMICS 274, 279 (2023), (flagging that Big Tech companies often benefit from economies of scope).

64. Teece, *supra* note 63, at 226; *see* Panzar & Willig, *supra* note 63, at 269–70.

65. *See generally* Tefi Alonso, *How General Electric Went from Lightbulb to Multinational Conglomerate*, CASCADE: STRATEGY FACTORY (Nov. 25, 2022), https://www.cascade.app/studies/general-electric-strategy-study [https://perma.cc/C4AE-GRHZ] (describing how General Electric became a diversified multinational company and leveraged economies of scope to its advantage).

resources across a vast and disparate portfolio of businesses, including aviation, power generation, healthcare technology, and financial services (via GE Capital).[66] By applying its renowned management systems, centralized research and development efforts, and the financial scale and expertise of GE Capital across these varied industrial and financial units, the conglomerate aimed to achieve operational efficiencies and competitive advantages unobtainable by standalone firms operating in each individual sector, thus illustrating the power of economies of scope.[67]

Professor Crane argues that AI is poised to exhibit exceptionally strong economies of scope, further accelerating market concentration trends.[68] This stems from AI's core capability—particularly machine learning—to identify and exploit underlying patterns across diverse datasets and problem domains that may appear unrelated to human analysis.[69] Consequently, an AI system demonstrating proficiency in one task, such as optimizing logistics, might readily be adapted to address seemingly disparate challenges, like drug discovery or financial modeling, by leveraging the same foundational algorithms, data infrastructure, and learned predictive techniques.[70] Crane suggests that as AI progresses towards greater generality, moving from narrow applications to more "omni-use" capabilities, the potential for dominant firms to leverage their AI prowess across an ever-expanding array of economic activities intensifies.[71] This capacity for broad applicability, potentially amplified by related "coming wave"[72] technologies that further shift economic value to scalable digital systems, implies that AI leaders may achieve cost advantages not just in volume but across an unprecedented range of activities. If this is indeed the case, a handful of already large firms may be poised to reinforce their market power and make it increasingly difficult for specialized firms to compete.[73]

C. Network Effects

Distinct from cost advantages derived purely from production volume (scale) or variety (scope), network effects arise when the value of a product

66. *See* Tim Laseter, Martha Turner & Ron Wilcox, *The Big, the Bad, and the Beautiful*, STRATEGY+BUSINESS (2003), https://www.strategy-business.com/article/03402 [https://perma.cc/8PJ5-MTGU]; Alonso, *supra* note 65 (detailing the core competencies and areas of resource sharing that General Electric leveraged throughout the latter half of the 20th century).

67. *See* Laseter, Turner & Wilcox, *supra* note 66.

68. Crane, *supra* note 42, at 1219–20.

69. *Id.* at 1219.

70. *See id.* at 1219–20.

71. *Id.* at 1220.

72. Crane clumps AI, robotics, quantum, synthetic biology, energy expansion, and nanotechnology into a single wave of general-purpose technologies. *Id.* at 1188.

73. *See id.* at 1220–21.

or service to an individual user increases as more individuals use that same product or service, or compatible ones.[74] Also termed demand-side economies of scale, these effects can create powerful positive feedback loops: as a platform or technology gains more users, it becomes more valuable, which attracts even more users, potentially leading to highly concentrated markets often described as "winner-take-all" or "winner-take-most."[75] While strong network effects can drive a market towards dominance by a single standard or platform—a phenomenon known as "tipping"—the two concepts are distinct; tipping is the outcome of rapid convergence, which generally occurs only if network benefits decisively outweigh user preferences for differentiation and if switching or multi-homing costs are high.[76] Network effects, precisely defined, describe this demand-side phenomenon where user utility is interdependent with the size of the user base, encompassing both *direct* effects (where value increases with more users of the same type, like telephones or social media connections) and *indirect* effects (where value increases for one group, like operating system users, as the size of a complementary group, like application developers, grows).[77] A canonical example of powerful network effects fostering market concentration involves the Microsoft Windows operating system.[78] For decades, Windows benefited from both direct effects (users valued compatibility for file sharing) and strong indirect effects (a large user base attracted numerous software developers, whose applications further increased the operating system's value to users), that created significant

74. Tim Stobierski, *What Are Network Effects?*, HARV. BUS. SCH.: INSIGHTS (Nov. 12, 2020), https://online.hbs.edu/blog/post/what-are-network-effects [https://perma.cc/K7AA-7RCJ]; *see* Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424, 424 (1985) (investigating the specific economic factors behind network effects).

75. *See* Stobierski, *supra* note 74.

76. Helen Jenkins & Liro Barros, *Tipping: Should Regulators Intervene Before or After? A Policy Dilemma*, OXERA: INSIGHTS (Apr. 28, 2021), https://www.oxera.com/insights/agenda/articles/tipping-should-regulators-intervene-before-or-after-a-policy-dilemma/ [https://perma.cc/8ED4-7YNL]; *see* Glick & Ruetschlin, *supra* note 37, at 6; *cf.* Dennis W. Carlton & Michael Waldman, *The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries*, 33 RAND J. ECON 194, 196 (2002) (setting forth the possibility of firms "swinging" into another market and taking it over).

77. Stobierski, *supra* note 74; *see* Matthew T. Clements, *Direct and Indirect Network Effects: Are They Equivalent?*, 22 INT'L J. INDUST. ORG. 633, 633 (2004) (distinguishing between direct and indirect network effects).

78. *See* Timothy F. Bresnahan & Shane Greenstein, *Technological Competition and the Structure of the Computer Industry*, 47 J. INDUST. ECON. 1, 29 (1999) (discussing Microsoft's dominance).

switching costs and thus solidified its dominance in the personal computer market despite the existence of alternatives.[79]

Professor Crane identifies these potent network effects as another key characteristic contributing to AI's inherent tendency toward concentration.[80] AI systems, particularly those based on machine learning, often exhibit powerful data network effects: the more data an AI ingests (often generated through user interaction), the more accurate and valuable its predictions or outputs become, which in turn attracts more users, generating more data in a self-reinforcing cycle.[81] This dynamic suggests that early movers or firms with access to larger, proprietary datasets can achieve and maintain a significant competitive advantage, as their AI models continually improve at a faster rate than those of smaller competitors with less data flow.[82] Crane notes that these effects, combined with AI's scalability, diminish the viability of competitive alternatives and drive markets toward concentration, potentially making it extraordinarily difficult for rivals to supplant an established leader whose AI benefits from a large, active user base.[83]

D. Vertical Foreclosure

Beyond factors intrinsic to AI models themselves, the structure of the AI supply chain creates potential competitive risks through vertical foreclosure.[84] Such foreclosure strategies can undermine competition when a firm integrated across different levels of production or distribution uses its control over one level—such as essential inputs or key distribution channels—to disadvantage or exclude competitors operating at another level, potentially leading to higher

79. *See id.*; Saddique Ansari, *Case Study: Aspects of Microsoft's Network Effect Breaking Down*, ECON. ONLINE: BUSINESS ECONOMICS (Oct. 6, 2023), https://www.economicsonline.co.uk/business_economics/case-study-aspects-of-microsofts-network-effect-breaking-down.html/ [https://perma.cc/6PK4-VL74] (reviewing how Microsoft's network effect eventually waned). *See generally* Stan Liebowitz & Stephen E. Margolis, *Network Effects and the Microsoft Case, in* DYNAMIC COMPETITION AND PUBLIC POLICY: TECHNOLOGY, INNOVATION, AND ANTITRUST ISSUES 160, 162 (Jerry Ellig ed., 2012) (providing a comprehensive overview of network effects in the context of Microsoft's control of the software market).

80. Crane, *supra* note 42, at 1217.

81. *Id.*; Sheen S. Levine & Dinkar Jain, *How Network Effects Make AI Smarter*, HARV. BUS. REV. (Mar. 14, 2023), https://hbr.org/2023/03/how-network-effects-make-ai-smarter [https://perma.cc/4ZPA-AYTJ].

82. *See* Crane, *supra* note 42, at 1217; *cf.* Cade Metz et al., *How Tech Giants Cut Corners to Harvest Data for A.I.*, N.Y. TIMES (Apr. 8, 2024), https://www.nytimes.com/2024/04/06/technology/tech-giants-harvest-data-artificial-intelligence.html [https://perma.cc/BR7K-HL3F] (summarizing how leading AI labs deployed questionable strategies to accumulate data and, as a result, develop leading AI models).

83. *See* Crane, *supra* note 42, at 1218.

84. *See id.* at 1220–21.

prices, reduced innovation, or limited consumer choice.[85] Vertical foreclosure occurs when a vertically integrated firm denies necessary inputs to its upstream rivals (input foreclosure) or denies market access to its downstream rivals (customer foreclosure), thereby raising rivals' costs or limiting their ability to compete effectively.[86] A historical example in the technology sector involved the integrated Bell System (AT&T), whose control over the telephone network and equipment manufacturing (via Western Electric) allegedly created the ability and incentive to disadvantage independent equipment manufacturers seeking interconnection or competing for equipment sales.[87]

The AI supply chain, characterized by distinct layers and significant concentration at key bottlenecks, presents fertile ground for potential vertical foreclosure concerns to emerge.[88] As analyzed by Girish Sastry and his myriad co-authors, the production of advanced AI capabilities relies critically on computing power ("compute"), which itself depends on a highly concentrated global supply chain encompassing chip design (dominated by firms like Nvidia), specialized manufacturing equipment (where ASML holds a monopoly in extreme ultraviolet (EUV) lithography), and semiconductor fabrication (where Taiwan Semiconductor Manufacturing Company (TSMC) is the leading manufacturer of advanced chips).[89] Furthermore, access to the large-scale compute required for training and deploying frontier AI models is predominantly provided by a small number of hyperscale cloud providers (Amazon Web Services, Microsoft Azure, Google Cloud), who often also

85. *See* Steven Salop, *Revising Guideline 6 with Evidence to Establish a Structural Inference for Input Foreclosure*, PROMARKET (Sept. 29, 2023), https://www.promarket.org/2023/09/29/revising-guideline-6-with-evidence-to-establish-a-structural-inference-for-input-foreclosure/ [https://perma.cc/K5J8-JS55]; Christine A. Varney, Comm'r, Fed. Trade Comm'n, Address at the 36th Annual Antitrust Institute Discussing Vertical Merger Enforcement Challenges at the FTC, (July 17, 1995), https://www.ftc.gov/news-events/news/speeches/vertical-merger-enforcement-challenges-ftc [http://perma.cc/LTV5-7RDE].

86. Bruce Hoffman, Acting Dir., Bureau of Competition, Fed. Trade Comm'n, Vertical Merger Enforcement at the FTC, Remarks at the Credit Suisse 2018 Washington Perspectives Conference 5–6 (Jan. 10, 2018), https://www.ftc.gov/system/files/documents/public_statements/1304213/hoffman_vertical_merger_speech_final.pdf [https://perma.cc/2EDK-B4RF]; Johannes Boehm & Jan Sonntag, *Vertical Integration and Foreclosure: Evidence from Production Network Data*, 69 MGMT. SCI. 141, 158 n.1 (2023) ("By foreclosure, we mean a buyer excluding a competitor from the market by means of acquiring its supplier. This could be by refusing to supply or by (directly or indirectly) raising the rival buyer's costs.").

87. *See* United States v. Am. Tel & Tel. Co., 552 F. Supp. 131, 161–64 (D.D.C. 1982) (detailing allegations leading to the consent decree that broke up AT&T).

88. *See* Girish Sastry et al., Computing Power and the Governance of Artificial Intelligence 31 (Feb. 14, 2024) (unpublished manuscript), https://arxiv.org/pdf/2402.08797.pdf. [https://perma.cc/25EM-VQK7].

89. *See id.* at 28–30 (describing the computer supply chain and noting concentration in EUV lithography (ASML), fabrication (TSMC), and AI chip design (Nvidia)).

compete in developing their own AI models and applications.[90] This structure creates the potential for firms dominant at critical upstream layers—particularly compute or cloud infrastructure providers—to engage in foreclosure by denying rivals access to essential compute resources, imposing discriminatory terms, or leveraging their infrastructure control to favor their own downstream AI services.[91] While clear instances of anticompetitive vertical foreclosure in AI may not yet be widespread, the significant concentration and dependency identified by Sastry and others underscore the potential for such strategies to arise as the ecosystem matures, warranting careful monitoring by antitrust authorities.[92]

In conclusion, the unique characteristics of AI explored in this Part—from the compounding advantages conferred by data access and computational scale to the complexities of algorithmic systems and the potential for emergent network effects—present distinct potential challenges to fair competition. While the societal imperative to foster AI innovation is undeniable and profoundly important, these specific attributes demand proactive and careful scrutiny from antitrust regulators. It is precisely *because* of AI's transformative potential that ensuring a competitive landscape is crucial; failure to address these nascent competitive concerns could risk entrenching market power and stifling the very innovation and broad societal benefit we seek to achieve.

III. WHY CURRENT MERGER DOCTRINE WILL NOT PREVENT AI CONCENTRATION

As established in Part II, the AI sector exhibits inherent tendencies toward market concentration due to powerful economies of scale and scope, network effects, and the potential for vertical foreclosure.[93] However, these structural factors alone do not fully explain why antitrust enforcement might fail to prevent this consolidation. A critical piece of the puzzle lies in the application, or misapplication, of prevailing antitrust doctrines to the unique context of startup acquisitions, particularly those involving dominant incumbent firms

90. *See id.* at 13, 31 fig. 11 (identifying AWS, Microsoft, Azure, and Google Cloud as the dominant providers of cloud computer infrastructure relied upon by most AI developers).

91. *See id.* at 26 (noting the physical nature of hardware enables exclusion); *see also* Tejas N. Narechania & Ganesh Sitaraman, *An Antimonopoly Approach to Governing Artificial Intelligence*, 43 YALE L. & POL'Y REV. 95, 123–26 (2024) (discussing potential abuses, including foreclosure, at different layers of the AI stack).

92. *See* Sastry et al., *supra* note 88, at 25–27; *Key takeaways from the G7 Competition Summit on Artificial Intelligence*, NORTON ROSE FULBRIGHT (Nov. 2024), https://www.nortonrosefulbright.com/en/knowledge/publications/d49a49d5/key-takeaways-from-the-g7-competition-summit-on-artificial-intelligence [https://perma.cc/99F6-2V75].

93. *See* NORTON ROSE FULBRIGHT, *supra* note 92.

acquiring nascent innovators. This Part delves into the analysis presented by Professors Kevin A. Bryan and Erik Hovenkamp, who argue that the dominant "error cost" framework in contemporary antitrust policy is ill-suited for evaluating startup acquisitions and ultimately favors nonenforcement, thereby potentially facilitating, rather than preventing, the concentration of markets like AI.[94] Though a litany of scholars have identified even more issues with the current merger regime,[95] the decision to focus on error costs reflects the central role of presumptions in dictating outcomes.

At the heart of modern antitrust enforcement, particularly as influenced by the Chicago school of thought, lies a strong preference for erring on the side of nonintervention.[96] This "error cost" framework, famously articulated by Judge Frank Easterbrook, posits that the societal costs associated with erroneously condemning a procompetitive or efficient business practice (a "false positive") are significantly greater and more persistent than the costs of erroneously permitting an anticompetitive practice (a "false negative").[97] A central justification for this asymmetry rests on the belief that market forces, specifically the threat of new entry, will naturally correct anticompetitive behavior and dissipate unlawfully obtained market power over time; firms charging supercompetitive prices will inevitably attract new competitors seeking to undercut them.[98] Conversely, the argument goes, the detrimental effects of mistakenly blocking an efficient merger or practice will persist indefinitely, as the market cannot easily undo the erroneous intervention.[99] This framework has led to demanding evidentiary requirements for plaintiffs,

94. *See* Kevin A. Bryan & Erik Hovenkamp, *Startup Acquisitions, Error Costs, and Antitrust Policy*, 87 U. CHI. L. REV. 331, 331–35 (2020).

95. *See, e.g.*, Samuel N. Weinstein, *Anticompetitive Merger Review*, 56 GA. L. REV. 1057, 1061–63 (2022) (discussing the length of the merger review process as a flaw of the system); Scott E. Gant, Andrew Z. Michaelson & Edward J. Normand, *The Hart-Scott-Rodino Act's First Amendment Problem*, 103 CORN. L. REV. ONLINE 1, 2 (2017) (asserting that merger review doctrine has evolved in a manner such that the strictest review applies to more deals than originally intended by Congress); *see also* Memorandum from Edward H. Levi, Att'y Gen., to President Gerald R. Ford 1 (Sept. 27, 1976), https://www.fordlibrarymuseum.gov/library/document/0055/1669524.pdf [https://perma.cc/JZJ7-PJU6] (expressing doubts as to the efficacy of premerger review).

96. *See* Bryan & Hovenkamp, *supra* note 94, at 332.

97. *See* Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 1–3 (1984) (arguing that false positives are more costly because market forces correct false negatives but not erroneous condemnations); Bryan & Hovenkamp, *supra* note 94, at 332, 334–36.

98. *See* Easterbrook, *supra* note 97, at 20–21; Bryan & Hovenkamp, *supra* note 94, at 332–33.

99. Bryan & Hovenkamp, *supra* note 94, at 334.

making it difficult to successfully challenge many business practices under antitrust law.[100]

A. The Error Cost Framework in Merger Analysis

Central to the evolution of modern antitrust enforcement, particularly concerning merger review, is the concept of "error costs."[101] This analytical framework explicitly acknowledges the inherent uncertainty courts and regulatory agencies face when attempting to predict the future competitive consequences of a proposed merger or acquisition.[102] Given that perfect foresight is impossible, antitrust decisions inevitably carry the risk of error. These potential errors are typically categorized into two types: "false positives" (Type I errors) and "false negatives" (Type II errors).[103] Understanding these potential errors and their perceived relative costs has profoundly shaped contemporary antitrust policy and enforcement priorities.[104]

A false positive, or Type I error, occurs when antitrust authorities intervene to block or modify a merger that, if allowed to proceed unimpeded, would have actually been beneficial or at least benign for competition and consumer welfare.[105] Such an error prevents the realization of potential procompetitive outcomes. For example, a merger might have generated significant economies of scale or scope, leading to lower production costs that could be passed on to consumers as lower prices. It might have combined complementary technologies or research capabilities, fostering innovation and leading to new or improved products. Alternatively, it might have enhanced the merged entity's ability to compete against a dominant incumbent. Blocking such a transaction based on an incorrect prediction of anticompetitive harm results in the loss of these potential benefits, representing a direct cost to society and consumer welfare.[106]

---

100. *See* Easterbrook, *supra* note 97, at 14–16; Filippo Lancieri & Tommaso Valletti, *Rebuttable Structural Presumptions Improve Merger Review*, PROMARKET (Nov. 14, 2024), https://www.promarket.org/2024/11/14/rebuttable-structural-presumptions-improve-merger-review/ [https://perma.cc/5X36-8YNK].

101. *See* Bryan & Hovenkamp, *supra* note 94, at 334–36.

102. *See id.* at 333–34.

103. Alan Devlin & Michael Jacobs, *Antitrust Error*, 52 WM. & MARY L. REV. 75, 79 (2010); *cf.* Herbert Hovenkamp, *Antitrust Error Costs*, 24 U. PA. J. BUS. L. 293, 296 (2022) (providing an overview of the rationale behind considering false positives and false negatives in merger reviews).

104. *See* Hovenkamp, *supra* note 103, at 296–300.

105. *See* Devlin & Jacobs, *supra* note 103, at 82–84; Bryan & Hovenkamp, *supra* note 94, at 332 n.5.

106. *See* Easterbrook, *supra* note 97, at 21–22; Bryan & Hovenkamp, *supra* note 94, at 336–38.

Conversely, a false negative, or Type II error, arises when antitrust authorities fail to intervene against a merger that genuinely harms competition.[107] This occurs when a transaction that substantially lessens competition or tends to create a monopoly is incorrectly permitted to proceed.[108] The resulting costs can manifest in various ways: the merged firm might exercise increased market power to raise prices above competitive levels, reduce output, diminish product quality or variety, or slow the pace of innovation.[109] For instance, allowing a dominant firm to acquire a disruptive nascent competitor—like the historical examples often cited involving Meta's acquisitions of Instagram and WhatsApp—might be viewed in retrospect as a false negative, where the transaction eliminated a future competitive threat and potentially entrenched the incumbent's market power, leading to long-term consumer harm and reduced innovation that was difficult to quantify prospectively.[110]

The influential interpretation of the error cost framework, particularly associated with the Chicago School of antitrust analysis, argues strongly for a systematic bias against false positives.[111] This perspective contends that the societal costs associated with erroneously blocking a beneficial merger (false positives) are substantially greater and more enduring than the costs of

---

107. Ben Rininger, The Ecosystem Theory of Harm in Merger Enforcement: A Transatlantic Comparison, 93 U. CIN. L. REV. 830, 845 (2025); Babette Boliek, Type I Vs Type II Errors: Antitrust Lessons for Communications Policy, AM. ENTER. INST. (Feb. 5, 2014), https://www.aei.org/technology-and-innovation/telecommunications/type-vs-type-ii-errors-antitrust-lessons-communications-policy/ [https://perma.cc/9H3T-FSMD] (discussing these errors in the related context of communications market decisions).

108. *See* Rininger, *supra* note 107.

109. *See id.* at 863–64 (explaining the costs and unintended consequences that may rise under both Type I and Type II errors).

110. *See* Bryan & Hovenkamp, *supra* note 94 at 331–32; Mike Issac, *What if Mark Zuckerberg Had Not Bought Instagram and WhatsApp?*, N.Y. TIMES: TECHNOLOGY (Apr. 15, 2025), https://www.nytimes.com/2025/04/14/technology/mark-zuckerberg-facebook-instagram-whatsapp.html [https://perma.cc/YJJ5-E7CR].

111. *See* Joshua D. Wright, *Abandoning Antitrust's Chicago Obsession: The Case for Evidence-Based Antitrust*, 78 ANTITRUST L.J. 241, 248 (2012); David McGowan, *Between Logic and Experience: Error Costs and* United States v. Microsoft Corp., 20 BERKELEY TECH. L.J. 1185, 1244 (2005); *see also* Press Release, Lina M. Khan, Chair, Fed. Trade Comm'n & Richard A. Powers, Acting Asst. Att'y Gen., Antitrust Div., Competition Executive Order's Call to Consider Revisions to Merger Guidelines, (July 9, 2021), https://www.ftc.gov/news-events/press-releases/2021/07/statement-ftcchair-lina-khan-antitrust-division-acting-assistant [https://perma.cc/3SHV-LN3P] (discussing how current merger guidelines may be too permissive and are being reviewed to possibly increase their rigor); Aurelien Portuese, *Precautionary Antitrust: The Changing Nature of Competition Law*, 17 J.L., ECON., & POL'Y 548, 614 ("Type I error costs are discarded while Type II error costs are exaggerated in coherence with the logic underpinning the precautionary principle.").

erroneously allowing an anticompetitive one (false negatives).[112] The core theoretical justification for this asymmetry hinges on the purported power of market self-correction.[113] Proponents argue that if an anticompetitive merger is wrongly permitted, the resulting monopoly profits will act as a lure, attracting new firms to enter the market or encouraging existing competitors to expand their operations.[114] This competitive entry, driven by the pursuit of profit, is expected to eventually erode the incumbent's market power, discipline its behavior, and counteract the initial anticompetitive effects, thereby limiting the duration and magnitude of the harm caused by the false negative.[115]

In stark contrast, the harm resulting from a false positive—blocking a genuinely efficient or procompetitive merger—is viewed as largely irreversible by market forces.[116] The specific synergies, cost savings, or innovative potential unique to the blocked combination, once prevented, cannot easily be replicated by the market later on.[117] The opportunity is lost, and consumers are permanently deprived of the benefits the merger would have generated.[118] This belief in the potent self-correcting nature of markets regarding false negatives, combined with the perceived permanence of harm from false positives, leads directly to the policy prescription that antitrust enforcement should be highly cautious.[119] It implies that intervention should only occur when there is very clear and compelling evidence of likely anticompetitive harm, setting a high bar for plaintiffs and establishing a strong default preference for nonenforcement.[120] This perspective minimizes the risk of deterring beneficial transactions but correspondingly increases the risk of

112. Lawrence M. Frankel, *The Flawed Institutional Design of U.S. Merger Review: Stacking the Deck Against Enforcement*, 2008 UTAH L. REV. 159, 192–93; *see* Easterbrook, *supra* note 97, at 2–3; Bryan & Hovenkamp, *supra* note 94, at 334; Richard A. Posner, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. REV. 925, 937–38 (1979).

113. *See* Bryan & Hovenkamp, *supra* note 94, at 334; Vincent Xu, *Vanderbilt Law's Respectfully Dissent Series Launches with Debate on the Limits of Antitrust*, VAND. L. SCH. (Nov. 14, 2024, at 10:55 ET), https://law.vanderbilt.edu/vanderbilt-laws-respectfully-dissent-series-launches-with-debate-on-the-limits-of-antitrust/ [https://perma.cc/R5HD-KCKQ] (summarizing remarks of Professor Thom Lambert).

114. Bryan & Hovenkamp, *supra* note 94, at 335; Easterbrook, *supra* note 97, at 2.

115. *See* Patrick Bolton, Joseph F. Brodley & Michael H. Riordan, *Predatory Pricing: Strategic Theory and Legal Policy*, 89 GEO. L.J. 2239, 2304–05 (providing a case study of a situation in which monopoly prices may invite entrants); *see also* Kenneth G. Elzinga & David E. Mills, *Price Wars Triggered by Entry*, 17 INT'L J. INDUS. ORG. 179 *passim* (1999) (analyzing the effects of various price dynamics on competition and entry).

116. Frankel, *supra* note 112, at 194; *see* Easterbrook, *supra* note 97, at 3.

117. *See* Frankel, *supra* note 112, at 193.

118. *See id.* at 194.

119. *See id.* at 195.

120. *See id.* at 193.

allowing harmful ones to proceed, particularly in contexts where competitive harm is difficult to prove conclusively at the outset.

B. Complications Arising from Startup Acquisitions

While the traditional error cost framework, with its inherent bias toward non-intervention, provides a guiding principle for conventional merger analysis involving established firms, its application becomes significantly more complicated and potentially inadequate when evaluating acquisitions involving startups.[121] The very nature of startups—nascent, innovative, and often operating at the fringes of existing markets or creating entirely new ones—introduces profound uncertainties that challenge the core assumptions underpinning the standard approach.[122] This complexity stems primarily from the fundamental lack of knowledge regarding how startup markets will evolve and the corresponding difficulty in applying conventional economic analysis to predict the competitive effects of such acquisitions.[123]

First, assessing the potential competitive impact of acquiring a startup is fraught with informational deficits regarding the startup's future trajectory.[124] Unlike established firms with track records, market shares, and observable pricing behavior, startups are typically new and small, providing scant data upon which to base reliable predictions.[125] Their products or services may be unproven, their business models experimental, and their ultimate market niche or disruptive potential highly speculative.[126] It is often unclear whether a startup will eventually emerge as a direct competitor to the acquirer, remain a complementary technology provider, develop into a distinct market leader itself, or simply fail altogether.[127] This inherent unpredictability surrounding a startup's future role makes it extraordinarily difficult to determine *ex ante* whether its acquisition will harm or enhance competition in the long run, undercutting the static analysis typically employed in merger review.[128]

Second, this profound uncertainty directly limits the utility of standard economic tools and reliance on conventional economic evidence commonly used in merger enforcement.[129] Antitrust analysis often focuses heavily on

---

121. *See* Bryan & Hovenkamp, *supra* note 94, at 350.

122. *See id.* at 347–48.

123. *See id.*

124. *See id.* at 347.

125. *See id.*

126. *See id.*; Glick & Ruetschlin, *supra* note 37, at 55 (noting that merger analyses often turn on "levels of proof that are intractable"); *cf.* Devlin & Jacobs, *supra* note 103, at 88 (discussing the empirical difficulties of assessing how smaller rivals will fare after a merger).

127. *See* Bryan & Hovenkamp, *supra* note 94, at 348.

128. *See id.* at 347.

129. *See* Jonathan M. Barnett, *"Killer Acquisitions" Reexamined: Economic Hyperbole in the Age of Populist Antitrust*, 3 U. CHI. BUS. L. REV. 39, 60 (2024).

estimating the immediate, static effects of a merger on market concentration (using metrics like the Herfindahl–Hirschman Index (HHI)) and prices, typically within a short time horizon.[130] This approach is ill-suited for startup acquisitions where the primary concerns often relate to dynamic, long-term effects on innovation and potential future competition, rather than immediate price changes.[131] Proving that a startup represents a significant *potential* competitor under existing legal doctrines requires overcoming substantial evidentiary hurdles, precisely because the evidence is inherently speculative.[132] Rigorous empirical methods used to model market outcomes rely on existing data, which, as noted, is sparse for startups.[133] Consequently, attempting to apply the traditional framework, which demands robust evidence to overcome the bias against intervention, often leads to a default posture of inaction simply because the required quantum of proof regarding future harm is virtually impossible to meet in the context of a nascent firm.[134]

C. Consumer Harm and Distorted Innovation from Underenforcement

The analytical difficulties inherent in applying traditional merger analysis to startup acquisitions, combined with the prevailing bias towards non-intervention, often result in systematic underenforcement that carries significant potential costs for consumers and the broader innovation ecosystem.[135] Yet, the precise nature and frequency of these harms, particularly in the technology sector, remain subjects of debate, as

130. Bryan & Hovenkamp, *supra* note 94, at 347; *see also* Oliver E. Williamson, *Review*, 46 U. CHI. L. REV. 526, 528 (1979) (reviewing the ROBERT BORK, THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF (1978)) (discussing the benefits and drawbacks of using static analysis as applied economics and business behavior).

131. *See* Michael L. Katz & Howard A. Shelanski, *Mergers and Innovation*, 74 ANTITRUST L.J. 1, 56 (2007) ("[T]he agencies often take an approach of considering a two-year horizon in assessing the effects of entry, with little or no discounting within the horizon and complete discounting of anything beyond.").

132. *See* Bryan & Hovenkamp, *supra* note 94, at 347–48; *cf.* Barnett, *supra* note 129, at 104 (noting the speculation involved in forecasting a startup's growth and impact on a market).

133. Bryan & Hovenkamp, *supra* note 94, at 347.

134. *See id.* at 348; Organisation for Economic Co-operation and Development [OECD], *Start-ups, Killer Acquisitions and Merger Control – Note by the United States*, at 3–4 (June 4, 2020) [hereinafter *OECD Report*], https://www.ftc.gov/system/files/attachments/us-submissions-oecd-2010-present-other-international-competition-fora/oecd-killer_acquisiitions_us_submission.pdf [https://perma.cc/H53W-QRKC].

135. *See* Robert B. Bell & Amanda L. Butler, *Institutional Factors Contributing to the Under-Enforcement of Merger Law,* THE ANTITRUST SOURCE, Oct. 2020, at 1, 1–2 (2020), https://www.americanbar.org/content/dam/aba/publishing/antitrust-magazine-online/2020/oct-2020/oct2020-bell-2.pdf [https://perma.cc/WAW4-4SVW].

acquisitions also play potentially vital roles in fostering innovation and efficiently allocating resources.[136]

One of the most salient potential harms stems from "killer acquisitions," where a dominant incumbent acquires a nascent firm specifically to discontinue its innovative projects and preempt future competition.[137] This practice, identified empirically in the pharmaceutical sector, directly harms consumers by preventing potentially valuable new products or services from ever reaching the market.[138] While the concern has been transposed to the technology sector,[139] some analysts suggest that classic "killer acquisitions"—defined as eliminating a nascent firm poised to challenge the acquirer's core business—may be relatively rare among acquisitions by major tech platforms like Google, Amazon, Facebook, and Apple (GAFA).[140] A study by Latham and others, applying filters for core business threats and significant valuation, found that, between 2009 and 2020, only a small percentage of GAFA acquisitions fit this specific narrative.[141] However, rarity does not negate impact; even a single significant acquisition can profoundly shape a specific market's trajectory,[142] and the sheer volume of acquisitions, many falling below reporting thresholds, raises concerns about "stealth consolidation" whose cumulative effect could be substantial.[143]

Beyond the direct elimination of potential products, consumer harm can arise from the exclusionary effects following an acquisition.[144] When a

---

136. *See* JACK CORRIGAN, NGOR LUONG & CHRISTIAN SCHOEBERL, ACQUIRING AI COMPANIES 14 (2024) (admitting an inability to assess the competitive effects of big tech companies acquiring smaller AI companies).

137. Bell & Butler, *supra* note 135, at 5. *See generally* Cunningham, Ederer & Ma, *supra* note 40 (providing background information about killer acquisitions).

138. *See* Cunningham, Ederer & Ma, *supra* note 40, at 650.

139. *See* Bell & Butler, *supra* note 135, at 5; Gilad Edelman, *Why the FTC Wants to Revisit Hundreds of Deals by Big Tech*, WIRED (Feb. 12, 2020, at 15:23 ET), https://www.wired.com/story/ftc-special-order-review-big-tech-killer-acquisitions/. [https://perma.cc/6VJX-7B7U].

140. *See, e.g.*, Barnett, *supra* note 129 *passim* (examining killer acquisitions); LATHAM, TECU & BAGARIA, *supra* note 41, at 2 (finding only a small proportion of GAFA acquisitions fit the killer acquisition definition).

141. LATHAM, TECU & BAGARIA, *supra* note 41, at 2.

142. *See id.* at 11; Giovanni Morzenti, *Antitrust Deregulation is Undermining Innovation*, UNIV. OF OXFORD: FACULTY OF LAW BLOGS (Feb. 2, 2023), https://blogs.law.ox.ac.uk/oblb/blog-post/2023/02/antitrust-deregulation-undermining-innovation [https://perma.cc/FK22-M33P].

143. *See* COUNCIL OF ECON. ADVISERS, EXEC. OFF. OF THE PRESIDENT, ECONOMIC REPORT OF THE PRESIDENT 206–07 (2020); Thomas G. Wollman, *How to Get Away with Merger: Stealth Consolidation and Its Effects on US Healthcare passim* (Nat'l Bureau of Econ. Rsch., Working Paper No. 27274, 2020), https://www.nber.org/papers/w27274 [https://perma.cc/74ZN-67SN]; *cf.* COMPETITION & MARKETS AUTHORITY, MERGER ASSESSMENT GUIDELINES, 2021, at 10–11 (UK) (recognizing that the case-specific inquiry means that thresholds can be unworkable or nonexistent in some scenarios).

144. *See* 2023 MERGER GUIDELINES, *supra* note 36, at 1.

dominant firm acquires unique technological capabilities or talent from a startup, it may choose not to make these assets available to smaller rivals, or only do so on unfavorable terms.[145] This can widen the competitive gap between market leaders and laggards, reinforcing the incumbent's dominance and leading to less competitive markets over time.[146] Data confirms that large tech incumbents are indeed among the most prolific acquirers of AI companies[147] and tend to acquire firms significantly earlier in their lifecycle than other buyers, suggesting they are positioned to absorb promising technologies early.[148] Nevertheless, pro-competitive justifications exist; such acquisitions facilitate efficient access to external talent and technology, enable economies of scale, and allow acquirers to expand into new markets or improve existing offerings.[149] Indeed, many acquisitions by major tech platforms appear focused on acquiring new capabilities or entering adjacent markets, rather than solely eliminating direct threats.[150]

The impact on innovation incentives is similarly complex. A permissive stance towards acquisitions by dominant firms might distort the *direction* of innovation, biasing startups towards developing technologies that primarily enhance the incumbent's advantage, rather than those maximizing overall welfare.[151] Furthermore, as markets consolidate, the leader's incentive to pay high premiums for future innovations may diminish, potentially dampening the overall rate of entrepreneurial activity.[152] The counterpoint, however, is significant: the prospect of a lucrative acquisition often serves as a primary driver for startup formation and venture capital investment.[153] Overly

145. *See* Bryan & Hovenkamp, *supra* note 94, at 342.

146. *See id.*

147. CORRIGAN, NGOR & SCHOEBERL, *supra* note 136, at 1 ("Large incumbent technology companies rank among the top acquirers of AI companies. . . .").

148. *Id.* at 14.

149. *See* Barnett, *supra* note 129, at 97; *cf.* LATHAM, TECU & BAGARIA, *supra* note 41, at 11 (explaining how "reverse" killer acquisitions present the concern that a very large firm will spend large sums of money to enter a target market/space).

150. *See* CORRIGAN, NGOR & SCHOEBERL, *supra* note 136, at 11 fig. 3. *But see OECD Report*, *supra* note 134, at 5 ("[A]n incumbent digital platform might acquire, through merger, the technology of a nascent or potential competitor because the technology complements or enhances the incumbent's own technology.").

151. *See* Bryan & Hovenkamp, *supra* note 94, at 342.

152. *See id.* at 344.

153. *Cf.* Barnett, *supra* note 129, at 46 (explaining how the risk of not closing an acquisition discourages potential venture capitalist investors); Lineke Kruisinga, *Understanding Exit Strategies for Startups: Types, Timing, and Key Considerations*, PITCHDRIVE: ACADEMY (Nov. 7, 2024), https://www.pitchdrive.com/academy/types-of-exit-strategies-for-startups [https://perma.cc/RFS2-ZZ9M] (explaining that investor expectations will influence a startup's decision to exit the market via acquisition).

aggressive antitrust intervention could inadvertently chill innovation by removing this key exit mechanism.[154]

Finally, the focus on traditional "killer acquisitions" may overlook other potential competition issues, such as "reverse killer acquisitions" where the acquisition prevents the *acquirer's* potential organic entry,[155] or the rise of large-scale investments and "partnerships" that may allow incumbents to exert acquisition-like influence while sidestepping traditional merger review.[156] These evolving dynamics underscore the difficulty in applying established frameworks and highlight the need for continued scrutiny of various mechanisms through which market power can be acquired or entrenched in rapidly evolving technology sectors like AI.[157]

D. The Failure of Market Self-Correction in Startup Acquisitions

The traditional error cost framework's preference for non-intervention hinges critically on the assumption that market forces, primarily through competitive entry, will effectively discipline incumbents and correct the harms arising from erroneously permitted anticompetitive conduct (false negatives).[158] While perhaps plausible in some market contexts, this reliance on market self-correction becomes particularly problematic, even circular, when applied to the acquisitions of startups by dominant incumbents.[159]

As Bryan and Hovenkamp forcefully argue, the very conduct under scrutiny—a dominant firm acquiring a nascent potential competitor—directly targets and potentially neutralizes the primary mechanism assumed to provide market correction.[160] The logic underpinning the traditional error cost framework breaks down when the alleged anticompetitive practice *is* the elimination of the competitive entrant upon whom the self-correction theory relies.[161] If dominant firms consistently identify and acquire the most promising startups before they can mature into significant competitive threats,

154. *See* Barnett, *supra* note 129, at 46.

155. *See* LATHAM, TECU & BAGARIA, *supra* note 41, at 11.

156. *See, e.g.*, Teodora Groza, *AI Partnerships Beyond Control Lessons from the OpenAI-Microsoft Saga*, STAN. L. SCH. (March 21, 2025), https://law.stanford.edu/2025/03/21/ai-partnerships-beyond-control-lessons-from-the-openai-microsoft-saga/ [https://perma.cc/HM69-97T9] (explaining how OpenAI and Microsoft ties impact merger review).

157. *See* CORRIGAN, NGOR & SCHOEBERL, *supra* note 136, at 19–20.

158. *See* Easterbrook, *supra* note 97, at 2–3; Fred S. McChesney, *Talking 'Bout My Antitrust Generation: Competition for and in the Field of Competition Law*, 52 EMORY L.J. 1401, 1412 (2003); Barnett, *supra* note 129, at 51 (specifying the role of "competitive forces" in responding to acquisitions).

159. *See* Bryan & Hovenkamp, *supra* note 94, at 348–50.

160. *See id.* at 333–34, 338, 350–51.

161. *See id.* at 355–56.

then the "onslaught of competition"[162] envisioned by proponents of the framework is preempted before it can materialize.[163]

There is a clear circularity: one cannot logically depend on the prospect of competitive entry to remedy the potential harms of a transaction whose very purpose or effect may be to forestall that entry.[164] Dominant incumbents often possess both the incentive to protect their existing market power from disruption and the resources to outbid rivals and acquire innovative startups.[165] This may occur even if the startup's technology would be more valuable to society in the hands of a competitor or if deployed more broadly.[166] The acquisition itself, therefore, can represent a strategic action that actively prevents the market from self-correcting, rendering the foundational assumption of the traditional error cost bias inapplicable in this context.[167]

Consequently, the theoretical justification for maintaining a strong default bias against intervention, rooted in the belief that market forces will readily cure competitive harms, loses much of its force when evaluating startup acquisitions by dominant firms.[168] The potential for these transactions to actively suppress the market's corrective mechanisms suggests that the risks of false negatives (wrongly permitting harmful acquisitions) may be significantly higher, and their effects more persistent, than the traditional framework assumes. This failure of the self-correction rationale underscores the need to reconsider the prevailing approach and explore analytical frameworks better suited to the unique competitive dynamics of startup acquisitions, particularly in innovative and rapidly evolving sectors like AI.

E. Screening Startup Deals: The Acquisition Risk Indicators (ARI)

Given the established inadequacies of the traditional error cost framework and its reliance on flawed self-correction assumptions in the context of startup acquisitions by dominant incumbents, a more practical and administrable approach is needed to assess potential competitive harms.[169] While

162. Easterbrook, *supra* note 97, at 21.

163. *See* Bryan & Hovenkamp, *supra* note 94, at 334.

164. *See id.*; *OECD Report*, *supra* note 134, at 15 (reviewing the attention paid to this issue by American competition agencies).

165. *See* Bryan & Hovenkamp, *supra* note 94, at 342–44.

166. *See id.* at 338–39, 341 (analyzing the conditions and policies under which society benefits from technological diffusion).

167. *See id* at 336–37.

168. *See id* at 343–45.

169. *See id.* at 348–50 (critiquing the application of traditional merger analysis and error cost assumptions to startups); *cf.* LATHAM, TECU & BAGARIA, *supra* note 41, at 11–12 (outlining some considerations for reforming analysis of potential killer acquisitions); CORRIGAN, NGOR & SCHOEBERL, *supra* note 136, at 20 (calling for heightened and nuanced attention to be paid to acquisitions in the AI space).

acknowledging the inherent uncertainties in predicting future market dynamics,[170] Bryan and Hovenkamp suggest focusing antitrust scrutiny on specific, observable factors, or indicia, that correlate with heightened risks of anticompetitive effects.[171] This approach, focusing on what I will refer to as the Acquisition Risk Indicators (ARI), shifts the analysis from demanding unattainable levels of predictive certainty towards identifying transactions warranting closer examination based on key risk factors: the acquirer's market position, the transaction's significance, and the acquirer's pattern of conduct.[172]

First, the acquirer's market power is a crucial initial indicator.[173] Dominant firms generally possess stronger incentives and greater ability to acquire startups for exclusionary purposes—to prevent rivals from accessing valuable technology or to eliminate a nascent competitive threat.[174] Furthermore, the more dominant the acquirer, the less likely it may be to voluntarily license acquired technology to rivals post-transaction, as excluding rivals often becomes more profitable than licensing once a sufficient market advantage is achieved.[175] Therefore, assessing whether the acquiring firm possesses significant, durable market power serves as a critical flag; heightened scrutiny under the ARI would primarily apply when the acquirer holds such a dominant position, potentially serving as a necessary condition for intervention.[176]

Second, the framework considers the transaction value or commercial significance of the startup's technology.[177] Accurately gauging the future competitive impact of a startup's innovation is inherently difficult given the lack of data.[178] However, the price paid for the acquisition—particularly when disproportionate to the startup's current revenues or tangible assets—can serve as a reasonable proxy for its perceived potential significance.[179] A dominant

170. *See* Bryan & Hovenkamp, *supra* note 94, at 352–53.

171. *See id.*

172. *See id.*

173. *Id.* at 352; *see* Michael L. Katz & Howard A. Shelanski, Merger Analysis and the Treatment of Uncertainty: Should We Expect Better? 2 (Sep. 20, 2006) (unpublished manuscript) (on file with author).

174. *See* Bryan & Hovenkamp, *supra* note 94, at 352.

175. *Id.*

176. *See id.*

177. *Id.* at 353.

178. *See id.*; Frankel, *supra* note 112, at 163; *cf.* LATHAM, TECU & BAGARIA, *supra* note 41, at 6 (detailing the difficulties in inquiries related to killer acquisitions because of ambiguity and complexity in relevant metrics).

179. Bryan & Hovenkamp, *supra* note 94, at 353; *see, e.g.,* Hayden Field, *OpenAI in Talks to Pay About $3 Billion to Acquire AI Coding Startup Windsurf*, CNBC (Apr. 16, 2025, at 14:31 ET), https://www.cnbc.com/2025/04/16/openai-in-talks-to-pay-about-3-billion-to-acquire-startup-windsurf.html [https://perma.cc/8PXJ-9XW6] (discussing the interest of OpenAI in acquiring Windsurf, a startup, for $3 billion).

firm paying a very high premium for a young, low-revenue startup might signal that the acquirer views the target's technology as a significant future competitive threat or possesses substantial commercial promise worth securing exclusively.[180] While not conclusive on its own, a high transaction value helps flag deals where the stakes for future competition might be particularly high, aligning with the use of value-based thresholds considered by commentators and regulators.[181]

Third, the ARI considers any pattern of similar acquisitions by the dominant firm.[182] While a single deal might reflect unique synergies, a history of repeatedly acquiring startups in related fields—especially if followed by conduct disadvantaging rivals (like refusing licenses or shelving acquired projects)—could indicate a broader strategic pattern aimed at systematically neutralizing threats and consolidating power, rather than pursuing isolated pro-competitive integrations.[183] Such a pattern strengthens the inference that the current acquisition is part of an ongoing exclusionary strategy, potentially justifying intervention or even scrutiny under different legal standards, such as section 2 of the Sherman Act prohibiting monopolization.[184] Concerns regarding such "serial acquisitions" or "roll-up strategies" have garnered increasing attention from enforcement agencies.[185]

By focusing on these ARI—acquirer dominance, transaction value/significance, and patterns of conduct—this framework offers a pragmatic lens for identifying startup acquisitions that pose the greatest risk to competition and innovation.[186] While not eliminating uncertainty, this approach allows for a more targeted and relevant assessment than one strictly bound by traditional static analysis or the demonstrably flawed assumption of market self-correction in this context, paving the way for a more nuanced application of merger control principles in dynamic markets like AI.

---

180. Bryan & Hovenkamp, *supra* note 94, at 353.

181. *See id.*

182. *Id.*

183. *See id.*; *see, e.g.*, Patricia L. Anslinger & Thomas E. Copeland, *Growth Through Acquisitions: A Fresh Look,* HARV. BUS. REV., Jan.–Feb. 1996, at 126, 126; *cf.* CORRIGAN, NGOR & SCHOEBERL, *supra* note 136, at 1–2 (providing an overview of acquisitions in AI, including the fact that several dominant firms have made numerous acquisitions).

184. *See* Bryan & Hovenkamp, *supra* note 94, at 342–43, 353; *cf.* Thomas Horton, *Life Science Mergers: Innovation, Exclusion and Killer Acquisitions*, BATES WHITE (June 23, 2021), https://www.bateswhite.com/media/event/213 Concurrences%20synthesis%20210623.pdf [https://perma.cc/HDA7-VRAY] (summarizing a webinar on the topic as it exists in the pharmaceutical space).

185. *See, e.g.*, Press Release, Fed. Trade Comm'n, FTC and DOJ Seek Info on Serial Acquisitions, Roll-Up Strategies Across U.S. Economy (May 23, 2024), https://www.ftc.gov/news-events/news/press-releases/2024/05/ftc-doj-seek-info-serial-acquisitions-roll-strategies-across-us-economy [https://perma.cc/8KT5-8QB5] (discussing agency enforcement).

186 Bryan & Hovenkamp, *supra* note 94, at 352–53.

In essence, this Part has demonstrated the significant challenges that startup acquisitions pose to traditional antitrust merger analysis. The prevailing error cost framework, with its inherent bias towards non-intervention rooted in assumptions of market self-correction, proves ill-suited and potentially counterproductive when applied to nascent firms in dynamic markets. The profound uncertainties surrounding startups, the difficulty in applying conventional economic tools, and the very real possibility that acquiring potential entrants neutralizes the market's corrective mechanisms all point to the inadequacy of the status quo. While acquisitions can offer pro-competitive benefits and incentivize innovation, the risks of entrenching dominance, excluding rivals, and distorting long-term technological progress through underenforcement are substantial. The ARI framework—focusing on acquirer market power, transaction value, and patterns of conduct—offers a more pragmatic approach to identifying high-risk deals that warrant closer scrutiny. Having established the limitations of existing principles and introduced this alternative lens, Part IV will now turn to apply the ARI framework specifically to the domain of AI, examining whether acquisitions in this uniquely transformative and consolidation-prone sector merit the heightened scrutiny this framework suggests.

IV. APPLYING THE ARI FRAMEWORK TO AI

Having established the limitations of traditional merger analysis for startup acquisitions and proposed the ARI framework as a more tailored approach in Part III, this Part now turns to apply that framework to the context of AI. Given AI's profound potential to reshape the economy, its inherent tendencies toward consolidation,[187] and the sheer volume of mergers and acquisitions activity and associated investments currently flowing into the sector,[188] applying a structured analysis like the ARI is an important exercise. It offers a potential pathway to scrutinize deals that might otherwise escape

187. *See supra* Part II.

188. CORRIGAN, LUONG & SCHOEBERL, *supra* note 136, at 8–9; *see also AI trends for 2025: M&A and investments*, DENTONS: INSIGHTS (Jan. 10, 2025), https://www.dentons.com/en/insights/articles/2025/january/10/ai-trends-for-2025-m-a-and-investments [https://perma.cc/DU46-XW4U] (discussing private equity's increasing involvement in artificial intelligence mergers and acquisitions); Myron Mallia-Dare & Brandon Meyer, *Acquiring Innovation: The Buyer's Guide to AI Company Acquisitions*, A.B.A. (May 13, 2024), https://www.americanbar.org/groups/business_law/resources/business-law-today/2024-may/acquiring-innovation-the-buyer-guide-to-ai-company-acquisitions/ [https://perma.cc/7A76-QPBL] (discussing the growing rate of investment in artificial intelligence mergers and acquisitions over recent years); *cf.* Davide French, Isla Binnie & Mrinalika Roy, *AI to Fuel Bumper Year for M&A in US Power Sector*, REUTERS: MKTS. (Mar. 13, 2025, at 20:00 ET), https://www.reuters.com/markets/deals/ceraweek-analysis-ai-fuel-bumper-year-ma-us-power-sector-2025-03-12/ [https://perma.cc/5Y2B-YGLJ] (outlining an uptick in mergers and acquisitions in AI-adjacent spaces).

meaningful review under conventional doctrines, thereby addressing concerns about dominant firms potentially entrenching their positions or stifling nascent competition in this critical technological domain.[189] However, it is crucial to acknowledge that applying this—or indeed any—framework to AI acquisitions is an inherently contestable endeavor, particularly at this early stage. Strong counterarguments emphasize the vital role of acquisitions as an exit mechanism driving venture capital investment and startup formation, cautioning against regulatory interventions based on potentially exaggerated "killer acquisition" narratives that could inadvertently chill innovation.[190] Furthermore, the unparalleled pace of technological change in AI,[191] coupled with the emergence of novel and complex inter-firm arrangements like strategic partnerships that blur traditional lines between merger and contract,[192] means that any analytical framework applied today must be considered provisional. The AI landscape, its business models, and the regulatory responses are all evolving rapidly, demanding constant vigilance and a willingness to revise analytical approaches as the field matures.[193]

A. Acquirer's Market Power in the AI Space

The first critical element of the ARI framework focuses on the market power of the acquiring firm.[194] An examination of the AI landscape reveals that the most significant acquirers and strategic investors are not diverse newcomers but rather the established titans of the digital economy: Alphabet

189. *See, e.g.*, MAX VON THUN & DANIEL A. HANELY, STOPPING BIG TECH FROM BECOMING BIG AI: A ROADMAP FOR USING COMPETITIVE POLICY TO KEEP ARTIFICIAL INTELLIGENCE OPEN FOR ALL 31–50 (2024), https://www.openmarketsinstitute.org/publications/report-stopping-big-tech-big-ai-roadmap [https://perma.cc/KR3T-WQPU] (discussing potential remedies to anticompetitive harms to businesses); *Emilia Javorsky on Big Tech A.I. Monopolies and Why You Should Care*, THE OVERVIEW (Nov. 18, 2024), https://www.theoverview.art/emilia-javorsky-on-ai-monopolies/ [https://perma.cc/A5PE-D2CM] (discussing the problems associated with a lack of competition in the AI space).

190. COUNCIL OF ECON. ADVISERS, *supra* note 143, at 219; *see Competition in Digital Technology Markets: Examining Acquisitions of Nascent or Potential Competitors by Digital Platforms: Hearing Before the Subcomm. on Antitrust, Competition Pol'y & Consumer Rts., S. Comm. on the Judiciary*, 116th Cong. 4 (2019) (statement of Bruce Hoffman, Dir., Bureau of Competition, Fed. Trade Comm'n); Barnett, *supra* note 129, at 46.

191. Connie Guglielmo, *AI Is Evolving Faster than Experts Imagined, Including for Bill Gates*, CNET: AI ATLAS (Sep. 23, 2024), https://www.cnet.com/tech/computing/ai-is-evolving-even-faster-than-experts-including-bill-gates-imagined/ [https://perma.cc/395T-HB6A]; Nathan L. Meikle & Bryan L. Bonner, *Unaware and Unaccepting: Human Biases and the Advent of Artificial Intelligence*, 5 TECH., MIND, & BEHAV., Summer 2024, at 1, 1–2.

192. *See* Groza, *supra* note 156; Teodora Groza & Aleksandra Wierzbicka, Mergers by Other Means? AI Partnerships and the Frontiers of (Post-)Industrial Organization pt I (Nov. 7, 2024) (unpublished manuscript) (on file with author).

193. Groza & Wierzbicka, *supra* note 192, at pt V.

194. Bryan & Hovenkamp, *supra* note 94, at 352.

(Google), Microsoft, Amazon, Meta, and Nvidia.[195] These firms already possess substantial, arguably dominant, positions in adjacent markets crucial to the AI ecosystem, including cloud computing, digital advertising, operating systems, social media, and specialized hardware.[196] Google's dominance in search provides vast datasets and integration opportunities; Microsoft leverages its Azure cloud platform and enterprise software ubiquity; Amazon commands the largest share of the cloud market via Amazon Web Services (AWS); Meta possesses enormous social graphs and user data; and Nvidia supplies the overwhelming majority of high-performance graphics processing units (GPUs) essential for training advanced AI models.[197] Their activity extends beyond acquisitions to include massive strategic investments and partnerships—such as Microsoft's relationship with OpenAI or Google and Amazon's respective investments in Anthropic—that further shape the competitive terrain and solidify their influence over the direction of AI development.[198]

Few trends suggest this dynamic of incumbent dominance is likely to change in the near term; indeed, the very factors driving AI innovation tend to reinforce their positions.[199] The development and deployment of cutting-

195. CORRIGAN, LUONG & SCHOEBERL, *supra* note 136, at 1; *see, e.g.*, *Nvidia Closes $700 mln Run:ai Acquisition after Regulatory Hurdles*, REUTERS: MKTS. (Dec. 30, 2024), https://www.reuters.com/markets/deals/nvidia-closes-700-mln-runai-acquisition-after-regulatory-hurdles-2024-12-30/ [https://perma.cc/K5GK-J8GG] (reporting on Nvidia investment into AI).

196. VON THUN & HANLEY, *supra* note 189, at 13; Allison Holt, Sushrut Jain & Ashley Zhou, *Assessing the Potential for Antitrust Moats and Trenches in the Generative AI Industry,* CPI ANTITRUST CHRON., Nov. 2024, at 1, 5–6 https://www.edgewortheconomics.com/media/publication/302_1-Assessing-The%20potential-For-Antitrust-Moats-And-Trenches-In-The-Generative-AI-Industry-Allison-Holt-Sushrut-Jain-Ashley-Zhou.pdf [https://perma.cc/GNY7-3Y99].

197. *See* Bas Braeken & Lara Elzas, *AI Turns the World of Competition Law on Its Head*, BUREAU BRANDEIS: JOURNAL (Dec. 16, 2024), https://bureaubrandeis.com/ai-turns-competition-land-on-its-head/?lang=en [https://perma.cc/G8TX-EVUV]; *see also* Holt, Jain & Zhou, *supra* note 196, at 3 (discussing Nvidia's market share and positioning).

198. *See, e.g.*, Cade Metz & Karen Weise, *Microsoft to Invest $10 Billion in OpenAI, the Creator of ChatGPT*, N.Y. TIMES (Jan. 23, 2023), https://www.nytimes.com/2023/01/23/business/microsoft-chatgpt-artificial-intelligence.html [https://perma.cc/P9U9-NTGM] (discussing Microsoft's $10 billion investment in OpenAI); James Vincent, *Google Invested $300 Million in AI Firm Founded by Former OpenAI Researchers*, THE VERGE (Feb. 3, 2023, at 12:23 ET), https://www.theverge.com/2023/2/3/23584540/google-anthropic-investment-300-million-openai-chatgpt-rival-claude [https://perma.cc/6ZMC-DMT6] (discussing Google's $300 million investment in the AI firm Anthropic).

199. *See, e.g.*, Anthony Di Pizio, *Meta, Microsoft, Alphabet, and Amazon Just Delivered Incredible News for Nvidia Stock Investors*, NASDAQ: THE MOTLEY FOOL (May 5, 2025, at 18:05 ET), https://www.nasdaq.com/articles/meta-microsoft-alphabet-and-amazon-just-delivered-incredible-news-nvidia-stock-investors [https://perma.cc/8WJP-JHEJ] (discussing positive financial results of major market incumbents); Rolfe Winkler, Nate Rattner & Sebastian Herrera, *Big Tech's $400 Billion AI Spending Spree Just Got Wall Street's Blessing*, WALL ST. J.

edge AI are extraordinarily resource-intensive, creating formidable barriers to entry for firms lacking incumbent advantages.[200] First, the immense *computational power* required for training large foundational models necessitates access to hyperscale cloud infrastructure, primarily controlled by Google, Microsoft, and Amazon, or reliance on specialized GPUs overwhelmingly supplied by Nvidia.[201] This dependency creates potential bottlenecks and leverage points for incumbents.[202]

Second, the performance of AI models hinges critically on access to vast and diverse *datasets*, and incumbents possess unparalleled advantages through their existing platforms and user bases, creating data network effects that are difficult for newcomers to replicate.[203]

Third, the intense competition for scarce *AI talent* favors the largest, best-resourced firms, who can offer superior compensation and research opportunities, further concentrating expertise.[204]

Control over these essential inputs—compute, data, and talent—creates a self-reinforcing cycle where established players are best positioned to identify, fund, partner with, or acquire the most promising AI startups, making it exceptionally difficult for independent firms to achieve comparable scale or challenge incumbent dominance.[205]

(July 31, 2025, at 21:00 ET), https://www.wsj.com/tech/ai/tech-ai-spending-company-valuations-7b92104b [https://perma.cc/ZW9D-V2SX] (discussing incumbent successes on Wall Street).

200. *See supra* Part II; Crane, *supra* note 42, at 1223–24.

201. *See* SATYA MARAR, MERCATUS CTR. AT GEO. MASON UNIV., ARTIFICIAL INTELLIGENCE AND ANTITRUST LAW: A PRIMER 7–8 (2024), https://www.mercatus.org/media/170871/download?attachment [https://perma.cc/5FYF-VLGJ].

202. *See id.* at 5; PAULO ABECASIS ET AL., GENERATIVE ARTIFICIAL INTELLIGENCE: THE COMPETITIVE LANDSCAPE 5 (2024), https://copenhageneconomics.com/wp-content/uploads/2024/03/Copenhagen-Economics-Generative-Artificial-Intelligence-The-Competitive-Landscape.pdf [https://perma.cc/Q2P4-3FE8] (identifying limited access to compute, among other AI inputs, as a competition concern).

203. *See* ABECASIS ET AL., *supra* note 202; *see, e.g.*, Foo Yun Chee, *Microsoft Singles Out Google's Competitive Edge in Generative AI*, REUTERS (Mar. 15, 2024), https://www.reuters.com/technology/microsoft-singles-out-googles-competitive-edge-generative-ai-2024-03-14/ [https://perma.cc/8JS9-XTSY] (discussing Google's criticism of Microsoft for a lack of openness compared to Google Cloud); Mark Bergen, *YouTube Looks to Creators' Data to Win the AI Era: Next Chapter*, BLOOMBERG: NEWS (Apr. 18, 2025, at 06:46 ET), https://news.bloomberglaw.com/artificial-intelligence/youtube-looks-to-creators-data-to-win-the-ai-era-next-chapter [https://perma.cc/9ZJ9-CQKL] (discussing YouTube's use of creators' data in its implementation of AI).

204 Cade Metz, *Tech Giants Are Paying Huge Salaries for Scarce A.I. Talent*, N.Y. TIMES (Oct. 22, 2017), https://www.nytimes.com/2017/10/22/technology/artificial-intelligence-experts-salaries.html [https://perma.cc/BKD2-2WHZ].

205 Stacy Dogan, *The Case for Vigilance in AI Markets*, PROMARKET: THE DIGITAL ECON. (Aug. 30, 2024), https://www.promarket.org/2024/08/30/the-case-for-vigilance-in-ai-markets/

Concluding that the primary acquirers in the AI space possess significant, durable market power, often extending from adjacent markets and reinforced by control over critical inputs, is the crucial first step in applying the ARI framework.[206] This finding carries profound significance for antitrust analysis. When dominant firms are the principal buyers of innovative startups, the potential harms identified by Bryan and Hovenkamp—such as preempting future competition, excluding rivals from accessing necessary technology, or distorting innovation incentives—are magnified.[207] The market power of the acquirer heightens the risk that an acquisition is motivated not merely by efficiency or synergy, but by a strategic desire to maintain or extend dominance, precisely the scenario where the traditional error-cost framework's bias towards non-intervention is least appropriate.[208] Identifying significant acquirer market power thus triggers the need for heightened scrutiny under the ARI framework, demanding a closer look at the other indicators—the transaction's significance and the acquirer's pattern of conduct—to assess the likelihood of competitive harm in this critical, rapidly concentrating sector.

B. Transactions in the AI Space

Beyond the established market power of the primary acquirers in the AI space, the second indicator within the ARI framework—the transaction value or commercial significance of the startup[209]—further counsels heightened scrutiny for deals in this sector. Recent investments and acquisitions involving AI startups have been characterized by astronomical valuations, often bearing little relation to the target firms' current revenues or tangible assets.[210] These striking figures, while reflecting intense market enthusiasm and perceived

---

[https://perma.cc/Y3TS-96TW]; VON THUN & HANLEY, *supra* note 189, at 8; *see also* Shivam Saran, *Antitrust in the AI Era: Strengthening Enforcement Against Emerging Anticompetitive Behavior*, FED'N OF AM. SCIENTISTS. (Jan. 10, 2025), https://fas.org/publication/antitrust-in-the-ai-era [https://perma.cc/AYS8-NUB8] (discussing the strategies used by larger corporations to monopolize on artificial intelligence and possible enforcement strategies to prevent this monopolization).

206. *See* Bryan & Hovenkamp, *supra* note 94 at 352.

207. *See id.* at 344–45; VON THUN & HANLEY, *supra* note 189, at 21–23.

208. Bryan & Hovencamp, *supra* note 94, at 342.

209. *Id.* at 353.

210. *See, e.g.*, Chris Metinko, *Eye on AI: The Never-Ending AI Valuation Escalation*, CRUNCHBASE: NEWS (Oct. 31, 2024), https://news.crunchbase.com/ai/neverending-valuation-escalation-openai-xai-perplexity/ [https://perma.cc/892P-93L9] (describing the "lofty" valuation of a company that "loses a lot of money" as a symptom of the AI "gold rush"); Anthony Ha, *OpenAI Co-founder Ilya Sutskever's Safe Superintelligence Reportedly Valued at $32B*, TECHCRUNCH (Apr. 12, 2025, at 12:38 PT), https://techcrunch.com/2025/04/12/openai-co-founder-ilya-sutskevers-safe-superintelligence-reportedly-valued-at-32b/ [https://perma.cc/A4TK-PN8C] (noting Safe Superintelligence had over a 32 billion dollar evaluation).

potential, also serve as a critical signal under the ARI framework, suggesting the profound competitive significance attributed to these nascent technologies by sophisticated, dominant market players.

The sheer scale of capital flowing into leading AI labs and startups underscores this point. Microsoft's cumulative investment in OpenAI has reportedly reached $14 billion, securing a substantial equity stake and deep strategic alignment.[211] Amazon has committed up to $8 billion to Anthropic, a major competitor to OpenAI, and Google has also invested billions in the same firm.[212] These multi-billion dollar investments in foundational model developers represent unprecedented corporate backing for entities that, while technologically advanced, often have nascent or rapidly evolving business models.[213] Valuations reflect this intensity; OpenAI has reportedly been valued at or near $300 billion in recent funding discussions,[214] while Anthropic achieved a post-money valuation of $61.5 billion in early 2025, more than tripling its value in roughly a year.[215] The trend extends beyond the very top labs, with numerous AI startups commanding multi-billion dollar valuations after dramatic increases over short periods, sometimes with limited revenue or established products.[216] Even acquisitions of smaller, specialized AI startups frequently involve nine-figure price tags, reflecting significant premiums.[217]

---

211. Ananya Gairola, *Microsoft Invested Nearly $14 Billion in OpenAI but Now Its Reducing Its Dependence on the ChatGPT-Parent: Report*, YAHOO!: FINANCE (Dec. 25, 2024, at 16:05 ET), https://finance.yahoo.com/news/microsoft-invested-nearly-14-billion-000512844.html [https://perma.cc/QM6Y-S54A].

212. Cade Metz, Nico Grant & David McCabe, *Inside Google's Investment in the A.I. Start-Up Anthropic*, N.Y. TIMES (Mar. 11, 2025), https://www.nytimes.com/2025/03/11/technology/google-investment-anthropic.html [https://perma.cc/B27M-VPA4].

213. *See, e.g.*, *id* (describing Google's investment in Anthropic).

214. Cade Metz, *OpenAI Completes Deal That Values Company at $300 Billion*, N.Y. TIMES (Mar. 31, 2025), https://www.nytimes.com/2025/03/31/technology/openai-valuation-300-billion.html [https://perma.cc/5YGK-EMBR].

215. Hayden Field, *Amazon-backed AI Firm Anthropic Valued at $61.5 Billion After Latest Round*, CNBC (Mar. 3, 2025, at 13:15 ET), https://www.cnbc.com/2025/03/03/amazon-backed-ai-firm-anthropic-valued-at-61point5-billion-after-latest-round.html [https://perma.cc/8Y6G-PXTE].

216. *See, e.g.*, Dean Takahashi, *Infinite Reality Will Acquire Agentic AI Firm Touchcast for $500M*, VENTUREBEAT (June 17, 2025), https://venturebeat.com/games/infinite-reality-will-acquire-agentic-ai-firm-touchcast-for-500m/ [https://perma.cc/HC2G-WHX5] (describing Touchcast being evaluated for over 15 billion dollars); Edward Ludlow, *AI's Smallest Firms Brace for Consolidation with Tech Giants on the Prowl*, BLOOMBERG (May 13, 2024, at 07:05 ET), https://www.bloomberg.com/news/newsletters/2024-05-13/ai-s-smallest-startups-prepared-for-the-coming-m-a-wave [https://perma.cc/GLD2-4TFE] (discussing OpenAI's multi-billion dollar valuation and Nvidia's continued targeting of AI startups).

217. *See, e.g.*, Kurt Robson, *Microsoft to Pay Inflection $650M After Taking Majority of Staff*, VERDICT (Mar. 22, 2024) (describing Microsoft paying Inflection 650 million in a

This pattern extends beyond mega-investments to include acquisitions of smaller, specialized startups by leading AI firms themselves, such as OpenAI and Meta, often involving substantial valuations despite uncertainty about the target's market viability.[218] OpenAI, for instance, made its first public acquisition by purchasing Global Illumination, a small digital products company,[219] and has since acquired firms like Multi (video collaboration) and invested in related companies.[220] It is reportedly pursuing larger deals, such as a potential $3 billion acquisition of AI coding assistant Windsurf[221] and a $500 million deal for hardware startup io Products,[222] reflecting valuations significantly exceeding prior funding rounds or representing large bets on future potential.[223] Meta, while having a recent large bid for AI chipmaker FuriosaAI rebuffed (reportedly an $800 million offer, well above market

licensing agreement), https://www.verdict.co.uk/microsoft-to-pay-inflection-650m-after-taking-majority-of-staff/ [https://perma.cc/L3VT-YKYC]. *See generally* Ludlow, *supra* note 216 (discussing the role of smaller firms in the AI market).

218. *See, e.g.*, Duncan Riley, *OpenAI Acquires Digital Products Company Global Illumination for Undisclosed Price,* SILICON ANGLE (Aug. 16, 2023, at 21:58 ET), https://siliconangle.com/2023/08/16/openai-acquires-digital-products-company-global-illumination-undisclosed-price/ [https://perma.cc/5WMA-QZEK] (providing an example of one of OpenAI's acquisitions); *cf.* Kate Park, *AI Chip Startup FuriosaAI Reportedly Turns Down $800M Acquisition Offer from Meta*, TECHCRUNCH (Mar. 24, 2025, at 02:00 PT), https://techcrunch.com/2025/03/24/ai-chip-startup-furiosaai-reportedly-turns-down-800m-acquisition-offer-from-meta/ [https://perma.cc/5W7U-XB3N] (giving an example of how Meta has attempted to buy start-ups using large offers).

219. Riley, *supra* note 218.

220. *OpenAI Funding Rounds: A Comprehensive Overview*, GROWTH NAVIGATE (Oct. 30, 2024), https://www.growthnavigate.com/openai-funding-rounds [https://perma.cc/24VY-JVGW].

221. Marina Tempkin, *OpenAI Pursued Cursor Maker Before Entering into Talks to Buy Windsurf for $3B*, TECHCRUNCH (Apr. 17, 2025, at 20:01 PT), https://techcrunch.com/2025/04/17/openai-pursued-cursor-maker-before-entering-into-talks-to-buy-windsurf-for-3b/ [https://perma.cc/PZH3-QAFG].

222. Ivan Mehta, *OpenAI Reportedly Mulls Buying Jony Ive and Sam Altman's AI Hardware Startup*, TECHCRUNCH (Apr. 7, 2025, at 06:13 PT), https://techcrunch.com/2025/04/07/openai-reportedly-mulls-buying-jony-ive-and-sam-altmans-ai-hardware-startup/ [https://perma.cc/3U5Z-WUT5].

223. *See, e.g.*, *OpenAI Expands Through Acquisition Spree with Multi and Rockset Purchases*, PYMNTS: COMPETITION POLICY INTERNATIONAL (June 25, 2024), https://www.pymnts.com/cpi-posts/openai-expands-through-acquisition-spree-with-multi-and-rockset-purchases/ [https://perma.cc/Q6UV-BAG5] (detailing OpenAI's "aggressive expansion strategy"); Paresh Dave, *OpenAI Agreed to Buy $51 Million of AI Chips from a Startup Backed by CEO Sam Altman*, WIRED: BUS. (Dec. 3, 2023, at 06:00 ET), https://www.wired.com/story/openai-buy-ai-chips-startup-sam-altman/ [https://perma.cc/3J9A-7YF8]; *cf.* Mike Isaac & Erin Griffith, *OpenAI Is Growing Fast and Burning Through Piles of Money*, N.Y. TIMES: TECH. (Sep. 27, 2024), https://www.nytimes.com/2024/09/27/technology/openai-chatgpt-investors-funding.html [https://perma.cc/Z6CN-LF5Y] (assessing OpenAI's finances).

value),[224] continues to invest heavily internally.[225] The strategic motives behind such acquisitions are multifaceted, often involving acquiring specialized technical talent ("acqui-hires"), integrating novel capabilities (like creative tools or coding assistants), securing intellectual property, or gaining access to crucial inputs.[226] Access to unique or specialized training data, or tools for generating synthetic data, represents another critical motive, as demonstrated by Nvidia's acquisition of synthetic data firm Gretel for over $320 million.[227] Acquiring such assets, even at high prices relative to the startup's current scale, allows dominant players like OpenAI or Meta to enhance their core models, build out their ecosystems, or potentially foreclose rivals' access, highlighting the strategic value placed on these nascent firms despite market uncertainties.[228]

Within the ARI framework, these astronomical transaction values—both the multi-billion dollar investments and the high-premium acquisitions of smaller firms—serve as a crucial proxy for the perceived competitive significance of the acquired technology or team, particularly when traditional metrics are lacking.[229] As Bryan and Hovenkamp note, assessing the future impact of a nascent firm is inherently speculative.[230] However, when a sophisticated, dominant incumbent—possessing deep market knowledge and strong incentives to maintain its position—pays a substantial premium for a startup, that price itself signals the acquirer's belief in the target's potential disruptive power or strategic value.[231] It suggests the acquired assets are viewed as sufficiently important to warrant a large expenditure, potentially to

224. Park, *supra* note 218.

225. Mike Isaac, *Meta to Increase Spending to $65 Billion This Year in A.I. Push*, N.Y. TIMES: TECHNOLOGY (Jan. 27, 2025), https://www.nytimes.com/2025/01/24/technology/meta-data-center.html [https://perma.cc/HUB4-SL8V].

226. *See, e.g.*, Alex Heath, *This Is Big Tech's Playbook for Swallowing the AI Industry*, THE VERGE (July 1, 2024), https://www.theverge.com/2024/7/1/24190060/amazon-adept-ai-acquisition-playbook-microsoft-inflection [https://perma.cc/Q9ZX-4N8E] (describing how OpenAI hired away from Inflection using methods that would avoid competition regulation).

227. Mark Haranas, *Nvidia Buys Synthetic Data Startup Gretel to Boost AI, LLMs: Report*, CRN (Mar. 20, 2025, at 12:23 ET), https://www.crn.com/news/ai/2025/nvidia-buys-synthetic-data-startup-gretel-to-boost-ai-llms-report [https://perma.cc/E9YN-YJFG].

228. *See supra* note 208 and accompanying text.

229. *See* Heath, *supra* note 226.

230. Bryan & Hovenkamp, *supra* note 94, at 332.

231. *Id.* at 353; *see* Eur. Comm'n, *Protecting Competition in a Changing World*, 101–03 (2024) (outlining the emergence of "adverse M&A," including killer acquisitions); Massimo Motta & Matrin Peitz, *Removal of Potential Competitors – A Blind Spot of Merger Policy?*, 6 COMP. L. & POL'Y DEBATE, Dec. 2020, at 19, 22 ("[I]t is also no secret that at least some established market players have a lot of data and data analytics capabilities to sniff around and detect potential competitors.").

secure an advantage, deny rivals access, or neutralize a future threat.[232] This signal helps overcome the analytical paralysis often caused by uncertainty in traditional merger review.[233] The high valuations prevalent in AI acquisitions, therefore, strongly trigger the second ARI indicator. When combined with the significant market power of the primary acquirers (the first ARI indicator), these high-value transactions present a compelling case for overcoming the default bias against intervention. With that threshold satisfied, regulators may then subject these deals to rigorous antitrust scrutiny to preempt potential long-term competitive harm in this vital sector.[234]

C. Pattern of Acquisition and Exclusionary Conduct

The final indicator within the ARI framework shifts focus from individual transaction characteristics to the acquirer's broader *pattern of conduct*, specifically examining whether a history of similar acquisitions suggests an exclusionary strategy rather than isolated, efficiency-enhancing deals.[235] When dominant firms repeatedly acquire innovative startups and integrate their technology internally rather than facilitating wider diffusion, it raises concerns that these acquisitions are part of a deliberate effort to maintain market power by neutralizing potential threats and controlling the trajectory

---

232. *See* Bryan & Hovenkamp, *supra* note 94, at 353; Mario Mariniello, *Reinforcing EU Merger Control Against the Risks of Acquisitions by Big Tech*, BRUEGEL (Mar. 13, 2025), https://www.bruegel.org/policy-brief/reinforcing-eu-merger-control-against-risks-acquisitions-big-tech [https://perma.cc/2MX6-FRH4].

233. Bryan & Hovenkamp, *supra* note 94, at 350.

234. *See* Kelly Fayne & Kate Foreman, *To Catch a Killer: Could Enhanced Premerger Screening for "Killer Acquisitions" Hurt Competition?*, 34 ANTITRUST, Spring 2020, at 8, 9–10 (reviewing different proposals for premerger scrutiny of potential killer acquisitions). *But see* William Rinehart, *Are 'Killer Acquisitions' by Tech Giants a Real Threat to Competition?*, THE CTR. FOR GROWTH & OPPORTUNITY (Oct. 3, 2023), https://www.thecgo.org/research/are-killer-acquisitions-a-threat/ [https://perma.cc/Q7UW-Z3AA] (contending that regulators may place excessive focus on quashing killer acquisitions rather than study what drives startups to enter and exit the market—an inquiry that may more directly help foster innovation); Renaud Foucart, *Tech Firms Face More Regulation After Moves to Stop 'Killer' Acquisitions – But Innovation Could Also Be Under Threat*, THE CONVERSATION (July 25, 2022, at 09:42 ET), https://theconversation.com/tech-firms-face-more-regulation-after-moves-to-stop-killer-acquisitions-but-innovation-could-also-be-under-threat-187278 [https://perma.cc/46G5-TASN] (expressing concerns that a change in the default approach may require a significant change in startup behavior).

235. Bryan & Hovenkamp, *supra* note 94, at 346, 349, 353; *cf.* Fiona Scott Morton et al., *Market Structure and Antitrust Subcommittee*, *in* STIGLER COMMITTEE ON DIGITAL PLATFORMS: FINAL REPORT 23, 75 (2019) (identifying the incentives that may drive a large incumbent to adopt this pattern).

of innovation.[236] Examining the behavior of major players in the AI sector reveals patterns consistent with such concerns.

A notable trend involves dominant tech firms acquiring AI capabilities through structures that effectively internalize talent and technology, often limiting broader access.[237] Instead of traditional acquisitions followed by widespread licensing, major incumbents like Microsoft, Amazon, and Google have engaged in high-value "pseudo-acquisitions" or strategic partnerships where they gain exclusive or preferential access to a startup's AI models and hire significant portions of their technical staff, while the startup formally remains independent.[238] Examples include Microsoft's $650 million deal with Inflection AI and Amazon's reported $330 million deal with Adept AI, both involving licensing and talent acquisition.[239] While potentially structured to navigate regulatory hurdles,[240] the effect is often similar to a full acquisition in terms of concentrating key resources and technology within the dominant firm's ecosystem. This pattern of internal integration over broad licensing is further suggested by findings that a high percentage of startups acquired by Big Tech subsequently shut down their independent websites, indicating a loss of autonomy and potential discontinuation of standalone offerings.[241] Such behavior suggests a tendency towards hoarding acquired innovations to bolster proprietary platforms rather than enabling wider market access.

This pattern aligns with concerns about dominant firms creating "kill zones"—areas adjacent to their core businesses where venture capital investment and startup formation are allegedly suppressed due to fear of being

---

236. Morton et al., *supra* note 235, at 76; *see* ARIEL EZRACHI & MAURICE E. STUCKE, HOW BIG-TECH BARONS SMASH INNOVATION—AND HOW TO STRIKE BACK 163–64 (2022).

237. *See infra* notes 238–41 and accompanying text.

238. Sean Ji, *Big Tech's Pseudo-Acquisitions: Using Licensing and Hiring Agreements Instead of Outright M&As*, COLUM. SCI. & TECH. L. REV.: BLOG (Mar. 24, 2025), https://journals.library.columbia.edu/indei.php/stlr/blog/view/671 [https://perma.cc/3D46-TM24]; Kenn So, *Unpacking Big Tech's Quasi-Acquisitions of GenAI Companies*, GENERATIONAL (Aug. 16, 2024), https://www.generational.pub/p/unpacking-big-techs-quasi-acquisitions [https://perma.cc/T4NU-Z3X4]; *Big Tech Is Quietly Taking Over AI Startups Without Buying Them*, 8SENECA: BLOG (Feb. 6, 2025), https://www.8seneca.com /blog/technology/big-tech-is-quietly-taking-over-ai-startups-without-buying-them [https:// perma.cc/ASB6-VNQ4].

239. Chris Metinko, *AI Startup Deal-Making Gaining Momentum – Is That Good?*, CRUNCHBASE NEWS: A.I. (Aug. 14, 2024), https://news.crunchbase.com/ma/ai-startup-deal-making-msft-goog-amzn/ [https://perma.cc/V59C-KBHF]; Ji, *supra* note 238.

240. *See* Berber Jin, Tom Dotan & Miles Kruppa, *Struggling AI Startups Look for a Bailout from Big Tech*, WALL ST. J. (Sep. 24, 2024), https://www.wsj.com/tech/ai/struggling-ai-startups-look-for-a-bailout-from-big-tech-3e635927 [https://perma.cc/7TTF-M6B3] (noting that these sorts of deals have all the key aspects of traditional acquisitions but fall just short of triggering regulatory thresholds).

241. *See* Axel Gautier & Robert Maitry, *Big Tech Acquisitions and Product Discontinuation*, 20 J. COMPETITION L. & ECON. 246, 247–48 (2024).

acquired and shut down, or simply copied and outcompeted by the incumbent.[242] Research by Sai Krishna Kamepalli, Raghuram Rajan, and Luigi Zingales provided empirical support for this theory, finding that venture capital investment in a specific app category dropped significantly after Google or Meta acquired a startup in that market, whereas investment increased following acquisitions by non-dominant firms.[243] While the prevalence and impact of kill zones are debated,[244] the perception among some investors that competing directly with tech giants is untenable can deter funding for potentially disruptive innovations.[245] Acquisitions, particularly serial acquisitions of nascent firms in related fields, can thus be viewed as part of a strategy to build defensive "moats" around existing market power, preemptively neutralizing threats and discouraging entry into the incumbent's perceived territory.[246]

This alleged pattern of acquiring potential competitors, integrating their technology internally, and potentially chilling investment in adjacent spaces directly contributes to the market concentration trends detailed earlier.[247] By systematically absorbing innovative startups, dominant firms may starve smaller rivals and potential entrants of access to cutting-edge technologies, critical datasets, or essential talent.[248] This raises rivals' costs and diminishes

242. Morton et al., *supra* note 235, at 75–77; Sai Krishna Kamepalli, Raghuram Rajan & Luigi Zingales, *Kill Zone* 1–2 (Nat'l Bureau of Econ. Rsch., Working Paper No. 27146, 2022), https://www.nber.org/papers/w27146 [https://perma.cc/8YQX-V594].

243. Kamepalli, Rajan & Zingales, *supra* note 242, at 7, 35 fig. 2.

244. *See id.* at 27–28 (observing that not all deals warrant heightened scrutiny as means to create or extend a kill zone).

245. *See* Asher Schechter, *Google and Facebook's "Kill Zone": "We've Taken the Focus Off of Rewarding Genuis and Innovation to Rewarding Capital and Scale"*, PROMARKET (May 25, 2018), https://www.promarket.org/2018/05/25/google-facebooks-kill-zone-weve-taken-focus-off-rewarding-genius-innovation-rewarding-capital-scale/ [https://perma.cc/5Z28-4BZM]. *But see* JOE KENNEDY, MONOPOLY MYTHS: IS BIG TECH CREATING "KILL ZONES"? 1, 6–7 (2020) (asserting that fears that Big Tech companies quash innovation through acquisitions lack empirical support).

246. *See* Mark A. Lemley & Matthew T. Wansley, *Coopting Disruption*, 105 B.U. L. REV. 457, 477, 490–91 (2025); *cf.* Joshua P. Zoffer, *Short-Termism and Antitrust's Innovation Paradox*, 71 STAN. L. REV. ONLINE 308, 310 (2019) (acknowledging the interest of Big Tech companies in creating "moats" while noting that they also aim to compete through innovation).

247. *See* Bryan & Hovenkamp, *supra* note 94, at 345.

248. *See* Daron Acemoglu & Simon Johnson, *Big Tech Is Bad. Big A.I. Will be Worse*, N.Y. TIMES (June 9, 2023), https://www.nytimes.com/2023/06/09/opinion/ai-big-tech-microsoft-google-duopoly.html [https://perma.cc/AQC9-V3JA]; Luise Eisfeld, *Big Tech's Acquisition Model – Is It Time for a New Approach?*, FIN. DERIVATIVE, https://www.finance derivative.com/big-techs-acquisition-model-is-it-time-for-a-new-approach/ [https://perma.cc/HL8Z-32TS] (last visited July 10, 2025); Seth Fiegerman & Rachel Metz, *AI Startups Struggle to Keep Up with Big Tech's Spending Spree*, BLOOMBERG (Sep. 6, 2024, at 16:00 ET), https://www.bloomberg.com/news/newsletters/2024-09-06/ai-startups-can-t-keep-up-with-big-tech-s-

their ability to challenge incumbents effectively, reinforcing the dominance of the few large players who control the ecosystem's key resources and acquisition pathways.[249] The result can be a less dynamic market with fewer independent innovators, reduced consumer choice, and potentially a slower overall pace of socially beneficial innovation, even as the dominant firms continue their internal development.[250]

Viewed through the ARI framework, evidence of such a pattern of conduct by dominant acquirers strongly triggers the third indicator, lending significant weight to the case for heightened antitrust scrutiny.[251] When a firm with substantial market power (Indicator 1) engages in high-value acquisitions of potentially significant startups (Indicator 2), and this behavior fits into a broader pattern of absorbing innovation internally rather than facilitating its diffusion (Indicator 3), the inference of an anticompetitive strategy aimed at maintaining dominance becomes considerably stronger.[252] This pattern analysis helps distinguish acquisitions driven primarily by exclusionary motives from those based on genuine efficiencies, providing a more robust basis for antitrust intervention in the fast-moving, strategically critical AI sector compared to relying solely on traditional, often inadequate, merger analysis tools.[253]

D. Ramifications

The application of the ARI framework to the AI sector, as detailed throughout this Part, yields a compelling picture. First, the primary acquirers are dominant incumbents possessing significant market power, often leveraged from adjacent digital markets.[254] Second, transactions frequently

---

spending-spree [https://perma.cc/8R4J-WX79]; John B. Kirkwood, *How Big Tech's AI Startup Alliances Could Harm Competition*, PROMARKET (Aug. 29, 2024), https://www.promarket.org/2024/08/29/how-big-techs-ai-startup-alliances-could-harm-competition/ [https://perma.cc/858L-37ZY].

249. Kirkwood, *supra* note 248.

250. *See* Bryan & Hovenkamp, *supra* note 94, at 342; Julian Kolev et al., *Of Academics and Creative Destruction: Startup Advantage in the Process of Innovation* 25, 37 fig. 4 (Nat'l Bureau of Econ. Rsch., Working Paper No. 30362, 2022) (comparing rates of commercialization of innovations by universities, incumbents, and startups and finding that the latter spur additional progress more so than the others).

251. *See* Bryan & Hovenkamp, *supra* note 94, at 353.

252. *See id.* at 352.

253. *See* Roberta Kwok, *A Wave of Acquisitions May Have Shielded Big Tech from Competition*, YALE INSIGHTS (Mar. 7, 2023), https://insights.som.yale.edu/insights/wave-of-acquisitions-may-have-shielded-big-tech-from-competition [https://perma.cc/3PFA-TRZD] (summarizing findings by Florian Ederer); Johannes M. Bauer & Tiago S. Prado, *Big-Tech Acquisitions and Venture Capital Funding for Start-Ups*, NETWORK L. REV., Summer 2023, at 37, 40.

254. CORRIGAN, LUONG & SCHOEBERL, *supra* note 136, at 13, 14 tbl. 1.

involve astronomical valuations, signaling high perceived competitive significance even amidst market uncertainty.[255] Third, a pattern of conduct exists where acquired technology and talent are often integrated internally or controlled through exclusive partnerships, rather than broadly diffused, consistent with concerns about tech hoarding and the potential creation of "kill zones."[256] Taken together, these findings strongly suggest that acquisitions of AI startups by dominant firms frequently trigger all three ARI indicators, warranting heightened antitrust scrutiny beyond what traditional merger analysis typically provides.[257]

This conclusion carries significant implications for the adequacy of current mergers and acquisitions law and enforcement policy in addressing the unique challenges posed by AI. The prevailing merger control framework, heavily influenced by an error-cost analysis favoring non-intervention and reliant on demonstrating predictable, often static, anticompetitive effects, is ill-equipped for the dynamic, uncertain, and rapidly concentrating AI landscape.[258] The analysis in Part IV underscores this inadequacy: if the deals most likely to shape the future of this transformative technology consistently exhibit characteristics identified as high-risk (dominant acquirer, high significance, potentially exclusionary pattern), yet often fall below traditional thresholds for intervention due to the target's nascent stage, then the existing legal regime risks systematically permitting transactions that entrench dominance and stifle long-term innovation.[259]

The ARI framework, derived from the work of Bryan and Hovenkamp, offers a valuable analytical lens for identifying these high-risk transactions. However, it is an analytical tool, not codified law. The findings therefore necessitate a fundamental rethinking of how mergers and acquisitions law applies in this context. Specifically, the consistent triggering of the ARI indicators suggests the need to recalibrate legal standards and enforcement priorities for AI acquisitions involving dominant firms. This could involve several potential avenues for reform, moving beyond the limitations of the current rule-of-reason-dominated approach. Consideration should be given to adjusting evidentiary thresholds or shifting burdens of proof, perhaps creating

---

255. *See, e.g.*, Metinko, *supra* note 210 (providing examples of astronomical evaluations in AI acquisitions).

256. *See* 8Seneca, *supra* note 238;

257. Morton et al., *supra* note 235, at 77.

258. *Id.* at 347; *see supra* Part III; Francesco Liberatore & Marty Mackowski, *Artificial Intelligence and the Issue of Antitrust*, INTERMEDIA: VOLUME 52 ISSUE 2 (June 2024), https://iicintermedia.org/vol-52-issue-2/artificial-intelligence-and-the-issue-of-antitrust/ [https://perma.cc/BA4V-ERH9] (detailing the slow pace with which antitrust regulators analyze competition issues in the AI space); Crane, *supra* note 42, *passim* (outlining how AI disrupts current antitrust enforcement, goals, and assumptions).

259. Bryan & Hovenkamp, *supra* note 94, at 348–50.

rebuttable presumptions of anticompetitive harm when all ARI indicators are met, requiring the dominant acquirer to affirmatively demonstrate the transaction's procompetitive benefits or lack of harm to innovation potential.[260] Furthermore, the analysis highlights the need to look beyond traditional remedies like divestiture or outright blocking, potentially embracing behavioral remedies or structural solutions like compulsory licensing, as suggested by Bryan and Hovenkamp, that might preserve some efficiencies while mitigating exclusionary effects.[261] Addressing the novel transaction structures prevalent in AI, such as the "pseudo-acquisitions" involving licensing and talent hires, also requires adapting enforcement tools to capture potentially anticompetitive arrangements that fall outside conventional merger definitions.[262] Ultimately, the findings demand a more dynamic, innovation-centric approach to merger review in AI—one that gives greater weight to potential future competition and the structural conditions necessary for sustained innovation, rather than focusing narrowly on existing market shares and predictable price effects.[263]

The manifest inadequacy of the current framework, coupled with the clear signals of competitive risk identified through the ARI lens when applied to AI acquisitions, establishes the urgent need for concrete policy innovation. Relying on existing doctrines risks allowing the AI ecosystem to consolidate prematurely under the control of a few dominant incumbents, potentially foreclosing alternative technological paths and limiting the diffusion of AI's benefits. Therefore, having identified the problem and the limitations of current tools, the discussion must turn to exploring specific, actionable proposals designed to foster competition and innovation in this critical sector. Part V takes up this challenge by outlining and evaluating one such potential mechanism: mandatory technology auctions.

---

260. *See, e.g.*, Lancieri & Valleti, *supra* note 100 (proposing using rebuttable presumptions in merger review to reform the problems of the current system).

261. Bryan & Hovenkamp, *supra* note 94, at 355; *see* Michael L. Katz, *When Big Tech Firms Buy Startups, Antitrust Enforcers Should Take Notice*, PROMARKET (Aug. 18, 2020), https://www.promarket.org/2020/08/18/when-big-tech-firms-buy-startups-antitrust-enforcers-should-take-notice/ [https://perma.cc/L265-QWLX] (calling for increased attention to merger policy design).

262. *See* Jin, Dotan & Kruppa, *supra* note 240.

263. *See* Kirkwood, *supra* note 248; Bryan & Hovenkamp, *supra* note 94, at 347–48; Thibault Schrepel, *A Framework for Assessing the Competitiveness of AI Partnerships*, NETWORK L. REV., Summer 2023, at 7, 8 (noting that analysis of AI partnerships has occurred on a case-by-case basis).

V. AI AUCTIONS

The analysis presented thus far—highlighting AI's inherent tendencies toward consolidation,[264] the inadequacies of the prevailing error-cost framework for startup acquisitions,[265] and the frequent triggering of ARI in AI deals[266]—collectively points to the urgent need for policy interventions beyond traditional merger enforcement. Recognizing the limitations of existing doctrines, particularly the high uncertainty and potential for suppressing innovation associated with outright prohibitions, necessitates exploring alternative remedies when dominant firm acquisitions of AI startups raise significant competitive concerns.[267] Scholars examining these dynamics, notably Bryan and Hovenkamp whose work informed the ARI framework, considered various remedial approaches designed to mitigate competitive harm without necessarily blocking the transaction entirely, such as licensing of acquired technology to rivals.[268]

Building upon the need for such alternative mechanisms, this Part focuses on developing and evaluating one specific proposal: a mandatory auction system for technology licenses triggered when a dominant firm seeks to acquire an AI startup deemed competitively significant under the ARI framework. This essay elects to explore an auction mechanism as a potentially promising pathway for implementing technology diffusion. The rationale for this focus stems from considerations of political economy and administrability. Compared to outright merger blocks, which face significant political headwinds and carry high risks of judicial error (false positives),[269] or complex, ongoing conduct oversight often required by compulsory licensing decrees,[270] a structured auction process might offer a more market-oriented, transparent, and potentially more politically palatable and administratively manageable means of ensuring rivals retain access to critical

264. *See supra* Part II.

265. *See supra* Part III.

266. *See supra* Part IV.

267. *See* Bryan & Hovenkamp, *supra* note 94, at 350–51; Crane, *supra* note 42, *passim* (specifying ways in which AI upends traditional theories and principles underlying current antitrust doctrine).

268. Bryan & Hovenkamp, *supra* note 94, at 354–55.

269. Fayne & Foreman, *supra* note 234, at 8, 11–12 (detailing potential unintended consequences of especially substantive and probing merger review).

270. *Compare* Jamie Feldman, *Compulsory Licenses: The Dangers Behind the Current Practice*, 8 J. INT'L BUS. & L. 137 *passim* (2009) (warning against excessive use of compulsory licensing regimes), *with* Jake Linford, *Improving Technology Neutrality Through Compulsory Licensing*, 100 MINN. L. REV. HEADNOTES 126 *passim* (2016) (reviewing a proposal by Brad Greenberg for increased use of compulsory licenses).

innovations acquired by dominant players.[271] This Part will therefore outline the mechanics of such an auction system, analyze its potential application in the AI context, and address key counterarguments, positioning it as a viable policy option worthy of serious consideration.

A. The Fundamental of Auctions

The core idea behind employing an auction mechanism in the context of a potentially anticompetitive startup acquisition by a dominant firm is relatively straightforward: instead of prohibiting the transaction outright or imposing complex conduct rules, regulators could condition approval on the acquirer granting licenses to the acquired startup's key technologies or intellectual property via a structured auction open to qualified rival bidders.[272] This approach seeks to balance the potential efficiencies or synergies of the acquisition itself with the need to prevent the foreclosure of competitors and ensure the continued diffusion of important innovations.[273] By allowing rivals to bid for access, the auction aims to mitigate the risk that the dominant acquirer will hoard the acquired technology, thereby preserving a degree of competitive dynamism in the market.[274] The winning bidders would gain non-exclusive rights to utilize the technology under predetermined terms or terms established through the auction process itself, preventing the acquisition from creating an insurmountable advantage for the merged entity.[275]

While the specific application of mandatory license auctions as a condition for approving startup acquisitions by dominant tech firms lacks direct, widespread precedent in American antitrust practice,[276] the underlying concept of using market-based mechanisms or auctions to allocate resources

---

271. *See* Carl Shapiro, Microsoft*: A Remedial Failure*, 75 ANTITRUST L.J. 739, 757–58 (2009) (contending that licensing requirements may address the underlying anticompetitive concerns in some cases); Keith N. Hylton, *Remedies, Antitrust Law, and* Microsoft*: Comment on Shapiro*, 75 ANTITRUST L.J. 773, 776–77 n.11 (2009) (noting briefly the feasibility of a licensing requirement); *cf.* Jay L. Himes, Jason Nieh & Ron Schnell, *Antitrust Enforcement and Big Tech: After the Remedy Is Ordered*, 1 STAN. COMPUTATIONAL ANTITRUST 64, 66 (2021) (specifying the goals of remedies in antitrust cases).

272. *See* Bryan & Hovenkamp, *supra* note 94, at 354–55.

273. *See* Shapiro, *supra* note 271, at 357–58.

274. *See* Bryan & Hovenkamp, *supra* note 94, at 342; Alexander Pedersen & Cirkeline Nielsen, Killer Acquisitions – Killing Innovation?: Navigating the Disruptive Tech World's Most Lethal Deals 109, 113 (May 15, 2023) (M.A. Thesis, Copenhagen Business School), https://researchapi.cbs.dk/ws/portalfiles/portal/98733715/1617089_Killer_Acquisitions_128593_128283_CN29568.pdf. [https://perma.cc/D236-EQCY].

275. *See* David L. Newman, *"Going Once . . . Going Twice . . . Licensed Under the Most Reasonable and Non-Discriminatory Bidding Terms!"*, 11 NW. J. TECH. & INTELL. PROP. 139, 143 (2013).

276. *See generally* Bryan & Hovenkamp, *supra* note 94, at 354 (identifying the few instances in which this or related proposals have been considered by courts).

or resolve disputes has appeared in related legal and regulatory contexts.[277] Perhaps the most prominent example involves government auctions of spectrum licenses conducted by the Federal Communications Commission.[278] Although designed for initial allocation rather than as an antitrust remedy, the decades-long experience with spectrum auctions demonstrates the feasibility of using sophisticated auction designs to allocate valuable, intangible assets efficiently among competing firms, incorporating goals beyond simple revenue maximization, such as promoting competition or diverse ownership.[279] In other areas, court-ordered patent pools or standardized compulsory licensing schemes, sometimes implemented to settle antitrust litigation or address patent hold-up (particularly concerning standard-essential patents), share the goal of ensuring broader access to critical technology, though typically through administered pricing or royalty rates rather than auctions.[280] Divestiture processes in traditional merger remedies also sometimes involve the selling of assets to regulator-approved buyers, which can occasionally incorporate competitive bidding elements, albeit with the different goal of creating a viable standalone competitor rather than licensing specific intellectual property.[281] These examples, while not direct analogues, illustrate that structured, market-oriented mechanisms for allocating access rights among competitors are not entirely foreign to the broader landscape of competition policy and regulation.

Despite the conceptual appeal of using auctions to facilitate technology diffusion, significant scholarly concerns and practical challenges attend their potential implementation as an antitrust remedy in this context.[282] A primary set of concerns revolves around *auction design and complexity*.[283] Crafting an

277. *See* Ronen Avraham & William H.J. Hubbard, *Civil Procedure as the Regulation of Externalities: Toward a New Theory of Civil Litigation*, 89 U. CHI. L. REV. 1, 8 (2022).

278. Peter Cramton, *The Efficiency of the FCC Spectrum Auctions*, 41 J. L. & ECON. 727, 735–36 (1998).

279. *Id.* at 733.

280. *See* Michael Mattioli & Robert P. Merges, *Measuring the Costs and Benefits of Patent Pools*, 78 OHIO ST. L.J. 281, 290–300 (2017) (providing background information on patent pools); Thomas F. Cotter, Erik Hovenkamp & Norman Siebrasse, *Demystifying Patent Holdup*, 76 WASH. & LEE L. REV. 1501, 1511–29 (2019) (explaining the difference between injunctions and holdups, including "classic" and patent holdups).

281. *See, e.g.*, BUREAU OF COMPETITION, FED. TRADE COMM'N, A STUDY OF THE COMMISSION'S DIVESTITURE PROCESS 8 (1999) (discussing the findings from a study done by the Federal Trade commission on divestitures as a potential remedy for anticompetitive mergers).

282. *See* Cramton, *supra* note 278, at 731–35.

283. *See, e.g.*, Paul Milgrom, *Combination Bidding in Spectrum Auctions*, *in* COMPETITION, REGULATION AND CONVERGENCE: CURRENT TRENDS IN TELECOMMUNICATIONS RESEARCH 19, 19 (1999) (investigating the merits of different auction design elements); Babette Boliek, *Lessons from the C Block: Auction Complexity Leads to*

effective auction requires careful consideration of numerous variables: defining precisely what technological assets or intellectual property rights are included in the license "lot," determining eligibility criteria for bidders (e.g., only direct competitors, or permitting a wider range of participants), selecting the auction format (e.g., sealed bid, ascending price), setting appropriate reserve prices or minimum bids, and establishing the specific terms of the resulting licenses (e.g., field-of-use restrictions, duration, royalty structures if any).[284] Poor design choices could lead to inefficient outcomes, fail to attract sufficient participation, or inadvertently favor certain bidders.[285]

A second major challenge involves *information asymmetry*.[286] The acquiring firm, having conducted due diligence, likely possesses far more information about the true value, potential applications, and integration challenges of the acquired startup's technology than rival bidders participating in the auction.[287] This informational disadvantage could depress bids, lead to adverse selection (where only less valuable licenses are successfully auctioned), or result in the "winner's curse," where the winning bidder overpays due to incomplete information.[288] Ensuring sufficient transparency

---

Disastrous Consequences for Consumers, AM. ENTER. INST. (Dec. 19, 2013), https://www.aei.org/technology-and-innovation/telecommunications/lessons-c-block-auction-complexity-leads-disastrous-consequences-consumers/ [https://perma.cc/62LS-25BL] (analyzing how aspects of auctions may help or hinder participation by certain stakeholders); Michael Kremer, *Patent Buyouts: A Mechanism for Encouraging Innovation*, 113 Q.J. ECON. 1137, 1146–48, 1158–62 (1998) (setting forth a novel system in which the government holds an auction that theoretically provides the highest bidder the chance of purchasing a patent but will likely result in the government paying the innovator twice the amount staked by the third-highest bidder).

284. *See, e.g.*, Paul Milgrom, *Auction Research Evolving: Theorems and Market Designs*, 111 AM. ECON. REV. 1383 *passim* (2021) (discussing auction theory and the variables involved in pricing); *Auctions & Competitive Bidding*, CHARLES RIVER ASSOC., https://www.crai.com/services/auctions/ [https://perma.cc/7BK8-UK7K] (last visited July 11, 2025) (listing factors pertinent to designing an auction); *cf.* John Jarosz et al., *Patent Auctions: How Far Have We Come?* 45 LES NOUVELLES 11, 11 (2010) (providing a brief survey of some different approaches to auctions involving intellectual property—namely, patents).

285. *See* Michael Abramowicz, *Patent Auctions* 18–19, 19 n.76 (Geo. Wash. L. Sch. Pub. L. & Legal Theory, Working Paper, Paper No. 163, 2005) (analyzing how the number of participants may alter whether an auction proves more efficient than one off negotiations). *But see id.* at 20 (noting that auctions and auction-like processes may be more efficient than alternative approaches).

286. *See* Eric Maskin & John Riley, *Asymmetric Auctions*, 67 REV. ECON. STUDIES 413, 414 (2000) (defining asymmetry in the context of contract bidding).

287. *See id.*; James Andreoni, Yeon-Koo Che & Jinwoo Kim, *Asymmetric Information About Rivals' Types in Standard Auctions: An Experiment*, 59 GAMES & ECON. BEHAV. 240 *passim* (2007) (concluding that asymmetric knowledge may distort the allocative efficiency of an auction).

288. *Beware the Winner's Curse in Auctions*, PROGRAM ON NEGOT. AT HARV. L. SCH.: DAILY BLOG (Nov. 23, 2023), https://www.pon.harvard.edu/daily/business-negotiations/negotiation-in-the-news-will-amazons-winner-be-cursed-nb/ [https://perma.cc/9EYQ-J53L].

about the technology without compromising legitimate trade secrets presents a difficult balancing act.

Third, the potential for *strategic behavior and collusion* among bidders poses a risk.[289] Rivals might tacitly or explicitly coordinate their bidding strategies to lower license prices or allocate licenses among themselves, undermining the pro-competitive intent of the auction. Preventing such collusion, especially in concentrated markets with few potential bidders, requires robust auction rules and monitoring.[290]

Finally, the *ex-ante incentive effects* of a mandatory auction remedy are complex and debated.[291] While potentially preserving downstream competition, the prospect of rivals gaining access to acquired technology via auction might reduce the dominant firm's willingness to pay high acquisition prices, potentially lowering the expected returns for startups and venture capitalists and thereby chilling early-stage investment and innovation—precisely the outcome antitrust seeks to avoid. Conversely, others might argue that ensuring broader access could spur *more* follow-on innovation by rivals. Balancing these competing incentive effects remains a critical theoretical and empirical question. These substantial concerns highlight that while auctions offer a conceptually intriguing alternative to traditional remedies, their successful implementation would require careful design, robust oversight, and a clear understanding of the specific market dynamics at play.[292]

B. Auctions in AI Context

Translating the concept of a mandatory license auction into a workable remedy for AI acquisitions requires careful consideration of its practical mechanics. Triggered upon a finding by the relevant antitrust agency (FTC or DOJ) that a proposed acquisition by a dominant firm meets the heightened risk criteria outlined by the ARI framework, the process would condition merger approval on the acquirer facilitating an auction for non-exclusive licenses to certain core technologies or intellectual property embodied in the target startup. Defining the precise scope of the licensable assets would be a

289. *See* Robert C. Marshall & Leslie M. Marx, The Vulnerability of Auctions to Bidder Collusion 1 (Aug. 2008) (working paper), https://people.duke.edu/~marx/bio/papers/vulnerability.pd [https://perma.cc/5F5V-2BZC]; *cf.* Ruqu Wang, *Strategic Behavior in Dynamic Auctions*, 3 ECON. THEORY 501, 501–03 (1993) (discussing how strategic behavior by a seller may alter the results of an auction).

290. *See* Marshall & Marx, *supra* note 289, at 25–26.

291. *See* Destin Royer, Note, *Killers Interrupted: Stopping Pharmaceutical Killer Acquisitions via IP Release Clauses*, 42 YALE J. REGUL. 872, 899 (2025) (identifying pros and cons of mandatory auctions).

292. *See* Steve Lohr, *Patent Auctions Offer Protections to Inventors*, N.Y. TIMES: TECH. (Sep. 20, 2009), https://www.nytimes.com/2009/09/21/technology/21patent.html [https://perma.cc/EEC4-89N4].

critical, albeit challenging, step—potentially encompassing key patents, essential algorithms, access to trained model weights for specific functionalities, or even foundational datasets (where feasible and appropriate). The auction itself could be structured using established formats (e.g., ascending bids, sealed bids) under rules designed to promote competitive outcomes and prevent collusion, potentially overseen by the agency or a designated third party. Successful bidders—qualified rivals—would receive non-exclusive licenses, enabling them to leverage the acquired innovation while allowing the original acquisition, potentially with its own integration efficiencies, to proceed.

It must be candidly acknowledged that designing such a system involves significant complexity, particularly in defining the licensable "technology" within rapidly evolving AI systems and ensuring the practicality of knowledge transfer. The specifics would necessitate substantial further development, welcoming rigorous review and feedback from technologists, economists, and legal experts to ensure feasibility and avoid unintended consequences. Crafting workable license terms, valuation methods (like reserve prices), and dispute resolution mechanisms would be crucial.

Despite these challenges, this approach warrants serious consideration, particularly given two key dynamics shaping the future of AI competition. First is the looming scarcity of high-quality training data.[293] Leading AI labs like OpenAI have acknowledged, both implicitly in arguments for broad fair use access[294] and reportedly in internal assessments,[295] that the vast datasets scraped from the public internet may soon be insufficient to fuel continued

293. Kevin Roose, *The Data That Powers A.I. Is Disappearing Fast*, N.Y. TIMES: TECH. (July 19, 2024), https://www.nytimes.com/2024/07/19/technology/ai-data-restrictions.html [https://perma.cc/FZ54-JSHR]; Pablo Villalobos et al., *Will We Run Out of Data? Limits of LLM Scaling Based on Human-Generated Data*, EPOCH AI (June 6, 2024), https://epoch.ai/blog/will-we-run-out-of-data-limits-of-llm-scaling-based-on-human-generated-data [https://perma.cc/5MTG-9CLW]; Noor Al-Sibai, *AI Companies Running Out of Training Data After Burning Through Entire Internet*, FUTURISM: THE BYTE (Apr. 1, 2024, at 18:00 ET), https://futurism.com/the-byte/ai-training-data-shortage [https://perma.cc/T36U-XB2N]. *But see* Neil Savage, *Synthetic Data Could Be Better than Real Data*, NATURE (Apr. 27, 2023), https://www.nature.com/articles/d41586-023-01445-8 [https://perma.cc/3RRF-D5EW] (suggesting that synthetic data may be a viable alternative for training models).

294. *See OpenAI's Proposals for the U.S. AI Action Plan*, OPENAI: NEWS (Mar. 13, 2025), https://openai.com/global-affairs/openai-proposals-for-the-us-ai-action-plan/ [https://perma.cc/CB7X-KNL2].

295. *See* Emma Roth, *OpenAI and Google Ask the Government to Let Them Train AI on Content They Don't Own*, THE VERGE: NEWS (Mar. 14, 2025, at 15:44 ET), https://www.theverge.com/news/630079/openai-google-copyright-fair-use-exception [https://perma.cc/Q7VZ-7KRN]; *see, e.g.*, Roose, *supra* note 293; Cade Metz & Tripp Mickle, *Is the Tech Industry Already on the Cusp of an A.I. Slowdown?*, N.Y. TIMES: TECH. (Dec. 25, 2024), https://www.nytimes.com/2024/11/19/technology/artificial-intelligence-data-openai-google.html [https://perma.cc/C9CK-STJT].

exponential progress in model capabilities based solely on scaling data and compute.[296] Research institutes like Epoch AI project the exhaustion of usable public text data within the next few years.[297] As readily available data becomes a less potent differentiator, competitive advantage may shift increasingly towards superior algorithms, novel model architectures, or highly efficient training techniques—precisely the kinds of innovations often developed by specialized startups.[298] Allowing dominant firms to exclusively acquire and internalize these non-data-driven breakthroughs risks locking up the next generation of AI progress. An auction mechanism provides a means to diffuse these critical algorithmic and architectural innovations, preventing data scarcity from further exacerbating market concentration by ensuring rivals can access key non-data advancements.

Second, and relatedly, the current dominance of Large Language Models (LLMs) based on the Transformer architecture is unlikely to represent the final stage of AI development.[299] Research is actively exploring limitations of Transformers[300] and investigating alternative architectures, such as state-space models, hybrid systems combining deep learning with symbolic reasoning, or models with fundamentally different memory structures, that might offer advantages in efficiency, reasoning, or adaptability.[301] If dominant incumbents use acquisitions to exclusively capture startups pioneering these next-generation architectures, they could effectively steer or constrain the

296. *See generally* Villalobos et al., *supra* note 293 (discussing the limits AI systems—the most powerful of which are language models—could face since scaling requires growing training datasets and human-generated text is finite).

297. *Id.*

298. *See* Tobias Feakin, *DeepSeek's Disruption: Geopolitics and the Battle for AI Supremacy*, ROYAL UNITED SERVS. INST. (Feb. 7, 2025), https://www.rusi.org/explore-our-research/publications/commentary/deepsdeep-disruption-geopolitics-and-battle-ai-supremacy [https://perma.cc/JVU3-APT6]; Yasir Atalan, *DeepSeek's Latest Breakthrough Is Redefining AI Race*, CTR. FOR STRATEGIC & INT'L STUD. (Feb. 3, 2025), https://www.csis.org/analysis/deepseeks-latest-breakthrough-redefining-ai-race [https://perma.cc/EXJ8-27QE].

299. *See Beyond the Transformer Mythos: The Quiet Revolution of Diffusion Models in Generative AI*, BLASTASIA (Mar. 22, 2025), https://www.blastasia.com/post/beyond-the-transformer-mythos-the-quiet-revolution-of-diffusion-models-in-generative-ai [https://perma.cc/6LVA-G8ZX].

300. Timothy B. Lee, *Are Transformer-Based Foundation Models Running Out of Steam?*, UNDERSTANDING AI (Nov. 14, 2024), https://www.understandingai.org/p/are-transformer-based-foundation [http://perma.cc/VL7B-BVEP]; *see, e.g.*, Binghui Peng, Srini Narayanan & Christos Papadimitriou, On Limitations of the Transformer Architecture 1 (Feb. 14, 2024) (unpublished manuscript), https://arxiv.org/html/2402.08164v1 [https://perma.cc/6NT4-MU39] (providing an example of a study looking into the limitations of the Transformer Architecture).

301. *See* Paul Sawers, *Meta's Yann LeCun Predicts 'New Paradigm of AI Architectures' Within 5 Years and 'Decade of Robotics'*, TECHCRUNCH (Jan. 23, 2025, at 07:28 PT), https://techcrunch.com/2025/01/23/metas-yann-lecun-predicts-a-new-ai-architectures-paradigm-within-5-years-and-decade-of-robotics/ [https://perma.cc/DZP7-UQ4S] (summarizing remarks by Meta's Yann LeCun at the Davos 2025 Annual Meeting).

entire field's technological trajectory. Ensuring broader access to foundational architectural innovations acquired by market leaders via mechanisms like license auctions is therefore crucial not just for immediate market competition, but for fostering a more diverse and resilient long-term innovation ecosystem beyond the current LLM paradigm.

Implementing such an auction system also requires establishing criteria for qualifying bidders. The goal should be to ensure that licenses are obtained by entities capable of utilizing the technology to enhance competition, without unduly restricting participation. Potential criteria could include demonstrating sufficient technical expertise to integrate and build upon the licensed technology, operating as an actual or credible potential competitor in a market segment affected by the acquisition, or perhaps prioritizing smaller firms or startups that lack comparable capabilities and whose participation would most directly enhance market dynamism. Drawing parallels from FCC spectrum auctions, which use financial or geographic criteria to determine eligibility for certain bidding credits,[302] objective standards could be developed, though defining technical capacity would require careful consideration.

Finally, effective oversight would be paramount. The antitrust agency, be it the FTC or DOJ, that reviewed the merger would logically retain primary oversight responsibility for the remedy as the primary enforcers of the nation's competition laws.[303] Given the potential complexity of administering the auction and monitoring compliance with license terms, the agencies could consider appointing an independent third-party monitor or special master, operating under agency or court supervision, to manage the technical and logistical aspects of the process.[304] This model, sometimes used in complex divestitures or consent decrees, could provide specialized expertise while ensuring accountability to the enforcing agency and the public interest.[305] While novel in this specific application, adapting existing oversight mechanisms appears feasible.

C. Counterarguments, Limitations, and the Need for Further Inquiry

While presenting a potentially more targeted and market-oriented approach than traditional merger remedies, the proposed AI license auction system is not without significant counterarguments and deep-seated

302. *See* Competitive Bidding Rules for Auction of AWS-3 Licenses, 90 Fed. Reg. 11931, 11931–37 (proposed Mar. 13, 2025) (to be codified at 47 C.F.R. pts. 1, 27).

303. *See The Enforcers,* FED. TRADE COMM'N, https://www.ftc.gov/advice-guidance/competition-guidance/guide-antitrust-laws/enforcers [https://perma.cc/BJ3K-TQZH] (last visited July 11, 2025).

304. *See* BUREAU OF COMPETITION, FED. TRADE COMM'N, NEGOTIATING MERGER REMEDIES 16 (2012).

305. *See id.*

challenges.[306] Like any novel regulatory intervention, particularly in a field as dynamic and complex as AI, it faces critical questions regarding its intrinsic effectiveness, its impact on incentives, and its desirability compared to alternative policy options.[307] Examining these limitations, especially those stemming from the unique nature of AI technology and talent, underscores the need for caution and further inquiry.

A fundamental challenge lies in defining the scope and ensuring the effective transfer of the "technology" to be licensed. Unlike conventional assets with clearly delineated patent claims, the competitive value of an acquired AI startup often resides in a complex amalgamation of trained model weights, unique system architectures, proprietary datasets or data-processing techniques, and sophisticated software pipelines.[308] Defining a licensable "asset" that captures this value and can be meaningfully transferred to a rival is exceptionally difficult.[309] Would licenses cover static model weights, specific algorithms, application programming interface access with usage limits, underlying training data, or architectural blueprints? Each option presents immense practical hurdles.[310] Model weights, for instance, are mere numerical parameters whose utility is deeply dependent on the specific architecture and runtime environment, and whose legal status as intellectual property remains ambiguous.[311] Granting access only to patents might confer little competitive benefit if the core advantage lies in the trained model or data engine itself, technologies often difficult to protect or transfer cleanly via traditional intellectual property licenses.[312] Researchers frequently detail the integrated, systemic, and rapidly evolving nature of cutting-edge AI, suggesting that isolating a transferable "license" that provides durable competitive capability might be an elusive goal for many advanced AI acquisitions.[313] If the mechanism fails to transfer the core basis of the competitive advantage, the auction risks becoming a performative remedy with negligible impact.

---

306. *See* discussion *infra* Section V.C.

307. *See* discussion *infra* Section V.C.

308. *See* John Lanza, *Eight Tips for Navigating the Complex World of AI Licensing*, IP WATCHDOG (Jan. 16, 2025, at 11:15 ET), https://ipwatchdog.com/2025/01/16/eight-tips-navigating-complex-world-ai-licensing/id=185180/ [https://perma.cc/JL7S-4QTP].

309. *Cf.* Will Douglas Heaven, *Generative AI Is Changing Everything. But What's Left when the Hype Is Gone?*, MIT TECH. REV. (Dec. 16, 2022), https://www.technologyreview.com/2022/12/16/1065005/generative-ai-revolution-art/ [https://perma.cc/798P-JN6J] (discussing the system-level nature of AI).

310. *See* Lanza, *supra* note 308.

311. Nuno Sousa e Silva, *Are AI Models' Weights Protected Databases?*, KLUWER COPYRIGHT BLOG (Jan. 18, 2024), https://copyrightblog.kluweriplaw.com/2024/01/18/are-ai-models-weights-protected-databases/ [https://perma.cc/XX4B-DDJX].

312. *Cf. id.* (describing the money and effort involved in training models).

313. *See* Woodside, *supra* note 11.

Compounding this issue is the crucial role of tacit knowledge and specialized human capital. Modern AI development hinges significantly on the expertise, intuition, and practical know-how of highly sought-after researchers and engineers—knowledge that is inherently difficult to codify or transfer through legal documents.[314] The intense "talent war" in the AI sector, widely reported by the *Wall Street Journal* and *Financial Times*, often sees acquisitions structured primarily as "acqui-hires" specifically to secure these key individuals and their embedded expertise.[315] An auction, however, can mandate the licensing of patents or code, but it cannot compel the transfer of this vital tacit knowledge residing within the acquired team, who are now employees of the dominant acquirer. Consequently, even if rivals win licenses to the explicit intellectual property, they may lack the crucial underlying know-how to effectively utilize, integrate, or innovate upon the technology, rendering the license competitively inert and failing to genuinely diffuse the acquired advantage.

Furthermore, the auction mechanism raises serious questions about its impact on the acquirer's post-auction incentives to invest. Standard economic theory suggests that reducing the exclusivity of returns from an innovation can dampen incentives for its development and commercialization.[316] If a dominant firm acquires a startup at a significant premium, only to have key rivals gain access to the core technology through a mandatory auction, the acquirer's expected return on investment diminishes.[317] This could rationally lead the acquirer to underinvest in the further development, integration, and deployment of the acquired technology compared to a scenario where it

314. *See Talent Tracker: The Rising Stars of AI Research*, THE INFORMATION (June 24, 2025), https://www.theinformation.com/projects/ai-research-scientists (on file with author) ("Talent, not capital, has separated the leaders and laggards in generative artificial intelligence."); Jeremy Howells, *Tacit Knowledge, Innovation and Technology Transfer*, 8 TECH. ANALY. STRAT. & MGMT. 91, 92–93 (1996) (discussing the often-neglected role of tacit knowledge in technology transfers).

315. Katherine Bindley, *The Fight for AI Talent: Pay Million-Dollar Packages and Buy Whole Teams*, WALL ST. J. (Mar. 27, 2024, at 14:20 ET), https://www.wsj.com/tech/ai/the-fight-for-ai-talent-pay-million-dollar-packages-and-buy-whole-teams-c370de2b [https://perma.cc/Y3HD-7X5T]; John Thornhill, *How Big Tech Is Winning the AI Talent War*, FIN. TIMES: TECHNOLOGY (Mar. 22, 2024), https://www.ft.com/content/2892bac2-d848-49ea-b983-bc649a8c0529 [https://perma.cc/4D3L-T25N].

316. *See* U.S. DEP'T OF JUST. & FED. TRADE COMM'N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY 2, 3, 31 (2017) (discussing the role of incentives in encouraging innovation); Morton et al., *supra* note 235, at 31 (reviewing how a market's structure will alter firm incentives).

317. *See* U.S. DEP'T OF JUST. & FED. TRADE COMM'N, *supra* note 316, at 2 (noting that imitation of a technology by competitors will diminish incentives to invest in additional research and development).

retained full exclusivity.[318] There is a plausible risk that the technology, deprived of its champion's full commitment due to mandated sharing, might languish—neither fully exploited by the acquirer nor effectively leveraged by licensees who may lack the resources or complementary assets for optimal development. This potential dampening effect on post-acquisition investment represents a significant counterpoint to the intended pro-competitive benefits of diffusion.

While other significant challenges remain—including the general complexities of auction design (managing information asymmetry, preventing collusion),[319] and the plausible argument that alternative policies like stricter upfront merger prohibition or targeted conduct remedies might be more direct or effective[320]—these three deeply embedded issues concerning the nature of AI assets, the centrality of tacit knowledge, and the impact on acquirer incentives are particularly critical. They suggest that applying a license auction remedy, especially to acquisitions involving complex, system-level AI or primarily talent-driven startups, requires navigating substantial, perhaps even prohibitive, obstacles.[321] These limitations underscore the exploratory nature of this proposal and highlight the essential need for rigorous, interdisciplinary research—involving technologists, economists, and legal scholars—to assess its practical viability and compare its likely outcomes against both the status quo and alternative interventions before considering it a dependable tool for antitrust enforcement in the AI domain.

VI. CONCLUSION

The ascent of AI presents not only a technological frontier but also a critical juncture for competition law and policy. As this essay has detailed, the very nature of AI development—characterized by significant economies of scale and scope, powerful data network effects, and reliance on concentrated inputs like compute and specialized talent—creates a powerful undertow

318. *See id.* at 5–6; *cf.* Nalin Kulatilaka & Lihui Lin, *Impact of Licensing on Investment and Financing of Technology Development*, 52 MGMT. SCI. 1824, 1836 (2006) (examining how different licensing schedules may alter the level and nature of investment by competitors). Note that, as of 2002, more than 95% of technology licenses involved exclusive assignments. Joshua S. Gans, David H. Hsu & Scott Stern, *When Does Start-Up Innovation Spur the Gale of Creative Destruction?*, 33 RAND J. ECON. 571, 575 n.9 (2002). This fact may indicate the market's concerns with the possibility of underinvestment resulting from alternative licensing arrangements.

319. *See supra* Part V.

320. *See* Bryan & Hovenkamp, *supra* note 94, at 353–55 (weighing the benefits and costs of various reforms to merger policy).

321. *See* Gans, Hsu & Stern *supra* note 318, at 583 (contending that the competitive effects of different intellectual property regimes hinges on market dynamics and the nature of the underlying technology).

towards market consolidation.[322] While the potential benefits of AI are immense, allowing this inherent tendency toward concentration to proceed unchecked under existing legal frameworks risks prematurely foreclosing competitive pathways, stifling disruptive innovation, and limiting the broad diffusion of AI's societal gains.

The prevailing antitrust regime, particularly its approach to merger control shaped by the error-cost framework's bias towards non-intervention, appears ill-equipped to address the unique challenges posed by AI's rapid evolution and the strategic acquisition of nascent innovators by dominant incumbents.[323] Applying analytical lenses sensitive to these dynamics, such as the ARI framework, reveals that transactions consolidating control over AI capabilities frequently exhibit warning signs that warrant heightened scrutiny beyond traditional analysis.[324] The exploration of novel remedial approaches, like the AI license auction discussed herein, underscores the need for creative policy thinking, even as it highlights the profound difficulties in crafting effective interventions for complex, rapidly advancing technologies.[325]

Therefore, this essay concludes by reaffirming its central thesis: the unique economic and innovative characteristics of dynamic, emerging technology markets, exemplified by AI, demand a fundamental reorientation of antitrust policy. A paradigm shift is necessary, moving away from a posture of reactive enforcement and towards a more proactive, structurally aware approach that presumes against increased concentration in these critical early stages. This may require recalibrating merger presumptions for dominant firm acquisitions in nascent tech sectors, developing tailored rules of conduct addressing key competitive bottlenecks like data or compute foreclosure, or seriously considering innovative remedial tools designed to promote technology diffusion and preserve competitive potential.

The goal is not to impede technological progress, but rather to ensure that foundational technologies like AI develop within an ecosystem that fosters sustained innovation through robust competition. Adapting our antitrust framework to the realities of the twenty-first-century digital economy is not merely an academic exercise; it is essential for shaping a future where the transformative power of AI is channeled towards broad economic prosperity and societal well-being, rather than becoming the province of a select few. The challenge is significant, but the stakes—for innovation, for competition,

322. *See generally* discussion *supra* Part II (discussing AI's inherent tendency toward consolidation).

323. *See generally* discussion *supra* Part III (discussing why current merger doctrine will not prevent AI concentration).

324. *See generally* discussion *supra* Part IV (discussing application of the ARI framework to AI).

325. *See generally* discussion *supra* Part V (discussing AI auctions).

and for the future structure of our economy—demand bold and thoughtful action.