ARTICLES

EXIT STRATEGY[†]

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ABSTRACT

In Silicon Valley, the most important thing to think about when starting a company is how you're going to end it. The venture capital funding model that dominates the tech industry is focused on the "exit strategy"—the ways funders and founders can cash out their investment. While in common lore the exit strategy is an initial public offering ("IPO"), in practice IPOs are increasingly rare. Most companies that succeed instead exit the market by merging with an existing firm. And for a variety of reasons, innovative startups are especially likely to be acquired by the dominant firm in the market, particularly when they are venture funded.

In this Article, we argue that this focus on exit, particularly exit by acquisition, is pathological. It leads to concentration in the tech industry, reinforcing the power of dominant firms. It short-circuits the development of truly disruptive new technologies that have historically displaced incumbents in innovative industries. And because incumbents often buy startups only to shut them down, intentionally or not, it means that the public loses access to many of the most promising new technologies Silicon Valley develops.

There has to be a better way. We suggest a number of ways to break the cycle of acquisition by incumbents, including changing the incentives that favor acquisition over continued operation, finding other ways to fund startups or to allow venture capital firms to cash out without an acquisition, and changing the antitrust laws to focus on who is acquiring startups. These solutions won't fix

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the problem of today's entrenched tech monopolies. But they will allow the next generation of companies that might displace the tech giants to make it to market.

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INTRODUCTION

The world has become preoccupied in recent years with the market dominance of large technology companies like Amazon, Apple, Facebook, and Google. Antitrust agencies around the world have fined them billions of dollars.[1] Presidential candidates and respected legal scholars talk about breaking them up.[2] But even beyond these well-known dominant firms, the technology industry has become a winner-take-all affair, with market concentration increasing and one or two firms dominating a wide variety of markets that in a previous era might have faced robust competition.[3]

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[1] *See, e.g.*, Cecilia Kang, *$5 Billion Fine for Facebook on User Data*, N.Y. TIMES, July 13, 2019, at A1; Tony Romm, Elizabeth Dwoskin & Craig Timberg, *Antitrust Inquiry Takes Aim at Big Tech*, WASH. POST, July 24, 2019, at A1; Jon Porter, *EU Opens Amazon Antitrust Investigation*, VERGE (July 17, 2019, 7:00 AM EDT), https://www.theverge.com/2019/7/17/20696214/amazon-european-union-antitrust-investigation-third-party-seller-marketplace; Tony Romm, *Google Fined Nearly $1.7 Billion for Ad Practices that E.U. Says Violated Antitrust Laws*, WASH. POST (Mar. 20, 2019, 7:17 AM EDT), http://www.washingtonpost.com/technology/2019/03/20/google-fined-nearly-billion-ad-practices-that-violated-european-antitrust-laws. Privacy regulators have also become disquiet. Elizabeth Schulze, *If You Want to Know What a US Tech Crackdown May Look Like, Check Out What Europe Did*, CNBC (June 7, 2019, 2:01 AM EDT), https://www.cnbc.com/2019/06/07/how-google-facebook-amazon-and-apple-faced-eu-tech-antitrust-rules.html [https://perma.cc/RT5H-LG3Q].

[2] Prominently among presidential candidates, see, for example, Elizabeth Warren, *Here's How We Can Break Up Big Tech*, MEDIUM (Mar. 8, 2019), https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c [https://perma.cc/XD3D-QQN7]. For a survey of scholarly opinions, see Steve Lohr, *How to Rein In Big Tech? Here Are 4 Ideas, From Drastic to Modest*, N.Y. TIMES, Aug. 21, 2019, at B1. For other opinions from academics, see TIM WU, THE CURSE OF BIGNESS: ANTITRUST IN THE NEW GILDED AGE 132-33 (2018) ("While Facebook might not like being dissolved, and might find the new competition unwelcome, it is hard to see what the great social cost, if any, would be."); Lina M. Khan, *Amazon's Antitrust Paradox*, 126 YALE L.J. 710, 790-805 (2017) [hereinafter Khan, *Antitrust Paradox*] (proposing either more aggressive antitrust doctrines or sectoral, utility-like regulation to limit the accrual and exploitation of monopoly power by digital firms perhaps uniquely able to cross-leverage from one market to another); Scott Galloway, *Silicon Valley's Tax-Avoiding, Job-Killing, Soul-Sucking Machine*, ESQUIRE, Mar. 2018, at 124, 148 (calling for breaking up big tech, though without specifying how).

[3] Take Uber and Lyft in private for-hire transportation, for example. *See* Matt Oguz, *A Beautiful Duopoly: How Economic Theory Can Explain the Competition Between Uber and Lyft*, TECHCRUNCH (May 8, 2019, 4:00 PM EDT), https://techcrunch.com/2019/05/08/a-beautiful-duopoly/ [https://perma.cc/565U-YC9N**]**. Or Booking Holdings and Expedia Group in online travel bookings, though they are now facing competition from Airbnb on one flank and Facebook and Google from another—the rare companies seemingly capable of new entry and whose entry perhaps offers only cold comfort to consumers. *See* Adrianne Pasquarelli,

There are many reasons tech markets feature dominant firms, from lead-time advantages to branding, to network effects that drive customers, to the most popular sites.[4] But traditionally those markets have been disciplined by so-called Schumpeterian competition—competition to displace the current incumbent and become the next dominant firm.[5] Schumpeterian competition involves leapfrogging by successive generations of technology. Nintendo replaces Atari as the leading game console manufacturer, then Sega replaces Nintendo, then Sony replaces Sega, then Microsoft replaces Sony, then Sony returns to displace Microsoft. And so on. One of the biggest puzzles of the modern tech industry is why Schumpeterian competition seems to have disappeared in large swaths of the tech industry. Despite the vaunted speed of technological change, Amazon, Apple, Google, Microsoft, and Netflix are all more than twenty years old. Even the baby of the dominant firms, Facebook, is over fifteen years old.[6] Where is the next Amazon, the next Facebook, the next Google?[7]

Overbooked: Expedia and Priceline Battle the Digital Duopoly, ADAGE (Mar. 19, 2018), https://adage.com/article/cmo-strategy/expedia-priceline-battle-digital-duopoly-airbnb/312769. For an early examination of this tendency, see Larry Dignan, *Technology's Natural State: Duopoly (or Close to It)*, ZDNET (Dec. 3, 2007, 3:35 AM EST), https://www.zdnet.com/article/technologys-natural-state-duopoly-or-close-to-it/ [https://perma.cc/F9PJ-AZUD].

[4] *See, e.g.*, CARL SHAPIRO & HAL R. VARIAN, INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY 173-226 (1999) (introducing concepts of network effects and positive feedback); Joseph Farrell & Paul Klemperer, *Coordination and Lock-In: Competition with Switching Costs and Network Effects*, *in* 3 HANDBOOK OF INDUSTRIAL ORGANIZATION 1967, 1972 (Mark Armstrong & Robert H. Porter eds., 2007) (describing how firms compete "for the market" by introducing products incompatible with competitors' products, extracting value from locked-in users); Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, J. ECON. PERSPS., Spring 1994, at 93, 94-95 (describing systems made valuable because many people use them or because many compatible products exist that add value to them); Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CALIF. L. REV. 479, 488-500 (1998) (discussing network effects in law).

[5] JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY 74 (Routledge Classics 2010) (1943) (underscoring importance of competition "which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives").

[6] *See* Piero Scaruffi, *A Timeline of Silicon Valley*, SCARUFFI, https://www.scaruffi.com/svhistory/silicon.html [https://perma.cc/Z4TS-BXJ3] (last visited Jan. 3, 2021).

[7] Not everyone is convinced that "this time is different," however; earlier monopolies were long-lasting and considered unassailable but ultimately were overtaken, and perhaps today's will be too. *See, e.g.*, RYAN BOURNE, CATO INST. POL'Y ANALYSIS NO. 872, IS THIS TIME DIFFERENT?: SCHUMPETER, THE TECH GIANTS, AND MONOPOLY FATALISM 1 (2019), https://www.cato.org/sites/cato.org/files/2019-09/Is%20This%20Time%20Different%3F.pdf [https://perma.cc/NH9L-LVZJ]. Certainly prior monopolies have lasted longer than

In this Article, we identify an important contributor to the collapse of Schumpeterian competition in the tech industry: the way startups are funded. Startup funding in the tech industry is overwhelmingly done through venture capital.[8] Venture capitalists ("VCs") naturally want to get paid. But the *way* they get paid is unique among funders because it depends on selling the company. From the very outset of a startup's life, VCs (and therefore the startups they fund) are focused on an "exit strategy": a way to turn the VCs' equity into liquid cash.[9] Exit strategies generally come in one of two forms: taking the company

this, but they have done so in industries where the pace of technological change was much slower.

[8] While personal savings, friends and family, and even debt financing do explain a larger portion of total funding for new small businesses (when considered across all types), venture capitalists ("VCs") cut larger checks on average than all other sources on average, combined. *See* Laura Entis, *Where Startup Funding Really Comes From*, ENTREPRENEUR (Nov. 20, 2013), https://www.entrepreneur.com/article/230011 [https://perma.cc/RN2D-M68V] (showing that while personal savings account for over $180 billion in new business funding each year compared to about $20 billion for venture capital, the average check size was $23,000 for personal savings compared to nearly $6 million for venture capital (citing study by Fundable, which itself does not, however, clearly specify data sources)). Further, while venture capital funding amounted to about $20 billion per year in the early 2000s, it now amounts to closer to about $100 billion per year. PWC & CBINSIGHTS, MONEYTREE REPORT: Q3 2019, at 4 (2019), https://www.pwc.com/us/en/moneytree-report/assets/moneytree-report-q3-2019.pdf [https://perma.cc/H88A-ZUX8]; *Value of Venture Capital Investment in the United States from 1995 to 2019*, STATISTA, https://www.statista.com/statistics/277501/venture-capital-amount-invested-in-the-united-states-since-1995/ (last visited Jan. 3, 2021). For studies showing the substantial but declining importance of personal savings to small businesses of all types, see Benjamin Ryan, *Starved of Financing, New Businesses Are in Decline*, GALLUP: BUS. J. (Sept. 4, 2014), https://news.gallup.com/businessjournal/175499/starved-financing-new-businesses-decline.aspx [https://perma.cc/JB47-359V] (citing savings as top source of new small business funding and suggesting that decline in personal savings rate may be driving a decline in new businesses); Press Release, Wells Fargo, Wells Fargo Survey: Small Business Optimism Continues to Slowly Improve (May 13, 2014), https://web.archive.org/web/20201003024841/https://newsroom.wf.com/press-release/community-banking-and-small-business/wells-fargo-survey-small-business-optimism-2 (describing same Gallup poll results more fully, explaining that 77% of new small businesses use personal savings, 41% use debt, and 33% use friends and family).

[9] *See* Steve Blank, *How to Build a Startup that Gets Acquired*, THINKGROWTH.ORG (Aug. 7, 2017), https://thinkgrowth.org/how-to-build-a-startup-that-gets-acquired-85ada592bfd7 [https://perma.cc/WL33-A989] (advising founders that "you need to be planning your exit the day you get funded," because "there's only one reason your company got funded—liquidity" (emphasis omitted)); Benjamin Joffe & Cyril Ebersweiler, *What Every Startup Founder Should Know About Exits*, TECHCRUNCH (July 31, 2018, 12:35 PM EDT), https://techcrunch.com/2018/07/31/what-every-startup-founder-should-know-about-exits/ [https://perma.cc/24GG-L3SM] (advising startup founders that "[f]ounders must be aware of

public by selling shares in an initial public offering ("IPO") or selling the company itself in an acquisition.[10] Having just two exit options—"[g]o public or get bought"[11]—is limiting enough. But in recent years, even IPOs have grown more and more scarce. They now account for fewer than one in ten exits for startups.[12] And when they do happen, they happen later in a company's life than they used to.[13] In short, high-tech startups seem increasingly to sell out in order to succeed.[14]

what contributes to an exit" and that the search for an exit begins "on day one," with founders encouraged to "work out who will be [their] buyer"). Steve Blank is a Silicon Valley godfather and an instructor of generations of entrepreneurs at Stanford University and U.C. Berkeley. *See About Steve*, STEVE BLANK, https://steveblank.com/about/ [https://perma.cc/578G-42V5] (last visited Jan. 3, 2021).

[10] A note on terminology: both founders and funders want to turn their cash into money. Strictly speaking, an IPO is an "exit" for the funders but not for the founders, who continue to run the company, while an acquisition will sometimes (though not always) mean that founders leave too. Both funder and founder incentives are important. Because our focus is on the role of VCs, we refer to both events as "exits." But the relationship between the two is important. Many founders too would like to cash out, and their heavy investment in stock options means that sale is often the easiest way for them to get paid too. But some rogue founders may insist on staying in business even when VCs want them to sell. Mark Zuckerberg is an example. *See infra* note 97.

[11] Luke Kanies, *If You Take Venture Capital, You're Forcing Your Company to Exit*, MEDIUM (Nov. 9, 2017), https://medium.com/s/understanding-venture-capital/if-you-take-venture-capital-youre-forcing-your-company-to-exit-fc08fcdb32cc.

[12] In the five years from 2014 to 2018, an average of 9% of VC-backed firms exited via IPO. For the numerator used in our calculation, see JAY R. RITTER, INITIAL PUBLIC OFFERINGS: UPDATED STATISTICS 11-12 tbl.4 (2020), https://site.warrington.ufl.edu/ritter/files/IPOs2019Statistics.pdf [https://perma.cc/E936-X4ZK] (reporting annual VC-backed IPOs). For the denominator, see Dana Olsen, *The State of US Venture Capital in 15 Charts*, PITCHBOOK (Oct. 29, 2018), https://pitchbook.com/news/articles/the-state-of-us-venture-capital-activity-in-15-charts (reporting annual VC-backed exits). For another cut of similar numbers, see PWC & CBINSIGHTS, *supra* note 8, at 20-21 (showing 87 IPOs and 699 Merger & Acquisition ("M&A") exits in 2018, meaning 12% of VC-backed exits occurred via IPO—though this fails to include in the denominator the portion of companies that fail to exit or that exit via secondary sales).

[13] *See, e.g.*, PWC & CBINSIGHTS, *supra* note 8, at 22 (comparing average time to exit via M&A (6.6 years) and IPO (7.5 years)).

[14] For more evidence and analysis, see *infra* notes 62-64 and accompanying text. And successful exits themselves aren't common. Only 30% of seed-funded companies exit, and most companies fail far earlier by being unable to raise outside funding. *See* David S. Rose, *How Many Start-Ups in the US Get Seed/VC Funding per Year?*, GUST: BLOG (Nov. 22, 2012), http://blog.gust.com/how-many-start-ups-in-the-us-get-seedvc-funding-per-year/ [https://perma.cc/J54W-3QKK] (suggesting, apparently from his experience in the startup investment industry, that VCs fund only 1 in 400 companies they examine); *Venture Capital*

Who buys startups? The answer, increasingly, is dominant incumbent players.[15] They may do that because they value the technology or because they have lots and lots of money.[16] But they may also do so to eliminate a potential competitor or adjacent challenger who might leapfrog them in Schumpeterian competition. Even if others are interested in buying the company, the incumbent monopolist may value that company more than anyone else does.[17] As one observer noted, "Companies like Cisco, Intel and Microsoft recognize the threat posed by nimble young firms getting technologies to market at unimaginable speeds . . . [a]nd they're willing to pay extremely high premiums to protect their franchises."[18] It's not surprising, then, that the exit strategy for most startups is acquisition and that the most likely acquirer is the very incumbent the startup's technology might otherwise challenge. Given this, it also shouldn't be a surprise that many of those technologies are quietly shut down a few years after acquisition.[19] The problem isn't limited to the incumbent's immediate market but extends to adjacent markets. And this may help explain why our finding that startups pursue (or are forced into) incumbent acquisition isn't necessarily at odds with others finding that fewer startups are funded in an incumbent's immediate market than further afield.[20] That's what we'd expect, too. Within the

Funnel Shows Odds of Becoming a Unicorn Are About 1%, CBINSIGHTS: RES. BRIEF (Sept. 6, 2018), https://www.cbinsights.com/research/venture-capital-funnel-2/ [https://perma.cc/KHP7-YGCT].

[15] *See infra* notes 68-69 and accompanying text.

[16] As of its fiscal year ending September 28, 2019, Apple had on hand over $205 billion in cash and equivalents, representing a full two-thirds of the assets on its balance sheet. Apple Inc., Annual Report (Form 10-K) 17 (Oct. 30, 2019).

[17] *See, e.g.*, Armin Schwienbacher, *Innovation and Venture Capital Exits*, 118 ECON. J. 1888, 1890 (2008) ("[T]he incumbent has an incentive to make an offer that is higher than what the company would get through a public offering.").

[18] Pehr-Johan Norbäck, Lars Persson & Roger Svensson, *Creative Destruction and Productive Preemption* 2 n.2 (CESifo, Working Paper No. 4075, 2013) [hereinafter Norbäck, Persson & Svensson, *Creative Destruction*] (on file with the Boston University Law Review) (quoting Nicholas Valery, *Innovation in Industry: Easy Way Out*, ECONOMIST, Feb. 20, 1999, at S22). Indeed, Cisco, Facebook, and Google each made nine acquisitions of $500 million or more between 2006 and 2018; Microsoft made four; and Apple and Oracle made three each (among others). SUSAN WOODWARD, SAND HILL ECONOMETRICS, SOME NUMBERS ON VENTURE CAPITAL INVESTING AND OUTCOMES 6-7 (2020) (PowerPoint) (on file with Boston University Law Review).

[19] *See infra* notes 277-82 and accompanying text.

[20] *See, e.g.*, Colleen Cunningham, Florian Ederer & Song Ma, *Killer Acquisitions*, J. POL. ECON. (forthcoming 2021) (manuscript at 52), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3241707 [https://perma.cc/9NW7-E5WH]; Sai Krishna Kamepalli, Raghuram Rajan & Luigi Zingales, *Kill Zone* 2 (Univ. Chi. Becker Friedman Inst. Econ., Working Paper No. 2020-19, 2020) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3555915

incumbent's market, a dominant firm may pay to guarantee the failure of a direct competitor, perhaps paying more than any purchaser, and so perhaps may counterintuitively prop up what remaining investment exists in the kill zone. Beyond the incumbent's immediate market, the firm may pay even more to acquire *adjacent* startups. An adjacent challenger whose forte is different from the dominant firm's may nonetheless offer goods or services that could render the incumbent's obsolete. That's the essence of Schumpeterian competition. To take another example: just as smartphone-based maps overtook paper ones, autonomous vehicles may soon overtake some smartphone-based mapping, and immersive virtual experiences may furthermore displace much need for traveling whatsoever. A savvy incumbent can spot these existential threats, but the easiest way to defeat them may be by acquiring the startup. Indeed we see incumbent acquisitions following those patterns in real life.[21] Those aren't the kinds of orthogonal acquisitions that the "kill zones" literature—let alone antitrust doctrine broadly—addresses closely.[22] And yet these are among the acquisitions that do occur and should concern us most.

The result is that a culture of vibrant startups that should drive Schumpeterian competition by leapfrogging less nimble incumbents has been co-opted by the structure of the VC market. Everyone here may be well intentioned. VCs want to support new companies and see them succeed—and, of course, get paid. Startup founders may see acquisition as a path to a larger market—and, of course, as a way to get paid.[23] Incumbent acquirers may (or may not) want the technology in good faith to add to their products, even if it doesn't work out in

[https://perma.cc/Z4FP-SDE7] (asking and seeking to explain why "the prospect of an acquisition [would] not be an extra incentive for entrepreneurs to enter the space, in the hope of being acquired at hefty multiples").

[21] Seeing that a substantial share of search inquiries led to places, people, and events in the real world, for instance, Google acquired mapping companies and began developing Google Maps, and it now is acquiring and developing autonomous vehicle capabilities. As Waze CEO Noam Barden articulated before Google acquired the company for $1.1 billion, "What search is for the web, maps are for mobile." Ingrid Lunden, *Google Bought Waze for $1.1B, Giving a Social Data Boost to Its Mapping Business*, TECHCRUNCH (June 11, 2013, 11:37 AM EDT), https://techcrunch.com/2013/06/11/its-official-google-buys-waze-giving-a-social-data-boost-to-its-location-and-mapping-business/ [https://perma.cc/MX6G-2P8Q]; *accord, e.g.*, Alexis C. Madrigal, *How Google Builds Its Maps—and What It Means for the Future of Everything*, ATLANTIC (Sept. 6, 2012), https://www.theatlantic.com/technology/archive/2012/09/how-google-builds-its-maps-and-what-it-means-for-the-future-of-everything/261913/ ("It's probably better not to think of Google Maps as a thing like a paper map. Geographic information systems represent a jump from paper maps like the abacus to the computer.").

[22] *See infra* notes 277-82 and accompanying text.

[23] And with so much of their wealth tied up in one place, they may really want to get paid and diversify. *See, e.g.*, Matthew Wansley, *Beach Money Exits*, 45 J. CORP. L. 151, 153 (2019).

the end.[24] They'd certainly rather have it themselves than let a competitor have it. And they have money to burn. But one party is left out of this equation: the consumer. Incumbents pay—can afford to pay—even for technologies they don't use because eliminating potential challengers keeps their profits high. But doing so also eliminates much of the promise of startup innovation for the economy. And we think it helps explain the persistent and much-lamented dominance of modern tech companies. They are quite literally swallowing up their competition.[25] Having identified this problem, we offer some suggestions for how to fix it. First, and foremost, why should a new company have an exit strategy at all? It has become so ingrained in Silicon Valley that we take it for granted, but starting a company while focused on how you will shut that company down seems deeply misguided. The point of starting a company that sells products should be, well, to sell products. An IPO gives a company funding and enables it to sell more products. But even if it can't go public, the default for a successful company should not be to sell the company off but to continue succeeding by selling more products.[26]

True, VCs need to get paid. And because they are high-risk investors, they reasonably want a high reward. Just taking dividends from the ordinary profits that a successful company makes is not enough to motivate VCs today. As one frustrated founder put it, VCs "deride private businesses that generate cash [not] because they're bad businesses, [but] because [VCs are] structurally incapable of profiting off of them."[27]

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[24] Or they may not. As just discussed, there is evidence of deliberate "killer acquisitions"—purchases made just to kill the product. *See* Cunningham, Ederer & Ma, *supra* note 20. There is also evidence that companies acquire startups just to get the employees rather than the technology. *See, e.g.*, Neha Bhargava & Vishwanath Venugopalan, Acqui-Hires: Revolutionizing Strategy & Transforming Organizational Structures 3 (Jan. 31, 2013) (unpublished manuscript), https://mackinstitute.wharton.upenn.edu/wp-content/uploads/2013/01/Bhargava-Neha-Venugopalan-Vishwanath_Final-Paper_MKTG-890-2012.pdf [https://perma.cc/U6TG-JQVE]. *But cf.* Amy C. Madl, *Killing Innovation?: Antitrust Implications of Killer Acquisitions*, 38 YALE J. ON REGUL. BULL. 28, 32 (2020) (noting difficulty of predicting which firms might be future threats in order to acquire them and shut them down).

[25] Sometimes incumbents drive competitors out of the market rather than acquiring them. *See, e.g.*, Daisuke Wakabayashi, *Prime Leverage: A Retail Giant's Hold on Tech*, N.Y. TIMES, Dec. 16, 2019, at A1 (surveying the ways some startups argue that Amazon has "strip-min[ed]" their innovations without paying for them). That's not the focus of this Article.

[26] Failing companies present a different case. Acquiring a company that would otherwise shut down is generally better than the alternative, though even then society has some interest in who does the acquiring. *See infra* note 420 and accompanying text.

[27] Kanies, *supra* note 11.

That needs to change. In this Article, we suggest a combination of carrots and sticks designed to reduce the incentive to sell successful startups to incumbents. First, we would make it easier to take a company public. Second, we think the market needs to encourage ways to buy out VCs and compensate employees without selling the company. Artificial liquidity events may enable successful companies to continue operating while making sure VCs and early employees get paid. Private equity financing could play this role to a greater extent than it does today, newly encouraged by legal changes. We might also change the tax treatment of transactions to favor those that keep the firm a going concern over those that shut it down. And venture debt could, from the outset, obviate the need for a cash-out exit altogether.

While these carrots may encourage some companies to stay in business, VCs are (ironically) conservative[28] and may not want to give up their dominant exit strategy. So we would couple incentives to keep startups operating with new restrictions on sales. While an outright ban on mergers would threaten the VC industry and therefore startups, a targeted ban on acquisitions of thriving companies by dominant firms in the same or adjacent markets might be welfare enhancing. Alternatively, those mergers should at least be subject to extra scrutiny by the antitrust authorities, who should presumptively block them if an alternative acquirer is available or if an alternative deal would keep the company afloat.[29] And changing the tax treatment of acquisitions versus IPOs may also encourage companies to stay in business rather than sell out.

Moving the startup world beyond the focus on exit strategy isn't a cure-all. It won't undo the effects of decades of concentration driven by incumbents acquiring potential competitors. But it can help restore competition to an industry that needs it and help implement innovations that too often languish in the hands of incumbents who lack much incentive to deploy them.

In Part I, we describe what's happening: incumbent acquisition has become the dominant exit strategy for VC-backed firms. In Part II, we explain why. The VC model positions startup founders to recognize powerful incumbents and to profit not by competing with but by preserving and sharing in that dominance. Sometimes scale economies, network effects, and first-mover advantages make incumbent acquisition the best result for the startup and the incumbent. In those cases, the ability of VCs to drive these deals creates value for deal participants (although, we argue, not always for society). But at other times VCs' timelines

[28] For critiques of VCs as conservative, see, for example, Kanies, *supra* note 11; Diane Mulcahy, *Venture Capitalists Get Paid Well to Lose Money*, HARV. BUS. REV. (Aug. 5, 2014) [hereinafter Mulcahy, *Venture Capitalists Get Paid*], https://hbr.org/2014/08/venture-capitalists-get-paid-well-to-lose-money.

[29] There may be special circumstances in which the synergy between the startup and the incumbent is so great that no alternative deal, including continued operation, would benefit society as much as an acquisition would. But those efficiencies must be proven, not just asserted.

and other considerations unique to their investing model may drive a founder to exit by acquisition when she (and the world) might prefer to go public or to operate as a profitable private company. In Part III, we ask what is to be done. We consider the costs to society of doing nothing. And we propose carrots and sticks to nudge tech startups away from acquisitions by incumbents and perhaps away from exit strategies altogether.

I. WHAT'S HAPPENING: STARTUPS SELL TO INCUMBENTS

The concentrated power of technology platforms like Amazon, Facebook, and Google has raised alarm in many quarters around the world. Scholars and policy makers across the political spectrum have pointed to market dominance as a problem in the tech industry and have proposed various solutions.[30] Presidential candidates have proposed breaking up the tech giants.[31] Conservative politicians have proposed regulating them as natural monopolies were once regulated.[32] European regulators have seemed to want to fine the companies into submission.[33] All are reacting to the large, entrenched market share of a few tech companies: Amazon, Facebook, and Google, and sometimes also Apple, Netflix, and Uber.[34]

Why is there such entrenched concentration in industries notorious for fast-moving, free-wheeling competition, where the canonical disruptive technology

[30] For a survey of popular and scholarly opinions, see *supra* note 2.

[31] *E.g.*, Warren, *supra* note 2.

[32] Republican Senator Josh Hawley, for example, has proposed that regulators oversee content moderation and even specify acceptable user-experience design so that consumers do not become addicted to social media. *See* Ending Support for Internet Censorship Act, S. 1914, 116th Cong. (2019) (content moderation); Social Media Addiction Reduction Technology Act, S. 2314, 116th Cong. (2019) (antiaddiction measures). For more on Senator Hawley and his positions, see Gilad Edelman, *Saint Josh and the Dragon*, WASH. POST MAG., Sept. 1, 2019, at 18.

[33] *See, e.g.*, Schulze, *supra* note 1 (reviewing repeated actions by the European Commission against Amazon, Apple, Facebook, and Google).

[34] Some might argue that the public, policy makers and regulators, and academics are overly focused on consumer-facing brands, and so they overstate the severity of market consolidation and, with regards to this Article's central argument, the limitations of the current VC ecosystem. While we focus our narrative on high-tech businesses (and, to a lesser extent, biotech), we believe that the structural incentives we identify as underlying the VC ecosystem apply across sectors. And, indeed, those who have examined other sectors more closely have found increasing levels of concentration even in areas not facing consumers. *See, e.g.*, David Leonhardt, Opinion, *The Monopolization of America*, N.Y. TIMES, Nov. 26, 2018, at A23 (summarizing research by the Open Market Institute showing increases to concentration across sectors).

can be put together by two people in a garage?[35] One answer is structural: tech platforms experience strong network effects.[36] If you join a social media network, you want it to be one all your friends are on. If you sign up for a ride-sharing or video service, you want it to have lots of cars or movies available. Network effects drive industries toward larger companies.[37]

But that can't be the whole explanation. Network effects do lead to concentration, but they can also lead to Schumpeterian competition: innovations that disrupt one leader and replace it with another.[38] To take just one past example, the console video game industry has had a whole series of dominant firms.[39] Customers would flock to one platform, but it would dominate only until a better platform came along and became the new incumbent for a while.[40] Atari built the market but then fell to Nintendo, which gave way to Sega, which lost to Sony, which ceded ground to Microsoft, which then fell to Sony again.[41] Network effects benefit incumbents, but they also make those incumbents a

[35] For a history of Silicon Valley's trope of two inventors in a garage, see Pino G. Audia & Christopher I. Rider, *A Garage and an Idea: What More Does an Entrepreneur Need?*, CAL. MGMT. REV., Fall 2005, at 6, 6; Justin Fox, *What Still Makes Silicon Valley So Special*, HARV. BUS. REV. (Dec. 5, 2014), https://hbr.org/2014/12/what-still-makes-silicon-valley-so-special (discussing the innovative speed that some argue persists to this day in Silicon Valley). For a literary deconstruction of the trope of two guys in a garage, see Glen Fuller, *In the Garage: Assemblage, Opportunity and Techno-Aesthetics*, 20 ANGELAKI, Mar. 2015, at 125, 125.

[36] *See* SHAPIRO & VARIAN, *supra* note 4, at 173-226; Lemley & McGowan, *supra* note 4, at 488-500 (introducing network effects).

[37] *See* Lemley & McGowan, *supra* note 4, at 495 (surveying network effects theory and its import on industries).

[38] *See* SCHUMPETER, *supra* note 5, at 72-73 (underscoring that "[t]he fundamental impulse that sets and keeps the capitalist engine in motion comes" not from competition for selling the same thing but "from the new consumers' goods, the new methods of production or transportation, the new markets, the new forms of industrial organization that capitalist enterprise creates").

[39] *See, e.g.*, *Console Portraits: A 40-Year Pictorial History of Gaming*, WIRED (June 15, 2007, 12:00 PM), https://www.wired.com/2007/06/gallery-game-history/; Guillermo Romero, *The Great Console Wars: A Brief History of Consoles and How Competition Birthed the Consoles We Know Today.*, MEDIUM (Feb. 2, 2019), https://medium.com/@gmromero/the-great-console-wars-a-brief-history-of-consoles-and-how-competition-birthed-the-consoles-we-f03d89c8e8fb [https://perma.cc/TPH2-J4W7]; *Video Game History*, HISTORY, https://www.history.com/topics/inventions/history-of-video-games [https://perma.cc/S7QS-2ADB] (last updated June 10, 2019).

[40] *See* Romero, *supra* note 39.

[41] *See Video Game History*, *supra* note 39.

tempting target for startups that want to become the new incumbents.[42] So why aren't new startups displacing today's tech incumbents?

The answer isn't that there aren't enough new startups. To the contrary, VCs are funding more firms than ever.[43] Rather, the answer lies in what happens to those startups. The share of U.S. startups that sell to incumbents rather than compete as public companies or private concerns has shot up in the last twenty years.[44] As we explain below, the incentives facing VCs explain these trends as other factors can't.[45] Those incentives drive VCs to push their startups to sell to incumbents. This in turn contributes to the market concentration that makes exiting this way ever-more likely.

[42] Network effects can also be unlocked through interoperable standards that allow providers to compete but consumers to connect. Sometimes a disruptive rival introduces such standards in order to enter and reshuffle the market, as when MCI sought to interconnect with AT&T to compete in telephony. *See, e.g.*, David A. Balto, Former Assistant Dir. of Pol'y & Evaluation, Fed. Trade Comm'n, Cutting Edge Antitrust Law Seminars International (Feb. 17, 2000), https://www.ftc.gov/public-statements/2000/02/standard-setting-network-economy [https://perma.cc/SCJ3-L39K].

[43] *See* Jason D. Rowley, *There Are More VC Funds than Ever, but Capital Concentrates at the Top*, CRUNCHBASE NEWS (Mar. 7, 2019), https://news.crunchbase.com/news/there-are-more-vc-funds-than-ever-but-capital-concentrates-at-the-top/ [https://perma.cc/S4F7-3PPM]; Martin Zwilling, *A New Era for Entrepreneurs and Startups Has Begun*, FORBES (Dec. 25, 2013, 2:36 PM EST), https://www.forbes.com/sites/martinzwilling/2013/12/25/a-new-era-for-entrepreneurs-and-startups-has-begun/#31091e64bd18 [https://perma.cc/UVL2-C6VW]; *see also* Jared Lindzon, *Startups Are Surviving Longer than Ever*, FASTCOMPANY (Nov. 17, 2016), https://www.fastcompany.com/3065712/startups-are-surviving-longer-than-ever [https://perma.cc/FYW7-2KQ2] (summarizing Kauffman Foundation report finding that, as of 2016, new businesses of all types are enduring longer than at any point since the recession and that minority and immigrant entrepreneurship is at its historical peak). *But cf.* Leigh Buchanan, *The Vanishing*, INC., May 2015, at 54, 56, 62-64 (recounting government census numbers showing entrepreneurship declining but also pointing out that the rate of both "nascent" entrepreneurs—i.e., those who remain employed elsewhere but are starting side businesses—and soloists has increased); Justin Gage, *Do We Really Live in a Golden Era of Startups?*, CRUNCHBASE NEWS (Aug. 23, 2017), https://news.crunchbase.com/news/really-live-golden-era-startups/ [https://perma.cc/4DE5-ZGP8].

[44] *See, e.g.*, Ann-Kristin Achleitner, Reiner Braun, Eva Lutz & Uwe Reiner, *Industry Relatedness in Trade Sales and Venture Capital Investment Returns*, 43 SMALL BUS. ECON. 621, 621-22 (2014) (citing sources from 2011 and 2012 demonstrating that IPOs are on the decline); Xiaohui Gao, Jay R. Ritter & Zhongyan Zhu, *Where Have All the IPOs Gone?*, 48 J. FIN. & QUANTITATIVE ANALYSIS 1663, 1663-64 (2013) [hereinafter Gao, Ritter & Zhu, *All the IPOs*].

[45] *See infra* Part II.

VC funding serves valuable purposes.[46] New ideas can be worth gold. But try telling that to a bank or to the public markets. They are conservative institutions—happy to give money, but only to safe bets.[47] Most companies started by garage inventors, college dropouts, or moonlighting professors fail, however, and leave little to sell off to compensate funders.[48] So banks won't lend to them except at implausibly high interest rates.[49] And public equity markets often won't list them, as they may not meet requirements meant to protect retail investors.[50] Venture capital fills the gap. Limited partners ("LPs") give funds to general partners ("GPs"), who invest the money in young companies.[51] They regularly evaluate and fund opportunities others won't touch: not just ideas that incumbents would gladly fund through so-called "corporate venture capital" ("CVC")[52] but also ideas that incumbents would be terrified to see realized.[53] In exchange for part of the company, and unlike banks, they give money that never needs to be repaid.[54]

[46] For a brief overview of the importance of VC funding to research and development and economic growth, see Ilya A. Strebulaev & Will Gornall, *How Much Does Venture Capital Drive the U.S. Economy?*, STAN. BUS.: INSIGHTS (Oct. 21, 2015), https://www.gsb.stanford.edu/insights/how-much-does-venture-capital-drive-us-economy [https://perma.cc/AZ4E-3PUP].

[47] Bob Zider, *How Venture Capital Works*, HARV. BUS. REV., Nov.-Dec. 1998, at 131, 132.

[48] *Id.*

[49] Bob Zider also makes the case that usury laws limit interest rates below those necessary for lenders to operate in this space. *Id.*

[50] *See id.*

[51] WILLIAM A. SAHLMAN, HARV. BUS. SCH., CASE NO. 9-811-036, RISK AND REWARD IN VENTURE CAPITAL 1 (2010) (summarizing venture capital industry); *see also* Zider, *supra* note 47, at 133.

[52] For overviews of CVC and its various objectives, some of which may be anticompetitive, see Will Drover, Lowell Busenitz, Sharon Matusik, David Townsend, Aaron Anglin & Gary Dushnitsky, *A Review and Road Map of Entrepreneurial Equity Financing Research: Venture Capital, Corporate Venture Capital, Angel Investment, Crowdfunding, and Accelerators*, 43 J. MGMT. 1820, 1833-37 (2017); Gary Dushnitsky, *Corporate Venture Capital in the Twenty-First Century: An Integral Part of Firms' Innovation Toolkit*, *in* THE OXFORD HANDBOOK OF VENTURE CAPITAL 156, 157 (Douglas Cumming ed., 2012).

[53] And even CVC, which composes about 15% of VC funding, often funds startups in order to co-opt them: CVC in part or even "mainly" is "undertake[n] . . . as a response to Schumpeterian competition," with strategic goals dominating financial ones, and with cultivating companies for acquisition one leading strategic goal. *See* Dushnitsky, *supra* note 52, at 164.

[54] For more on how the venture capital business works, see Mulcahy, *Venture Capitalists Get Paid*, *supra* note 28, at 2-3; Zider, *supra* note 47, at 133.

People who put time or money into companies—funders or founders—eventually want to reap their rewards.[55] As a company matures to the point where it can be more conventionally evaluated, the GPs aim to sell it to others for a gain, return principal and profits to their LPs, and pocket management fees and their share of the increased value.[56] There are two main ways they can cash out their equity: by selling it to the public through an IPO or by selling it to another firm.[57] In theory there are other choices: the VC could sell her interests in the venture capital fund itself ("secondaries"), sell her shares in the company to other financiers ("secondary sales"), prompt the company to sell off assets to others ("liquidation"), take dividends or a share of the profits of a going concern, or write off the investment.[58] But these options face practical concerns and are often considered signs of failure. VC partnership agreements usually block exits from the fund itself.[59] And secondary buyers see a VC's desire to sell fund interests or company shares as a distress sign and devalue the company accordingly.[60] And tech startups usually lack tangible assets to sell, even in a

[55] *See* Zider, *supra* note 47, at 132 ("Venture money is not long-term money.").

[56] As Bob Zider describes,

> The idea is to invest in a company's balance sheet and infrastructure until it reaches a sufficient size and credibility so that it can be sold to a corporation or so that the institutional public-equity markets can step in and provide liquidity. In essence, the venture capitalist buys a stake in an entrepreneur's idea, nurtures it for a short period of time, and then exits with the help of an investment banker.

Id.

[57] Mark Liu, Mahka Moeen & Debarshi Nandy, *M&As & IPOs*, EWING MARION KAUFFMAN FOUND.: STATE OF THE FIELD (Sept. 22, 2016), https://web.archive.org/web/20180109003208/http://www.kauffman.org/microsites/state-of-the-field/topics/firm-and-industry-dynamics/ma-and-ipos (introducing these dominant exit types and the VC-financing model generally).

[58] Douglas Cumming & Sofia Atiqah binti Johan, *Preplanned Exit Strategies in Venture Capital*, 52 EUR. ECON. REV. 1209, 1213 (2008).

[59] This is meant to avoid securities regulation and overhead. For an overview of these "secondaries" (or secondary interests) and "secondary funds" that purchase them, see Vincent T. Cannon, Secondary Markets in Private Equity and the Future of U.S. Capital Markets 25-32 (2007) (unpublished manuscript), http://www.law.harvard.edu/programs/corp_gov/papers/Brudney2007_Cannon.pdf [https://perma.cc/2PKD-F8FW].

[60] Secondary buyouts fail 40% more frequently than primary buyouts and are viewed negatively by most parties involved. *See, e.g.*, Cannon, *supra* note 59, at 20-21. One might also expect the secondary market to suffer the challenges of a market for lemons. *Cf. id.* at 21. *See generally* George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488 (1970).

fire sale. In short, exit by IPO has traditionally been thought of as the gold standard for a successful VC investment.[61]

That "gold standard" is now achieved less frequently than in years past. In the late 1990s, about 200 VC-backed companies went public per year on average; in recent years, only about 75 have done so—a more than 60% decrease.[62] This decline is especially striking given that the number of VC-backed firms exiting has *increased* during this period, from about 380 per year to about 530.[63] Putting these two trends together, while one in two exits was by IPO as recently as the 1990s, only about one in ten is today.[64]

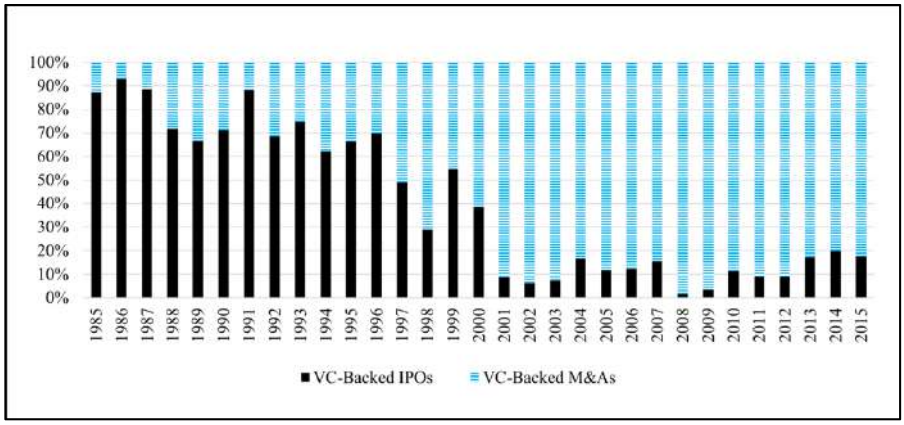
[61] *See, e.g.*, Dirk De Clercq, Vance H. Fried, Oskari Lehtonen & Harry J. Sapienza, *An Entrepreneur's Guide to the Venture Capital Galaxy*, ACAD. MGMT. PERSPS., Aug. 2006, at 90, 102 (calling IPOs "the preferred exit route" for many VCs); Pierre Giot & Armin Schwienbacher, *IPOs, Trade Sales and Liquidations: Modelling Venture Capital Exits Using Survival Analysis*, 31 J. BANKING & FIN. 679, 700 (2007) (same). As we will see, acquisitions by incumbents may result in higher exit valuations. *See infra* note 103 and accompanying text (discussing why VCs may actually prefer trade sales—especially now).

[62] These averages cover 1995 to 2000 and 2010 to 2015. *See* NAT'L VENTURE CAP. ASS'N, YEARBOOK 2014, at 14 fig.9.0 (2014) [hereinafter 2014 YEARBOOK] (tallying VC-backed IPOs from 1985 to 2013); NAT'L VENTURE CAP. ASS'N, YEARBOOK 2016, at 64 fig.4.03 (2016) [hereinafter 2016 YEARBOOK] (same from 1995 to 2015).

[63] This number is the sum of the average annual exits of VC-backed firms by IPO and by M&A for 1995 to 2000 and for 2010 to 2015. *See* 2016 YEARBOOK, *supra* note 62, at 64 fig.4.03, 68 fig.4.07 (tallying VC-backed IPOs and M&As from 1995 to 2015). The number of firms overall has also increased. *See* Craig Doidge, G. Andrew Karolyi & René M. Stulz, *The U.S. Listing Gap*, 123 J. FIN. ECON. 464, 465 (2017).

[64] Specifically, from a calculated 50% to a calculated 14% per year, using the average IPOs and acquisitions for 1995 to 2000 and 2010 to 2015. *See* 2016 YEARBOOK, *supra* note 62, at 64 fig.4.03, 68 fig.4.07; *infra* Figure 1; *see also* Gao, Ritter & Zhu, *All the IPOs*, *supra* note 44, at 1672 (making similar analysis and graph); *Where Have All the Public Companies Gone?*, BLOOMBERG (Apr. 9, 2018, 7:00 AM EDT), https://www.bloomberg.com/opinion/articles/2018-04-09/where-have-all-the-u-s-public-companies-gone (same). While some of this drop coincides with the dot-com collapse, it was ongoing even during the boom, and in any event the IPO market has not recovered.

Figure 1. VC-Backed Exits: % IPOs v. % M&As.[65]



Acquisitions have filled the gap.[66] The number of VC-backed firms acquired has jumped from 190 per year in the 1990s to 450 per year recently—a nearly 140% increase.[67] These acquisitions are often by competitors. Over the last ten years, more than 50% of the deal value of each year's top ten acquisitions has been generated by dominant firms acquiring horizontal competitors—an amount so large that it reflects over 40% of all reported VC-backed acquisition value

[65] *See* 2014 YEARBOOK, *supra* note 62, at 14 fig.9.0, 15 fig.10.0; 2016 YEARBOOK, *supra* note 62, at 64 fig.4.03, 68 fig.4.07.

[66] Or, perhaps, created the gap: the increasing demand for acquisitions could have stimulated the increasing supply of startups to be acquired, leading to a smaller numerator of firms exiting other ways and a larger denominator of firms overall. Thanks to Doug Melamed for this point. But it's not just the denominator that is increasing; as we note in text, the actual number of successful IPOs is declining. Others allude to Melamed's concern in this and related contexts. *E.g.*, Kamepalli, Rajan & Zingales, *supra* note 20, at 2 (raising intuition that acquisition potential should spur investment); *cf.* C. Scott Hemphill & Mark A. Lemley, *Earning Exclusivity: Generic Drug Incentives and the Hatch-Waxman Act*, 77 ANTITRUST L.J. 947, 981 (2011) (raising in related arguments about whether incentivizing pharmaceutical patent challenges is a social benefit that would be discouraged by limiting incumbent settlements with generic challengers: "We want to encourage them only to the extent they will benefit the public, by invalidating or limiting the scope of bad patents and allowing earlier competition for the corresponding drugs. A generic that files a challenge only in order to be paid to drop that challenge is not providing such a benefit"). Startups are not ends in themselves.

[67] 2014 YEARBOOK, *supra* note 62, at 15 fig.10.0 (tallying VC-backed M&As from 1985 to 2013); 2016 YEARBOOK, *supra* note 62, at 68 fig.4.07 (same from 1995 to 2015).

across those years.[68] In 2014, for example, eight of the ten largest disclosed acquisitions appear to have been by incumbents of nascent or potential rivals.[69]

[68] To reach this number, we pulled from PitchBook the top ten acquisitions by deal size of VC-backed firms for the years 2009-2018, and from separate news sources and general knowledge adjudged whether the acquirer was dominant in the same market as the rival it acquired. We then compared the value of rival acquisitions to the value of all of the top ten acquisitions for each year and then to all acquisitions for each year. This showed that more than 40% of total deal value was for such acquisitions. Because we did not code the long tail of acquisitions, the true total may be larger still.

[69]

Value	Acquirer	Exiting Firm	Rival
$22 B	Facebook	WhatsApp	Y
$8.3 B	SAP America	Concur Technologies, a leader in travel expense software. *See* Press Release, SAP Concur Team, SAP to Acquire Concur, Expanding the World's Largest Business Network (Sept. 18, 2014), www.concur.com/newsroom/article/sap-to-acquire-concur-expanding-the-worlds-largest-business-network [https://perma.cc/UF3B-DNN3].	Y
$3.2 B	Google (pre-Alphabet)	Nest Labs, a nascent rival to smart home hub. *See* Ron Amadeo, *Nest's Time at Alphabet: A "Virtually Unlimited Budget" with No Results*, ARS TECHNICA (June 5, 2016, 1:30 PM EST), https://arstechnica.com/gadgets/2016/06/nests-time-at-alphabet-a-virtually-unlimited-budget-with-no-results/ [https://perma.cc/S37P-VEZF].	Y
$3.0 B	Facebook	Oculus VR	~
$1.75 B	Johnson & Johnson	Alios BioPharma, a novel antiviral and hepatitis C treatments to "augment [J&J's] existing [hepatitis C] portfolio." Press Release, Johnson & Johnson, Johnson & Johnson Announces Completion of Alios Biopharma Acquisition (Nov. 7, 2014), https://www.jnj.com/media-center/press-releases/johnson-johnson-announces-completion-of-alios-biopharma-acquisition [https://perma.cc/B4HT-RAB2].	Y
$1.73 B	Genentech	Seragon Pharmaceuticals, a maker of breast cancer therapies. *See Genentech Acquires Seragon for Up to $1.725B*, GEN: GENETIC ENG'G & BIOTECHNOLOGY NEWS (July 2, 2014), https://www.genengnews.com/news/genentech-acquires-seragon-for-up-to-1-725b/ [https://perma.cc/X2RD-9NUU].	Y
$1.55 B	VMware	AirWatch	Y
$1.4 B	Mallinckrodt Pharmaceuticals	Cadence Pharmaceuticals	~
$1.1 B	Amazon.com	Twitch Interactive	Y
$1.0 B	Dealertrack Technologies	Dealer.com. *See* Press Release, Dealer.com, Dealertrack Completes Acquisition of Dealer.com (Mar. 3, 2014), https://www.dealer.com/company-news/dealertrack-completes-acquisition-of-dealer-com/ [https://perma.cc/SJ75-SXL5].	Y

These top eight amounted to $40 billion, or 80% of the disclosed value of all VC-backed companies acquired that year.[70]

The year's acquisitions included Facebook's purchase of WhatsApp for roughly $22 billion.[71] They also included, not among the top ten but far below on the list, DraftKings's purchase of rival platforms StarStreet and Draftstreet (for amounts perhaps on the order of $10 million each).[72] As those smaller deals show, any focus on the largest deals understates the scale and significance of the anticompetitive acquisitions being made. Incumbents are in perhaps the best position among investors to identify firms that could threaten them before those firms mature; waiting until those threats grow in size and value to acquire them—as Facebook arguably did with WhatsApp—is likely the exception, not the rule.

We suspect that there are many more troubling incumbent acquisitions of smaller firms, including ones not reported or tracked by the government. Indeed, given that Facebook's acquisition of WhatsApp was not blocked by antitrust authorities, an incumbent who failed to offer to acquire a potential rival would seem foolhardy—particularly for deal values where antitrust authorities do not even require notice of merger.[73] In December 2000, the deal size triggering antitrust merger review under the Hart-Scott-Rodino Act was raised from $15 million to $50 million (provided the firms also meet size-of-the-person criteria), and the Act added a new $200 million threshold to capture other transactions

This information is based on the authors' search of last-known valuations of U.S. VC-backed firms acquired in 2014. *See* PITCHBOOK, http://www.pitchbook.com [https://perma.cc/N55H-KDT4] (last visited Sept. 22, 2019).

[70] For valuation of the seven companies, see PITCHBOOK, *supra* note 69 (search last-known valuations of U.S. VC-backed firms acquired in 2014). For total disclosed exit value, see 2016 YEARBOOK, *supra* note 62, at 68 fig.4.07.

[71] Alexei Oreskovic, *Facebook's WhatsApp Acquisition Now Has Price Tag of $22 Billion*, REUTERS (Oct. 6, 2014, 12:36 PM EST), https://www.reuters.com/article/us-facebook-whatsapp-idUSKCN0HV1Q820141006. This accounted for nearly half of the disclosed deal value that year. *See* 2016 YEARBOOK, *supra* note 62, at 68 fig.4.07 (showing 140 disclosed deals valued at $48 billion and another 332 deals with undisclosed values).

[72] Darren Heitner, *Will DraftKings' Purchase of DraftStreet Be a Bust?*, FORBES (July 15, 2014, 2:24 PM EDT), https://www.forbes.com/sites/darrenheitner/2014/07/15/will-draftkings-purchase-of-draftstreet-be-a-bust/#1cf4dcda7b16; Ryan Lawler, *DraftKings Raises Another $41M and Acquires Daily Fantasy Sports Competitor StarStreet*, TECHCRUNCH (Aug. 25, 2014, 3:01 AM EDT), https://techcrunch.com/2014/08/25/draftkings-41m-starstreet/ [https://perma.cc/B8BD-WN69] (explaining deals); PITCHBOOK, http://www.pitchbook.com [https://perma.cc/N55H-KDT4] (last visited Aug. 25, 2019) (reporting $7 million as the last-known valuation of StarStreet before its acquisition).

[73] *See* Oreskovic, *supra* note 71.

(regardless of firm size). Since then, the evidence suggests that the share of newly exempt deals has grown.[74]

Looking at the pattern of incumbents' acquisitions shows their focus on acquiring nascent rivals and on controlling strategic complements that could otherwise destabilize their core business.[75] Facebook, for instance, has acquired over ninety companies, mainly startups—building and maintaining its userbase partly by acquiring, and then often shuttering, other services.[76] Some acquisitions are of clear rivals, others of unpredictable complements. When Facebook acquired Instagram, for instance, it was a disruptive complement as well as a direct rival.[77] Instagram at that time allowed users to post photos across multiple social networks, from Facebook to Twitter, fostering cross-platform relationships, technologies, and markets that could threaten Facebook's

[74] In other words, the Hart-Scott-Rodino Act requires that proposed acquisitions over $200 million, as well as acquisitions over $50 million where other "size-of-the-person" test conditions are met, not be consummated until sufficient time has passed for antitrust agencies to review the merger (or, if reviewed, to approve the merger). *See* 15 U.S.C. § 18a; FED. TRADE COMM'N, STEPS FOR DETERMINING WHETHER AN HSR FILING IS REQUIRED, https://www.ftc.gov/sites/default/files/attachments/steps-determining-whether-hsr-filing-required/stepstofile.pdf [https://perma.cc/C99R-8ABB] (last visited Jan. 3, 2021); FED. TRADE COMM'N, TO FILE OR NOT TO FILE: WHEN YOU MUST FILE A PREMERGER NOTIFICATION REPORT FORM (2008), https://www.ftc.gov/sites/default/files/attachments/premerger-introductory-guides/guide2.pdf [https://perma.cc/5YWS-URRV]. For a study of the recent policy changes and the market's response, see Thomas G. Wollmann, *Stealth Consolidation: Evidence from an Amendment to the Hart-Scott-Rodino Act*, 1 AER: INSIGHTS 77, 78-80 (2019) (showing that the recently increased threshold for merger review led to an increase in acquisitions below the new $50 million threshold); *see also* Cunningham, Ederer & Ma, *supra* note 20, at 5 (showing that a surge of acquisitions occurred just below the thresholds for required merger review reporting).

[75] Tim Wu & Stuart A. Thompson, Opinion, *The Roots of Big Tech Run Disturbingly Deep*, N.Y. TIMES: PRIVACY PROJ. (June 7, 2019), https://www.nytimes.com/interactive/2019/06/07/opinion/google-facebook-mergers-acquisitions-antitrust.html (noting that "'[b]ig tech' companies like Google and Facebook are, in reality, the products of hundreds of mergers" and documenting those mergers).

[76] Mark Glick & Catherine Ruetschlin, *Big Tech Acquisitions and the Potential Competition Doctrine: The Case of Facebook* 3-10 (Inst. for New Econ. Thinking, Working Paper No. 104, 2019). This began early in the company's history and continues to the present day. *See id.* at 6-7 ("The record of Facebook demonstrates how acquisitions can play a critical role in the rise to dominance and the maintenance of dominance by a Big Tech incumbent."); *id.* at 9 fig.1 (tracking acquisitions and user growth); *id.* at 10 & n.26 (providing examples of shuttering companies).

[77] *Cf. id.* at 28-29 (explaining Instagram's functioning, though emphasizing Instagram's threat as a rival rather than as a complement).

dominance, even if Instagram itself did not.[78] Google, similarly, has spent over 75% of its disclosed $25 billion in acquisitions since 2008 on competitors.[79] It bought Waze for $1 billion before Waze or alternative acquirers like Facebook or Apple could challenge Google's mapping supremacy.[80] And superior mapping is arguably a necessary complement for any firm seeking to compete with Google's core and future business areas, from search-based ads to autonomous ridesharing. Apple has been "getting more aggressive and ambitious" in its acquisitions, buying digital music companies including Beats (for $3 billion) and Shazam (for a reported $400 million) to retrench its digital music position against attacks by streaming services like Spotify.[81]

This speed and scale of acquisitions is unlike that undertaken by past incumbents. Cisco completed its first acquisition only in its ninth year, as its board initially strongly opposed acquisitions.[82] And Microsoft—the network incumbent of a prior generation—acquired only *one* company in its entire first decade of operations (then twenty-seven in the first decade after it began making acquisitions, with a disclosed sum worth less than $1 billion in today's dollars).[83] By contrast, Google acquired *fifty* in its first decade of operations (and eighty-

[78] Thomas Kadri calls this "adversarial interoperability." Thomas E. Kadri, *Digital Gatekeepers*, 99 TEX. L. REV. (forthcoming 2021) (manuscript at 20), https://ssrn.com/abstract=3665040 [https://perma.cc/T5UE-X3X6].

[79] *See* Soojung Yeon, *How to Be Acquired by Google?: Analysis of Target Firms Acquired by Google Inc.*, 22D BIENNIAL CONF. INT'L TELECOMMS. SOC'Y, June 2018, at 1, 8 tbl.1, 15-16 (first showing acquisition amounts in Table 1, and then describing clusters of companies acquired—with clusters 2, 4, and 5 each composed of businesses in competition with core aspects of Google's business).

[80] Pehr-Johan Norbäck, Lars Persson & Joacim Tåg, *Acquisitions, Entry, and Innovation in Oligopolistic Network Industries*, 37 INT'L J. INDUS. ORG. 1, 1 (2014).

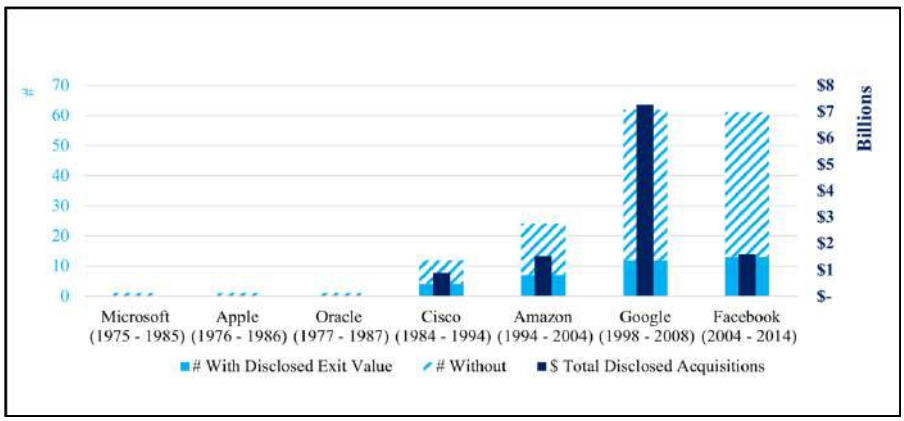
[81] Eric Jhonsa, *Apple Is More Willing than Ever to Cut Large Checks to Suppliers and Startups*, THESTREET (Dec. 14, 2017, 10:00 AM EST), https://www.thestreet.com/story/14420138/1/apple-spending-more-on-suppliers-and-startups.html [https://perma.cc/82HX-W77C]. Notably, Spotify, which has stayed independent, may prove to be the rare example of working Schumpeterian competition in big tech today.

[82] It did so only once threatened by a firm possessing a new generation of technology that Cisco had failed to imagine or develop internally. And Cisco went on to "buil[d] its dominant market position by acquisition." David Mayer & Martin Kenney, *Economic Action Does Not Take Place in a Vacuum: Understanding Cisco's Acquisition and Development Strategy*, 11 INDUS. & INNOVATION 299, 299, 304-05, 317-19 (2004).

[83] *See List of Mergers and Acquisitions by Microsoft*, WIKIPEDIA [hereinafter *Microsoft Mergers*], https://en.wikipedia.org/wiki/List_of_mergers_and_acquisitions_by_Microsoft [https://perma.cc/SP3D-JSRX] (last visited Jan. 3, 2021).

five in its first decade of acquisitions, together worth a disclosed $8 billion);[84] and Facebook forty-eight (sixty in its first decade of acquisitions, worth $25 billion).[85]

Figure 2. Acquisitions During First Decade of Business (# and, For Those with Disclosed Values, Today's $).[86]



But don't count Cisco or Microsoft out of the acquisition business. After going nearly a decade without any acquisition, Cisco acquired a new network-switching technology company that threatened its rise; recognizing the success of this approach, it went on to "buil[d] its dominant market position through acquisition" before the dot-com crash.[87] And in recent years, other legacy companies have played catch-up. Microsoft has spent richly to acquire

[84] *See List of Mergers and Acquisitions by Alphabet*, WIKIPEDIA, https://en.wikipedia.org/wiki/List_of_mergers_and_acquisitions_by_Alphabet [https://perma.cc/J3YT-WTVT] (last visited Jan. 3, 2021).

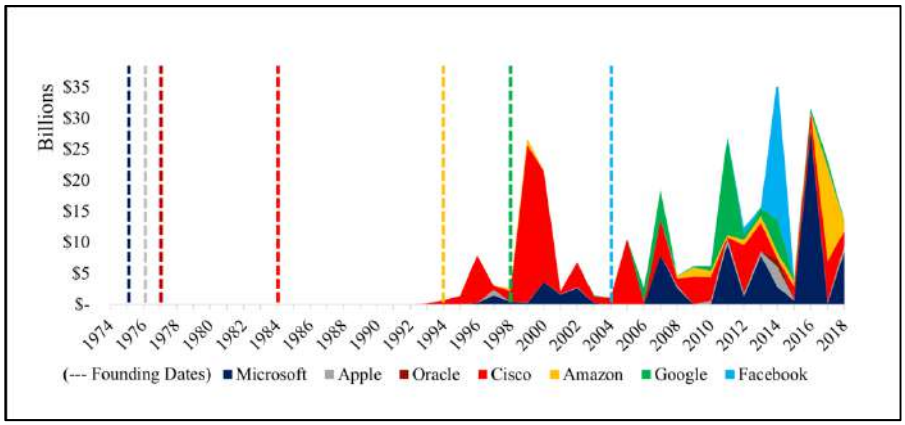
[85] *See List of Mergers and Acquisitions by Facebook*, WIKIPEDIA, https://en.wikipedia.org/wiki/List_of_mergers_and_acquisitions_by_Facebook [https://perma.cc/RG96-HJ8P] (last visited Jan. 3, 2021). This remains true even when all values are converted to today's dollars using U.S. Bureau of Labor Statistics's Consumer Price Index. Analysis is on file with authors.

[86] Compiled from deals disclosed on Wikipedia, for example, *List of Mergers and Acquisitions by Amazon*, WIKIPEDIA, https://en.wikipedia.org/wiki/List_of_mergers_and_acquisitions_by_Amazon [https://perma.cc/F4M3-3CHS] (last visited Jan. 3, 2021), with each year's dollars inflated to today's using U.S. Bureau of Labor Statistics's Consumer Price Index. Analysis is on file with authors.

[87] *See* Mayer & Kenney, *supra* note 82, at 299, 304-05, 317-19.

companies (including LinkedIn and GitHub)[88] and from time to time has regained its place as the world's most valuable company.[89]

Figure 3. Value of Acquisitions (Today's $).[90]



Even those firms that *do* exit through IPOs are increasingly using offerings not to continue to run the business but as a step toward being acquired. A high percentage of VC-backed firms that go public go private by acquisition shortly thereafter. From 1980 to 2010, 69% of firms with VC backing that went public were later acquired, compared to just 22% of non-VC-backed firms.[91] Prominent examples include Powersoft[92] (a database software company) and Juno[93] (a biotech company); both raised venture capital, went public to raise more capital, and then went private in acquisitions (the former by Sybase, the latter by Celgene). Some VCs anticipate this ultimate acquisition; rather than cash out

[88] *See Microsoft Mergers*, *supra* note 83.

[89] *See* JJ Kinahan, *World's Largest Company? It's Microsoft Again, and It Reports Wednesday*, FORBES (Jan. 30, 2019, 9:42 AM EST), https://www.forbes.com/sites/jjkinahan/2019/01/30/worlds-largest-company-its-microsoft-again-and-it-reports-wednesday/#60ec5fb153c5 [https://perma.cc/X6VJ-AR3P].

[90] *See supra* note 86 and accompanying text.

[91] *See* Andrej Gill & Uwe Walz, *Are VC-Backed IPOs Delayed Trade Sales?*, 37 J. CORP. FIN. 356, 356 (2016).

[92] *See id.* at 359-60.

[93] Joanna Glasner, *Home Run Exits Happen Stealthily for Biotech*, TECHCRUNCH (July 28, 2018, 12:00 PM EDT), http://social.techcrunch.com/2018/07/28/home-run-exits-happen-stealthily-for-biotech/ [https://perma.cc/9NX2-TT3A].

upon the IPO, they "IPO-and-hold."[94] This is especially true in some markets. As one VC put it candidly: "I don't think IPOs are ever an exit in biotech. It's always a financing event."[95]

And when companies do go public, it's often only because the founders are mavericks who resist social and market pressure to sell out.[96] Companies like Facebook, Google, and Snap went public arguably not because of the financial incentives they faced but in spite of them. Such companies face acquisition offers well before an IPO ever becomes viable. In the case of Facebook, Yahoo offered in 2006 to acquire the then-money-losing startup (which had only $30 million in revenue) for $1 billion; against the preference of his two other board members, Mark Zuckerberg declined to sell.[97] Through dual-class share structures, the founders of those firms—Facebook, Google, and Snap—maintained majority voting control from founding through their IPOs.[98] Some were criticized for not selling or for going public.[99] This is not uncommon. A recent study found that firms that go public are commonly controlled by founders, and going public in any case rewards founders who care about nonpecuniary factors (control, public prominence, etc.) rather than profit

[94] *Id.*

[95] *Id.* (quoting Bob Nelsen, managing director of ARCH Venture Partners).

[96] For a study of the financial pressures that founders face to sell, see Wansley, *supra* note 23, at 153.

[97] *See* Allison Fass, *Peter Thiel Talks About the Day Mark Zuckerberg Turned Down Yahoo's $1 Billion*, INC. (Mar. 12, 2013), https://www.inc.com/allison-fass/peter-thiel-mark-zuckerberg-luck-day-facebook-turned-down-billion-dollars.html; Fred Vogelstein, *How Mark Zuckerberg Turned Facebook into the Web's Hottest Platform*, WIRED (Sept. 6, 2007, 12:00 PM EST), https://www.wired.com/2007/09/ff-facebook/.

[98] *See Social Classes; Non-Voting Shares*, ECONOMIST, Sept. 30, 2017, at 65; Bob Pisani, *Shareholders Won't Force Zuckerberg's Hand in Facebook Management*, CNBC: TRADER TALK (Mar. 21, 2018, 7:22 AM EDT), https://www.cnbc.com/2018/03/20/shareholders-wont-force-zuckerbergs-hand-in-facebook-management.html [https://perma.cc/625R-VQUP] ("Those in favor of dual class structures—it is typically the founders—say it allows founders/executives to focus on long-term growth, and that any restrictions may discourage founders from taking companies public."); Emily Stewart, *Mark Zuckerberg Is Essentially Untouchable at Facebook*, VOX (Dec. 19, 2018, 11:19 AM EST), https://www.vox.com/technology/2018/11/19/18099011/mark-zuckerberg-facebook-stock-nyt-wsj; Brian Broughman & Jesse M. Fried, *Do Founders Control Start-Up Firms that Go Public?* 14, 19-20 (Eur. Corp. Governance Inst., Working Paper No. 405/2018, 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3171237 [https://perma.cc/8GWU-W3JB] (summarizing structure and use by Facebook, Google, and Snap).

[99] *See* Fass, *supra* note 97 (reporting that Mark Zuckerberg's decision to decline Yahoo's offer was greeted with criticism: "This is what you get when you have a CEO who is only 22 years old").

maximization.[100] Without such founder control and nonfinancial motivations, the go-public rate might be lower still. Founders who lack voting control will be unlikely to steer companies that continue to compete despite rich offers from their competitors.

We're not the first to observe that "the exit of venture-backed firms often takes place through a sale to an incumbent firm."[101] These incumbent acquisitions have consequences: companies like Facebook and Google have remained dominant for decades.[102] They stay on top by buying out the companies that might otherwise displace them, and they do so on a scale never before seen, staving off Schumpeterian competition. In the next Part, we'll explain why this is so.

II. VENTURE FUNDING DRIVES ACQUISITIONS BY INCUMBENTS

As we have seen, VCs want to get paid, and increasingly that means they want startups to be acquired rather than go public and stay in the market. But the problem is not just that VCs push acquisitions because they want to cash out. VCs sometimes profit most by selling the firms they fund to incumbents, even or especially if the firms in which they invest threaten the incumbents' markets.[103] We argue in this Part that the rise of VC funding has driven the rise

[100] Broughman and Fried find that 40% of startups financed from 1990-2012 that went public had founder CEOs, and 7% had founder CEOs who also enjoy substantial voting control of the company—much higher percentages than was true in earlier periods when IPOs were more common (though the rate of founder control has recently dropped again). *See* Broughman & Fried, *supra* note 98, at 2-3, 8, 20. The study unfortunately does not compare this rate to the rate for M&A activity.

[101] Pehr-Johan Norbäck & Lars Persson, *The Organization of the Innovation Industry: Entrepreneurs, Venture Capitalists, and Oligopolists*, 7 J. EUR. ECON. ASS'N 1261, 1262 (2009).

[102] For a list of major acquisitions by dominant platforms and an analysis of the resulting concentration, see Ulrich Dolata, *Apple, Amazon, Google, Facebook, Microsoft: Market Concentration – Competition – Innovation Strategies* 12 tbl.3 (Inst. for Soc. Scis., Dep't of Organizational Socio. & Innovation Stud., Univ. of Stuttgart, SOI Discussion Paper, No. 2017-01, 2017).

[103] True, the return from any given IPO is higher than from any given merger. *See* Susan Chaplinsky & Swasti Gupta-Mukherjee, Exit Returns and Venture Capital Investment Opportunities 10 (Sept. 2010) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1707002 [https://perma.cc/N3QS-N3LD] ("The mean return to VCs from M&A exits is 99.5% . . . compared to 211.7% for IPO exits . . . ."). But there are a number of complications that may change VCs' calculus when setting their exit strategy. Above all, the profitability of a single exit ex post is not the same as the profitability of choosing an exit strategy ex ante for that investment, let alone for a VC's whole fund. If incumbent acquisitions tend to happen more quickly, more predictably, and still for very steep

of sales to incumbents. There are market explanations for this trend, including the increasing rewards to scale that new technology affords.[104] But the venture capital business model intensifies these drivers and adds other incentives to sell to incumbents.[105] It does so both because VCs select firms that are easier to sell to incumbents and because VC funding increases the chance of an incumbent sale.

True, VC-backed startups are also more likely to exit by IPO than are other firms (22% more likely), perhaps because they are also more likely to succeed

prices (paying a market power premium over all other potential owners of the firm and a control premium over potential public shareholders), then pursuing investments that are poised for incumbent acquisition may maximize returns on average, and potentially even in the one case. *See infra* Figure 4; *infra* notes 133-36 and accompanying text (discussing speed); *infra* notes 152-59 (discussing premia). Further, evidence suggests that IPO prices track market bubbles, going above or below the fundamental value of the firms; given that VCs must liquidate their funds within a timeline set by their LPs, for this reason, too, they may find planning for IPOs not the best bet. *See infra* note 168 and accompanying text. Most importantly, preparing for one eventuality need not preclude the other; a VC who positions a company for incumbent acquisition may also prepare for and be happy to see a final IPO (as could have been the case with Snapchat (now Snap, not acquired by Facebook) as with Instagram or WhatsApp (acquired, but which perhaps could have held on and gone public)). The venture capital business is said to be a "home run" business, with one big payout being the only one that counts. But that dazzling characterization may obscure what in fact is a more workmanly sport. Incumbent acquisitions may look like solid triples, or even home runs. From a VC's perspective, a big incumbent acquisition—like Facebook's acquisition of Instagram, or Google's of Waze—is a home run indeed.

Whether VCs are better at choosing firms or better at advising them, and whether what motivates their choice and advice is a desire to position a company for incumbent acquisition or rather to position a company to compete, the exits of VC-backed firms are in any case more highly priced than exits of other firms. *See, e.g.*, Annette B. Poulsen & Mike Stegemoller, *Moving from Private to Public Ownership: Selling Out to Public Firms Versus Initial Public Offerings*, 37 FIN. MGMT. 81, 94 (2008) (stating the exit valuation of VC-backed firms is "consistently higher" than other firms, whether exiting through acquisition or IPO). *But see* George Kanatas & Christodoulos Stefanadis, *Can Venture Capital Be a Curse?*, 10 B.E. J. ECON. ANALYSIS & POL'Y, no. 1, 2010, at 1, 19 (stating that VC-backed firms are acquired at lower prices than non-VC-backed firms and modeling one possible reason why: that VCs can vouch for the management quality but not the technology quality, and technology risk is the most profound risk).

[104] *See infra* Section II.A.

[105] *See infra* Section II.B.

overall.[106] But VC-backed startups are even more unusually likely to cooperate with incumbents (37% more likely).[107]

The acquisitions of startups by incumbents contributes to the market concentration that makes incumbents even more formidable. Finally, we show that some other proposed drivers for the decline in IPOs—including recent regulatory changes—cannot be the prime causes.[108]

A. *Venture Funding Intensifies Trends Toward Acquisitions by Incumbents*

Several factors explain why companies increasingly exit through acquisitions instead of IPOs, including the chance to share in the incumbent's scale economies and monopoly rents. In this Section, we explain each factor that encourages exit by acquisition and how the VC model intensifies its effect. Among funders, VCs may be best able to help incumbents identify and acquire startups that threaten their dominance. And they may be best able to position companies to be acquired or even best able to pick early-stage companies that are already well positioned.[109] While VCs are widely believed to bring about "creative destruction" by making "systematic[ally] pro-competitive" investments,[110] the opposite may be true.

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[106] *See* David H. Hsu, *Venture Capitalists and Cooperative Start-Up Commercialization Strategy*, 52 MGMT. SCI. 204, 213 tbl.3, 214 tbls.5 & 6 (2006) [hereinafter Hsu, *Venture Capitalists*].

[107] The cooperation here is the formation of a research and development ("R&D") alliance. Hsu states that he was unable to obtain sufficient information on acquisitions to evaluate increases in acquisitions by incumbents. *Id.* at 213. Note that the IPO number controls for postfunding R&D alliances, and the R&D alliances number controls for prefunding R&D alliances. *See id.* at 212, 214. *But cf.* Poulsen & Stegemoller, *supra* note 103, at 99 (finding, in 2006, that VC-backed firms were more likely to go public than were other firms but not clarifying whether this meant that they were correspondingly less likely to be acquired); Roberto Ragozzino & Dane P. Blevins, *Venture-Backed Firms: How Does Venture Capital Involvement Affect Their Likelihood of Going Public or Being Acquired?*, 40 ENTREPRENEURSHIP THEORY & PRAC. 991, 1006 (2016) (finding that prominence of VC backing increases IPO likelihood but not acquisition likelihood, though a number of VCs backing increases acquisition likelihood but not IPO likelihood).

[108] *See infra* Section II.C.

[109] *See, e.g.*, Dawn R. DeTienne, Alexander McKelvie & Gaylen N. Chandler, *Making Sense of Entrepreneurial Exit Strategies: A Typology and Test*, 30 J. BUS. VENTURING 255, 256 (2015) ("[E]ntrepreneurial exit strategies are likely to influence future decisions and behaviors, including resource acquisition, funding, growth, and risk-taking propensities."); Darian M. Ibrahim, *The New Exit in Venture Capital*, 65 VAND. L. REV. 1, 12 (2012) ("An ex ante focus on a trade sale exit means that VCs might pass on truly pioneering technologies when no industry leader exists to buy the start-up later.").

[110] *See* Joshua S. Gans, David H. Hsu & Scott Stern, *When Does Start-Up Innovation Spur*

1. The Need for Speed

The rewards to scale are greater than ever and may encourage exits through acquisition instead of public offering.[111] Jay Ritter, a leading scholar of IPOs, says that "[g]oing public and growing organically just takes too long, and it's typically not the profit-maximizing strategy" today.[112] We agree.[113] To succeed in a tech marketplace, companies need to scale, and they need to do it quickly.

Today's web-enabled services, even if simple in concept, demand ever larger user networks and data resources to meet consumer expectations.[114] Social apps

the Gale of Creative Destruction?, 33 RAND J. ECON. 571, 581 (2002) [hereinafter Gans, Hsu & Stern, *Gale of Creative Destruction*]; Joshua S. Gans, David H. Hsu & Scott Stern, *When Does Start-Up Innovation Spur the Gale of Creative Destruction?* 2 (Nat'l Bureau of Econ. Rsch., Working Paper No. 7851, 2000), http://www.nber.org/papers/w7851 [https://perma.cc/VY3Y-QL7L].

[111] *See* Liu, Moeen & Nandy, *supra* note 57 (describing dramatic increase in importance of speed-to-market scale).

[112] Mark Fahey, *Why Buyouts Are Blowing Away IPOs When Investors Want to 'Cash Out,'* CNBC: BIG CRUNCH (Jan. 6, 2017, 10:43 AM EST), https://www.cnbc.com/2017/01/06/ipos-vs-mergers-buyouts-blow-away-ipos-when-investors-cash-out.html [https://perma.cc/6YUR-QCCN]. Ritter also says that "[t]here has been a worldwide trend going on for a couple of decades where for many industries, especially technology, getting big fast is more important than it used to be." *Id.*

[113] Others point out that the increasing importance of scope and scale should be globally felt and yet only U.S. listing rates have noticeably declined; as a result, these scholars argue that there must be another explanation for the decline in IPOs in the United States. *See, e.g.*, Doidge, Karolyi & Stulz, *supra* note 63, at 465, 486 (rejecting Gao's hypothesis that there are fewer listed firms because there are fewer firms as technological changes promote larger firms). *But see* Gao, Ritter & Zhu, *All the IPOs*, *supra* note 44, at 1671, 1677. But these scholars offer no factor better able to explain the decline. It is possible that there is a rational/behavioral reason that U.S. markets would be more affected by these U.S.-based (and U.S.-listed) firms having large scale economies, however. For instance, perhaps Europe's markets haven't fully internalized the advantage of the tech incumbents. But our explanation for the U.S. decline can also (or perhaps better) explain why the global decline has not been felt: VC funding is more firmly entrenched in the United States than elsewhere, and the VC relationships that help drive incumbent acquisitions are likely more robust between the U.S. VCs and these U.S. tech leaders than between other VCs and U.S. tech leaders.

[114] *See, e.g.*, Joachim Henkel, Thomas Rønde & Marcus Wagner, *And the Winner Is—Acquired. Entrepreneurship as a Contest Yielding Radical Innovations*, 44 RSCH. POL'Y 295, 304 (2015) (arguing that incumbents "rely[] on start-ups" and possibility of acquisitions makes startups predominant source of radical innovations in electronic design automation industry (emphasis omitted)); Stephen Harrison, *Start-Ups Aren't Cool Anymore*, ATLANTIC (Dec. 5, 2018), https://www.theatlantic.com/business/archive/2018/12/milennial-start-up/567793/ ("[T]he opportunities 'to start compelling start-ups,' for college students without industry-specific knowledge, 'has vastly shrunk.'" (quoting Matt Krisiloff, former Director,

aren't much fun if your friends aren't on them. Media sites aren't as easy to use (or as addictive) if billions of past user choices aren't powering the recommendation engine for your next video clip or tune.[115] Even search engines benefit from scale. The more you know about what your customers want to see when they search, the better your search results will be.[116] And retail sites face not only these demands but a variety of others. Retail sites aren't very pleasing if not powered by recommendation engines, say, nor convenient if unable to process and deliver orders the same or next day through a vast distributional network.[117] True, companies may borrow the social network of Facebook or the distribution network of Amazon, but they do so only by giving up proceeds, information, and time—and quite possibly any hope of vertically integrating and competing with those platforms.[118]

Without complementary assets and scale, small firms suffer. Small firms are often less profitable today than similarly sized firms in the past.[119] Yet building

Y Combinator)).

[115] *See, e.g.*, Mohammed Fadhel Aljunid & Manjaiah D.H., *A Survey on Recommendation Systems for Social Media Using Big Data Analytics*, INT'L J. LATEST TRENDS ENG'G & TECH., Special Issue - SACAIM 2017, at 48, 48.

[116] *Online Platforms and Market Power, Part 2: Innovation and Entrepreneurship: Hearing Before the Subcomm. on Antitrust, Com. & Admin. L. of the H. Comm. on the Judiciary*, 116th Cong. 3 (2019) (written statement of Megan Gray, General Counsel and Policy Advocate, DuckDuckGo) ("Another barrier facing a start-up search engine is that it needs data, such as the most commonly clicked links for a particular query, in order to produce a useful ranking of organic links, i.e., what organic link is first, second, etc."); Kira Radinsky, *Data Monopolists Like Google Are Threatening the Economy*, HARV. BUS. REV. (Mar. 2, 2015), https://hbr.org/2015/03/data-monopolists-like-google-are-threatening-the-economy. *But see* Ryan Bourne, Opinion, *Big Tech Antitrust Probe: Where's the Real Harm from Google, Amazon, Facebook and Apple?*, MARKETWATCH (July 24, 2019, 11:07 AM EST), https://www.marketwatch.com/story/wheres-the-real-harm-from-google-amazon-facebook-and-apple-2019-06-18 (doubting permanence of data-driven monopolies by underscoring that just the year before Apple launched its iPhone, critics of Nokia stated that "no mobile company will ever know more about how people use phones than Nokia" (quoting Bruce Upbin, *The Next Billion*, FORBES (Oct. 26, 2007, 1:00 PM EDT), https://www.forbes.com/forbes/2007/1112/048.html?sh=76ae2f6539e4)).

[117] *See, e.g.*, Shah Mohammed, *How Did Amazon Build Its 'Sustainable Competitive Advantage'? – Business Strategy and the Key Success Factors*, MEDIUM (May 28, 2018), https://medium.com/@shahmm/how-did-amazon-build-its-sustainable-competitive-advantage-88cfee7fe2c8 (describing user network effects, distribution scale economies, and other economies of scope and scale as creating sustained advantage for Amazon).

[118] *See, e.g.*, Khan, *Antitrust Paradox*, *supra* note 2, at 754-56 (discussing limited benefit to firms and to the competitive process of firms using the dominant platform's infrastructure to achieve their scale, as marketplace sellers do when selling on Amazon).

[119] *See* Gao, Ritter & Zhu, *All the IPOs*, *supra* note 44, at 1671.

the complementary assets to scale is not easy. Firms face a double bind: until they have the assets, they lack the prospects needed to attract funding to build the assets.[120] Even when firms get capital, building the assets takes time. Perhaps partly for these reasons, the median time to IPO for technology firms has increased from about six years in the late 1990s (one year *less* than typical across all firms) to twelve years in recent periods (two years *more* than typical).[121]

As the time and cost to replicate complementary assets and reach scale increases, cooperation with incumbents increases too.[122] Large firms may not want to take the risk that a small startup succeeds. And small innovators may not want to take the risk they fail. Both—and sometimes society as well—may stand to benefit from cooperating. While large firms may better manage "economies of scale and scope[,] . . . small firms are often more efficient in producing innovations."[123] Rather than building their own complementary assets, small firms may "decide to cooperate with incumbent firms or seek to be acquired by incumbents."[124] The large firms, for their part, may agree—not just to prevent the rise of a possible rival[125] but also to obtain innovation they may be unable to develop in-house.[126]

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[120] *See* Åsa Lindholm, *Acquisition and Growth of Technology-Based Firms* 3-4 (ESRC Centre for Bus. Rsch., Univ. of Cambridge, Working Paper No. 47, 1996) ("In other words, the transaction costs involved in acquiring complementary assets for the small firm are likely to be high.").

[121] *See* RITTER, *supra* note 12, at 10 tbl.4, 12 tbl.4a (defining "technology firms" and reporting annual median ages from which we calculate averages of these medians across 1995 to 2000 and across 2015 to 2018); *see also* Ibrahim, *supra* note 109, at 14 (reporting *average* time to exit for *VC-backed* firms of three to four years in 1999, but seven years in 2009, which Ibrahim suggests has resulted primarily from slower IPOs). Note that the time to IPO for all firms has increased, perhaps because building technology is an increasingly necessary part of every firm's business. *See id.* at 10 tbl.4 (reporting that median age for all IPOs increased from five years in 1999-2000 to ten years in 2001-2019). Some evidence suggests that the chance of exiting via IPO increases and then decreases as time goes on, peaking at between 2.75 and 4 years. *E.g.*, Giot & Schwienbacher, *supra* note 61, at 696 fig.1.

[122] *See* Gans, Hsu & Stern, *Gale of Creative Destruction*, *supra* note 110, at 583.

[123] Robin Kleer & Marcus Wagner, *Acquisition Through Innovation Tournaments in High-Tech Industries: A Comparative Perspective*, 22 ECON. INNOVATION & NEW TECH. 73, 74 (2013); *see also* Lindholm, *supra* note 120, at 4 (describing how a large firm "is likely to [have] relative disadvantages [for R&D], such as dulled entrepreneurial spirits, bureaucracy, internal procurement bias, and various innovation barriers").

[124] Joern H. Block, Christian O. Fisch & Mirjam van Praag, *The Schumpeterian Entrepreneur: A Review of the Empirical Evidence on the Antecedents, Behaviour and Consequences of Innovative Entrepreneurship*, 24 INDUS. & INNOVATION 61, 64 (2017) (citation omitted).

[125] *See infra* Section II.A.2.

[126] In order to ensure appropriate levels of R&D, incumbents may need to supplement (do

Against this background, the VC model strongly favors investing in entrants that will exit by selling to incumbents with scale and scope. A key factor is time. Venture investment is a "homerun" business;[127] despite many misses, a few hits can make a venture fund's total returns attractive. How many investments succeed, how fast, and how wildly determines VCs' returns. An acceptable annual return to a VC's LP is 12%.[128] Over a traditional ten-year life, a venture capital fund must at least triple in value to reach 12% returns;[129] if a fund lasts longer, VCs need bigger (or more frequent) hits to reach the same rate. And knowing many startups will fail, before investing in one VCs often impose a "hurdle rate," or minimum expected annual return, of at least 20%.[130] So VCs need a few "home run" investments, and the longer those home runs take, the more of them they need.

Given those constraints, IPOs used to make good exits when they occurred three to four years after investment, as they did from 1995 to 2000—then about

some internal R&D), subsidize (through corporate VC), or reassure outside R&D firms that they will be compensated rather than merely copied—as the new entrants may not produce sufficient research otherwise given no prospect of entry. *See* Joshua S. Gans & Scott Stern, *Incumbency and R&D Incentives: Licensing the Gale of Creative Destruction*, 9 J. ECON. & MGMT. STRATEGY 485, 488, 500 (2000) [hereinafter Gans & Stern, *Licensing the Gale*].

[127] Christian Knott, *Homerun Dependency — the Early Stage Venture Capital Fund Model*, MEDIUM (Mar. 14, 2018), https://medium.com/capnamic-ventures/homerun-dependancy-the-early-stage-venture-capital-fund-model-3d328119b212.

[128] Tomer Dean, *The Meeting that Showed Me the Truth About VCs*, TECHCRUNCH (June 1, 2017, 6:00 PM EDT), http://social.techcrunch.com/2017/06/01/the-meeting-that-showed-me-the-truth-about-vcs/ [https://perma.cc/8UXL-VCJS] (suggesting 12% annualized as the minimum venture rate of return that LPs expect after GPs take their fees and cut).

[129] *Id.* To account for GP fees and "carry" (or the GPs' contracted-for share of exit proceeds), the actual increase in the fund's value may need to be even greater.

[130] EDWARD S. CHUNG, JAVIER OLIVAN LOPEZ, RYAN N. COLTON, JAMES R. HART, III, LINDA YU, JACLYN CHEN & PETER M. DEMARZO, STAN. GRAD. SCH. BUS., CASE NO. F-298, NOTE ON VENTURE CAPITAL FINANCING 1, 1 (2018) ("[T]arget returns hover in the range of 20–30 percent, depending on the stage of investment.").

as fast as acquisitions.[131] But IPOs now make poor exits.[132] Offerings commonly occur six to eight years after investment—or one to two years slower than acquisitions.[133] And the date of public offering is rarely the VCs' actual exit date: VCs most often must wait until a months- or year-long "lockup" period ends before selling their shares.[134]

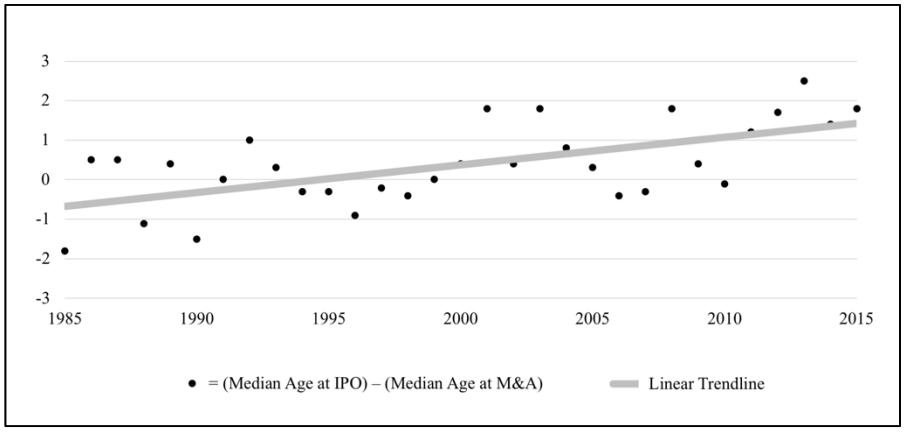
[131] *See* 2016 YEARBOOK, *supra* note 62, at 64 fig.4.03, 68 fig.4.07. Notably, the time to acquisition has increased and time to IPO decreased in the last year, narrowing the gap between them. However, the overwhelming trend has been a long-term shift from IPOs leading acquisitions to IPOs trailing them. *Id.* This is true even as fund durations increasingly extend from ten to twelve or even fourteen years. Diane Mulcahy, *The New Reality of the 14-Year Venture Capital Fund*, INSTITUTIONAL INV.: PORTFOLIO (Feb. 19, 2015), https://www.institutionalinvestor.com/article/b14z9vv7hjbt6y/the-new-reality-of-the-14-year-venture-capital-fund [https://perma.cc/4XWG-KYBT]. Still, the overwhelming trend has been away from IPOs to acquisitions. See trends analyzed *supra* notes 66-69 and accompanying text.

[132] 2016 YEARBOOK, *supra* note 62, at 64 fig.4.03 (comparing 3.8-year median time to exit in 1995 with 6.5-year median time to exit in 2015).

[133] *See* Ibrahim, *supra* note 109, at 14; *see also* PITCHBOOK, PE & VC EXITS 10 (2017) ("The hold period for VC-backed companies has risen quite dramatically. . . ."); PITCHBOOK, UNICORN REPORT 4 (2019) (finding that total capital raised in existing companies allows for "doubling down and ensuring businesses have more than enough capital to expand in order to cement a commanding position in their given market").

[134] Lockups are typically self-imposed or required by agreement with underwriters. Agreeing not to immediately sell shares signals confidence in the company and promotes a smoother and better supported offering. *See* De Clercq et al., *supra* note 61, at 103.

Figure 4. Extra Time Needed to Exit by IPO Rather than by Acquisition.[135]



This added time does not come with enough added value to compensate VCs for the delay. The median value of an IPO is often *less* than the median value of an acquisition.[136] And "[s]ince [venture capital] firms' typical management fee of about 2% of the committed capital exceeds the average costs of actively managed equity funds, [investors in venture capital funds] refuse to allow the [venture capital] firms to stay invested in public companies."[137] As a result, IPOs are increasingly beyond VCs' investment horizons and are a much less viable exit.[138]

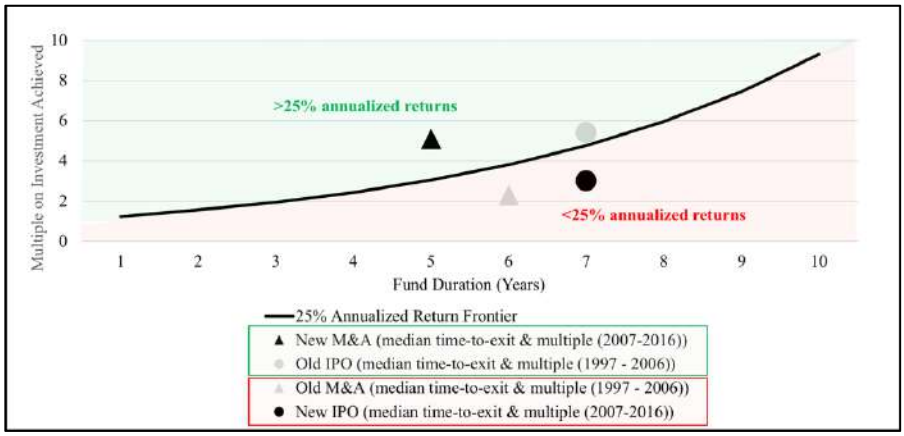
[135] *See* 2014 YEARBOOK, *supra* note 62, at 14 fig.9.0, 15 fig.10.0; 2016 YEARBOOK, *supra* note 62, at 64 fig.4.03, 68 fig.4.07.

[136] This is true even though acquisitions are far more common. *See* PITCHBOOK, VC VALUATIONS 1H 2019, at 20 (2019).

[137] Carolin Bock & Maximilian Schmidt, *Should I Stay, or Should I Go? – How Fund Dynamics Influence Venture Capital Exit Decisions*, 27 REV. FIN. ECON. 68, 68 (2015) (citation omitted).

[138] See trends analyzed *supra* note 66-69 and accompanying text.

Figure 5. Greater Multiples Needed to Surpass Hurdle of 25% Annualized Return Given Longer Durations.[139]



Some firms can tough out these extended timelines without exit, waiting patiently for a supersized IPO. Abundant follow-on funding has allowed some "unicorns" to remain private for extended periods before going public (or selling).[140] But with the abundant funding this requires and without the financial scrutiny of a public company, some poster children of "staying private" have become "zombie unicorns,"[141] risking failure and their ultimate payout. Some have made it to public status.[142] While these private unicorns suggest that some

[139] This analysis, calculated from Mick Bain, *2017 Venture Capital Report*, HARV. L. SCH. F. ON CORP. GOVERNANCE (May 30, 2017), https://corpgov.law.harvard.edu/2017/05/30/2017-venture-capital-report/ [https://perma.cc/QN56-6VMU], is on file with authors.

[140] Elisabeth de Fontenay, *The Deregulation of Private Capital and the Decline of the Public Company*, 68 HASTINGS L.J. 445, 447, 459-61 (2017); *see also* Leslie Picker, *Risks in Running with Unicorns*, N.Y. TIMES, Nov. 5, 2015, at F2.

[141] *See, e.g.*, William Pesek, *WeWork Might Be a Zombie Unicorn. Softbank Should Probably Let 'WeDead' Die*, FORBES (Oct. 17, 2019, 5:00 AM EDT), https://www.forbes.com/sites/williampesek/2019/10/17/wework-might-be-a-zombie-unicorn-softbank-should-probably-let-wedead-die/#586afb5645c6 [https://perma.cc/333Z-JDBE].

[142] This includes Facebook, Lyft, and Uber. *See* de Fontenay, *supra* note 140, at 447; *id.* at 460 (describing how Facebook was effectively forced to become a public company when it surpassed the number of shareholders allowed to hold a private company). Elisabeth de Fontenay discusses the societal and private spillover benefits of having highly liquid public companies that are forced to disclose large amounts of information. *Id.* at 486-94. In particular, their market pricing and disclosures allow investors to value related private companies, *id.*, and even, in aggregate, to understand the market rate of return and so to

VCs can stomach a longer path to public status, they do not suggest this pathway is welcome, costless, or possible for many.

As IPOs become less promising for VCs, acquisitions have become the conventional exit.[143] VCs must solve straightforward math: they need to fund companies able to attain a large multiple in a short time.[144] And quick analysis shows that companies positioned to exit by incumbent acquisition are likely to reach a higher multiple in a shorter time than those positioned only for public offering.[145] Oddly conservative despite their reputation for risk-taking, VCs may overinvest in companies that are positioned to be acquired—embracing market leaders rather than competing with them.[146] Even when VCs choose to fund companies with the potential to disrupt a market, the "pressure of being obliged to have exited the investments by the end of the fund's lifetime and the allocation of resources to new funds can lead to premature exits."[147]

The structure of venture capital firms further exacerbates this effect. VCs use limited liability companies ("LLCs") to collect funds and invest in portfolio companies; these LLCs avoid the heaviest burdens of securities regulation—and overhead for GPs—by limiting when and to whom LPs can resell their interests.[148] When the venture capital fund invests in portfolio companies, then, it seeks companies able to exit early and contracts for legal tools to prompt early exit because this is the fund's path to liquidity.[149] The resulting system is, as one founder observed, "limited to valuing sales or IPOs; nothing else can have value to [VCs], because nothing else allows them to make money."[150] And, increasingly, sales make VCs more money faster than IPOs.

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determine the required return for unrelated investments of differing risks.

[143] *See* Henkel, Rønde & Wagner, *supra* note 114, at 295, 304 (conceptualizing innovation for acquisition as a prize contest).

[144] *See* Achleitner et al., *supra* note 44, at 635 (explaining that VCs must seek to "understand differences in the return potential of trade sale exit channels").

[145] *See id.*

[146] Bock & Schmidt, *supra* note 137, at 68.

[147] *Id.* at 68-69; *see also* Ibrahim, *supra* note 109, at 11 (stating that VCs "will push for start-ups to exit through IPOs and trade sales before their funds expire").

[148] Some limiting provisions exist simply to ensure that uncoordinated sales do not in concert defeat exemption from securities provisions, and others exist to keep the fund manageable for GPs. *See* Cannon, *supra* note 59, at 9, 12.

[149] VC investment terms often include "piggyback" rights enabling "participat[ion] in a public offering by the portfolio company"; "tag-along" rights enabling pro rata participation in sales of "portfolio company securities by management"; and "drag-along" rights that, whether or not founders are ready to move on, "force management to join in an acquisition exit of the portfolio company." *Id.* at 14.

[150] Kanies, *supra* note 11.

2. The Value of Market Power

The opportunity to increase the incumbent's market power and share in the resulting rents also leads startups to exit through incumbent acquisitions rather than IPOs.[151] And the bigger the threat the startup poses, the bigger the premium.[152] As one founder put it, "[t]he goal is always to be acquired," and the "more successful we are, the more urgent it becomes." [153] Even companies ready to go public sometimes opt to be acquired instead, using the IPO as leverage. As an example, AppDynamics was set to begin its IPO when it agreed to be acquired by Cisco for $3.7 billion.[154]

The opportunity to increase (or shore up) an incumbent's market power is powerful even when the new entrant is unlikely to take over the market but holds an essential asset. For example, a large firm may acquire a small firm that holds blocking patents. Studies show that acquisition prices increase by 13% for the

[151] *See* Achleitner et al., *supra* note 44, at 634; Gans & Stern, *Licensing the Gale*, *supra* note 126, at 496 (explaining the extreme case where "monopoly profits are greater than duopoly profits," making an incumbent monopolist's acquisition of an entering rival natural and mutually beneficial); *see also id.* at 487 (expanding on this point).

[152] *See* Achleitner et al., *supra* note 44, at 634 ("Through foreclosure and collusion, synergetic trade sales might offer strategic value gains at the expense of other market players."); Gans & Stern, *Licensing the Gale*, *supra* note 126, at 486 ("When startup innovators and established firms cooperate at the commercialization stage, the bargaining power of each party . . . depends . . . on the ability of the startup to threaten to enter the product market and impose competitive costs on the incumbent and . . . on the ability of the incumbent to threaten to expropriate the startup's technology. . . . In other words, bargaining outcomes in the market for ideas reflect the shadow of *potential* competition.").

[153] Henkel, Rønde & Wagner, *supra* note 114, at 304 (emphasis omitted) (quoting from survey of Electronic Design Automation industry, which is dominated by three incumbents). While some studies suggest that there is no market power premium in acquisition prices, those studies addressed the efficiency-driven horizontal takeovers of the 1980s and 1990s, not the platform-protective acquisitions of the 2000s and 2010s. Achleitner et al., *supra* note 44, at 623, 634. As an example of one such study, see Husayn Shahrur, *Industry Structure and Horizontal Takeovers: Analysis of Wealth Effects on Rivals, Suppliers, and Corporate Customers*, 76 J. FIN. ECON. 61, 62 (2005) (describing era of focus).

[154] Jeff Grabow, *The Numbers Say IPOs Are More Profitable than Acquisitions*, VENTUREBEAT (Aug. 27, 2017, 8:35 AM EST), https://venturebeat.com/2017/08/27/the-numbers-say-ipos-are-more-profitable-than-acquisitions/ [https://perma.cc/YGG3-3KXL] (giving this example, though in context of article by Ernst & Young venture capital adviser arguing that IPOs are more profitable for VCs). Another is example is Dollar Shave Club, which exited through a $1 billion acquisition by Unilever. *Id.* Still another is eBay's acquisition of PayPal. There, the two companies were able to agree on an acquisition price only after PayPal went public. Roberto Ragozzino & Jeffrey J. Reuer, *Initial Public Offerings and the Acquisition of Entrepreneurial Firms*, 5 STRATEGIC ORG. 155, 156 (2007).

first 1% increase in the blocking potential of the target firm's patent portfolio.[155] Seen another way, among firms at a given level of profitability, those with blocking patents command a higher price.[156] These assets could be valuable in themselves as a platform for disruptive competition or as a way of helping a nonincumbent compete for the market. But selling to an incumbent "usually commands the highest sale price."[157] And the incumbent gains the ability to block startups rather than be blocked by them.[158] Further, startups may

[155] *See* Christoph Grimpe & Katrin Hussinger, *Pre-Empting Technology Competition Through Firm Acquisitions*, 100 ECON. LETTERS 189, 191 (2008). The "blocking potential" is assessed using a methodology explained only loosely in the paper; the method appears to weigh the citations to the patent that European Patent Office examiners make when considering the novelty and obviousness of later patents. *Id.* at 190.

[156] *See id.* at 191. This is especially true "if the target's technologies are highly valuable and related to the acquiring firm's technology portfolio." *Id.* at 190.

Note that the acquisition of intellectual property ("IP") may affect forward technology development, an issue beyond the scope of this Article. Research to date suggests that there are more forward citations for patents held by companies that remain separate—and private—than for patents held by companies that are then acquired. *See* Block, Fisch & van Praag, *supra* note 124, at 78. This difference may turn on a confounding variable other than the exit choice, however. Perhaps firms with especially strong technology also choose to remain private. Forward citations for firms that go public are lowest of all. *Id.*

[157] Didier Folus & Emmanuel Boutron, *Exit Strategies in Private Equity*, *in* PRIVATE EQUITY: OPPORTUNITIES AND RISKS 215, 220 (H. Kent Baker, Greg Filbeck & Halil Kiymaz eds., 2015). As they explain,

> [A strategic rather than financial] buyer expects a greater competitive advantage and market share in its respective industry, intending to hold the acquisition over the long term. That is, the buyer often agrees to pay the value of strategic options embedded in the target price, hoping for a higher future operating cash flow from the target, and thus paying a higher present value for it. Therefore, the trade sale usually commands the highest sale price . . . .

Id.; *see also* Nils Behnke & Norbert Hültenschmidt, *New Path to Profits in Biotech: Taking the Acquisition Exit*, 13 J. COM. BIOTECHNOLOGY 78, 78-79 (2007) (explaining how VC-backed pharmaceutical companies increasingly exit via trade sale, not IPO, and do so more profitably). *But cf.* Victor Basta, Opinion, *Private Equity: Tech's Best-Kept Secret*, FIN. TIMES: ALPHAVILLE (Jan. 7, 2019), https://www.ft.com/content/1e37adba-c175-3724-8819-8d9fcf9dd077 (describing very recent trend whereby private equity financial buyers, having a surplus of unused capital, may in some cases pay more than strategic buyers).

[158] Rob Merges has suggested encouraging the sale of patents from startups to incumbents as an alternative to outright acquisition. Robert P. Merges, *Patent Markets and Innovation in the Era of Big Platform Companies*, 35 BERKELEY TECH. L.J. 53, 57-58 (2020). While the sale of assets may be less problematic than the sale of the company, it is not clear to us that it is patent rights that incumbents want, rather than the people, know-how, or customers of the startup or to prevent competition by that startup.

reasonably fear that if they don't sell out to the incumbent, the incumbent will drive them out of business.[159]

VCs intensify this driver by selecting firms that pursue this strategy and then advising them how to achieve it. Reaching an exit by incumbent acquisition is not equally likely for all firms. Of course, it is more likely in markets with a dominant incumbent (whereas going public is more likely in markets without one).[160] But even in those markets, and importantly here, it is more likely for firms that work with VCs who have completed a past acquisition.[161] One reason may be that selling a company is more complicated than entrepreneurs expect.[162] Another may be that sales are network- and credibility-dependent and that VCs have the right connections to make those sales happen.[163] Founders believe as much: some seek backing from particular VCs thinking that those VCs will push particular incumbents to acquire them.[164]

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[159] Facebook famously threatened to "go into destroy mode" if Instagram turned down its acquisition offer. Sarah Frier, *Documents Show Facebook Bought Instagram to Quash Competitor*, BLOOMBERG (July 29, 2020, 5:01 PM EDT), https://www.bloomberg.com/news/articles/2020-07-29/documents-show-facebook-bought-instagram-to-quash-competitor.

[160] Onur Bayar & Thomas J. Chemmanur, *What Drives the Valuation Premium in IPOs Versus Acquisitions? An Empirical Analysis*, 18 J. CORP. FIN. 451, 473 (2012).

[161] *Cf.* Bart Clarysse, Annelies Bobelyn & Itxaso del Palacio Aguirre, *Learning from Own and Others' Previous Experience: The Contribution of the Venture Capital Firm to the Likelihood of a Portfolio Company's Trade Sale*, 40 SMALL BUS. ECON. 575, 587 (2013) (concluding that VC firms that have completed trade sales in the past, and so engaged in "experiential learning" as a firm, are more likely to complete trade sales going forward); Gans, Hsu & Stern, *Gale of Creative Destruction*, *supra* note 110, at 580 tbl.3, 581 (finding that VC-backed firms have higher rate of cooperating); Hsu, *Venture Capitalists*, *supra* note 106, at 213-14 (finding that VC-backed firms have high higher rate of reaching licensing and other agreements); Alejandro Cremades, *How to Get Your Business Acquired*, FORBES (Aug. 2, 2019, 10:21 AM EDT), https://www.forbes.com/sites/alejandrocremades/2019/08/02/how-to-get-your-business-acquired/#3e75dc32aa75 [https://perma.cc/362E-RBRK] (explaining that "[p]utting the right investors on your board can make all the difference" because "they can make the right connections to secure your exit").

[162] *Cf.* Clarysse, Bobelyn & del Palacio Aguirre, *supra* note 161, at 588 (suggesting that venture capital firms that have not completed a trade sale to date might systematically underestimate their complexity).

[163] *See id.* at 577-78 (reviewing literature on the contributions of VCs to the success of their portfolio companies, including the contribution of their credibility and networks); Ragozzino & Reuer, *supra* note 154, at 159-60 (same).

[164] *See, e.g.*, Dave Bailey, *How to Set Up Your Company for Acquisition*, MEDIUM: FOUNDER COACH (Nov. 20, 2018), https://medium.dave-bailey.com/how-to-set-up-your-company-for-acquisition-3b26f5214cf5 (advising founders to "[r]ig [their] [a]dvisory [b]oard" to "leverage existing relationships with potential acquirers"); Cremades, *supra* note 161; Welltory, *10 VCs to Look for to Be Acquired by Apple*, MEDIUM (May 28, 2018),

3. Incumbent Information and Incentive Advantages

Asymmetric information and incentives may also drive startups to exit through incumbent acquisitions rather than IPOs. Incumbents may understand a startup's market opportunity better than public traders and be willing to pay the firm's full value.[165] And even if others have the same information, incumbents may still have the strongest incentive to acquire it because they have the most to lose if they don't.

For a startup to exit at the highest price, it must explain to buyers what makes it valuable without empowering them to compete using that information.[166] Strategic acquirers already possess much of the needed information, and sometimes even more contextual information, than does the startup. When Facebook acquired Instagram, for instance, the $1 billion price paid was more than twice what outside investors had valued the company—but less than 1% of what Instagram would be worth today if still independent.[167] The wider market often lacks relevant information to make informed offers. Indeed, evidence suggests that IPOs are more likely to occur during economic bubbles,[168] a time when public traders may be willing to pay more than the startup's worth.

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https://medium.com/@welltory/what-vcs-should-you-choose-to-be-acquired-by-apple-dbd226189491; *see also* Zider, *supra* note 47.

[165] Others have already explained this well:

> In order to maximize the capital gain upon exit, a venture capitalist will choose the exit vehicle for which the new owners are best able to resolve information asymmetry. When informational asymmetries are lowest, the new owners are willing to pay more for the company. As it is typically most difficult for new owners in an IPO to mitigate informational problems, we may predict that venture capitalists will only take public the best quality firms for which informational asymmetries are least pronounced.

Douglas Cumming, Grant Fleming & Armin Schwienbacher, *Legality and Venture Capital Exits*, 12 J. CORP. FIN. 214, 219 (2006) [hereinafter Cumming, Fleming & Schwienbacher, *Legality*] (footnote omitted) (citation omitted). The authors incorporate this hypothesis within their larger study of how legal systems influence exit choices. They presume that stronger legal systems lead to stronger information symmetry—or protections for asymmetry. *Id.* And they find that stronger legal systems are consistent with more frequent exits via IPOs. *See id.* at 242.

[166] As Kenneth Arrow put it: "[T]here is a fundamental paradox in the determination of demand for information; its value for the purchaser is not known until he has the information, but then he has in effect acquired it without cost." Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, *in* THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS 609, 615 (1962).

[167] *See* Jamie Condliffe, *A Risky Bet on Instagram Is Paying Off for Facebook*, N.Y. TIMES, June 28, 2018, at B3.

[168] *See* Cumming, Fleming & Schwienbacher, *Legality*, *supra* note 165, at 220 (describing this as "well known").

Patent, trade secret, and contract law can give firms confidence in conveying information to other buyers and traders, facilitating other exit strategies.[169] But just because all parties possess the same information does not mean they will possess the same incentives. Knowledgeable buyers or public investors may bid up the startup's sale price, but the incumbent may still have the best reason to acquire it. Beyond paying for the startup's future profits, incumbents will pay for their own avoided losses (which may be larger than the startup's future profits given the incumbent's market power at risk).[170] When Facebook acquired WhatsApp, for instance, other suitors likely understood the value of the acquisition, but Facebook still valued the target the most, likely because it was protecting an existing market.[171] Knowledgeable interest from others may only make the incumbent's need to keep the startup out of others' hands more real.[172]

In short, incumbents often have both the best information and the biggest incentive to acquire rivals. In this environment, information and intellectual property ("IP") rights may do less to change who buys an startup and more to change the price paid.[173]

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[169] Block, Fisch & van Praag, *supra* note 124, at 65 ("Patents, prototypes, or first innovative products are signals that help start-ups to overcome the information asymmetries that exist between them and resource providers such as VC firms."); Mark A. Lemley, *The Surprising Virtues of Treating Trade Secrets as IP Rights*, 61 STAN. L. REV. 311, 332-37 (2008).

[170] *See* Gans & Stern, *Licensing the Gale*, *supra* note 126, at 505; Norbäck & Persson, *supra* note 101, at 1263-64; *cf.* Norbäck, Persson & Svensson, *Creative Destruction*, *supra* note 18, at 4, 22.

[171] *See* Josh Constine, *A Year Later, $19 Billion for WhatsApp Doesn't Sound So Crazy*, TECHCRUNCH (Feb. 19, 2015, 8:29 PM EST), https://techcrunch.com/2015/02/19/crazy-like-a-facebook-fox/ [https://perma.cc/YNB9-GGHY] ("[W]hether it stayed independent or sold to someone else, WhatsApp could have challenged Facebook's iron grip on social networking."); *cf.* William Alden, *Facebook's Deal for WhatsApp: The Chatter on Twitter*, N.Y. TIMES: DEALBOOK (Feb. 19, 2014, 7:02 PM EST), https://dealbook.nytimes.com/2014/02/19/facebooks-deal-for-whatsapp-the-chatter-on-twitter/ (relaying shock from Twitter at the deal price at time of acquisition); Ingrid Lunden & Alexia Tsotsis, *What's Up with WhatsApp? Facebook Might Want to Buy It, That's What*, TECHCRUNCH (Dec. 2, 2012, 10:43 PM EST), https://techcrunch.com/2012/12/02/whats-up-with-whatsapp-facebook-might-want-to-buy-it-thats-what/ [https://perma.cc/BA4C-E7HH] (recounting rumors of Google's and Facebook's offers to acquire WhatsApp).

[172] Gans & Stern, *Licensing the Gale*, *supra* note 126, at 505; *cf.* Norbäck, Persson & Svensson, *Creative Destruction*, *supra* note 18, at 4, 22.

[173] Some evidence suggests that incumbents overpay to acquire even firms holding weak IP. *See* Gans & Stern, *Licensing the Gale*, *supra* note 126, at 496 n.22. Startups with weak IP face an information paradox limiting their ability to extract value from a trade sale. But because incumbents benefit in the long run from outsourcing innovation, their desire to not discourage future innovators may lead them to forego exploiting weak IP from current

VCs appear to solve information asymmetries and align estimates of value better than founders can alone, leading VC-backed companies to more frequently achieve acquisition exits than others do.[174] Partly, this may be because VC-backed firms do a better job using the mechanisms for closing information asymmetries available to all firms. VC-backed firms are more likely to get patents,[175] for instance. And strong IP rights promote sale to incumbents.[176] But this is partly because VC-backed firms draw upon assets not available to other firms. Funding by a VC can signal startup quality to incumbents and reduce transaction costs in closing deals.[177] VCs fund less than 1% of the proposals they receive and, as repeat players, face strong incentives not to opportunistically encourage others to deal with companies that they expect to fail.[178] Evidence suggests that founders "lease" reputation from VCs at real

innovators—overpaying as if the IP were stronger IP to incentivize continued outside innovation. *See id.* at 496-97. It may simply be less costly to acquire those innovators than to do the innovation in-house or to compete. Indeed, Facebook did not appear to copy Snapchat's best features, for instance, until after Snapchat refused to be acquired. *Cf.* Olivia Solon, *Genius or Hubris? Why Turning Down Facebook May Be Snapchat's Big Mistake*, GUARDIAN (July 15, 2017, 7:00 AM EDT), https://www.theguardian.com/technology/2017/jul/15/facebook-buy-snapchat-offer-mistake [https://perma.cc/J6RG-UERU] (dating Snapchat's refusal to be acquired and Facebook's effort to copy its features, without, however, making the inference we suggest here). And startups that enjoy strong IP protection are, it turns out, even more likely to cooperate with and sell to incumbents than are startups with weak IP. *See* Clarysse, Bobelyn & del Palacio Aguirre, *supra* note 161, at 578. Patent holders appear 23% more likely than those without patents to cooperate. Gans, Hsu & Stern, *Gale of Creative Destruction*, *supra* note 110, at 572.

[174] *See* Cumming, Fleming & Schwienbacher, *Legality*, *supra* note 165, at 219-20, 219 n.7.

[175] Norbäck & Persson, *supra* note 101, at 1261-62.

[176] *See* Gans, Hsu & Stern, *Gale of Creative Destruction*, *supra* note 110, at 581; Gans & Stern, *Licensing the Gale*, *supra* note 126, at 505; *cf.* Norbäck, Persson & Svensson, *Creative Destruction*, *supra* note 18, at 4, 22.

[177] *See* Hsu, *Venture Capitalists*, *supra* note 106, at 206-07, 217-18; *see also* Cumming, Fleming & Schwienbacher, *Legality*, *supra* note 165, at 219-20, 219 n.7. Acquirers in the same industry as their targets might be thought to already possess the information needed, leaving no gap for VCs to close and no premium for VC backing in price paid. But this is not the case. *See* Jeffrey J. Reuer, Tony W. Tong & Cheng-Wei Wu, *A Signaling Theory of Acquisition Premiums: Evidence from IPO Targets*, 55 ACAD. MGMT. J. 667, 677 (2012) [hereinafter Reuer, Tong & Wu, *A Signaling Theory*].

[178] Ragozzino & Reuer, *supra* note 154, at 159. Note that this Article concerns follow-on funding rather than acquisitions, but similar reasoning would apply in either case. *See* Ragozzino & Blevins, *supra* note 107, at 991.

cost, accepting lower valuations from more prominent VCs.[179] VCs use their credentialing function to close acquisitions.

VCs may see IPOs as a step towards acquisition, whether of this startup or the next one. Going public can position a company for an eventual sale at a higher, better-validated price.[180] Even if a given firm does go public and stay listed, its VCs gain reputation through the process—and that enables them to avoid taking another company public in the future. IPOs introduce VCs to investors and incumbents, attracting further fund investments[181] and closing future acquisitions at higher prices.[182] Indeed, the decline in IPOs may partly be due to a decline in the need for VCs to use them as success signals. The VC industry appears to have matured and stabilized,[183] and VCs may no longer be building reputations through IPOs but enjoying the fruits of their reputations through acquisitions.[184]

Incumbents often have the strongest incentive to buy nascent rivals. And the better associated those startups are with VCs, the more likely the incumbents are to buy them.[185]

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[179] *See, e.g.*, Reuer, Tong & Wu, *A Signaling Theory*, *supra* note 177, at 670. *See generally* David H. Hsu, *What Do Entrepreneurs Pay for Venture Capital Affiliation?*, 59 J. FIN. 1805, 1823 (2004).

[180] *See* Bock & Schmidt, *supra* note 147, at 68, 72; Ragozzino & Reuer, *supra* note 154, at 157 ("Our results can offer guidance to entrepreneurs, who can enhance their credibility in M&A markets by signaling their value through the institutional mechanisms embedded in IPOs."). The desire to acquire or to be acquired also affects firms that go public: a survey of firms undergoing IPOs from 2000 to 2002 showed that the top reason was to ease mergers and acquisitions. *See* Gao, Ritter & Zhu, *All the IPOs*, *supra* note 44, at 1674. *But cf.* Ragozzino & Blevins, *supra* note 107, at 1006 (finding that prominence of VC backing increases IPO likelihood but not acquisition likelihood, although number of VCs backing increases acquisition likelihood but not IPO likelihood).

[181] *See* Bock & Schmidt, *supra* note 147, at 72.

[182] This point has not been studied by the literature to date; a thorough empirical study confirming this is beyond our scope here.

[183] *Cf.* Oliver T. Alexy, Joern H. Block, Philipp Sandner & Anne L.J. Ter Wal, *Social Capital of Venture Capitalists and Start-Up Funding*, 39 SMALL BUS. ECON. 835, 843 fig.1 (2012).

[184] This claim is not yet explored by the literature. An abbreviated analysis, however, shows that there is no statistically significant correlation between the number of new VC firms and the number of IPOs, the former lagged by the years to IPO prevailing at the time of the IPO numbers. This analysis, drawing on 2016 YEARBOOK, *supra* note 62, at 19 fig.1.04, is on file with the authors.

[185] *See* Gans, Hsu & Stern, *Gale of Creative Destruction*, *supra* note 110, at 572.

4. Avoiding the Cost of IPOs

Several other factors drive startups to exit by acquisition rather than by IPOs. First, startups face lower transaction costs when selling privately than when selling publicly. Avoidable costs include management time, regulatory compliance, and underwriting—the last charging from 5% to 7% of proceeds.[186] In dynamic industries like those in which many VC-backed firms operate, the time that managers spend on an IPO roadshow might be best spent focusing on improvements and then speaking to the one obvious incumbent acquirer.[187]

Second, a startup does not need to discount its price as deeply to promote a successful acquisition as it does to promote an IPO. Incumbent acquirers tend to be well informed about a firm's full price.[188] Perhaps because retail traders are less informed and require clear discounting before they are willing to buy out earlier investors, and perhaps for marketing reasons, IPOs are systematically underpriced by 18% on average.[189] VCs could wait for their newly listed stock to then reach its true value before selling, but this correction could take months or years. And new developments could easily send the price downwards. Firms

[186] *See* Susan Chaplinsky, Kathleen Weiss Hanley & S. Katie Moon, *The JOBS Act and the Costs of Going Public*, 55 J. ACCT. RSCH. 795, 807 tbl.2 (2017) (documenting costs of IPOs); Howard Jones & Rüdiger Stucke, *A Cheaper Way to Do IPOs*, HARV. BUS. REV., Nov. 2013, at 32, 32. As others have further explained,

> Another advantage of a trade sale is that the negotiations take place with a single buyer, allowing for a quicker and more efficient process that is not subject to the regulatory restrictions applicable to public transactions such as an IPO. For these reasons, selling to a strategic buyer is generally the preferred exit option for a [private equity] investor.

Folus & Boutron, *supra* note 157, at 220. As we explain below, however, regulatory costs are not the best explanation for decline in IPOs. *See infra* Section III.C.

[187] A Delaware corporation pursuing a change in control must discharge its fiduciary duty to maximize sale price for shareholders under *Revlon*, which might be easiest to accomplish by seeking and considering at least one alternative offer. *See* Revlon, Inc. v. MacAndrews & Forbes Holdings, Inc., 506 A.2d 173 (Del. 1986). In some markets, other offers will likely not approach the incumbent's, for all the reasons described above.

[188] *See supra* notes 165-68 and accompanying text.

[189] This comes from a study of nearly 8,000 IPOs, not necessarily VC-backed firms. Liu, Moeen & Nandy, *supra* note 57; *see also* Jones & Stucke, *supra* note 186.

that go public falter more often than triumph.[190] Litigation is likely.[191] And for some firms, simply proposing an IPO invites scrutiny that can send stock spiraling.[192]

Third, a startup can charge a control premium when selling privately that it cannot charge when selling to a fluid aggregation of public traders. Acquirers pay for control.[193] This is true even for acquirers that lack superior information and market power (factors that also lead to higher prices, discussed above).[194] All this being so, selling a firm privately may be generally more profitable than taking it public.[195] It's simply "not surprising that many owners pursue other options [than IPOs], especially M&A."[196]

5. Personal Finance and Tax Incentives

Personal financial planning and tax incentives can also change whether, when, and how startups choose to exit a company.[197] And, unfortunately, those considerations can nudge startups toward exiting via incumbent acquisition.

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[190] As one summary of the literature concludes,

> Most generally, despite the benefits of access to capital, firms tend to experience a decline in operating performance in the years following the IPO, as well as a decline in productivity. In particular, the productivity pattern exhibits an inverted U shape in which productivity increases steadily in the years prior to the IPO, reaches a peak in the IPO year, and declines steadily in the years subsequent. Beyond a decline in productivity, IPO firms also on average underperform similar "matched" peers in terms of both stock market and accounting performance.

Liu, Moeen & Nandy, *supra* note 57.

[191] *See* Guadalupe Gonzalez, *After the Flood of IPOs? Next Come the Shareholder Lawsuits*, INC. (May 31, 2019), https://www.inc.com/guadalupe-gonzalez/ipo-shareholder-lawsuits-rising-lyft-eventbrite.html.

[192] *See* Joshua Franklin & Lance Tupper, *After WeWork Debacle, IPO Market Slams Brakes on Unprofitable Companies*, REUTERS (Sept. 27, 2019, 11:21 AM EST), https://www.reuters.com/article/us-usa-ipo-idUSKBN1WC1WY.

[193] *See, e.g.*, ADOLF A. BERLE, JR., & GARDINER C. MEANS, THE MODERN CORPORATION AND PRIVATE PROPERTY 244 (1933); Henry G. Manne, *Mergers and the Market for Corporate Control*, 73 J. POL. ECON. 110, 112-14 (1965).

[194] *See* Manne, *supra* note 193, at 112.

[195] *See* Armin Schwienbacher, An Empirical Analysis of Venture Capital Exits in Europe and in the United States 4 (July 2002) (unpublished manuscript) (on file with the Boston University Law Review) (summarizing survey of VCs in United States and Europe).

[196] Jones & Stucke, *supra* note 186, at 32.

[197] Startups become increasingly sensitive the later they are in their life cycle. *See* Susan C. Morse & Eric J. Allen, *Innovation and Taxation at Start-Up Firms*, 69 TAX L. REV. 357, 361 (2016). And past tax reforms appear to have changed the rate and quality of merger activity. *See* Eric Ohrn & Nathan Seegert, *The Impact of Investor-Level Taxation on Mergers and Acquisitions*, 177 J. PUB. ECON. 1, 1-2 (2019).

Founders, early employees, and VCs typically own a startup's equity.[198] Equity usually aligns incentives: employees and VCs do well when the company does well and so give their best efforts and advice.[199] But equity by itself cannot fully align founders or VCs with the company's long-term interests (let alone society's). VCs and founders must sell their equity to reap their reward. And their decision to sell will depend on their personal financial outcome, not the company's. Today, personal financial planning and tax incentives can lead these insiders to choose to exit by acquisition even if a company could continue to grow and compete independently—and this result remains unchecked or is even amplified by today's tax policies.

As a starting point for this analysis, recall that when a company creates value only slowly or modestly, VCs may seek to exit despite common shareholders wishing to keep competing. We said this bias exists because VCs seek to maximize the value of their funds, not the value of every firm in their portfolios.[200] This general bias towards exit can be intensified by the legal rights typically accompanying VCs' stock (which tend to create the most severe misalignment at moderate exit values).[201] In short, suboptimal, too-soon exits

[198] Past surveys suggest that 75-90% of VC-backed firms' employees receive stock options. *See* John R.M. Hand, *Give Everyone a Prize? Employee Stock Options in Private Venture-Backed Firms*, 23 J. BUS. VENTURING 385, 396 tbl.7 (2008) (finding 89% using surveys from 2004-2005); Magnus Henrekson & Tino Sanandaji, *Stock Option Taxation and Venture Capital Activity: A Cross-Country Study*, 20 VENTURE CAP. 51, 56 (2018) (citing Ola Bengtsson & John R.M. Hand, *Employee Compensation in Entrepreneurial Companies*, 22 J. ECON. & MGMT. STRATEGY 312, 319 tbl.1 (2013) (finding 74.8% using surveys from 2002-2007)). By rough comparison, only 23% of public companies having 500+ employees use broad-based stock option plans (plans where at least 50% of employees are eligible). Hand, *supra*, at 392 n.8.

In certain circumstances employees and founders could borrow against their equity, effectively tapping its economic value without a sale.

[199] *See, e.g.*, Henrekson & Sanandaji, *supra* note 198, at 54-55 (summarizing agency theory literature and equity compensation).

[200] *Supra* notes 143-47 and accompanying text.

[201] *See, e.g.*, Wansley, *supra* note 23, at 154. VCs sometimes hold convertible preferred stock that has liquidation preferences but not participation rights. *Id.*; *see also* WILMERHALE, VENTURE CAPITAL REPORT, 2020 at 19 (2020), https://www.wilmerhale.com/-/media/files/shared_content/editorial/publications/documents/2020-wilmerhale-vc-report.pdf [https://perma.cc/GJV7-VTF4]. Under this arrangement, VCs can choose to be paid from a transaction's proceeds before any common shareholders are paid, up to the amount of their liquidation preference (after which common shareholders get paid any remainder on a pro rata basis). Alternatively, the VCs can choose to convert to common stock and be paid pro rata along with other common stockholders. At low transaction prices, VCs will clearly prefer cashing out with their liquidation preference, even if this means that common shareholders get nothing. More interestingly, as the transaction price increases, there may be a wide range

may occur because venture capital *fund*-level interests diverge from *company*-level interests.

But another set of suboptimal, too-soon exits may occur because individual VCs' *personal* financial interests diverge from both the company's and even their funds' interests. In a venture fund, the individual GPs who make decisions are in a different financial position from the institutional LPs that provide the capital.[202] LPs are often multibillion dollar, tax-exempt endowments and pension funds.[203] When they invest a small portion of their overall portfolio in venture, they are girded for risk and often face no taxes on gains. But GPs are working professionals, and while they may have high net worths, significant success in one company may still be significant to them. Often this is a good thing, motivating the GPs to pick winners. But given an apparent winner, an early exit to lock in the rich rewards may become rational sooner for GPs than for the more resourced and diversified LPs—perhaps leading GPs to accept or even advocate for a triple instead of a homer, or a homer instead of a grand slam, or a big tech acquisition instead of an IPO.

True, GPs face reputational risks that should mitigate this tendency. GPs would not want to become known for shortchanging LPs by exiting prematurely, assuming they wish to raise future venture funds.[204] But the GP is also likely the LPs' best source of information into the actual prospects of a company that has

of increased exit values that will not increase the earnings of the VCs. This is because that additional value will accrue only to common shareholders (assuming that the VC does not also have the right to "participate" or to share immediately in the remaining proceeds, a right rarely held). Only when the value of the VCs' share of common stock on an as-converted basis exceeds the value of the VCs' liquidation preference will they make the conversion. And this means that in some cases, even if the firm could continue to increase in value, the VCs may not bother to try. Given that VCs often hold board seats and special voting rights as shareholders, Wansley, *supra* note 23, at 154, some firms that could continue improving their prospects won't continue and compete. VCs always face some urgency to exit and get on to the next fund, but these particular stock provisions and long windows of indifference to moderately increasing exit values may prompt VCs to decide to exit earlier than they might otherwise.

[202] For general discussion of principal-agent problems between LPs and GPs, see Andrew Metrick & Ayako Yasuda, *Venture Capital and Other Private Equity: A Survey*, 17 EUR. FIN. MGMT. 619, 641-42 (2011). For an article on principal-agent problems between founders and their firms, which inspires this analysis in some respects, see generally Wansley, *supra* note 23 (discussing founder personal financial planning, which here we extend where relevant to GP incentives).

[203] *See* Metrick & Yasuda, *supra* note 202, at 636-37.

[204] *Cf.* Victor Fleischer, *The Rational Exuberance of Structuring Venture Capital Start-Ups*, 57 TAX L. REV. 137, 174 (2003) (making similar point); *supra* notes 180-84 and accompanying text.

prematurely exited.[205] As a result, the GP can manage reputational risk by managing the flow of information to LPs. Further, the GP may expect that other GPs will behave similarly in similar situations, reducing the likelihood that this GP will negatively compare to others.

GPs likely face extra incentive to exit prematurely even from apparent winners. This pressure has been studied more fully as applied to stockholding founders and early employees.[206] A founder or employee is also solving for her personal financial well-being, not her company's. Once a company reaches a certain level of success, a founder (or employee) may become willing to accept an exit to lock in "beach money" even if the firm could continue to become more successful.[207] Founders and early employees often take a lower-than-market salary in exchange for stock. As time goes on, a growing share of their potential wealth becomes locked in a single asset: their company's stock. This may lead them to seek premature exits for similar reasons to GPs, for several reasons.

First, further gains become less material. If the founder or employee already has enough money to live out her days on the beach, why keep fighting? This is the problem of diminishing marginal utility.[208] Second, potential losses become more significant. If one shock the founder can't control could prevent her from living out her days on the beach, she may really want to lock in her gains. This is loss aversion.[209] Third, even if she wants to increase her wealth, and even if she stays as risk tolerant as ever, she may still seek to diversify her investments. In other words, even the founder seeking more than the "beach money" may still want to sell. That's because at some point her best strategy for maximizing wealth will cease to be keeping all gains in the startup and will begin to be reinvesting gains into other assets.[210] For all these reasons, she may want to sell

[205] *Cf.* Wansley, *supra* note 23, at 172-73 (making similar point as applied to founders misleading GPs).

[206] *E.g.*, Wansley, *supra* note 23, at 153 (discussing throughout article); David F. Larcker, Brian Tayan & Edward Watts, *Cashing It In: Private-Company Exchanges and Employee Stock Sales Prior to IPO*, HARV. L. SCH. F. ON CORP. GOVERNANCE (Oct. 9, 2018), https://corpgov.law.harvard.edu/2018/10/09/cashing-it-in-private-company-exchanges-and-employee-stock-sales-prior-to-ipo/ [https://perma.cc/8RWZ-4YRZ].

[207] Wansley, *supra* note 23, at 153 (describing and coining term "beach money" in this context).

[208] *Id.*

[209] *Id.*

[210] The point would depend on factors like her risk tolerance, the company's anticipated future performance, and the broader market's anticipated performance. *Cf. id.* (applying aspects of modern portfolio theory to this context, but doing so without clearly specifying the case of a risk-tolerant, gains-seeking, but profit-maximizing founder wanting diversification). *See generally* JONATHAN BERK & PETER DEMARZO, CORPORATE FINANCE 369-77 (4th ed. 2017) (discussing and illustrating modern portfolio theory).

part or all of her stock, which may entail selling the company—even if the company could keep doing better. This, too, may explain why a company like Instagram sells to Facebook, instead of competing with it under uncertainty.

For all these individuals—GPs, founders, and stock-holding employees—personal financial planning may make them prefer a lucrative but premature exit even if it means foregoing a bigger reward for other shareholders (and for society). All of these actors also have various ways to push for premature exit to act on those interests. If IPOs are slow and secondary sales limited,[211] the premature exit these actors choose will likely be an acquisition, often by an incumbent. In short, key participants may want to leave the fight just before the final round.

The securities and tax regimes don't push back against these private incentives and may even exacerbate them. On the securities front, the IPO lockup period makes the final price an individual will obtain highly uncertain.[212] As just discussed, GPs and founders will want to avoid such risk and so to avoid IPOs. For employees holding stock options, an IPO may be especially unattractive. The uncertainty creates challenging tax-planning decisions. Lacking information about the company's plans and facing pronounced volatility, an employee with stock options must typically decide if and when to exercise those options and so set the basis for subsequent gains (or losses) through the IPO.[213] The best-laid plans can be for nought. In at least one case, a company was alleged to have changed the issue date of exercised stock in order to manage its own accounting as a public company, saddling employee stockholders with a larger-than-expected tax bill in the process.[214] By contrast, acquisitions typically present clearer information and choices. While individual employees may face different personal situations, the faster time to exit and the greater simplicity of acquisitions may prompt some senior insiders to advocate for an acquisition exit over an IPO.[215]

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[211] *See* Cannon, *supra* note 59, at 17-32, 83-89 (discussing rules limiting secondary buyouts and sales); *supra* Figure 4; *supra* notes 133-36 and accompanying text (comparing speed of IPOs and acquisitions).

[212] *Supra* note 134 and accompanying text.

[213] For an account of a particularly tough IPO, see Biz Carson, *Uber IPO Fallout: Why Some Early Employees Are Stunned by Tax Bills*, PROTOCOL (Feb. 11, 2020), https://www.protocol.com/uber-ipo-rsus-tax-bills [https://perma.cc/4WDB-EU4L].

[214] *See, e.g.*, Lauren Feiner, *Nearly 200 Current and Former Uber Employees Sue Over Stock Price Decline Since IPO*, CNBC (Aug. 28, 2020, 3:49 PM EDT), https://www.cnbc.com/2020/08/28/nearly-200-uber-employees-sue-over-stock-price-decline-since-ipo.html [https://perma.cc/W9HW-N4QZ].

[215] Acquisitions can be made in stock, cash, or in combination. *See, e.g.*, Giang Nguyen & Hung Pham, Venture Capital and Method of Payment in Mergers and Acquisitions 3-4 (Oct. 15, 2019) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id

Perhaps more concerning is a set of tax policies that may unwittingly intensify these problems. First, these policies may encourage equity funding of innovative companies and their employees *even when* debt funding and ordinary compensation might do. And second, these policies reward those investors and employees for successfully exiting companies *even when* they exit by selling to incumbents bent on shutting them down. In other words, these policies may increase the size of the problem described here.

The most significant measure in this is the Qualified Small Business Stock ("QSBS") exemption to the capital gains tax.[216] Introduced in 1993 and expanded at the behest of VCs,[217] this exemption enables VCs to "totally wipe out their tax bills."[218] It provides that a person who is issued original stock in a C-corporation having less than $50 million in assets and who then holds that stock for at least five years need not pay tax on up to $500 million in capital gains.[219] Further, if the C-corporation is acquired, the basis rolls over into the

=3351544 [https://perma.cc/3WPS-RLZ2]. But even if it is a stock swap, an acquisition by a large public company enables employees to liquidate their stock immediately on the public market.

[216] Manoj Viswanathan, *The Qualified Small Business Stock Exclusion: How Startup Shareholders Get $10 Million (or More) Tax-Free*, 120 COLUM. L. REV. F. 29, 29 (2020); Brian Faler, *That Time Democrats Created a Massive Tax Break for the Rich*, POLITICO (Oct. 6, 2016, 5:00 AM EDT), https://subscriber-politicopro-com.stanford.idm.oclc.org/article/2016/10/that-time-democrats-created-a-massive-tax-break-for-the-rich-132736.

[217] *See* Ed Zimmerman & Brian Silikovitz, *Gimme Shelter: VC-Backed M&A Tax Strategies For QSBS/1202*, FORBES (July 18, 2016, 3:28 PM EDT), https://www.forbes.com/sites/edwardzimmerman/2016/07/18/gimme-shelter-vc-backed-ma-tax-strategies-for-qsbs1202/#8636b8a497ba [https://perma.cc/SFS7-SGZB]. Alan Patricof, a cofounder of the venture capital firm Greycroft, evidently helped lobby for this tax loophole. *Id.*; *see also* Alan Patricof, *Early Stage Investing for Entrepreneurs and Individual Investors Just Got a Whole Lot More Attractive*, TECHCRUNCH (Jan. 25, 2016, 11:00 AM EST), https://techcrunch.com/2016/01/25/early-stage-investing-for-entrepreneurs-and-individual-investors-just-got-a-whole-lot-more-attractive/ [https://perma.cc/D3ZJ-XX3Y].

[218] Ben Steverman, *When an Eight-Figure IPO Windfall Can Mean a Zero-Digit Tax Bill*, BLOOMBERG BUSINESSWEEK (June 10, 2019, 5:00 AM EDT), https://www.bloomberg.com/news/articles/2019-06-10/silicon-valley-wins-big-with-tax-break-aimed-at-small-businesses. Thanks to Becky Lester for pointing us towards this provision.

[219] Specifically the greater of $10 million or 10 times their investment. *See* 26 U.S.C. § 1202(b)(1)(A) (defining upper bound under one election of $10 million); *id.* § 1202(b)(1)(B) (defining upper bound under the other election of ten times basis invested or up to $500 million if all $50 million in small business assets were the result of equity investments by the taxpayer); *id.* § 1202(b)(2) (defining minimum holding period); *id.* § 1202(d) (defining qualified small business); *id.* § 1202(h)(4)(A) (permitting the QSBS benefit to roll over into stock received in an acquiring firm); *see also* Matthew E. Rappaport

acquirer's stock and the tax benefit can be realized when *that* stock is sold.[220] The QSBS exemption also applies to stock obtained in exchange for services.[221] Note, however, that this exemption does *not* apply to venture debt in the same way. For venture debt, the asset test is performed and the hold time accrues only if and when the venture debt is converted to equity,[222] which may be too late after founding or too soon before exit (or both) for the original lender to take advantage. Because contemporary tech companies are asset poor, a "qualified small business" with $50 million in assets might look like Uber did in 2013, when it held few assets but was valued at $3.5 billion.[223]

This QSBS provision aims to encourage VCs to invest in startups, and VCs say it does.[224] But it doesn't benefit most LPs much, because they're often endowments and other tax-exempt entities.[225] Instead, it benefits GPs, who are nonexempt and typically contribute from 2% to 10% of fund values.[226] In the words of Alan Patricof, founder and managing director of venture firm Greycroft, "It is difficult to overstate the magnitude of what this means for individuals who are founders or who invest in early stage corporations," as "the tax-free gain could be dramatic."[227]

The benefit can be so dramatic that VCs upon investment often "require assurances from companies seeking funding that they will qualify for the tax-

& Caryn I. Friedman, *Section 1202: A Big Deal for Small Business*, ABA TAX TIMES, Aug. 2018, at 28, 29, 33-34.

[220] That is, even if the company is sold before the five-year holding period is complete, the benefit can still be realized if the acquiring company pays in shares and those shares are held for the remaining time. *See* Steverman, *supra* note 218 (pointing out Uber example).

[221] *See* Joseph J. Bergthold & Thomas C. Lenz, *How Private Equity Fund Managers Can Cash In on Tax Benefits of Qualified Small Business Stock*, J. PASSTHROUGH ENTITIES, May-June 2011, at 19, 24. No changes appear to have affected this aspect of the provision since the time of this article.

[222] *See id.*

[223] *See* Steverman, *supra* note 218; Harrison Weber, *Timeline: How Uber's Valuation Went from $60M in 2011 to a Rumored $50B This Month*, VENTUREBEAT (May 10, 2015, 12:24 PM), https://venturebeat.com/2015/05/10/timeline-how-ubers-valuation-went-from-60m-in-2011-to-a-rumored-50b-this-month/ [https://perma.cc/MB24-TDNA] (discussing Uber's exponential growth and valuation).

[224] *E.g.*, Justin Field, *Correcting the Record on How QSBS Impacts the Entrepreneurial Ecosystem*, NVCA (Oct. 11, 2016), https://nvca.org/correcting-record-qsbs-impacts-entrepreneurial-ecosystem/ [https://perma.cc/YFE7-QCQP].

[225] *E.g.*, *id.* ("Big VC funds can raise capital from the large institutional investors (pension plans, foundations etc.) for which this provision does nothing, but smaller ones have more difficulty doing that.").

[226] Patricof, *supra* note 217.

[227] *Id.*; *see also* Faler, *supra* note 216.

free treatment."[228] And though practical concerns make venture debt difficult to deploy at early stages in any case, early funders may be incrementally less likely to agree to give debt (even convertible debt) because this policy favors gains from equity. Earnings from debt will be subject to income rather than the lower capital gains tax, and more importantly will not be exempted by the QSBS provision.[229] For similar reasons, employees may be incrementally more likely to demand equity shares over cash compensation because of the policy. On the margins, the QSBS provision may increase the tendency to fund startups with equity and to pay early employees with stock, intensifying the conditions that would prompt early stakeholders to seek an early exit instead of continued operations.

At the company level, similar financial- and tax-planning concerns may also drive acquisition exits. This planning might increase the willingness of acquirers to pay for targets, and of targets to be acquired. Large firms may at times see that by acquiring a firm they can obtain a tax benefit or avoid a tax loss. This could come in many configurations. As one example, until recently, firms domiciled in tax havens were unable to return cash to the United States without paying a steep repatriation tax.[230] As a result, in the absence of better uses of cash abroad, firms having their cash abroad saw acquiring firms abroad as effectively cheaper. This may partly explain why Microsoft was willing to spend as much it did using dollars abroad for Skype, then domiciled abroad.[231] Of course, unsophisticated startups may not situate themselves in tax havens[232] and the U.S. repatriation penalty has been eliminated, thus diminishing the import of this driver going forward. Another example of an acquirer seeing tax-related value in an acquisition would be one seeking to obtain subsidies that the target

[228] Faler, *supra* note 216; *see also* Fleischer, *supra* note 204, at 165 (explaining that QSBS qualification is part of standard representations and warranties). The QSBS benefit, which only applies to C-corporation stock, may also help explain VCs' apparent preference for funding C-corporations, despite the problem of double-taxation it creates; another possible reason to use the form suggested by scholars is—you guessed it—to facilitate exit. Viswanathan, *supra* note 216, at 38-39.

[229] Faler, *supra* note 216 (discussing capital gains and income taxes, as well as the QSBS benefit).

[230] TAX POL'Y CTR., BRIEFING BOOK 509-10 (2020), https://www.taxpolicycenter.org /sites/default/files/briefing-book/tpc_briefing_book_2020.pdf [https://perma.cc/6JF6-TE4G] (summarizing law and collecting sources).

[231] rbarusch, *Dealpolitik: Microsoft's Brilliant, Legal Tax Dodge*, WALL ST. J. (May 11, 2011, 2:59 PM ET), https://www.wsj.com/articles/BL-DLB-33254.

[232] Skype, for instance, was not a startup; it had been bought by eBay, sold to private equity, and then sold to Microsoft. Stephen Shankland, *Microsoft Closes $8.5 Billion Skype Acquisition*, CNET (Oct. 14, 2011, 5:17 AM EDT), https://www.cnet.com/news/microsoft-closes-8-5-billion-skype-acquisition/ [https://perma.cc/M5EK-JBTL].

has already earned and that can be conveyed to the acquirer.[233] For various reasons, tax treatment may encourage large firms to pay more for small firms than they otherwise would.

Targets may also see that tax planning available through an acquisition can increase the value of their exit. As one example, some corporate structures can help companies reduce taxes, and these may be easier to deploy in the context of an acquisition. Early-stage companies often overlook tax-planning and corporate governance considerations.[234] And so late-stage companies often need to restructure to prepare for their next phase of growth. Yet firms may be less likely to take advantage of the most aggressive tax avoidance structures—including international ones like the historic "Double Irish" or today's "Single Malt"[235]—if the headline risk outweighs the benefit, and this may be more likely in an IPO than an acquisition exit.[236] Promoting the firm publicly is part of the

[233] For some tax breaks, firms may become eligible most easily by acquiring others. *See, e.g.*, Jennifer L. Blouin, Eliezer M. Fich, Edward M. Rice & Anh L. Tran, *Corporate Tax Cuts, Merger Activity, and Shareholder Wealth*, J. ACCT. & ECON. (forthcoming 2021) (manuscript at 2), https://www.sciencedirect.com/science/article/pii/S0165410120300173 [https://perma.cc/R9ZW-C346] (discussing how the creation of a tax break for domestic production prompted an increase in total deal value in one industry).

[234] *See* Morse & Allen, *supra* note 197, at 358-60. Startups become increasingly sensitive the later they are in their life cycle. *Id.* at 361.

[235] In general, these methods take advantage of discontinuities between each country's tax codes. A company is formed on paper that is seen by Country A as not taxable in Country A and yet by Country B as not taxable by Country B—and so not taxable at all. Ireland, the Netherlands, and other countries allow or even encourage such structures, as companies engaged in such tax planning nonetheless may need or find it convenient to be resident in those countries for the scheme to work, and this creates some investment and jobs in these tax havens. As the European Union and other international bodies have moved to close these structures, others have opened: the Double Irish structure is being phased out, but already the Single Malt, another Irish dodge, has risen to take its place. Dominic Coyle, *Multinationals Turn from 'Double Irish' to 'Single Malt' to Avoid Tax in Ireland*, IRISH TIMES (Nov. 14, 2017, 5:00 AM), https://www.irishtimes.com/business/economy/multinationals-turn-from-double-irish-to-single-malt-to-avoid-tax-in-ireland-1.3290649 [https://perma.cc/DW7Y-NLEY]. For a primer on such structures—though recent reforms have overtaken some of the papers' relevance—see Edward D. Kleinbard, *Stateless Income*, 11 FLA. TAX REV. 699, 706-13 (2011) [hereinafter Kleinbard, *Stateless Income*] (using Google's structure to explain the "Double Irish Dutch Sandwich"); and Edward D. Kleinbard, *The Lessons of Stateless Income*, 65 TAX L. REV. 99, 106-09 (2011) [hereinafter Kleinbard, *The Lessons*] (continuing the analysis in a companion paper).

[236] This may be an especially salient risk for emerging firms with nascent values still premised partly on pure consumer adoption and network effects—not stable revenues. That said, studies examining whether this headline risk exists and how it affects tax planning among firms as they reorganize, go public, or merge have not conclusively validated this

IPO process. When Etsy went public, for instance, it received public pushback for offshoring its IP to benefit from internal transfer pricing, and so Etsy decided not to undertake further reorganization into a complex tax avoidance structure.[237] By contrast to IPOs, acquisitions do not entail as much public attention.[238] The ability to reorganize with reduced scrutiny and to capture additional value through aggressive tax planning may make a firm more eager to sell to an acquirer than to the public market.

Sometimes, the benefits may be mutually generated. Once under the acquiring firm's ownership, new corporate affiliates can set and accept prices on the transfer of goods and services between them so that revenues accrue where taxed the least, and expenses accrue where they can result in the greatest tax deductions.[239]

In sum, individual- and firm-level financial and tax planning likely influences exit decisions, and may on balance nudge individuals to seek earlier exits and both individuals and firms to seek exits through acquisition. Even if these

intuition. But they haven't disproven it either. *See, e.g.*, John Gallemore, Edward L. Maydew & Jacob R. Thornock, *The Reputational Costs of Tax Avoidance*, 31 CONTEMP. ACCT. RSCH. 1103, 1104-08 (2014) (reviewing the mixed evidence as to whether reputational effects can explain the "under-sheltering" puzzle and concluding, based on new analysis, that reputational effects cannot explain "under-sheltering"). *But cf.* Michelle Hanlon & Joel Slemrod, *What Does Tax Aggressiveness Signal? Evidence from Stock Price Reactions to News About Tax Shelter Involvement*, 93 J. PUB. ECON. 126, 127, 136 tbl.4 (2009) (finding some but not overwhelming evidence that stock price depresses in response to news of tax shelter involvement and that this effect is stronger among retail firms and weaker (indeed positive) among firms with highly entrenched boards (as would be the case for firms in which founders own a majority of voting shares)—but not separately studying long-tenured versus newly public firms, let alone private ones).

[237] Specifically, a Double Irish with Dutch Sandwich. *See* Suzanne Kapner, *Etsy Crafted Tax Strategy in Ireland*, WALL ST. J., Aug. 17, 2015, at B1.

[238] *See, e.g.*, *In re* Bristol-Myers Squibb/Celgene, F.T.C. File No. 191-0061, 2019 WL 6168276, at *2 (Nov. 15, 2019) (Chopra, Comm'r, dissenting) (objecting to $74 billion pharmaceutical merger because "this transaction appears to be heavily motivated by financial engineering and tax considerations" (footnote omitted)).

[239] A single firm could also develop its own inputs for its own vertically related goods or services, set up separate subsidiaries, and set internal transfer prices with tax planning in mind. Our point here is that, as to the two independently operating firms, the tax benefits of merger include transfer pricing benefits they could not accomplish alone in the near term. On transfer pricing generally, see, for example, Joel Barker, Kwadwo Asare & Sharon Brickman, *Transfer Pricing as a Vehicle in Corporate Tax Avoidance*, 33 J. APPLIED BUS. RSCH. 9, 9-10 (2017); Lisa De Simone & Bridget Stomberg, Do Investors Differentially Value Tax Avoidance of Income Mobile Firms? 1-2 & n.1 (June 2012) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2102903 [https://perma.cc/A6VM-HHEY] (explaining transfer pricing and related tax planning or avoidance strategies).

considerations came out neutral, from a social perspective this might be the wrong balance. Because acquisitions to incumbents may be worse for society than other exits, an optimal tax policy might well advantage secondary sales, nonincumbent acquisitions, and IPOs over acquisitions.[240] A so-called Pigouvian tax raises the cost of privately beneficial but socially costly conduct, internalizing to the private parties the social externalities so that by following their own interests they choose the socially efficient outcome.[241] To the extent companies that operate independently or are acquired by nondominant firms benefit society more than do companies acquired by dominant rivals, an efficient tax policy should in fact nudge these individual- and firm-level incentives to favor IPOs. They don't.

B. *The VC Model Encourages Acquisition Over IPO*

VCs are not passive in the face of these incentives. Rather, it's only reasonable that VCs would professionalize their pursuit of the most lucrative exit. And this may have an outsized effect on founders' own ambitions and the fate of portfolio companies. Whether hearing a new pitch or advocating that a board approve an exit, VCs have every reason to focus founders not on running businesses but on getting out—and they are uniquely positioned to succeed.

1. Before Funding: VCs Prime Startups to Look Toward Acquisition

VCs may prompt founders to start companies set for the exit VCs prefer. Passionate founders may be energized by their view of the future, but a rational VC will force them to refocus on exit opportunities a few years after investment.[242] Once upon a time, the prototypical pitch explained how a startup

[240] We discuss the reasons why *infra* Section III.A.

[241] For an introduction to this class of taxes, which intend to internalize negative externalities, see generally William J. Baumol, *On Taxation and the Control of Externalities*, 62 AM. ECON. REV. 307 (1972).

[242] As one Silicon Valley godfather and instructor to generations of entrepreneurs puts it, "The minute you take money from someone, *their business model now becomes yours*." Blank, *supra* note 9. And the VC business model demands an exit: "There are many reasons to found a startup. There are many reasons to work at a startup. But there's only one reason your company got funded—liquidity." *Id.* (emphasis omitted); *see also* Achleitner et al., *supra* note 44, at 635 ("Prior research has shown that venture capitalists often already plan for a specific exit route at the time of entry."); Bock & Schmidt, *supra* note 147, at 70-71, 75; DeTienne, McKelvie & Chandler, *supra* note 109, at 256 ("[E]ntrepreneurial exit strategies are likely to influence future decisions and behaviors, including resource acquisition, funding, growth, and risk-taking propensities."); Giot & Schwienbacher, *supra* note 61, at 680 ("The assessment of possible exit options is of paramount importance for venture capitalists prior to their investments in new ventures."); Henkel, Rønde & Wagner, *supra* note 114, at 304 ("[V]enture capitalists aiming for a profitable exit always consider the option of a trade

would build a whole new market or completely disrupt an existing one. But as run times get longer, VCs seek to invest in later-stage, surer bets. "At least anecdotally, innovative firms that attempt to enter the market at a very early stage have been described as being 'first to market, first to fail,' 'too fast to market,' and to have suffered 'a first mover disadvantage.'"[243] Proposing to be the first to disrupt an entire marketplace does not inspire the confidence of most VCs today.

As Steve Blank coaches entrepreneurs, "You've been funded to get to a liquidity event. Period. Your VCs know this, and you need to know this too."[244] Founders respond to this conservativism in VCs' thinking. The mythical founder once wanted to be the next Jeff Bezos or Mark Zuckerberg. Today's founders may simply hope to be acquired by them (or "acqui-hired").[245] Those who still dream of running a business long term are quickly rebuffed. Of seven VCs introduced to the young founder of Airbnb, for instance, two declined to hear the pitch, and all five others declined to invest—each balking at the $150,000 requested for a 10% stake in what today is a $30 billion company.[246] Many VCs likely passed on Airbnb for lack of an obvious acquisition exit option. While Airbnb did just fine, less persistent founders have shifted their business plans to clarify which incumbents would seek to acquire them.[247] They recognize that "the success path is to be acquired by a big company," "the dream is to be bought by somebody big,"[248] and the big potential buyers are "[their] incumbents and [their] competition."[249] These "early choices entrepreneurs make can have long-

sale."); Joffe & Ebersweiler, *supra* note 9 (advising that "[f]ounders must be aware of what contributes to an exit" and that the search for an exit begins "on day one").

[243] Annaleena Parhankangas & Michael Ehrlich, *How Entrepreneurs Seduce Business Angels: An Impression Management Approach*, 29 J. BUS. VENTURING 543, 547 (2014) (citations omitted); John Boitnott, *5 Things You Must Do to Get Your Company Acquired*, INC. (Apr. 19, 2018), https://www.inc.com/john-boitnott/how-to-boost-your-businesss-odds-of-an-acquisition.html ("It's many an entrepreneur's dream[:] You get a call from Apple or Google, offering to buy your rapidly-growing business." (citation omitted)).

[244] Blank, *supra* note 9.

[245] *See* John F. Coyle & Gregg D. Polsky, *Acqui-Hiring*, 63 DUKE L.J. 281, 283 (2013).

[246] Brian Chesky, *7 Rejections*, MEDIUM (July 12, 2015), https://medium.com/@bchesky/7-rejections-7d894cbaa084.

[247] Block, Fisch & van Praag, *supra* note 124, at 78 (explaining how founders set strategy given exit options).

[248] Henkel, Rønde & Wagner, *supra* note 114, at 304 (emphasis omitted) (quoting from survey of Electronic Design Automation industry, which is dominated by three incumbents: Synopsys, Cadence, and Mentor).

[249] Joe Procopio, *The Marker Guide to Getting Your Startup Acquired*, MARKER (Sept. 26, 2019), https://marker.medium.com/how-to-get-your-startup-acquired-a-step-by-step-guide-c75417a8d5be.

lasting impacts on an organization"[250]—shaping the culture and structure of the firm in light of the exit options preferred by VCs.

2. While Advising: VCs on Boards Push Acquisitions

VCs may continue to prod founders to take the easy exit of acquisition after they decide to fund a company. Often, VCs take a board seat. When they do, they become "dual fiduciaries." They owe a duty of care not only to the shareholders of the portfolio company but also to the LPs whose capital they have invested.[251] Sometimes those interests diverge. If prioritizing the fund's interests, the VC may push a poorly performing company to take an exit even if it is suboptimal for the company.

The VCs' conflict of interest may be bigger still. While LPs seek to maximize their investment in the current fund, GPs seek to maximize their take across multiple, rolling funds.[252] And they typically take not only 20% of the upside but also a flat 2% of funds managed.[253] Even when an LP might seek a longer-term strategy with greater payout, the GP may benefit by closing the fund to raise another fund and another 2% fee.[254] The short VC timeline and fee structure may make VC board members less helpful advisors for long-term, competitive strategies—and turn them into powerful advocates for acquisitions.

Another conflicting interest may even guide a portfolio company to a particular acquirer. Many VCs sit on the boards of both startups and potential acquirers.[255] A VC that has a stake in both the acquirer and the target may serve as a matchmaker and an information conduit, pushing the startup towards the incumbent.

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[250] Block, Fisch & van Praag, *supra* note 124, at 72.

[251] *In re* Trados Inc. S'holder Litig., 73 A.3d 17, 46-47 (Del. Ch. 2013) (citing Weinberger v. UOP, Inc., 457 A.2d 701, 710 (Del. 1983)) (discussing dual fiduciary duty and potential for conflict); *see also* Carsanaro v. Bloodhound Techs., Inc., 65 A.3d 618, 638 (Del. Ch. 2013) (same).

[252] *See* Christian Figge, Oliver Bauer, Reiner Braun & Ann-Kristin Achleitner, The GP-LP Conflict in Private Equity Funds Revisited: The Impact of Fund-Level Considerations on the Divestment Decision 26 (May 6, 2012) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2051441 [https://perma.cc/C83R-DD25].

[253] *See* Bock & Schmidt, *supra* note 147, at 68.

[254] *Id.* at 69 ("The VC fund's limited lifetime and the fact that fund managers often manage several funds simultaneously can distort general partners' behavior."). For more discussion of these points, see *supra* text accompanying notes 202-05.

[255] On common ownership and overlapping directorships and shareholding, see Einer Elhauge, *Horizontal Shareholding*, 129 HARV. L. REV. 1267, 1274 (2016); and C. Scott Hemphill & Marcel Kahan, *The Strategies of Anticompetitive Common Ownership*, 129 YALE L.J. 1392 (2020).

Founders are aware of these dynamics, and those who seek to cash out rather than to compete actively take advantage of them. "Putting the right investors on your board can make all the difference in an exit. More than just bringing expertise and money to the table, they can make the right connections to secure your exit."[256] Another "founder coach" puts it more bluntly: "Rig your [a]dvisory [b]oard" to "leverage existing relationships with potential acquirers."[257]

3. After Leaving: VCs Exiting Boards May Make Post-IPO Startups More Vulnerable to Acquisition

Even a VC's eventual departure may make a firm more likely to be acquired. Some VC-backed firms go public, but even those VC-backed firms that exit via IPO are *more likely* than non-VC-backed firms that exit via IPO to be acquired thereafter.[258] The reason is unclear, but it may result directly from factors unique to VCs, like the residual benefit of VC investment as a quality signal or from more general factors correlated with VC backing. First, VC-backed firms are younger than other firms when they go public, and younger firms delist more frequently than older firms.[259] Further, VC board members commonly depart post-IPO, and this may make those firms more susceptible to later takeover.[260]

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[256] Cremades, *supra* note 161.

[257] Bailey, *supra* note 164.

[258] *See* Ragozzino & Reuer, *supra* note 154, at 169 (finding that VC-backed firms are over 1.5 times more likely to be acquired after going public than other firms that go public); *cf.* Gill & Walz, *supra* note 91, at 368 ("[I]t seems to be the case that being listed is only a temporary part of the lifetime of the formerly VC-backed firms; or to put it more bluntly, a delayed trade sale.").

[259] *See* Gill & Walz, *supra* note 91, at 361, 363 (finding both that firms that are delisted during a merger are younger than other listed firms and that VC-backed firms that IPO are younger than other firms that IPO).

[260] The contrast between VC-backed firms undergoing IPOs and other firms undergoing IPOs, such as other private equity–backed firms, is not well studied on this point. However, initial indications point to a difference. Jeff Jordan, a partner at Andreesen Horowitz and CEO of OpenTable as it went public, notes that VC-backed firms going public—given regulatory requirements and practical skills considerations—will "need to execute a transition where some, most, or even all of their investor board members are replaced by independent[]" directors. Jeff Jordan, *16 Things CEOs Should Do Before an IPO*, TECHCRUNCH (Aug. 22, 2017, 12:30 PM EDT), https://techcrunch.com/2017/08/22/16-things-ceos-should-do-before-an-ipo/ [https://perma.cc/XP5E-JEBA]; *see also* David F. Larcker & Brian Tayan, *Tesla Motors: The Evolution of Governance from Inception to IPO*, STAN. CLOSER LOOK SERIES, May 16, 2011, at 1, 2 ("After the venture capitalists that hold substantial equity positions sell down their investment, we would expect their representatives to step down from the board."). By apparent contrast, a law firm's study of recent private equity–backed offerings found that

Finally, VC-backed firms are better able to time IPO issuance to market bubbles,[261] and firms that go public during bubbles are more likely to later be acquired and delisted.[262] Founders may have their own reasons for being acquired.[263] But VCs appear to encourage rather than rebuff this tendency.

C. *Regulation Does Not Explain the Drop in IPOs*

Other potential causes of the decline in IPOs are not fully satisfying. One prominent alternative explanation is regulation, and in particular the Sarbanes-Oxley Act ("SOX").[264] SOX increased the scrutiny and costs facing companies choosing to go public. Small firms were especially affected. But regulatory changes could not have been the primary cause of the decline in IPOs because IPOs had already become less common before SOX.[265] And IPOs had already started becoming less profitable before SOX too.[266] Further, many SOX

"[m]ost [private equity] sponsors sought to maintain their representation on the board following the IPO by entering into nominating agreements." *See* Carol Anne Huff, *Recent Trends in IPOs of Private Equity Sponsor-Backed US Companies*, PRAC. L.J., Sept. 2016, at 51, 52, https://www.kirkland.com/siteFiles/Publications/Practical%20Law%20the%20Journal%20(Huff)%20Sept%202016.pdf [https://perma.cc/MXZ2-HPPH].

[261] *See* Gill & Walz, *supra* note 91, at 358-59 (reviewing literature suggesting that VC-backed companies hold more IPOs than non-VC-backed firms during times when equity valuations are high).

[262] There is "modest evidence that hot IPO markets are followed by increased activity in M&A markets in general, after controlling for firm-specific attributes." Ragozzino & Reuer, *supra* note 154, at 169. Ragozzino and Reuer "find no evidence of a positive relation between the magnitude of underpricing and the incidence of post-IPO acquisitions" except during the first year after an IPO. *Id.* at 169-70. But this finding does not directly address whether firms that are *overpriced* when they go public later go private at higher rates.

[263] *See* De Clercq et al., *supra* note 61, at 103. *But cf.* Chris Hughes, Opinion, *The Problem with Dominant Mark Zuckerberg Types*, BLOOMBERG (Dec. 10, 2018, 1:00 AM EST), https://www.bloomberg.com/opinion/articles/2018-12-10/the-problem-with-dominant-mark-zuckerberg-types (describing dual-class share structures that super founders use to maintain voting control of their corporations even as they dilute ownership, and reviewing problems this causes and pressures to end it in publicly traded companies).

[264] Sarbanes Oxley Act of 2002, Pub. L. No. 107-204, 116 Stat. 745; *see also* Ibrahim, *supra* note 109, at 13 nn.43-44.

[265] *See* DAVID WEILD & EDWARD KIM, A WAKE-UP CALL FOR AMERICA 2 (2009); Doidge, Karolyi & Stulz, *supra* note 63, at 466-67; Gao, Ritter & Zhu, *All the IPOs*, *supra* note 44, at 1665.

[266] *See* Gao, Ritter & Zhu, *All the IPOs*, *supra* note 44, at 1665.

provisions were later reformed or removed[267] without a corresponding increase in IPOs.[268]

Other regulatory changes also don't seem to be the culprit. New rules intended to enable high-frequency trading decreased brokers' minimum fees.[269] These may have reduced Wall Street's ability to fund the analysis of small-cap stocks; with fewer analysts covering small companies, fewer investors would likely understand these businesses sufficiently to invest in them even if they did go public.[270] But this also fails to explain the drop in IPOs. These rules, too, were introduced after the decline in IPOs began. Also, the decrease in listings occurred for firms of all sizes (although the decrease among small firms was most pronounced).[271] And the rise of data-driven, algorithmic trading should have driven down the cost of supplying analysis and transacting.[272] Investments in small companies still should have been possible.

Our point is not that regulatory changes are irrelevant to the changes in startup exits. But they aren't the primary explanation for the shift from IPOs to acquisitions. We think the interests of incumbents in buying startups and the demands of the VC model are a more persuasive explanation.

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[267] *See* Liu, Moeen & Nandy, *supra* note 57 (describing JOBS Act of 2012, designed to reduce regulatory burden of SOX on smaller firms going public).

[268] While the number of VC-backed IPOs briefly increased from 2013 to 2014, the number decreased again in 2015 and 2016 to pre-2012 levels. *See* Ritter, *supra* note 12, at 10 tbl.4. This vacillation appears likely to repeat for 2018 (higher than usual) and 2019-2020 (lower than usual, following faltered listings and poor results from recent IPOs, as well as global uncertainty). Richard Henderson, *IPO Activity Slows Around the World*, FIN. TIMES (Sept. 25, 2019, 2:24 PM EST), https://www.ft.com/content/085c5eb2-dfab-11e9-9743-db5a370481bc.

[269] *See* WEILD & KIM, *supra* note 265, at 19-24 (summarizing policy changes allegedly responsible for "Casino Capitalism" that have impaired small firms' ability to attract capital); Ibrahim, *supra* note 109, at 13-14 (explaining changes in decimalization, Manning Rule, Order Handling Rules, and Regulation Fair Disclosure); *see also* Doidge, Karolyi & Stulz, *supra* note 63, at 465.

[270] *See* WEILD & KIM, *supra* note 265, at 19-24; Doidge, Karolyi & Stulz, *supra* note 63, at 465; Ibrahim, *supra* note 109, at 13-14; Marshall Lux & Jack Pead, *Hunting High and Low: The Decline of the Small IPO and What to Do About It* 9-11 (Harvard Kennedy Sch. Mossavar-Rahmani Ctr. for Bus. & Gov't Assoc. Working Paper Series, No. 86, 2018).

[271] *See* Doidge, Karolyi & Stulz, *supra* note 63, at 473-75.

[272] This claim is not well researched in the literature and is beyond what we can fully address here. But we imagine that automated algorithms fed by information scraped from filings, Twitter feeds, press releases, and the like should reduce information costs.

III. THE PROBLEM WITH EXIT STRATEGIES

Should it trouble us that the nature of today's startup and VC industries drives startups to sell to incumbent monopolists? In this Part, we argue that the answer is yes.

A. *What's Wrong with Incumbents Acquiring Startups?*

There are several reasons to be concerned that startups tend to be acquired by incumbents rather than go public or merge with another maverick and that VCs intensify this phenomenon.

First, concentration in the tech industry is a large and growing problem. Others have recognized as much.[273] The normal waves of Schumpeterian competition that disciplined previous network markets seem to have stalled; the companies that dominate the digital economy are all more than fifteen years old and have dominated their market categories for more than a decade.[274] While

[273] *See generally Antitrust and Competition*, PROMARKET, https://promarket.org/category/antitrust-and-competition/ [https://perma.cc/UL7G-AXH2] (last visited Jan. 3, 2021) (containing blog posts from journalists and academics—convened by the University of Chicago's Booth School of Business—concerned with the growing tech-enabled concentration of markets). For a survey of popular accounts of growing concentration and a critical assessment of the evidence, see Carl Shapiro, *Antitrust in a Time of Populism*, 61 INT'L J. INDUS. ORG. 714, 717-37 (2018). Note that Shapiro discounts overblown narratives of concentration creeping up in all industries, but he underscores the role of "an industry's use of information technology" and "the rise in concentration from 2002 to 2007" only pages into his assessment. *Id.* at 731. Other authors point more directly to the role of technology, which is central to the story of VC-backed firms.

[274] The technology firms that are commonly considered dominant enjoy large market shares, though their competitive moats in some areas may have been breached (particularly smartphones for Apple and streaming subscriptions for Netflix). These firms are ordered by value of their acquisitions in their first decade of business:

- Google, founded in 1998, now controls 73.1% of search advertising revenues, 90% of actual searches, and over 40% of primary personal email accounts. *See* Jeff Desjardins, *How Google Retains More than 90% of Market Share*, BUS. INSIDER (Apr. 23, 2018, 6:35 PM EST), https://www.businessinsider.com/how-google-retains-more-than-90-of-market-share-2018-4 [https://perma.cc/MG9V-8GNS]; Monica Nickelsburg, *Amazon Gaining on Google in Search Advertising Market Share*, GEEKWIRE (Oct. 15, 2019, 9:41 AM EST), https://www.geekwire.com/2019/amazon-gaining-google-search-advertising-market-share/ [https://perma.cc/YGP4-BW69]; *Primary E-Mail Providers According to Consumers in the United States as of January 2017, by Age Group*, STATISTA (Apr. 2017), https://www.statista.com/statistics/547531/e-mail-provider-ranking-consumer-usa-age/ [https://perma.cc/H7YZ-HZMU].
- Facebook, founded in 2004, now (with Instagram) enjoys 81.4% of social referrals to e-commerce sites and 66% of the social media market (ostensibly by number of active accounts). *See* Nina Angelovska, *Facebook Losing Users to Pinterest*,

monopoly alone is not illegal or necessarily problematic, today's tech monopolists have almost certainly held onto and even broadened their monopolies by acquiring firms that in another era would have displaced them. At the very least, these acquisitions have reduced the likelihood of disruptive innovation that would challenge the power of those monopolies. Monopoly can lead to higher prices, though that has not been true for most of today's tech giants. But it can also lead to less consumer-friendly nonprice terms, such as

YouTube and Twitter (Market Share by Region), FORBES (Jan. 7, 2019, 7:30 AM EST), https://www.forbes.com/sites/ninaangelovska/2019/01/07/facebook-loosing-users-to-pinterest-youtube-and-twitter-market-share-by-region/ [https://perma.cc/SUJ5-PRYQ]; Christina Newberry, *33 Facebook Stats that Matter to Marketers in 2020*, HOOTSUITE (Nov. 4, 2019), https://blog.hootsuite.com/facebook-statistics/ [https://perma.cc/PYT7-GAKU].

- Amazon, founded in 1994, now controls 38% of online retail (and over 60% in some categories, like books). *See* Matt Day & Spencer Soper, *Amazon U.S. Online Market Share Estimate Cut to 38% from 47%*, BLOOMBERG (June 13, 2019, 3:44 PM EDT), https://www.bloomberg.com/news/articles/2019-06-13/emarketer-cuts-estimate-of-amazon-s-u-s-online-market-share; Polly Mosendz, *Amazon Has Basically No Competition Among Online Booksellers*, ATLANTIC (May 30, 2014), https://www.theatlantic.com/business/archive/2014/05/amazon-has-basically-no-competition-among-online-booksellers/371917/.
- Apple, founded in 1976, and with its first iPod released in 2001, controls just over 10% of the smartphone, laptop, tablet, and PC hardware markets worldwide but more than a third of the U.S. smartphone market, *US Smartphone Market Share: By Quarter*, COUNTERPOINT (Nov. 16, 2020), https://www.counterpointresearch.com/us-market-smartphone-share/ [https://perma.cc/ZC8E-5BV2], and similarly high percentages in digital music products and services, *see Apple Music Gains Global Market Share, but Spotify Is Still Far Ahead*, VARIETY (Sept. 14, 2018, 2:15 PM EDT), https://variety.com/2018/biz/news/apple-music-global-market-share-streaming-spotify-1202942424/ [https://perma.cc/B5EY-NF7Y]; Stephanie Condon, *iPad Dominates Tablet Market Again, Even as Sales Drop in Q3*, ZDNET (Nov. 2, 2018, 2:23 PM EDT), https://www.zdnet.com/article/ipad-dominates-tablet-market-again-even-as-sales-drop-in-q3/ [https://perma.cc/QQ8R-9N3S]; Ben Lovejoy, *Apple Holds 3rd Place in Smartphone Market Share, Position Looks Safe for Now*, 9TO5MAC (Aug. 1, 2019, 7:37 AM EDT), https://9to5mac.com/2019/08/01/smartphone-market-share/ [https://perma.cc/F7FK-5Q3V]; Ben Lovejoy, *Apple Moves from #5 to #4 in Global Laptop Shipments, on Track for Double-Digit Share*, 9TO5MAC (Feb. 12, 2018, 9:29 AM EST), https://9to5mac.com/2018/02/12/apple-mac-market-share/ [https://perma.cc/AEH9-MNMQ]; *Apple's Market Share of PC Unit Shipments in the United States from 2013 to 2020, by Quarter*, STATISTA (Oct. 2020), https://www.statista.com/statistics/576473/united-states-quarterly-pc-shipment-share-apple/ [https://perma.cc/XKF6-HZJN].
- Netflix, founded in 1997, now controls 47% of online streaming subscription revenue. Wendy Lee, *Why Netflix Isn't Worried About the Streaming Wars*, L.A. TIMES (Oct. 9, 2019, 3:00 AM), https://www.latimes.com/entertainment-arts/business/story/2019-10-09/can-netflix-maintain-dominance-over-new-streaming-services.

reduced privacy, increased advertising exposure, and less consumer choice—and this appears to be happening today.[275]

Second, incumbent acquisition has contributed to the increasing concentration of technological capacity. Technology is diffusing from leaders to followers more slowly than it used to. Economists have blamed this for a long-term drop in productivity in recent decades and for sustained declines in entrepreneurship over the last decade.[276] Even if today's tech monopolists are good for consumers—and they may be in many ways—the consolidation of technological leadership and resulting loss of technology diffusion is bad for economic growth more generally.

Third, and perhaps most problematic, tech giants often buy up promising startups only to shut them down. Sometimes this is intentional. Economists have documented cases of "killer acquisitions"—companies that buy incipient competitors in order to eliminate the threat they pose.[277] While especially prominent in biotech, the practice is also prominent among big tech firms:

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[275] *See, e.g.*, GEORGE J. STIGLER CTR. FOR THE STUDY OF THE ECON. & THE STATE, COMMITTEE FOR THE STUDY OF DIGITAL PLATFORMS MARKET STRUCTURE AND ANTITRUST SUBCOMMITTEE REPORT 32, 40 (2019), https://research.chicagobooth.edu/-/media/research/stigler/pdfs/market-structure-report.pdf [https://perma.cc/CTC7-Z48A] (describing supracompetitive nonprice terms including for privacy and advertising minutes per content minute); *see also* John M. Newman, *Antitrust in Zero-Price Markets: Foundations*, 164 U. PA. L. REV. 149, 169-72 (2015) (discussing implicit price on attention); Dina Srinivasan, *The Intersection of Privacy, Data, and Competition*, PROMARKET (Oct. 26, 2019), https://promarket.org/the-erosion-of-privacy-for-facebook-and-google-users-is-an-antitrust-problem/ [https://perma.cc/3265-2WNJ] (arguing, from the perspective of a legal scholar with over ten years' experience in digital advertising, why diminished privacy protections are symptomatic of diminished competition in online services).

[276] There are fewer startups these days, and one reason may be that there is less diffusion of new research and technology. *See* JOHN HALTIWANGER, IAN HATHAWAY & JAVIER MIRANDA, EWING MARION KAUFFMAN FOUND., DECLINING BUSINESS DYNAMISM IN THE U.S. HIGH-TECHNOLOGY SECTOR 8 & fig.4 (2014) (showing sustained declines in entrepreneurship over the last decade that remain unexplained); James Bessen, *Industry Concentration and Information Technology* 3-6 (Bos. Univ. Sch. of L. L. & Econ. Series, Paper No. 17-41, 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3044730 [https://perma.cc/F48W-Y3C5] (exploring how privately held technology may strengthen market leaders, increase concentration, and decrease entrepreneurship); Ufuk Akcigit & Sina T. Ates, *What Happened to U.S. Business Dynamism?* 1-4 (Nat'l Bureau of Econ. Rsch., Working Paper No. 25756, 2019), https://www.nber.org/papers/w25756.pdf [https://perma.cc/Q6Y9-GUTF] (arguing that gap in technology diffusion explains drop in productivity). *But cf.* ROBERT FAIRLIE, SAMEEKSHA DESAI & A.J. HERRMANN, EWING MARION KAUFFMAN FOUND., 2018 NATIONAL REPORT ON EARLY-STAGE ENTREPRENEURSHIP 7 tbl.1.1 (2019) (showing rates of entrepreneurship essentially flat from 1996 to 2018).

[277] *E.g.*, Cunningham, Ederer & Ma, *supra* note 20.

Facebook, Google, and Oracle have all bought and shut down competing firms, sometimes in the same day.[278] Tim Wu calls this the "Kronos effect"—killing your competitors in their infancy.[279] At other times, firms engage in "acqui-hires"—buying a startup to get the brainpower it employs, not the products or ideas the startup offers.[280] (Both outcomes often come together: as one tech journalist put it, "[a]nother day, another acqui-hired shutdown."[281]) But even incumbents that buy startups in good faith often shut them down within a few years. While companies fail all the time, incumbent mergers seem littered with failures. Facebook alone has shut down dozens of once-promising projects after it acquired them, and Google has done the same.[282] Those are not just

[278] *See, e.g.*, Josh Constine, *Facebook Buys and Shuts Down Shopping Site TheFind to Boost Commerce in Ads*, TECHCRUNCH (Mar. 13, 2015, 4:49 PM EDT), https://techcrunch.com/2015/03/13/to-boost-commerce-in-ads-facebook-buys-and-shuts-down-shopping-site-thefind/ [https://perma.cc/PT2X-Q8AD]; Ingrid Lunden, *After Facebook Acqui-Hired Branch Media in 2014, Founders Shutter Branch (and Potluck)*, TECHCRUNCH (June 3, 2015, 12:37 PM EDT), https://techcrunch.com/2015/06/03/bye-branch/ [https://perma.cc/CLX5-7HT3]; *Sun Acquisition by Oracle*, WIKIPEDIA, https://en.wikipedia.org/wiki/Sun_acquisition_by_Oracle [https://perma.cc/HXU2-QYXB] (last visited Jan. 3, 2021) (discussing the fate of Sun Microsystems's open source projects after its acquisition by Oracle); Wu & Thompson, *supra* note 75 ("Facebook has purchased and then shut down 39 companies – nearly half of its acquisitions. Many of these shutterings may represent the simple purchase of talent, but others may have been designed to eliminate future competitors."); *infra* note 282 (discussing Google acquisitions shut down).

[279] *See* TIM WU, THE MASTER SWITCH: THE RISE AND FALL OF INFORMATION EMPIRES 25 (1st Vintage Books ed. 2011).

[280] *See, e.g.*, Bhargava & Venugopalan, *supra* note 24, at 3-4.

[281] Lunden, *supra* note 278.

[282] For an overview of Facebook's acquisitions and a report on the thirty-nine companies shut down, see Wu & Thompson, *supra* note 75. *See also* Glick & Ruetschlin, *supra* note 76, at 10 & n.26. For examples of Google's acquired companies whose services were then shut down, see Ron Amadeo, *Google's Constant Product Shutdowns Are Damaging Its Brand*, ARS TECHNICA (Apr. 2, 2019, 6:45 AM), https://arstechnica.com/gadgets/2019/04/googles-constant-product-shutdowns-are-damaging-its-brand/ [https://perma.cc/4TDG-D8E8]; see also Nicholas Carlson, *How a Great Google Workplace Turned into a 'Nightmare,'* BUS. INSIDER (June 25, 2013, 8:24 AM EST), https://www.businessinsider.com/google-zagat-story-2013-6#ixzz3YkUB8WBn [https://perma.cc/A2BM-DM4F] (describing Google's acquisition of Zagat as it aimed to solidify its restaurant recommendations in connection with local searches and in competition with Yelp and the subsequent diminishment of Zagat's brand); Alex Hern, *Revolv Devices Bricked as Google's Nest Shuts Down Smart Home Company*, GUARDIAN (Apr. 5, 2016, 5:04 AM EDT), https://www.theguardian.com/technology/2016/apr/05/revolv-devices-bricked-google-nest-smart-home [https://perma.cc/BXK9-RB7Q]; Miranda Miller, *Google Acquires (and Shuts Down) Trust Seal Company KikScore*, SEARCH ENGINE WATCH (June 4, 2012),

technologies that no longer compete with the monopolist; they are technologies that we no longer have access to at all because of the exit strategy.

Finally, some might worry about market concentration for its own sake. As New Brandeis scholars remind us, economic concentration often leads to political concentration.[283] And today, tech firms spend more than others to lobby local, state, and federal governments.[284] They and their controlling founders also shape the news that reaches consumers and citizens, corporate executives, and public officials.[285] And even supposing their leadership is unimpeachably civic, their structural concentration makes their platforms easier or at least more valuable targets for state and nonstate actors to exploit through disinformation, surveillance, and other campaigns meant to undermine social and political processes.[286] Today's dominant tech platforms aren't solely to blame for

https://www.searchenginewatch.com/2012/06/04/google-acquires-and-shuts-down-trust-seal-company-kikscore/ [https://perma.cc/7GSN-FMA5]; Jordan Novet, *Google Has Shut Down the Product It Acquired with Former Cloud Leader Diane Greene*, CNBC (Aug. 27, 2019, 9:15 PM EDT), https://www.cnbc.com/2019/08/27/google-shuts-down-hire-the-product-it-acquired-with-diane-greene.html [https://perma.cc/V3GS-FQT5]; and Catherine Shu, *Google to Close Bump and Flock, Its Recently Acquired File Sharing Apps*, TECHCRUNCH (Jan. 1, 2014, 1:52 AM EST), https://techcrunch.com/2013/12/31/google-to-close-bump-and-flock-its-recently-acquired-file-sharing-apps/ [https://perma.cc/QXR8-SWTE]. It is not clear in all cases whether Google left those technologies fallow or incorporated them into its own services.

[283] *E.g.*, Khan, *Antitrust Paradox*, *supra* note 2, at 740 (reporting that the Sherman Antitrust Act was "*for* diversity and access to markets; it was *against* high concentration and abuses of power" (quoting Eleanor M. Fox, *Against Goals*, 81 FORDHAM L. REV. 2157, 2158 (2013))). Indeed, Senator Sherman called his act a "bill of rights, a charter of liberty." 21 CONG. REC. 2461 (1890) (statement of Sen. Sherman).

[284] *See, e.g.*, Hamza Shaban, *Google Surprises as Lobbying Champion*, WASH. POST, Jan. 24, 2018, at A1 (reporting dramatic increases in lobbying to reach a combined $50 million spent by Amazon, Apple, Facebook, and Google); Max Zahn, *'Ready to Stomp on It': Documents Reveal Staggering Power of Tech Giant Lobbying*, YAHOO FIN. (Aug. 22, 2019), https://finance.yahoo.com/news/facebook-google-amazon-apple-state-lobbying-170525755.html [https://perma.cc/2VRG-XCDN] (reporting on state-level lobbying by tech firms as well as national-level lobbying intended to preempt state laws).

[285] *See, e.g.*, Shaban, *supra* note 284 (noting, while reporting on Amazon's lobbying in Washington, that "Amazon chief executive Jeffrey P. Bezos owns The Washington Post").

[286] *See, e.g.*, Olivia Beavers & Emily Birnbaum, *Lawmakers Sound Alarm on China's Disinformation Campaign in Hong Kong*, HILL (Aug. 22, 2019, 6:00 AM EDT), https://thehill.com/policy/technology/458349-lawmakers-sound-alarm-on-chinas-disinformation-campaign-in-hong-kong (describing exploitation of Facebook and other social media platforms by China, North Korea, and Russia); Bob Moser, *Interference 2020: The Disinformation Is Coming from Inside the Country*, COLUM. JOURNALISM REV. (Fall 2019), https://www.cjr.org/special_report/interference-election-2020.php [https://perma.cc/QY6B-

political divisions,[287] and the lack of alternative exit strategies for VC-backed firms aren't solely to blame for these platforms—but we're not optimistic that current incentives make better alternatives likely to come about. Society tends to benefit when companies compete with incumbents, not cave to them.

Not all of these effects apply to all acquisitions. Startups acquired by incumbents fall into three basic categories: companies that compete directly, companies that offer complementary products, and companies that might change the nature of the market altogether. Purposeful killer acquisitions seem most likely of direct competitors and perhaps of companies that threaten the business model altogether. Acquisitions of complements, by contrast, may be more socially beneficial, a prospect we explore in the next Section. Even complementary mergers, however, raise concerns. While an incumbent is unlikely to buy a complement in order to shut it down, complementary acquisitions still increase the size and political power of the incumbent. They may also make eventual direct challenges less likely by expanding the footprint of the incumbent across related markets, making the job of building a competitor that much more complicated.

B. *Aren't Incumbent Acquisitions a Good Thing?*

But perhaps we should be happy about, or at least fine with, sales of startups to incumbents. There are at least three reasons why that might be true about any particular merger, and other reasons we might want to put up with anticompetitive consequences in order to encourage investment in startups.

First, some technologies might work well only at scale. Some artificial intelligence ("AI") inventions may require a sufficiently large database to train on, for instance. Those inventions might work better in the hands of a company like Google that already has access to most of the text and images in the world than in the hands of a company without such a comprehensive training dataset.[288]

K837] (explaining nonstate disinformation and the ability of messages to spread on Facebook, accruing tens of thousands of shares before countermessages can be issued).

[287] *See* Mark A. Lemley, *Who's to Blame for Bad Things on the Internet?*, STAN. L. SCH: LEGAL AGGREGATE (July 15, 2019), https://law.stanford.edu/2019/07/15/whos-to-blame-for-bad-things-on-the-internet/ [https://perma.cc/9ELJ-JS3Q].

[288] PHILIPP GERBERT, JAN JUSTUS & MARTIN HECKER, BOS. CONSULTING GRP., COMPETING IN THE AGE OF ARTIFICIAL INTELLIGENCE 2-3 (2017), http://image-src.bcg.com/Images/BCG-Competing-in-the-Age-of-Artificial-Intelligence-Jan-2017_tcm52-146381.pdf [https://perma.cc/BJT4-PT8D] (explaining that Facebook, Google, and other pioneers with scale enjoy "the ability to run more training data through their algorithms and thus improve performance" and so enjoy a "privileged zone" in the AI space); *Battle of the Brains*, ECONOMIST, Dec. 9, 2017, at 61 (arguing that "[i]t seems likely that the incumbent tech groups will capture many of AI's gains, given their wealth of data"—data which also attracts the hottest talent).

Second, the incumbent might get the innovation into the hands of more people, simply because it has more customers.[289] Entry may be inefficient on this view because the entrant will have to prove the value of the innovation to consumers and often require them to switch away from products they already know and like.[290] "[E]xpected consumer welfare can be higher under commercialization by sale [from a small innovator to an incumbent] despite the risk of increased market power."[291]

Third, the market leaders may be best positioned to put complementary technologies to work. Their complementary assets may be more synergistic, their cash on hand greater and more immediately deployed, their engineers more talented, and their business know-how more complete—all resulting in their being able to bring proposed products to life better and faster than anyone else.

While these may be valid points in particular cases, they neither disprove nor help solve the problems of concentration caused by the norm of selling startups to incumbents.

First, market structure matters. Markets that are not competitive not only distort prices but also reduce innovation.[292] Further, incumbent acquisitions prevent potential competitors from combining to form a company that can credibly threaten entry at scale.[293] So reducing the possibility of Schumpeterian competition is likely to discourage innovation in the long run. And precisely because incumbency does bring some real advantages, we may need to create incentives to support Schumpeterian competition and avoid perpetual incumbency.

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[289] *See* Norbäck, Persson & Svensson, *Creative Destruction*, *supra* note 18, at 3.

[290] *Cf. id.* at 4 (discussing high-entry costs as deterrent and one reason welfare may be improved through acquisitions).

[291] *Id.* at 3.

[292] As Kenneth Arrow pointed out, the monopolist who has already won most customers in a market, unlike a new entrant who hopes to win new customers, stands to gain little by innovating, and so the monopolist will always expend less on innovation than would the new entrant. *See* Arrow, *supra* note 169, at 619-21; *see also* Jonathan B. Baker, *Beyond Schumpeter vs. Arrow: How Antitrust Fosters Innovation*, 74 ANTITRUST L.J. 575, 578-79, 578 n.8 (2007). Indeed, in the extreme case, the monopolist might avoid the cost of innovation altogether.

[293] *See* Shahrur, *supra* note 153, at 62, 64-67; *see also* Andrew McCreary, When Collusion Is Necessary Just to Compete: Antitrust Enforcement, Self Help, and Efficiency-Enhancing Alternatives in the Platform Economy 19-21 (Mar. 2019) (unpublished manuscript) (on file with the Boston University Law Review) (arguing that mergers, joint ventures, or even collusive agreements among individuals or smaller firms may create welfare benefits by enabling them to compete more effectively against a horizontally related dominant firm or to exert countervailing power against a vertically related dominant firm).

And second, in any event, the incumbent will put the innovation in the hands of more consumers only if it actually deploys that product. As we have seen, incumbents often buy startups and then kill them, either deliberately or by dissipating the team and not focusing on the acquired product.[294] Incumbents have less incentive to deploy new technologies than startups do. That's because incumbents that replace their existing product with a new one are mostly stealing customers from themselves.[295] And incumbents don't need to innovate to stay alive if they can buy any entrant that looks like a threat.[296]

Finally, the value of scale is similarly not a persuasive reason for most incumbent mergers. There may be markets where network effects are so strong that merger is inevitable. But we should be reluctant to assume that just because scale has value, the incumbent will always make a better product. History is full of cases where that turned out not to be true. Sometimes it just means we need a new dominant firm. And we won't see those leapfrog products if the incumbent buys the potential disruptor.[297] Even in the relatively rare case of technologies that can reach their full potential only when deployed to the entire market, there are alternatives to allowing incumbents to buy up all new technologies. We could, for example, require that certain AI training databases be open to all AIs or that companies allow access by competitors seeking to make their products interoperable with the de facto standard.[298]

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[294] *See supra* notes 278-83 and accompanying text.

[295] Arrow, *supra* note 166, at 609; *cf.* C. Scott Hemphill, *Disruptive Incumbents: Platform Competition in an Age of Machine Learning*, 119 COLUM. L. REV. 1973, 1974 (2019) (arguing that incumbents could enter each other's markets).

[296] Carl Shapiro argues that it's plausible that a "dominant incumbent firm can reliably identify [and then acquire at a premium] the firms that are genuine future threats before the antitrust agencies or the courts can do so with confidence [and block the merger]." Shapiro, *supra* note 273, at 739-40; *see also* ALBERT O. HIRSCHMAN, EXIT, VOICE, AND LOYALTY: RESPONSES TO DECLINE IN FIRMS, ORGANIZATIONS, AND STATES 57-60 (1970) (discussing "'lazy' monopolies" that dominate despite lacking all innovation and efficiency and that remain so comfortably dominant that they may invite modest competitors to remove their customers who otherwise would generate costs by complaining vociferously); Mark A. Lemley, *A New Balance Between IP and Antitrust*, 13 SW. J.L. & TRADE AMS. 237, 241-42 (2007) (describing monopolists' reduced incentives to innovate and the importance of both antitrust and IP law in stimulating innovation).

[297] *Cf.* Mark A. Lemley & Mark P. McKenna, *Unfair Disruption*, 100 B.U. L. REV. 71, 74-75 (2020) (arguing that incumbents rarely benefit from new technologies and use IP, unfair competition, and other laws to rebuff nascent rivals).

[298] *See* Moritz Lehne, Julian Sass, Andrea Essenwanger, Josef Schepers & Sylvia Thun, *Why Digital Medicine Depends on Interoperability*, 2 NPJ DIGIT. MED., no. 79, 2019, at 1; *see also infra* note 311 (discussing problems of network effects and the potential for interoperability as a solution).

Competition, in short, is an externality to an incumbent-startup merger transaction. Consumers benefit from the possibility of competition—both in terms of choice and potentially lower prices and because competition may drive more innovation. But the merging firms don't capture those benefits, and so they naturally ignore them in favor of maximizing the private benefits they get by cementing a monopoly and selling the startup for a price that reflects that monopoly profit. That doesn't mean that there are no benefits to such a merger. But companies have an incentive to engage in those mergers even when they aren't in the public interest.

There may be one other reason to allow incumbents to acquire VC-backed startups: it may counterintuitively improve the prospect that incumbent-destroying startups get funded at all because it makes funding any startup more attractive to VCs.[299] Funding a startup's unlikely goal of supplanting an incumbent may be financially viable only if failing to supplant that incumbent still leads to a sufficiently attractive alternative: acquisition by that incumbent. And if so, perhaps we should be wary not just of the ex post consequences of incumbent acquisitions but the ex ante consequences of preventing them—because then we'll really never see Schumpeterian competition get off the ground.

While this is an important consideration, and we discuss it in detail below, innovation today faces a starker problem: selling to incumbents is not the backstop but increasingly the starting point for funding decisions. In any event, we doubt that making incumbent acquisitions more difficult will dampen VC investment to a concerning degree given that the demand for private equity and venture capital investment opportunities has recently increased by orders of magnitude.[300] Still, the risk of chilling procompetitive investments can and should be mitigated by making alternative exits like IPOs or secondary sales easier at the same time that we increase the difficulty of incumbent acquisitions, as we describe further below.[301]

[299] We thank Doug Melamed for pushing us to address a version of this argument.

[300] *See* Shailesh Ghorpade & Mohit Babu, *How Softbank's Vision Fund Is Disrupting the Venture Capital Business*, INC42 (Nov. 24, 2018), https://inc42.com/resources/how-softbanks-vision-fund-is-disrupting-the-venture-capital-business/ (arguing that the increasingly large funds and investment rounds "give founders a fair chance to compete against the likes of Amazon, Google, [and] Facebook"); Arash Massoudi, Kana Inagaki & Leo Lewis, *SoftBank: Inside the 'Wild West' $100bn Fund Shaking Up the Tech World*, FIN. TIMES (June 19, 2018), https://www.ft.com/content/71ad7cda-6ef4-11e8-92d3-6c13e5c92914.

[301] *See infra* Section IV.A.

C. *Isn't the Problem Bigger?*

While some suggest that there is no problem with incumbent acquisitions, others argue that the problem is larger than incumbents acquiring startups. For them, the current size and dominance of the tech firms is itself the problem and directly reducing their size and dominance the answer. A number of politicians and commentators have argued for breaking up incumbent tech firms.[302]

Definitively addressing that approach is beyond the scope of this Article. But we have concerns. We might do better to focus first on stopping continued accretion before breaking up tech giants, if we do so at all. Preventing new mergers has its challenges, but trying to unravel existing mergers is tougher still.[303] Sure, some parts of firms and their technologies are sufficiently different that they could be separated. That might be true of Amazon and Whole Foods, or perhaps Facebook and WhatsApp. But over time, technologies and the teams that build them become integrated in a way that is extremely costly to undo.[304]

Beyond breaking off side projects, some commentators even argue for cracking open the core of companies like Google or Facebook and attacking their main products and source of dominance. And there it is even harder to see how breaking the company up will improve the world. Network effects likely make a single social media site with all your friends more valuable—to you and everyone else—than five incompatible sites, each with a fraction of the people you know.[305] When the government won its antitrust case against Microsoft in

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[302] *See supra* notes 2, 30-34 and accompanying text. For a narrower argument that antitrust agencies should retroactively unwind anticompetitive mergers, see generally Menesh S. Patel, *Merger Breakups*, 2020 WIS. L. REV. 975.

[303] Breaking up a firm has been likened to "unscrambl[ing]" eggs. M.A. Adelman, Comment, *The Du Pont-General Motors Decision*, 43 VA. L. REV. 873, 878 (1957).

[304] Knowing this, some companies may integrate even products and teams that do not clearly benefit from combination apart from thwarting the threat of breakup. Facebook, for instance, has only recently begun facing serious antitrust scrutiny and just as recently has begun integrating Instagram and WhatsApp into its main product. *Cf.* Sara Salinas, *Facebook Is Integrating the Messaging Functions of Messenger, Instagram and WhatsApp*, CNBC (Jan. 25, 2019, 9:52 AM EST), https://www.cnbc.com/2019/01/25/facebook-reportedly-integrating-messenger-instagram-and-whatsapp.html [https://perma.cc/MP2D-5A7V]; Kaya Yurieff, *Facebook Takes a Big Step in Linking Instagram, Messenger and WhatsApp*, CNN BUS. (Sept. 30, 2020, 8:01 AM EDT), https://www.cnn.com/2020/09/30/tech/instagram-messenger-messaging/index.html [https://perma.cc/2D4N-B4Q9] (quoting Vishal Shal, Instagram's head of product). Nonetheless, once that integration is accomplished, it can be very hard to unwind.

[305] On network effects generally, see *supra* note 4. True, we might get the benefits of a large network without the costs of having a single owner over that network were all social media sites interoperable, as telephone and email service providers are. *See* Bennett Cyphers & Danny O'Brien, *Facing Facebook: Data Portability and Interoperability Are Anti-*

2001, courts properly resisted calls to break up Microsoft, opting for conduct remedies instead.[306] Some even worry that breaking up the giants will deprive the world of some of their longer-term investments in new innovation, replacing it with a focus on the short-run bottom line.[307]

A measure short of breakup would be to force interoperability between Internet platforms, preserving network effects while facilitating competition on dimensions like price, privacy policies, and content curation. While the Internet was once largely interoperable, companies (and governments) are increasingly walling off access across platforms.[308] Courts have so far short-circuited efforts at what Thomas Kadri calls "adversarial interoperability,"[309] though that might be changing.[310] Regulators are eyeing this opportunity, which might give us the

Monopoly Medicine, ELEC. FRONTIER FOUND. (July 24, 2018), https://www.eff.org/deeplinks/2018/07/facing-facebook-data-portability-and-interoperability-are-anti-monopoly-medicine [https://perma.cc/KV7X-JL7Q]. A company attempted to enable such integration for its users but was enjoined by a suit brought under the Computer Fraud and Abuse Act of 1986 ("CFAA"), 18 U.S.C. § 1030, among other laws. *See* Facebook, Inc. v. Power Ventures, Inc., 844 F.3d 1058, 1062 (9th Cir. 2016). But there is some reason to think those legal barriers might be falling. *See* HiQ Labs, Inc. v. LinkedIn Corp., 938 F.3d 985, 1003-04 (9th Cir. 2019) (rejecting similar CFAA claim against a company that scraped profiles from a social media site), *petition for cert. filed*, No. 19-1116 (U.S. Mar. 12, 2020).

[306] *See* United States v. Microsoft Corp., 253 F.3d 34, 106 (D.C. Cir. 2001) (advising lower court on remand that "[a] corporation that has expanded by acquiring its competitors often has preexisting internal lines of division along which it may more easily be split than a corporation that has expanded," as Microsoft was considered to have expanded "from natural growth"); *see also* United States v. Microsoft Corp., 231 F. Supp. 2d 144, 164, 196-202, 202-03 (D.D.C. 2002), *aff'd sub nom.* Massachusetts v. Microsoft Corp., 373 F.3d 1199 (D.C. Cir. 2004) (approving parties' stipulated behavioral remedy, enforced in part by outside technologists, in lieu of a structural remedy that would have been more disruptive).

[307] Joshua P. Zoffer, *Short-Termism and Antitrust's Innovation Paradox*, 71 STAN. L. REV. ONLINE 308, 314-19 (2019). Zoffer doesn't argue against breaking up big tech per se but notes that if we do, it needs to be coupled with significantly increased government investment in R&D to counteract the loss of private investment. *Id.* at 316.

[308] *See* Chinmayi Sharma, *Concentrated Digital Markets, Restrictive APIs, and the Fight for Internet Interoperability*, 50 U. MEM. L. REV. 441, 455-56 (2019); Mark A. Lemley, *The Splinternet*, 70 DUKE L.J. (forthcoming 2021).

[309] *Facebook, Inc.*, 844 F.3d at 1062 (rejecting effort to port user data from Facebook to a cross-platform social media competitor); Kadri, *supra* note 78 (discussing cases that use the CFAA to preclude data scraping for interoperability).

[310] *HiQ Labs, Inc.*, 938 F.3d at 1004-05 (rejecting use of the CFAA to prevent data scraping for interoperability). Europe is already more willing to compel interoperability than the United States is. *See* Kadri, *supra* note 78, at 38 (citing Margrethe Vestager, Former Comm'r, Eur. Comm'n, Competition and the Digital Economy, Address Before the OECD/G7 Conference (June 3, 2019), https://wayback.archive-it.org/12090

best of both worlds—network effects *and* competition.[311] But if this approach doesn't require ripping out the core of these companies, it does likely require rewiring them in concert—and unwinding their investors' basic expectations. It's not as drastic as a breakup, but it would be a very big deal, it would require significant changes in the law, and we don't see it happening easily, if ever.

Whether or not we would break up tech incumbents in an ideal world, slowing acquisitions by those firms seems both independently desirable and more feasible than breaking the companies up altogether or compelling interoperability. Society has an interest in encouraging more productive startups to stay in business or at least to sell to someone other than incumbents. Accomplishing that isn't as flashy as breaking up an Apple or a Facebook, but it is a better long-term solution, one that will encourage Schumpeterian or leapfrog competition in the long run from companies that aren't household names. In the next Part we discuss a combination of carrots and sticks to achieve that result.

IV. REENTRY STRATEGY

If Silicon Valley's exit strategy is a problem, what can we do about it? In this Part, we offer a combination of carrots and sticks designed to better align our startup funding and exits with social welfare.

A. *Carrots*

Startups sell to incumbents because that is the easiest, most profitable way for VCs to get their exit. One way to change that is to change the incentive structure, either of VCs or of the startups themselves, by offering more attractive alternatives. We call those alternatives "carrots."

1. Make IPOs Easier

One carrot would be to make IPOs easier. As we discussed above, IPOs are less and less common, having dropped from about 90% of exits a few decades ago to approaching 10% of exits today. And IPOs that do happen occur later in the company's life.[312] One thing we could do would be to make IPOs more attractive for successful startups. That would help keep them in business and independent of incumbents.

/20191129200956/https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/competition-and-digital-economy_en).

[311] *See* Lemley & McGowan, *supra* note 4, at 599-602 (endorsing interoperability as a solution to network effects problems in many cases); Sharma, *supra* note 308, at 461-67 (arguing for the FTC to regulate anticompetitive programming interfaces).

[312] *See supra* notes 12-13 and accompanying text.

One way to make IPOs more attractive is to simply increase the information available to those seeking to go public. A new rule adopted by the SEC does just that, allowing larger tech firms to "test-the-waters" of an IPO before committing to it publicly, reducing the risk of doing so.[313] That seems like a step in the right direction.

Another way to make IPOs easier would be to relax the regulatory requirements that have built up, both around the process of going public and around being a public company. While the evidence we discussed above doesn't support the claim that regulatory requirements like SOX were responsible for the drop in IPOs,[314] that doesn't mean relaxing those regulations wouldn't promote more IPOs. And in fact, one study found that's what happened after public-listing requirements were temporarily relaxed for statutorily defined "emerging growth companies" post recession.[315] From a startup's perspective, one advantage of an acquisition is that it is generally quicker and easier than an IPO, enabling VCs and employees to get paid sooner. Making it easier to go public can help change that. The post-recession JOBS Act is what temporarily eased disclosure and other requirements for certain publicly listed firms with less than $1 billion in revenues.[316] The changes arguably led to a 25% increase in IPOs.[317] Learning from these efforts, we could extend or make permanent the

[313] *See* Press Release, U.S. Sec. & Exch. Comm'n, SEC Adopts New Rule to Allow All Issuers to "Test-the-Waters" (Sept. 26, 2019), https://www.sec.gov/news/press-release/2019-188 [https://perma.cc/L32P-WHUM]; *see also* Press Release, U.S. Sec. & Exch. Comm'n, SEC Proposes to Expand "Test-the-Waters" Modernization Reform to All Issuers (Feb. 19, 2019), https://www.sec.gov/news/press-release/2019-14 [https://perma.cc/8UKH-KW2R]; Guadalupe Gonzalez, *The SEC's New Plan to Persuade More Companies to Go Public*, INC. (Feb. 20, 2019), https://www.inc.com/guadalupe-gonzalez/sec-extend-test-waters-rule-ipo.html.

[314] *See supra* notes 265-73 and accompanying text.

[315] *See* Michael Dambra, Laura Casares Field & Matthew T. Gustafson, *The JOBS Act and IPO Volume: Evidence that Disclosure Costs Affect the IPO Decision*, 116 J. FIN. ECON. 121, 122 (2015) (finding reforms "increased IPO volume by 21 IPOs per year . . . which represents a 25% increase over US IPO volume between 2001 and the passage of the [JOBS] act").

[316] *See* Kiersten Zaza, *Emerging Growth Companies Under the JOBS Act: An Analysis of the "IPO On-Ramp,"* 3 GLOB. MKTS. L.J. 63, 63-64, 81 (2014); *see also Emerging Growth Companies*, SEC, https://www.sec.gov/smallbusiness/goingpublic/EGC [https://perma.cc/6NM4-835E] (last updated July 24, 2019).

[317] *See* Dambra, Field & Gustafson, *supra* note 315, at 121. *But cf.* Therese Poletti, *The Government Tried to Encourage IPOs, but It Helped Create the Age of the Unicorn*, MARKETWATCH (Dec. 31, 2017, 2:44 PM EST), https://www.marketwatch.com/story/the-government-tried-to-encourage-ipos-but-it-helped-create-the-age-of-the-unicorn-2017-12-26 [https://perma.cc/V69R-74DK] (summarizing more pessimistic views of some academics and industry participants). For one article finding only mixed results, see Chaplinsky, Hanley & Moon, *supra* note 186, at 799-801.

most promising reforms,[318] making sure that going public becomes less of "a way of living in hell without dying."[319] (Another approach would be to reduce the regulatory burden on public companies generally, but that would have significant risks for the economy as a whole and seems less desirable.)

But perhaps we could help firms go public without requiring them to go through a lengthy IPO at all. A traditional IPO involves a roadshow to familiarize investors with a company and an underwriter to create the market for opening day partly by preselling some shares. Yet for firms that are already well known (and especially those that are already well capitalized), this lengthy process provides little value.

Companies have been able to avoid the roadshow and underwriting process if willing to list only their currently held shares for trading (not any new shares for raising new capital); in practice, however, this "secondary direct listing" pathway is rarely used, with Spotify's 2018 listing a nearly unique example.[320] That's because the pathway is appropriate only to firms that are both well known and well capitalized. In other words, this pathway has not been a meaningful substitute for a traditional IPO. Now, however, a recent rule change will allow a company to also list *new* shares for immediate trading through a "primary direct listing," allowing VCs to get out *and* the company to get new capital, creating a more fulsome substitute for IPOs.[321] Moreover, this alternative eliminates the

[318] Some, like the National Venture Capital Association, even urge extending the relief from five years post listing to ten years given the increasingly long development timelines that technology companies face. *See* Justin Field, *A Proposal to Encourage More Public Companies – NVCA's Perspective*, NVCA: BLOG (Apr. 27, 2018), https://nvca.org/proposal-encourage-public-companies-nvcas-perspective/ [https://perma.cc/EXA4-X8LJ]. Others have advocated similarly. *See* IPO TASK FORCE, REBUILDING THE IPO ON-RAMP: PUTTING EMERGING COMPANIES AND THE JOB MARKET BACK ON THE ROAD TO GROWTH 19 (2011), https://www.sec.gov/info/smallbus/acsec/rebuilding_the_ipo_on-ramp.pdf [https://perma.cc/WQ83-4SQF]; Lux & Pead, *supra* note 270, at 22.

[319] That's how James Freeman, the founder of Blue Bottle Coffee, described it when explaining why, rather than going public, he decided to sell his company to Nestlé. *See* Andrew Ross Sorkin, *The Profits of Going Public Without the 'Brain Damage,'* N.Y. TIMES, Sept. 19, 2017, at B1.

[320] Michelle Castillo, *How Spotify's Direct Listing Is Different from an IPO*, CNBC (Apr. 3, 2018, 12:55 PM EDT), https://www.cnbc.com/2018/04/03/how-does-spotify-direct-listing-work.html [https://perma.cc/EF8U-P4GP] (explaining that Spotify was able to exploit this "highly unusual" process because Spotify is "unique in the sense that they do have unlimited access to capital, they do have a worldwide brand and 70 million users" (quoting Tom Farley, then–New York Stock Exchange President)).

[321] *See* David Lopez, Jeff Karpf & Helena Grannis, *Direct Listings 2.0—Primary Direct Listings*, HARV. L. SCH. F. ON CORP. GOVERNANCE (Sept. 20, 2020), https://corpgov.law.harvard.edu/2020/09/20/direct-listings-2-0-primary-direct-listings/ [https://perma.cc/622D-8SM7]; Cydney Posner, *NYSE Persistence Pays Off—SEC Approves*

lockup period for insiders.[322] Relatedly, investors are increasingly interested in using legal engineering to forge a path to public company status for startups. Investors create a simple publicly listed company as a blank slate for the sole purpose of later quickly acquiring a private startup, effectively bringing the startup public (and on a faster timeline from the startup's perspective).[323]

It remains to be seen whether these newly adopted or exploited measures will make a difference, but their use is an encouraging sign. Early VC interest in these speedier public exits[324] suggests that they may shift some VC-backed companies towards continued competition in the future. Of course, these IPO reforms and innovations are not without drawbacks. One objection is that abbreviated or foregone roadshows will result in less transparency and less accurate pricing, potentially benefiting insiders at the expense of outsiders.[325] Another is that not only will worthy companies' IPOs be accelerated but unworthy companies' IPOs will be too, also potentially harming new investors.[326] These countervailing trade-offs are ones that the SEC should consider closely and is best situated to address. Our purpose is to underscore that IPO speed matters to exit considerations and even to ex ante investment decisions, and that these matter to the potential for continued innovation and competition in some sectors, concerns that may not always be forefront among the SEC's thinking. We would encourage securities experts and regulators to

Primary Direct Listings, HARV. L. SCH. F. ON CORP. GOVERNANCE (Sept. 10, 2020), https://corpgov.law.harvard.edu/2020/09/10/nyse-persistence-pays-off-sec-approves-primary-direct-listings/ [https://perma.cc/T4VV-9MCF].

[322] Posner, *supra* note 321.

[323] These are commonly called SPACs, or Special Purpose Acquisition Companies. *See, e.g.*, *Big Blank Checks*, N.Y. TIMES: DEALBOOK (July 14, 2020), https://www.nytimes.com/2020/07/14/business/dealbook/spac-blank-check.html. Some recent analysis, however, suggests that the apparent savings of this exit alternative may be overstated. *E.g.*, Ortenca Aliaj, Sujeet Indap & Miles Kruppa, *The Spac Sponsor Bonanza*, FIN. TIMES (Nov. 13, 2020), https://www.ft.com/content/9b481c63-f9b4-4226-a639-238f9fae4dfc (explaining why "Bill Ackman, the hedge fund billionaire, believes the structure is 'one of the greatest gigs ever for the sponsor'"); Michael Klausner, Michael Ohlrogge & Emily Ruan, *A Sober Look at SPACs*, HARV. L. SCH. F. CORP. GOVERNANCE (Nov. 19, 2020), https://corpgov.law.harvard.edu/2020/11/19/a-sober-look-at-spacs/.

[324] *See* Posner, *supra* note 321 (claiming that there have been "vociferous call[s] from many VCs . . . for alternative on-ramps to public-company status" (first citing Michael Moritz, *Investment Banks Are Losing Their Grip on IPOs*, FIN. TIMES (Aug. 18, 2019), https://www.ft.com/content/7985bb78-bdbf-11e9-9381-78bab8a70848; and then citing Michal Lev-Ram, *Direct Listings Are All the Rage in Silicon Valley. Here's Why VCs Favor Them Over IPOs*, FORTUNE (Sept. 26, 2019, 6:30 AM EDT), https://fortune.com/2019/09/26/what-is-a-direct-listing-vc-ipo/)).

[325] *Id.*

[326] Mihir Desai suggested this argument to us.

consider other ways to protect retail investors, for instance—whose increasingly speculative trading on already-public companies, whether perfectly stable or perfectly bankrupt, is probably worthy of more targeted regulatory concern[327]—than those that unduly limit the speed of IPOs or close alternatives. Not every problem with public markets needs to be solved at the IPO gateway. And we encourage regulators to consider ways to accelerate IPOs where possible.

Alternatively, if not faster, we could at least make IPOs comparatively sweeter: we could change the tax treatment of acquisitions, in particular incumbent acquisitions, to incentivize IPOs. For both individual financial planning reasons and firm financial planning reasons, acquisitions tend to be more attractive, likely unduly so.[328] We could, for instance, eliminate or dramatically reduce the size of the QSBS exemption when applied to capital gains realized from stock sold after an incumbent acquisition, leaving it in place only for stock sold after an IPO (or other exit such as a secondary sale, nonincumbent acquisition, or so forth).[329] The purpose of the QSBS exemption should be to reward those who compete and innovate, not those who stop competing and let their innovations go idle in exchange for an easy payout. But right now, the current policy rewards the innovator who creates a new category from whole cloth equally with the shrewd investor who makes a me-too product with the ambition of being acquired and "killed" by a market leader. That doesn't make much sense. And so the QSBS exemption, which likely encourages the use of equity funding, may now push companies and investors toward socially unproductive results. We could eliminate the QSBS exemption altogether. Or we could at least eliminate its application to gains earned through acquisitions or, more narrowly, incumbent acquisitions. Other tailoring approaches could include extending the time required for holding a stock from five years to seven or ten, encouraging early investors to seek companies ready to compete long term, and reducing the individual GP and founder temptation to take premature exits even when the company promises more. These kinds of changes should help encourage startups to continue in business.

[327] *E.g.*, Andrew Bary & Avi Salzman, *How the Little Guy Is Fueling the Stock Market's Wild Ride*, BARRON'S (Sept. 14, 2020), https://www.barrons.com/articles/how-retail-investors-are-fueling-the-nasdaqs-wild-ride-51599866516 (discussing increase of retail speculation); Kelly Anne Smith, *Robinhood & Hertz: The Troubling Saga of a Bankrupt Stock*, FORBES (June 24, 2020, 1:37 AM), https://www.forbes.com/advisor/investing/robinhood-bankrupt-hertz/ [https://perma.cc/3TKW-79QW] (discussing "gamification" of retail investment and specific case of speculative purchase of bankrupt Hertz's stock, prompting unexpected 900% rally in price).

[328] *See supra* notes 197-238 and accompanying text.

[329] For discussion of the QSBS exemption, see *supra* notes 217-23 and accompanying text.

Separately but relatedly, some have proposed reducing capital gains on shares purchased at IPO and held for some years.[330] We are skeptical of anything that further exacerbates the disparity between taxes on capital and labor, but treating capital gains from IPOs more favorably than those from acquisitions would encourage better outcomes. Any or all of these changes would sweeten the exit strategy that keeps companies competing.

2. Support Secondary Markets

While encouraging IPOs relative to acquisitions is a good thing, we don't think it can be the primary solution to the problem. What we need are carrots that encourage not a different type of exit but not choosing to exit at all. That means making it more attractive to stay in business as an independent company—not a flashy unicorn but a business that continues to make a modest profit.[331] Some tax changes may help here too, such as equalizing the rates applied to capital gains and ordinary dividends,[332] eliminating the international tax dodges most easily abused by merging companies (a change we think is a good idea even apart from any impact on startups),[333] changing the tax rules that currently discourage secondary-market sales by employees pre-IPO,[334] and perhaps extending the QSBS exemption to cover dividends drawn from QSBS firms. But the real action may be in enabling investors to leave the company without requiring that the company leave the marketplace.

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[330] *See* IPO TASK FORCE, *supra* note 318, at 16, 30.

[331] That idea is so anathema in Silicon Valley that when the *New York Times* profiled companies that were neither going public nor going out of business, it talked about them as "failing slowly." *See* Erin Griffith, *A Start-Up Shatters the 'Fail Fast' Gospel*, N.Y. TIMES, June 30, 2019, at BU1. For an explanation of what it means to "fail slowly" and why more entrepreneurs should do it, see Ryan Tate, *The Next Big Thing You Missed: Why the Most Ambitious of Tech Startups Should Fail Slowly*, WIRED (Nov. 19, 2013, 6:30 AM), https://www.wired.com/2013/11/the-next-big-thing-you-missed/. What Silicon Valley today calls "failing slowly" would be called "running an ongoing business" in a different era.

[332] For background on the different tax rates applied and their perhaps counterintuitive but observed effect on stock prices and investor behavior, see Henrekson & Sanandaji, *supra* note 198, at 52-53.

[333] Some companies consider restructuring as they prepare to go public—but the potential for consumer backlash under the harsh pre-IPO light may dissuade them. For one provocative example, take the case of Etsy. *See* Kapner, *supra* note 237 (explaining that Etsy decided not to undertake a Double Irish or Dutch Sandwich structure but did decide to offshore its IP, reducing its future tax bills). For a discussion of these structures, see Kleinbard, *Stateless Income*, *supra* note 235, at 706-13 (using Google's structure to explain the Dutch Sandwich); Kleinbard, *The Lessons*, *supra* note 235, at 99 (continuing the analysis in a companion paper).

[334] *See* Anat Alon-Beck, *Unicorn Stock Options—Golden Goose or Trojan Horse?*, 2019 COLUM. BUS. L. REV. 107, 188-89.

As we have seen, the problem with staying in business as a profitable but private company is that the people who invested in the company at the outset (not only VCs but also friends and family who invested and employees who took lower salaries in exchange for stock options) can't get that money out of the company easily.[335] True, employees will continue to draw a salary, and VCs might collect dividend payments. But what they want—the ability to liquidate their investment—traditionally only comes with exit. Their end game is too often also the company's.

That could change, however. There are various ways we might facilitate pre-IPO secondary markets to allow VCs and employees to sell their shares without selling the company as a whole, reducing the pressure on the company to merge.[336] We could encourage the nascent secondary market in pre-IPO stock.[337] That market is and will likely remain less liquid than a true public stock offering, since only sophisticated investors are allowed to invest in a company that hasn't met SEC requirements.[338] But companies have used this to allow employees to cash out some of their stock even before going public. And we should provide additional support to encourage more VCs to exit the same way. That's a change already emerging in markets flush with private equity, where private equity firms sometimes buy out the stakes of early VC investors.[339] But it's a change we will want to encourage.

Such late-stage investment is often devoted to expanding a company's capital so that it can grow and reach "escape velocity."[340] But we could encourage late-stage funders to cash out early-stage funders rather than just add to the investment in the company. Startups often go through several rounds of funding,

[335] *Id.* at 107-08 (noting this problem for employees as IPOs are later and rarer).

[336] *See* Ibrahim, *supra* note 109, at 20.

[337] *See* Sarah Lacy, *Back Off SEC: Let's Put the "Risk" of Secondary Markets in Perspective*, TECHCRUNCH (Dec. 29, 2010, 3:00 PM EST), https://techcrunch.com/2010/12/29/back-off-sec-lets-put-the-risk-of-secondary-markets-in-perspective/ [https://perma.cc/57C4-LEHE] (describing secondary sales of stock from the likes of Facebook in secondary markets convened by companies like SecondMarket); Larcker, Tayan & Watts, *supra* note 206 (same, with greater detail). Examples of currently operating secondary markets include EquityZen, Forge Global, Microventures Marketplace, SecondMarket, and SharesPost.

[338] *See* Cannon, *supra* note 59, at 17-32, 83-89 (summarizing current rules limiting secondary buyouts and secondary sales of LPs' interests in a particular portfolio company and making recommendations to expand these offerings, arguing that such improvement will not come at the cost of rendering public markets irrelevant or inaccessible or of exposing more investors to fraud).

[339] *See* Basta, *supra* note 157 (describing how "[t]ech companies on both sides of the pond are turning to private [equity] (PE) as a serious and even preferable exit route").

[340] Scott Kupor, *Late Stage Venture*, ANDREESSEN HOROWITZ (May 1, 2019), https://a16z.com/2019/05/01/late-stage-venture/ [https://perma.cc/UC25-FYXD].

and different VCs specialize in seed-, early-, mid-, or late-stage investing.[341] And growth-oriented private equity firms make large post-VC investments in companies that want to expand.[342] These post-VC rounds are usually cumulative, with each new round diluting the ownership share of previous investors but not liquidating those investments.[343] But that could change. We could encourage late-stage investors to buy out earlier investors, something we don't do now. Those who buy stock at pretty much any time other than original issuance do not qualify for QSBS benefits.[344] We could reform the QSBS exemption to encourage such financial exits. (Alternatively, the company itself could buy out its investors with profits, just as public companies buy back their own stock.)

Finally, another possibility would be for other investors to buy out venture capital investors using publicly traded venture capital vehicles, as already happens in limited contexts.[345] We're not thrilled about this idea for various reasons, including that it's hard to see how public markets will properly scrutinize and value a fund before it buys one, let alone several, private firms. Another option would be to facilitate patient capital, such as public pension and other funds, to buy out venture capital through these vehicles or others.[346] We

[341] *See* Alejandro Cremades, *How Funding Rounds Work for Startups*, FORBES (Dec. 26, 2018, 5:14 AM EST), https://www.forbes.com/sites/alejandrocremades/2018/12/26/how-funding-rounds-work-for-startups/#6561bd767386/ [https://perma.cc/38SH-UMME] (providing overview of rounds).

[342] *See* Basta, *supra* note 157 (surveying uptick in late-round private equity investments and even exits to private equity, some of which rival strategic buyers in price paid).

[343] This is in contrast to buyout-oriented private equity, which takes full ownership of more mature firms and seeks to improve their profitability not only through growth but also through operational efficiencies. *Cf.* Paul Gompers, Steven Kaplan & Vladimir Mukharlyamov, *What Private Equity Investors Think They Do for the Companies They Buy*, HARV. BUS. REV. (June 18, 2015), https://hbr.org/2015/06/what-private-equity-investors-think-they-do-for-the-companies-they-buy (classifying private equity into buyout and growth equity and explaining goals of each).

[344] *See* 26 U.S.C. § 1202(c)(1). There are accommodations, however, to apply the exception even to stock that has been gifted or stock that has been converted during reorganization or merger, for instance—but not for stock newly bought on a secondary market. *See* Rappaport & Friedman, *supra* note 219.

[345] *See* Cannon, *supra* note 59, at 69-82, 89-93 (summarizing current rules and recommendations on public "private" equity vehicles, which have only recently been developed and whose very existence remains uncertain and potentially untenable if provisions of securities and tax laws are interpreted unfavorably).

[346] Many are already invested as LPs in venture funds. *See* Kristin Schwab, Molly Wood & Stephanie Hughes, *Your Pension Fund Could Be Invested in Tech*, MARKETPLACE (Oct. 19, 2017), http://www.marketplace.org/2017/10/19/how-venture-capital-gets-funding/ [https://perma.cc/EB7K-U6MV].

have concerns with this approach too, given the conservative nature of public funds and the competitive distortions that can happen when the government participates in the marketplace. But if public investors are to fund private equity (and to some extent they do already), they may as well use their leverage to support competition rather than consolidation.

Some incumbents might choose to buy a minority position in their emerging rivals through these secondary sales. So long as this position is not one of significant or controlling influence, it's less problematic than acquisitions. Funding rivals without controlling them could help the market leader hedge its bets while also helping promote a competitive market that benefits consumers. Other investors may be less knowledgeable about rivals than the market leaders, and allowing small investments by market leaders in rivals could have some benefits. On the other hand, there is evidence that companies are less likely to compete aggressively if they share investors.[347] So we should be troubled even by minority investments in a competitor, especially if we believe no rational incumbent would invest in a nascent rival unless that investment provided a way for at least tacitly influencing the rival to be less of a threat. Minority investments are harder to control than outright acquisitions. We could tax or bar stock purchases by rival incumbents, but investors in the incumbent could still hedge their own bets by also investing in the rival, creating "homemade" diversification.

Secondary sales don't often happen now, in part because some early VCs wait for the ultimate payout and in part because no investors would buy them out. Neither new investors nor the company necessarily want to use scarce money to buy out earlier investors, instead preferring that new money go to the company's operations. Changing this might require some sticks besides the carrots identified so far; more on that below. But it is certainly feasible that startups themselves or late-stage investors could help VCs and employees liquidate their stock, obviating or at least delaying the need for an exit.

The possibility of an earlier cash out may also affect ex ante incentives at the investment stage.[348] And the credible threat of exit by management or VCs should enhance corporate management and governance.[349] It may enable early

[347] Elhauge, *supra* note 255, at 1274; Daniel P. O'Brien & Steven C. Salop, *Competitive Effects of Partial Ownership: Financial Interest and Corporate Control*, 67 ANTITRUST L.J. 559, 559 (2000); *cf.* Michael A. Carrier, Mark A. Lemley, & Shawn Miller, *Playing Both Sides? Branded Sales, Generic Drugs, and Antitrust Policy*, 71 HASTINGS L.J. 307, 348 (2020) (showing that pharmaceutical companies with both branded and generic interests are less aggressive generic competitors).

[348] *See supra* note 109 and accompanying text (discussing ex ante incentives effected by exit options).

[349] *See* Ibrahim, *supra* note 109, at 26-27 (arguing that the credible threat of exit by an equity holder should reduce agency costs as the beneficiary of the equity may seek to perform

employees to get compensated for their work while continuing to operate the company, reducing the internal demand by management to sell the company in order to cash out.[350]

3. Encourage Alternatives to VCs

Before the rise of venture capital in the 1980s, companies that wanted to raise money generally did so in an old-fashioned way: they borrowed it from banks.[351] Venture funding offered some significant advantages over loans for many startups. Banks wanted their loans repaid on a regular schedule, which meant that startups had to begin generating cash very early and that a significant amount of that cash went to paying the debt rather than expanding the company. For businesses that required a large up-front investment with a delayed payout (say, a potential new gene therapy that must await FDA testing and approval),[352] selling equity rather than taking on debt made sense.

better to keep a valued advisor on board and avoid sending a negative signal to future investors).

[350] On the other hand, employees may leave if they can cash out completely. *See generally* Qing Gong, James Liang, Hong Zhang & Li-An Zhou, *Causal Effects of Stock Options on Employee Retention: A Regression Discontinuity Approach* (Stanford Ctr. for Int'l Dev., Working Paper No. 547, 2015), https://kingcenter.stanford.edu/sites/default/files/publications/547wp_0.pdf [https://perma.cc/LCE2-32F7]. Companies might want to structure the deal to allow employees to sell some of their options in a secondary market but still retain ongoing equity, just as employee stock options today vest on a rolling basis. *See, e.g.*, Andy Rachleff, *The Right Way to Grant Equity to Your Employees*, FIRST ROUND REV., https://firstround.com/review/The-Right-Way-to-Grant-Equity-to-Your-Employees/ [https://perma.cc/C7DR-GFY7] (last visited Jan. 3, 2021) (describing typical plans, including smoothing vesting process so employees do not consider alternatives).

[351] Paul A. Gompers, *The Rise and Fall of Venture Capital*, 23 BUS. & ECON. HIST., Winter 1994, at 1, 1-13 (describing history of venture capital, which received an influx of funding following an amendment of the Employee Retirement Income Security Act of 1974 that allowed pensions to invest in venture capital funds); *see also* Cannon, *supra* note 59, at 3-4 (discussing history of venture capital and private equity). Some used an even more old-fashioned mechanism still in use in the age of venture capital: borrowing from friends and family. *See generally* Samuel Lee & Petra Persson, *Financing from Family and Friends*, 29 REV. FIN. STUD. 2341 (2016).

[352] *See, e.g.*, PHRMA, BIOPHARMACEUTICAL RESEARCH & DEVELOPMENT: THE PROCESS BEHIND NEW MEDICINES 1 (2015) (stating typical drug development timelines of ten years and costs of $2.6 billion), https://www.phrma.org/-/media/Project/PhRMA/PhRMA-Org/PhRMA-Org/PDF/P-R/rd_brochure.pdf [https://perma.cc/VP2A-NUGM]; Matthew Herper, *The Cost of Developing Drugs Is Insane. That Paper that Says Otherwise Is Insanely Bad*, FORBES (Oct. 16, 2017, 10:58 AM EDT), https://www.forbes.com/sites/matthewherper/2017/10/16/the-cost-of-developing-drugs-is-insane-a-paper-that-argued-otherwise-was-

But equity has taken over from debt even in circumstances where banks used to give traditional loans.[353] To founders, giving stock to new investors may look cheaper than taking out loans because they don't have to repay the share purchaser. The first time they see what money they gave up is at exit. And so selling equity has become the default way that founders fund innovative new companies.[354]

But sometimes debt makes sense. For a company that will make money sooner rather than later, debt can be a good deal because the founders and employees don't dilute their share of the company. And banks, unlike equity investors, don't need an exit strategy to get paid. Their returns come from interest payments on the money they loaned. That avoids the need to exit and its associated problems.

Debt may be feasible even for companies with longer-term debt needs. So-called "venture debt" has sprung up alongside venture capital, offering a nonequity funding option that is nonetheless tailored to startups.[355] Venture debt is, so far, a small share of the money startups raise.[356] But we could adopt policies that treat investors' earnings from venture debt at least as favorable as their earnings from venture equity. For instance, we might change the tax rules to at least limit the advantages of equity over debt financing. We could make the bank's interest income tax free when realized from loans to QSBS startups or, conversely, make the tax treatment of equity less favorable.[357]

Venture debt won't work for every startup. And we have some concerns about government policies encouraging too much debt in markets; that has backfired in the past. But where it does work, encouraging venture debt over venture

insanely-bad/#77ebe3592d45 [https://perma.cc/3BCT-7MCT] (reviewing conflicting reports of drug development costing anywhere from hundreds of millions to several billion dollars).

[353] *See* Cannon, *supra* note 59, at 1.

[354] *Id.* at 2-3.

[355] *See* Patrick Gordan, *Venture Debt: A Capital Idea for Startups*, KAUFFMAN FELLOWS (Oct. 25, 2012), https://www.kauffmanfellows.org/journal_posts/venture-debt-a-capital-idea-for-startups [https://perma.cc/K8NB-VGGA] (observing that venture debt is typically structured as three-year term loan with company stock warrants). For an innovative suggestion to enable banks to evaluate startups in order to lend money, see Xuan-Thao Nguyen & Erik Hille, *Disruptive Lending for Innovations: Signaling Model and Banks Selection of Startups*, 21 U. PA. J. BUS. L. 200, 203-04 (2018). For calls for "efficient entrepreneurship," accepting less VC funding and less exit pressure, see Eric Paley & Joseph Flaherty, *Overdosing on VC: Lessons from 71 IPOs*, TECHCRUNCH (Oct. 15, 2016, 2:00 PM EDT), https://techcrunch.com/2016/10/15/overdosing-on-vc-lessons-from-71-ipos/ [https://perma.cc/LV3F-AK9X].

[356] One source suggests that venture capital accounts for only 0.05% of startup financing. Entis, *supra* note 8. For related discussion on small business financing, see Ryan, *supra* note 8.

[357] Interest is already deductible, but stock gets preferential treatment too.

capital has one significant advantage: it reduces the need for an exit strategy to generate cash. Instead, a debt-funded company needs an ongoing source of revenue—precisely what society should encourage.[358]

B. *Sticks*

While we can do various things to encourage startups to wean themselves from venture capital, many of those things will have limited effect as long as venture capital is abundant and relatively cheap for startups. And while we believe that there are structural reasons why VC-backed firms are especially adept at selling to incumbents, even non-VC-backed firms will continue to face private incentives to do so. Society pays the costs of the company cashing out to an incumbent in the form of increased market concentration and lost innovation, but neither startups nor VCs pay directly. So we may need to couple supports for alternative ways to cash out or fund companies with a series of sticks: either disincentives to use venture capital or, more plausibly, disincentives to sell to incumbents. And beyond tax disincentives, we may need new antitrust barriers to acquisitions by incumbents.

1. Tax Transactions

One way to discourage anticompetitive mergers and to encourage companies to continue operating is to vary the tax treatment of those two options.[359]

Right now, liquidity events are generally not taxed directly. When companies go public, they generate enormous amounts of money by selling stock, and that influx of cash isn't taxed at all.[360] That might make sense; we want people to create and fund public companies. The same thing happens when companies merge. They usually do so by exchanging stock, again avoiding taxation when

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[358] There are other ways to encourage innovation, including tax credits, grants, and prizes. *See* Daniel J. Hemel & Lisa Larrimore Ouellette, *Beyond the Patents–Prizes Debate*, 92 TEX. L. REV. 303, 303-04 (2013) (surveying each approach to stimulating innovation, examining its social effects, and recommending that each be applied in appropriate contexts). But it's not obvious that those are well suited to encouraging startups, and none of them require that the recipient stay independent.

[359] On the ways that tax rules can be used to encourage innovation, see *id.* at 321-26.

[360] Companies are not taxed for raising cash by selling stock, public or not. *See* 26 U.S.C. § 351(a). We discuss "public" here only because we are comparing companies not at founding but at exit. Note, however, that individuals who later sell their share of the company's stock do face taxes. For instance, VCs and employees who subsequently exercise options and sell shares typically pay ordinary income tax on the appreciation to the exercise price and capital gains on any increase from exercise until sold if the stock is held for more than one year; incentive stock options, or qualified stock options, are subject only to the capital gains rate. *See* Ruth Simon, *Internet Rich – Cashing in the Chips: Tax Strategies Aid Options Gains*, WALL ST. J., June 28, 1999, at C1 (discussing strategies to reduce tax hit on stock options).

various conditions are met.[361] But here the social value of giving them a tax exemption is less clear. Merging can be a good thing that creates savings or synergies within the merging companies. But it poses enough of a threat to competition that we require costly antitrust review for mergers of a certain size.[362] If we think that incumbent acquisitions are worse for society than IPOs, one way to push people towards IPOs may be a Pigouvian tax on acquisitions.[363] We might tailor the tax to particular sectors or acquisitions and base it on an adequate proxy of an acquisition's likely social cost.[364]

The problem may be worse than the equal tax treatment of options that are not equally good for society. Right now, mergers that threaten to reduce social welfare by decreasing market competition not only are not taxed but may also sometimes obtain tax breaks that separately managed firms cannot. This incentivizes mergers, including anticompetitive ones.[365] Some of these breaks are achieved through structures that, on paper, are available to firms reorganizing for an IPO but that, in practice, may be most easily attained by firms reorganizing through merger.[366] Performance-related subsidies might be most readily exploited through acquisition.[367] And agreements once formed at arm's length can be set so that revenues accrue where taxed the least and expenses where they result in the greatest tax deductions.[368] This doesn't encourage the acquisition of direct competitors, but it may drive the acquisition

[361] *See* 26 U.S.C. § 354(a)(1) (providing that target shareholders are not taxed for exchanging their stock for acquirer's stock in qualifying reorganizations); *id.* § 368(a) (defining qualifying reorganizations); Michael L. Schler, *Basic Tax Issues in Acquisition Transactions*, 116 PENN. ST. L. REV. 879, 882-83 (2012) (explaining the conditions under which tax-free reorganizations are possible). Further, the shareholders exiting the target firm retain the tax basis of the target's stock as the basis of their newly held stock. 26 U.S.C. § 358; Schler, *supra*, at 883. By contrast, if an acquirer pays cash, that payment is generally a taxable event for the acquired firm, though not the acquirer, for whom it is an investment. There may be reasons that merging firms (and/or their shareholders) would seek a merger that is in fact *taxable*. *See* Schler, *supra*, at 884-86.

[362] *See infra* note 388.

[363] *See* Baumol, *supra* note 241, at 307.

[364] *Infra* note 372 and accompanying text.

[365] This general critique is not an altogether new one. For one account from a far earlier time, see William A. Lovett, *Tax Subsidies for Merger: Should Mergers Be Made to Meet a Market Test for Efficiency?*, 45 N.Y.U. L. REV. 844, 847 (1970) ("[E]limination of tax subsidies for mergers would be a highly desirable reform, one which would greatly ease the burden placed upon antitrust policy."). Not all of those provisions remain today.

[366] *See supra* note 235 and accompanying text (discussing these tax dodges).

[367] *See supra* note 233 and accompanying text.

[368] *See supra* note 239 and accompanying text.

of companies that provide complements. And mergers offer other tax benefits as well.[369]

Tax incentives matter to exit decisions. Startups become increasingly sensitive to tax issues the more they generate revenue and the later they are in their lifecycle.[370] And past tax reforms appear to have changed merger activity.[371] Right now, however, far from rewarding firms that resist incumbent acquisition—the mergers that may reduce competition and cause social harm—the tax system equally or in some cases especially rewards these exits.

We should closely consider ways we might tax mergers to force companies to internalize the cost that the merger imposes on society.[372] A firm that sells out does not bring the same benefits to society as a firm that continues to compete. We might consider not only changes to tax law designed to entice individual GPs and founders involved with companies to continue to operate the firm, which we touched on above[373] but also others to directly discourage companies from merging with incumbents. This kind of tax could be aimed at mergers by particular firms in particular sectors. And its basis could be set to capture the social harm likely to result. We propose a few approaches here to prompt discussion.

A one-time merger tax on the combined market value of merging companies could discourage acquisition, especially acquisition by large rivals, by raising the cost to the acquiring firm—complementing antitrust laws to discourage anticompetitive mergers. Taxing the combined value of the merging firms rather than the value of the acquired firm alone would make it more costly to merge as firms get bigger.[374] That may be desirable as a matter of social policy in general,

[369] These are beyond the scope of this Article to fully address. For an early analysis of the effect of tax policy on merger behavior, see Myron S. Scholes & Mark A. Wolfson, *The Effects of Changes in Tax Laws on Corporate Reorganization Activity*, 63 J. BUS. S141, S141 (1990) (describing benefits that can be acquired, including net operating losses, and others that can be newly created given accounting changes on merger, including changing of depreciation schedules). For a more recent paper, see Merle M. Erickson & Shiing-wu Wang, *Tax Benefits as a Source of Merger Premiums in Acquisitions of Private Corporations*, 82 ACCT. REV. 359 (2007).

[370] *See* Morse & Allen, *supra* note 197, at 361.

[371] *See* Ohrn & Seegert, *supra* note 197, at 2.

[372] Government policy already tunes merger incentives in some respects. The cap on tax losses obtained through acquisition, for instance, reduces the incentive for firms to acquire others simply for this purpose. 26 U.S.C. § 382. We thank Joe Bankman and Jacob Goldin for helping us clarify our thinking on this point.

[373] *See supra* note 202 and accompanying text.

[374] Becky Lester helpfully points out that the capital gains tax, in one respect, already imposes some cost on investors who exit that is based on the underlying value of the *acquired* firm and the premium paid. That tax is taken on the difference between the acquisition price

offering a market-based alternative to antitrust law as a means of promoting competition. And it would be a particularly good way to tackle the exit strategy problem because it would encourage startups that decide not to keep operating to merge with small rather than large firms.[375]

Market value is an imperfect proxy for what we want to measure here, however. While incumbent monopolists are generally larger than nonincumbents, a tax based purely on market value would discourage large investors outside the market from buying a startup, even though they might be better positioned to compete with the incumbent. There might not be anything intrinsically bad about acquisition by a big firm if the big firm was not already in the market.

One alternative would be to tax the goodwill created by an acquisition made by dominant firms (and/or in markets with select characteristics). After an acquirer allocates the price paid to each acquired asset for accounting and tax purposes, goodwill is the amount left over—the amount not covered simply by the identifiable assets' fair market value. Goodwill contains, then, any market power premium paid by an incumbent for another firm—and so a tax on goodwill should discourage acquisitions that produce large market power premiums. As context, in Facebook's acquisition of WhatsApp, for instance, $15.3 billion of the $17.2 billion deal value—nearly 90%—was allocated to goodwill (by contrast, $2.0 billion was allocated to the fair value of the user relationships acquired and $0.3 billion to the fair value of WhatsApp's

and the selling shareholders' tax basis in the stock (generally, the price originally invested by the shareholders). And this difference may already be larger for more highly valued acquisitions than for smaller ones, depending on the exact tax bases involved. It may also already be larger when a premium is paid by a strategic buyer (say a monopolist).

Still, our proposal would intensify these incentives by knocking on an additional size-related penalty based on the size of the *acquiring* firm. This would discourage acquisitions where the dominant firm pays for a nascent rival at bargain prices, whether because the potential of the technology is not yet clear to others (or even to the startup) or because the potential and the startup's bargaining power is impaired by the dominant firm's market power. More importantly, it would encourage startups to sell to smaller over larger companies. Further, this tax would affect the firms even before their investors choose to exit, and that may be more salient psychologically to managers.

[375] Depending how the tax is structured, some mergers between very large and very small firms might become uneconomic. To take one example, a flat 2% tax on combined value would mean a payment of $200,000 if a $10 million company bought a $1 million startup, but a full $20 million in tax if a $1 billion company bought the same startup. That doesn't mean the deal couldn't happen, but it would raise the costs of small deals quite a bit for very large companies. That's probably a feature of the idea, not a bug, but if it were a concern there are ways to modify the tax so that it caps out at some percentage of the value of the acquired firm.

technology).[376] Goodwill includes more than market power premiums, however. For instance, it also contains the value of the acquired firm's IP, if any. But perhaps taxing the accumulation of IP—particularly the property most threatening to one's existing business, which may be part of what can create or destroy the market power premium just discussed[377]—is not such a bad idea. Goodwill can also reflect the increase in the market value of assets like real estate from the time recorded on the books of the target to the time acquired, something we wouldn't want to tax. But many acquired startups are asset poor (they don't have much real estate, for instance) and quite young (whatever they have probably hasn't appreciated), minimizing this risk. Further, while goodwill may also include deal synergies and efficiencies like the rationalization or elimination of otherwise redundant effort or infrastructure that arguably should be encouraged, not discouraged, evidence suggests that these efficiencies are often overestimated.[378] And finally, while goodwill can be "managed" or "manipulated," acquirer firms have traditionally faced incentives to *overstate* goodwill—so this threat of taxation should prompt them to tack back in the other direction.[379] Increased goodwill upon acquiring a young startup will often reflect

[376] *See* Facebook, Inc., Annual Report (Form 10-K) 69 (Jan. 29, 2015).

To be clear, the acquirer may already have goodwill on its balance sheet. That starting goodwill reflects the value of IP, synergies, and other intangibles obtained through previous acquisitions (homegrown intangibles are not marked to goodwill). When the acquisition is made, the acquirer records new goodwill reflecting the intangibles from this transaction. We do not propose taxing any preexisting goodwill, just the incremental amount from the acquisition. This approach depends on how the acquirer accounts for the transaction and what value is ultimately attributed to goodwill, which could be manipulated. But accountants, institutional investors, regulators, and others are already skilled at checking the work of goodwill accounting. *See, e.g.*, *Tyco's Goodwill Games*, FORBES (June 13, 2002, 2:28 PM EDT), https://www.forbes.com/2002/06/13/0613tycaccount.html [https://perma.cc/VF3V-C3LR] (describing one such famous case wherein Cisco Systems "avoid[ed] booking $14.9 billion"). And as the WhatsApp example indicates, M&A specialists are used to valuing intangible assets like the fair value of user relationships that firms bring to the table. *E.g.*, Facebook, Inc., *supra*, at 69.

[377] *See supra* notes 155-56 and accompanying text.

[378] *See* Alan Lewis & Dan McKone, *So Many M&A Deals Fail Because Companies Overlook This Simple Strategy*, HARV. BUS. REV. (May 10, 2016), https://hbr.org/2016/05/so-many-ma-deals-fail-because-companies-overlook-this-simple-strategy (analyzing 2,500 mergers to find over 60% "destroy shareholder value"); McCreary, *supra* note 293, at 20 (collecting sources showing that "[m]ost buyers routinely overvalue the synergies to be had from acquisitions" (alteration in original) (quoting Scott A. Christofferson, Robert S. McNish & Diane L. Sias, *Where Mergers Go Wrong*, MCKINSEY Q., May 2004, at 93, 93)).

[379] Take the case of Tyco's goodwill accounting scandal.

> Because the continuation of Tyco's business depended above all else on the value of its stock, everything was done to keep it high, including accounting fraud. Illicit practices

the private benefit to eliminating competition—and that's something we should consider taxing. (And goodwill, unlike another measure treated next, may capture the benefit from eliminating not only direct market competitors but adjacent firms that challenge the existing market structure altogether.)

An even more refined measure would look alternatively—or additionally—at how concentrated the market already is and how much the merger would increase that concentration. One likely proxy is the Hirschman-Herfindahl Index ("HHI"). Developed to measure market concentration and the effect of mergers for antitrust purposes, HHI sums the squares of the market shares of all participants in the market before and after the merger.[380] The fewer the competitors, the higher the HHI. More importantly, because we square the shares of each participant, HHIs are higher with one or two dominant firms than with a number of equally sized competitors.[381] Calculating a merger tax based on total HHI, change in HHI, or both would mean that dominant firms would pay more to acquire startups than would other companies in the market. Companies

> included . . . the accumulation of a massive amount of so-called "goodwill." Goodwill is used to cover the difference between the actual value of an acquired asset and the amount paid for it. . . .
>
> The [fraudulent] process worked something like this: Tyco paid high prices for acquired companies, and rather than writing this cost off as an expense, which would have to be reported to shareholders as a reduction in earnings, the company created a massive amount of goodwill (about $35 billion) on its balance sheet.

Joseph Kay, *Tyco: US Conglomerate Falls Amid Revelations of Greed and Corruption*, WSWS.ORG (June 18, 2002), https://www.wsws.org/en/articles/2002/06/tyco-j18.html [https://perma.cc/8P9P-3LY6]; *see also Tyco's Goodwill Games*, *supra* note 376.

[380] U.S. DEP'T JUSTICE & U.S. FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES § 5.3 (2010).

[381] Here are a couple of examples to show how it works. Imagine there are ten equally sized competitors in a market. Each has a share of 10. 10 squared is 100, so adding their ten HHI scores together gives an HHI of 1,000, a relatively unconcentrated market (the maximum total HHI is 10,000 if one company has 100% of the market). If one of those ten firms buys another, the HHI rises to 1,200 (20 squared is 400 for the two merged firms, plus 800 for the eight remaining firms), an increase of 200 points. By contrast, imagine a market in which one company has 50% of the market and ten other competitors have 5% each. The HHI in that market is 2,750 (50 squared is 2,500, plus ten competitors that each contribute 5 squared or 25). If two small firms merge, the HHI doesn't change much, increasing to 2,800 from 2,750 (2,500 for the incumbent plus 100 for the merged firm plus eight other firms at 25 each). But if the dominant firm buys a small player, the increase is more substantial. The new HHI is 3,250 (55 squared is 3,025, plus 225 for the nine remaining firms at 25 each).

Antitrust agencies typically treat a market with an HHI of greater than 1,500 as moderately concentrated (and of greater than 2,500 as highly concentrated). They focus particular attention on mergers that increase the HHI by 100 points or more. When the HHI of a market is above 2,500 and would increase by 200 or more from the merger, the merger is presumed to increase market power. *See id.*

entirely outside the market would not change the HHI and so wouldn't pay the tax, which might be what we want. And perhaps companies merging beneath a given HHI could be excluded from any tax at all, if effects of increasing a highly unconcentrated market are initially socially positive.

HHI isn't a perfect measure for our purposes. While it works for direct competitors, it doesn't deal well with the problem of tech incumbents buying startups in adjacent markets.[382] And it doesn't prevent current incumbents from buying startups even earlier, before they establish a place in the market.[383] But a Pigouvian tax based on it may be a step in the right direction.

2. Impose Postacquisition Lockups

As we saw in Part III, one reason VCs prefer acquisitions to IPOs is that they can get paid immediately, whereas in an IPO their money is locked up for at least six months by law and often longer by contract or during the run-up to the IPO.[384] One way to encourage IPOs over acquisitions at the margin might be to equalize the payout system. For startups merging into public entities, we could require a lockup period for stock sales, eliminating one advantage to VCs and founders of pushing acquisitions.[385] A stronger version would require that the merged firm meet a competitively important goal before paying out, incentivizing the firm to meet public goals in the same way that milestone-based earn-outs incentivize the startup's managers to meet the new owner's private goals. This could be used to prevent so-called "killer acquisitions."[386] Ideally, we would want to impose lockups only for acquisitions by incumbent monopolists; we don't want to discourage acquisitions by other firms. One possibility is to tie a lockup period to antitrust review, which should be more significant when an incumbent buys the startup than with any other merger. To some extent this happens already, since Hart-Scott-Rodino review generally

[382] *See supra* notes 366-81 and accompanying text; *infra* notes 383-405 and accompanying text.

[383] VCs and founders motivated to achieve larger payouts should be more likely to continue to compete with incumbents under our proposal. Note also that a tax on the value of the combined firms, as opposed to the tax keyed to the purchase price or to the increase in HHI, would solve for this problem, although perhaps leading to others.

[384] *See supra* notes 124-39 and accompanying text. In general, the SEC limits sales of restricted securities, which shares obtained by venture investors often are. *See* 17 C.F.R. § 230.144(d) (2020); *Rule 144: Selling Restricted and Control Securities*, SEC (Jan. 16, 2013), https://www.sec.gov/reportspubs/investor-publications/investorpubsrule144htm.html [https://perma.cc/K3F5-SBJR].

[385] Indeed, SEC Rule 145 imposes some limitations on resales post merger, though it was recently trimmed down. *See* 17 C.F.R. § 230.145 (limiting sales of restricted securities after restructurings that involve a shell company).

[386] *See supra* notes 277-82 and accompanying text.

delays the merger.[387] But we could also create a limited period after the merger during which antitrust authorities could intervene to unwind the merger and prevent stock sales.

It's not clear whether the costs and uncertainty of doing this are worth the risk. We already have a premerger period of antitrust review, which seems to achieve some of the same purposes. And while in theory it would be nice to have a tool to punish killer acquisitions, companies that make such acquisitions are unlikely to cooperate, and it seems quite hard to come up with and track milestones for every merger that justifies payouts without making legitimate acquisitions difficult. And, ultimately, it may not be the post-IPO lockup period that discourages IPOs but the pre-IPO period of preparing for and selling the IPO to investors. During those twelve to eighteen months of looking toward an exit through the public markets, startups may well receive acquisition offers that offer a faster path to liquidity.

3. Restrict Acquisitions by Incumbents

a. *Don't We Already Do That?*

A more direct approach would be to prohibit or restrict some incumbent mergers altogether. Section 7 of the Clayton Act already gives the antitrust authorities the ability to block anticompetitive mergers.[388] The DOJ's Antitrust Division and the FTC share the authority to review mergers.[389] Mergers above a certain size must be disclosed in advance so the government can decide whether to challenge them.[390] And the agencies have developed detailed guidelines for evaluating mergers.[391]

[387] The waiting period is usually thirty days at minimum. *See* Hart-Scott-Rodino Antitrust Improvements Act of 1976, 15 U.S.C. § 18a(a)-(b); U.S. FED. TRADE COMM'N PREMERGER NOTIFICATION OFF., WHAT IS THE PREMERGER NOTIFICATION PROGRAM (2009) [hereinafter PREMERGER NOTIFICATION PROGRAM], https://www.ftc.gov/sites/default/files/attachments/premerger-introductory-guides/guide1.pdf [https://perma.cc/2CQY-KJNE].

[388] Clayton Act, ch. 323, § 7, 38 Stat. 730, 731-32 (1914) (current version at 15 U.S.C. § 18).

[389] 15 U.S.C. § 18a; PREMERGER NOTIFICATION PROGRAM, *supra* note 387 (discussing procedure for filing required premerger notices).

[390] Proposed acquisitions over $200 million, as well as acquisitions over $50 million where other "size-of-the-person" test conditions are met, cannot be consummated until sufficient time has passed for antitrust agencies to review the merger (or, if reviewed, until approved). *See* 15 U.S.C. § 18a(b).

[391] *See* U.S. DEP'T JUSTICE & U.S. FED. TRADE COMM'N, *supra* note 380, § 5.3; U.S. DEP'T JUSTICE, NON-HORIZONTAL MERGER GUIDELINES (1984), https://www.justice.gov/atr/page/file/1175141/download [https://perma.cc/MN3B-9T9F].

Unfortunately, the existence of antitrust laws regulating mergers has not stopped exit strategies from creating unprecedented concentration in technology markets.[392] Nor has it prevented killer acquisitions in other innovative fields like biotechnology.[393] Indeed, there is some evidence that acquirers structure their transactions in part to avoid antitrust scrutiny.[394] Even when they don't, antitrust enforcement has grown more lax in recent decades, and the agencies regularly approve mergers they would have challenged in a different era.[395] And the nature

[392] *See* Tommaso Valletti & Hans Zenger, Increasing Market Power and Merger Control 1 (June 16, 2019) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3387999 [https://perma.cc/TLR9-QYSY] (noting "significant body of empirical research" documenting higher prices and profit margins stemming from a lack of competition); *see also generally* Germán Gutiérrez & Thomas Philippon, *Declining Competition and Investment in the U.S.* (Nat'l Bureau of Econ. Rsch., Working Paper No. 23583, 2017), https://www.nber.org/system/files/working_papers/w23583/w23583.pdf [https://perma.cc/C4QS-5KFN] (same).

[393] *See* Cunningham, Ederer & Ma, *supra* note 20, at 1 (showing that a surge of acquisitions occurs just below thresholds for required merger review reporting).

[394] *See id.* at 30-31; *cf.* Wollmann, *supra* note 74, at 78-80 (showing that the recently increased threshold for merger review—to a minimum of $50 million merger value—led to an increase in acquisitions below that new threshold).

[395] For a survey of the decline in agency merger review, see Jonathan B. Baker & Carl Shapiro, *Detecting and Reversing the Decline in Horizontal Merger Enforcement*, ANTITRUST, Summer 2008, at 29, 30, 31-32. Baker and Shapiro surveyed a limited number of practitioners to find, in 2007, that merger review was "significantly more favorable" to the merging parties than a decade prior. *Id.* at 30. They also found that the percent of mergers reviewed by the DOJ (of those reported) decreased to 0.4% during President Reagan's second term and President George W. Bush's entire tenure from a 0.9% average at other times—representing about twenty-four mergers per year not reviewed (when similar dips for FTC enforcement are also considered). They also surveyed individual cases. *Id.*; *see also* DIANA L. MOSS, AM. ANTITRUST INST., THE RECORD OF WEAK U.S. MERGER ENFORCEMENT IN BIG TECH 4-6 (2019), https://www.antitrustinstitute.org/wp-content/uploads/2019/07/Merger-Enforcement_Big-Tech_7.8.19.pdf [https://perma.cc/FSA7-9N4J]; Carl Shapiro, *Protecting Competition in the American Economy: Merger Control, Tech Titans, Labor Markets*, J. ECON. PERSPS., Summer 2019, at 69, 70 ("The clearest area where antitrust enforcement has been overly lax is the treatment of mergers."); Marshall Steinbaum & Maurice E. Stucke, *The Effective Competition Standard: A New Standard for Antitrust*, 86 U. CHI. L. REV. 595, 596 (2019) (describing current U.S. merger policy as "a light-if-any-touch antitrust review").

For examples of mergers approved by courts even when the government did challenge them, see, for example, United States v. AT&T, Inc., 916 F.3d 1029, 1032 (D.C. Cir. 2019); United States v. Oracle Corp., 331 F. Supp. 2d 1098, 1101 (N.D. Cal. 2004); Baker & Shapiro, *supra*, at 32 (discussing error in *Oracle*). Other oft-cited examples include *United States v. Syufy Enterprises*, 903 F.2d 659, 673 (9th Cir. 1990); and *United States v. SunGard Data Systems, Inc.*, 172 F. Supp. 2d 172, 193 (D.D.C. 2001). Note that Baker and Shapiro argue that the Obama Administration improved merger enforcement, which raised the percent noted

of high-tech markets makes traditional forms of merger analysis more difficult.[396] Even though the anticompetitive consequences of many tech mergers have been "obvious to industry participants, very few of these mergers [have been] investigated or challenged."[397]

Antitrust authorities normally define markets and assess market power by measuring increases in price, for instance. But many tech companies provide their services to consumers for free and make their money in other market segments, making it harder for the agencies to assess market power.[398] Further, Internet markets are notoriously fluid. Does Google compete with Facebook? Did Facebook compete with WhatsApp before it bought them? The services have overlapping customers but serve different purposes. But if the market is

above to 1.5%. Jonathan B. Baker & Carl Shapiro, *Evaluating Merger Enforcement During the Obama Administration*, 65 STAN. L. REV. ONLINE 28, 30 (2012). Recent mergers that went through despite concern for competition include LiveNation/Ticketmaster and Comcast/NBC Universal. *Id.* at 32-33.

Tech firm mergers that were approved despite concerns include: Google/DoubleClick, *see* Dawn Kawamoto, *FTC Allows Google-DoubleClick Merger to Proceed*, CNET (Mar. 21, 2008, 4:52 PM EDT), https://www.cnet.com/news/ftc-allows-google-doubleclick-merger-to-proceed-1/ [https://perma.cc/RV8P-8L4K]; and Facebook/WhatsApp, *see* Jeff Roberts, *FTC Approves Facebook Acquisition of WhatsApp, Warns Companies to Respect Privacy Promises*, GIGAOM (Apr. 10, 2014, 11:28 AM EDT), https://gigaom.com/2014/04/10/feds-tell-facebook-to-uphold-whatsapp-privacy-promises/ [https://perma.cc/ZU4R-BAJU].

[396] *See* Kevin A. Bryan & Erik Hovenkamp, *Startup Acquisitions, Error Costs, and Antitrust Policy*, 87 U. CHI. L. REV. 331, 332 (2020) [hereinafter Bryan & Hovenkamp, *Antitrust Policy*] (noting a "paucity of meaningful oversight" in part because of governmental preference for "err[ing] on the side of nonintervention"); Lina M. Khan, *The Ideological Roots of America's Market Power Problem*, 127 YALE L.J. F. 960, 972 (2018).

[397] Glick & Ruetschlin, *supra* note 76, at 3.

[398] This isn't entirely new—free distribution of Linux has prompted an assessment of this issue before. *See* Wallace v. Int'l Bus. Machs. Corp., 467 F.3d 1104, 1106, 1108 (7th Cir. 2006) (holding that licensing agreements among competitors requiring that improvements to open-source software be freely distributed "have nothing to fear from the antitrust laws"); Heidi S. Bond, Note, *What's So Great About Nothing?: The GNU General Public License and the Zero-Price-Fixing Problem*, 104 MICH. L. REV. 547, 553-55 (2005) (arguing that agreement among cross-licensing competitors requiring free distribution of the combined product should not run afoul of antitrust laws where ancillary to procompetitive benefits). *But see* Michal S. Gal & Daniel L. Rubinfeld, *The Hidden Costs of Free Goods: Implications for Antitrust Enforcement*, 80 ANTITRUST L.J. 521, 524-25, 531, 534, 536, 539 (2016) (arguing that a fact-specific inquiry into why a competitor is offering a service for free may show that it is part of a strategy to prevent entry in a market for a complement, to manipulate consumer choice, or to encourage product-specific investments in ways that are not rational or welfare maximizing, or even that it does not benefit the organization offering the free product or service in order to limit investment in superior paid alternatives).

one for attention or Internet time (as opposed to money spent), there are ways in which they do compete.

Another fact that complicates merger analysis is that many startup acquisitions are not of direct competitors. Antitrust law is more skeptical of "horizontal" mergers between competitors than of "vertical mergers" (deals between buyers and sellers in a supply chain) or "conglomerate mergers" that link unrelated businesses.[399] But how should we analyze two technologies that aren't related but might become so? Things that interconnect and work together but do different things? This was an issue in the government's antitrust case against Microsoft two decades ago.[400] Microsoft's Internet Explorer web browser competed with Netscape's browser, but Internet Explorer wasn't a particularly important product for Microsoft at the time. More important was making sure that Netscape didn't set up a competing Internet portal that could grow over time into a threat to Microsoft's core business, the operating system.[401] But that risk exists even if there is no horizontal relationship between the parties at all. Google purchased DoubleClick, the largest clickstream tracking company. That merger was likely vertical, or at least complementary, not horizontal. But it made it more difficult for Google's actual competitors to track user behavior and monetize user attention with ads.[402]

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[399] *See* Koren W. Wong-Ervin, *Antitrust Analysis of Vertical Mergers: Recent Developments and Economic Teachings*, ANTITRUST SOURCE, Feb. 2019, at 1, 1. For skepticism of this more favorable treatment, see generally Marissa Beck & Fiona Scott Morton, Evaluating the Evidence on Vertical Mergers (Feb. 26, 2020) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3554073 [https://perma.cc/UR2P-X8VU]. The antitrust agencies recently issued revised vertical merger guidelines that take the competitive risks more seriously. U.S. DEPT. OF JUSTICE & FED. TRADE COMM'N, DRAFT VERTICAL MERGER GUIDELINES (2020), https://www.ftc.gov/system/files/documents/reports/us-department-justice-federal-trade-commission-vertical-merger-guidelines/vertical_merger_guidelines_6-30-20.pdf [https://perma.cc/22N6-TUVB].

[400] *See* United States v. Microsoft Corp., 253 F.3d 34, 46 (D.C. Cir. 2001); Robin Cooper Feldman, *Defensive Leveraging in Antitrust*, 87 GEO. L.J. 2079, 2096-99 (1999).

[401] Feldman, *supra* note 400, at 2098 (concluding that "Microsoft is leveraging into browsers for one key reason: to prevent browsers from eroding Microsoft's formidable monopoly in the operating systems market").

[402] For thinking near the time the merger was approved, see Michael R. Baye, Matias Barenstein, Debra J. Holt, Pauline M. Ippolito, James M. Lacko, Jesse B. Leary, Janis K. Pappalardo, Paul A. Pautler & Michael G. Vita, *Economics at the FTC: The Google-DoubleClick Merger, Resale Price Maintenance, Mortgage Disclosures, and Credit Scoring in Auto Insurance*, 33 REV. IND. ORG. 211, 213-17 (2008) (reviewing arguments raised in merger review and concluding that these showed no real harm was likely to result); Kawamoto, *supra* note 395. For a reassessment of international competition authorities' approval of the merger given what appears to have happened since, see Damien Geradin & Dimitrios Katsifis, Google*'s (Forgotten) Monopoly – Ad Technology Services on the Open*

Traditional antitrust doctrines have trouble assessing mergers like these. Acquiring a direct competitor limits competition in the existing market. But acquiring adjacent companies short-circuits the Schumpeterian competition that could wholly displace the incumbent. That process, while profound in consequence, is probabilistic.[403] And as Doug Melamed notes, "[C]urrent law implicitly presumes that mergers are efficient . . . . Plaintiffs are therefore required to prove that increased market power is a likely result of the merger. That is an almost impossible task . . . ."[404]

b. *Limiting Incumbent-Startup Mergers*

The law can and should do more to limit the sale of innovative startups to incumbents. Those sales can entrench market power even—perhaps especially—if they involve not direct competitors but adjacent companies that could change the way people consume content.[405]

Antitrust agencies considering mergers can already take into account the involvement of a "maverick" that "plays a disruptive role in the market to the benefit of customers."[406] As the agencies have explained, mergers involving mavericks "can involve the loss of actual or potential competition."[407] Along

Web, CONCURRENCES, Sept. 2019, at 1, 5 & n.52 ("Google did what the Google/DoubleClick opponents had feared of: it used [DoubleClick for Publishers]'s pivotal role to foreclose the market for ad intermediation.").

[403] For discussion of what to do about conduct that individually has only some probability of restricting competition but collectively poses a significant risk, see Robin C. Feldman & Mark A. Lemley, Atomistic Antitrust (2021) (unpublished manuscript) (on file with author).

[404] A. Douglas Melamed, *Antitrust Law and Its Critics*, 83 ANTITRUST L.J. 269, 278 (2020).

[405] Several recent papers briefly discuss this issue. *E.g.*, Steven Berry, Martin Gaynor & Fiona Scott Morton, *Do Increasing Markups Matter? Lessons from Empirical Industrial Organization*, J. ECON. PERSPS., Summer 2019, at 44, 61 (discussing Facebook's acquisitions of Instagram and WhatsApp and reminding that "when a market is subject to strong network effects, competition is *for* the market, and the possibility that the nascent entrant could contest the incumbent is an important source of competition"); Shapiro, *supra* note 273, at 739-40 (arguing that it is not "far-fetched that the dominant incumbent firm, whose market capitalization will fall sharply if successful entry occurs, would pay a premium to acquire the target firm," nor "that a dominant incumbent firm can reliably identify the firms that are genuine future threats before the antitrust agencies or the courts can do so with confidence").

[406] *See* U.S. DEP'T JUSTICE & U.S. FED. TRADE COMM'N, *supra* note 380, § 2.1.5.

[407] *Id.* "Mergers involving mavericks have the potential to exert larger anticompetitive effects than those involving non-mavericks." Alexander J. McGlothlin, Mavericks and Mergers in Concentrated Markets 1 (Oct. 3, 2019) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3490329 [https://perma.cc/SFR2-LSDT].

similar lines, a company that "has often resisted otherwise prevailing industry norms to cooperate on price setting or other terms of competition" can play a vital role in spurring competition.[408] Taking over a direct competitor is bad, but taking over an adjacent company may be worse because it short-circuits potential Schumpeterian competition that is more likely to displace the incumbent altogether.[409]

One (rather extreme) possibility is just to ban mergers altogether. The business and economic evidence suggests that most mergers don't actually produce the efficiencies promised.[410] And the growing concentration of markets across our economy has concentrated capital and profit but not necessarily benefited consumers as a class.[411] Indeed, mergers tend to hurt workers, not only by laying some off but also by concentrating the buyer side of the labor market, making it harder for labor to share in those profits.[412] Maybe the world would be better off if companies just didn't buy other companies and let competition work.[413]

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[408] U.S. DEP'T JUSTICE & U.S. FED. TRADE COMM'N, *supra* note 380, § 2.1.5.

[409] Wu and Thompson analyze hundreds of acquisitions by both Google and Facebook. They find that Facebook acquired 46 competitive companies, 40 conglomerate/adjacent companies, and 6 others. Google acquired 171 directly competitive companies, 55 conglomerate/adjacent companies, and 43 others. Only one merger was challenged in the United States, but it was ultimately approved. Wu & Thompson, *supra* note 75. Notably, as their graphics indicate, even the "conglomerate" mergers are actually quite closely related to core competitor business.

[410] *See supra* note 378 and accompanying text; *see also* Austin Frakt, *Competition? It's What the Doctor Ordered*, N.Y. TIMES, Feb. 11, 2019, at B7.

[411] The fact that wealth has increased dramatically at the top while stagnating for 90% of Americans is well documented. *E.g.*, JACOB S. HACKER & PAUL PIERSON, WINNER-TAKE-ALL POLITICS: HOW WASHINGTON MADE THE RICH RICHER—AND TURNED ITS BACK ON THE MIDDLE CLASS (2010); THOMAS PIKETTY, CAPITAL IN THE TWENTY-FIRST CENTURY 24 (Arthur Goldhammer trans., 2014). While there are many causes for the fact that a rising tide no longer lifts all boats, Thomas Philippon persuasively argues that a significant part of the problem is that U.S. consumers pay more than their foreign counterparts because our markets are less competitive. *See generally* THOMAS PHILIPPON, THE GREAT REVERSAL: HOW AMERICA GAVE UP ON FREE MARKETS 111-23 (2019).

[412] *See* Ioana Marinescu & Herbert Hovenkamp, *Anticompetitive Mergers in Labor Markets*, 94 IND. L.J. 1031, 1031-33 (2019) (arguing that merger review fails to adequately consider labor market effects and applying traditional antitrust tools to cognize harms from monopsony in labor markets); Suresh Naidu, Eric A. Posner & Glen Weyl, *Antitrust Remedies for Labor Market Power*, 132 HARV. L. REV. 536, 537 (2018) (similarly attending to understudied effects of mergers on labor markets).

[413] *See* Gutierrez & Philippon, *supra* note 392, at 1-3.

We think that goes too far. There are mergers that do make the merged companies work better.[414] Supermarket chains are much better in most ways than the individual corner groceries that preceded them.[415] In some markets, including tech, mergers may allow companies to take advantage of efficient scale or network effects.[416] And in many cases, the alternative to merger is not continued competition by the acquired firm but watching that firm fail. Mergers may make productive use of employees and assets that would otherwise be left by the wayside when the business went under.

Further, given the small number of IPOs, it is reasonable to worry that a flat ban on mergers would discourage venture investment too much. At least until they have some alternative means to cash out their investments, startups and VCs depend on some form of company exit strategy, and we want to be careful in weaning them away from the most common currently available exit lest we dry up the funding that has supported a tremendous amount of innovation.[417]

Nonetheless, there is room for antitrust to regulate acquisitions of startups more than it currently does. As a guiding principle, agencies should pay particular attention to acquisitions by incumbent monopolists, even if they don't present as direct competitors. Acquisitions of adjacent firms are likely to increase concentration and prevent the development of fundamentally new sources of competition. And unlike mergers between small firms, which might

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[414] Shapiro, *supra* note 273, at 740 (noting the difficulty of distinguishing cases where a large firm acquiring a nascent rival will decrease consumer welfare from those where the large firm increases consumer welfare by "greatly expand[ing] the reach and usage of the target firm's products" or technology).

[415] Supermarket consolidation might cause smaller rivals to "cut each other's throats" and leave the market to larger stores, but—given today's antitrust goals—so be it. *See* United States v. Topco Assocs., Inc., 405 U.S. 596, 611 (1972) (alteration omitted) (quoting White Motor Co. v. United States, 372 U.S. 253, 278 (1963)). The disruption to "small dealers and worthy men" is no doubt "a misfortune . . . [but also] the inevitable accompaniment of change and improvement." United States v. Trans-Mo. Freight Ass'n, 166 U.S. 290, 323 (1897); *see also* Joshua D. Wright & Douglas H. Ginsburg, *The Goals of Antitrust: Welfare Trumps Choice*, 81 FORDHAM L. REV. 2405, 2405 & n.4 (2013) (citing *Trans-Missouri Freight* case and discussing case law of this period).

[416] *See, e.g.*, Howard Shelanski, Samantha Knox & Arif Dhilla, *Network Effects and Efficiencies in Multi-Sided Markets*, *in* RETHINKING ANTITRUST TOOLS FOR MULTI-SIDED PLATFORMS 189 (2018), https://www.sipotra.it/wp-content/uploads/2018/07/Rethinking-Antitrust-Tools-for-Multi-Sided-Platforms-2018.pdf#page=190 [https://perma.cc/TP3Y-ZRVW]. Similar arguments were made in earlier cases, as in the case of airlines. *E.g.*, Mark Israel, Bryan Keating, Daniel L. Rubinfeld & Bobby Willig, *Airline Network Effects and Consumer Welfare*, 12 REV. NETWORK ECON. 287 (2013). For more on network effects, see sources cited *supra* note 4.

[417] For one expression of this viewpoint, see generally D. Daniel Sokol, *Vertical Mergers and Entrepreneurial Exit*, 70 FLA. L. REV. 1357 (2018).

help build a strong competitor to an incumbent, acquisitions of adjacent startups by an incumbent often reinforce and extend its dominance, not only preventing a new competitor from arising but also making it harder for other competitors to dislodge the incumbent. We propose applying this principle to create a strong rebuttable presumption against incumbent acquisitions of direct competitors and a weak rebuttable presumption against incumbent acquisitions of other firms.

First, we think that the antitrust agencies should presumptively block acquisitions of directly competitive startups by dominant firms.[418] That presumption would extend to startups worth less than $200 million (the current threshold for reporting mergers for antitrust review). So we would need to change the Hart-Scott-Rodino reporting threshold to require reporting of smaller mergers or potentially any mergers that involve dominant tech incumbents.[419] That presumption should be rebuttable if (1) the startup would not be viable as a freestanding entity and (2) there are no other plausible acquirers (a

[418] Scott Hemphill and Tim Wu argue that a dominant firm's acquisition or exclusion of a nascent competitor should be prohibited. *See* C. Scott Hemphill & Tim Wu, *Nascent Competitors*, 169 U. PA. L. REV. (forthcoming 2021) (manuscript at 2); *cf.* Hemphill, *supra* note 295, at 1981-84 (discussing the role that adjacent incumbents can play in challenging a market). But while they identify features and examples of nascent competition, they don't fully define it. *Cf.* Bryan & Hovenkamp, *supra* note 396, at 333-34 (suggesting that we reverse the presumption that the market will self-correct when an incumbent buys a startup); John M. Newman, *Antitrust in Digital Markets*, 72 VAND. L. REV. 1497, 1553 (2019) (same). For a suggestion along similar lines but focused on vertical rather than horizontal or adjacent mergers, see Khan, *Antitrust Paradox*, *supra* note 2, at 793. As she describes,

> A stricter approach would place prophylactic limits on vertical integration by platforms that have reached a certain level of dominance. This would recognize that a platform's involvement across multiple related lines of business can give rise to conflicts of interest by creating circumstances in which a platform has an incentive to privilege its own business and disadvantage other companies. Seeking to prevent the industry structures that *create* these conflicts of interest may prove more effective than policing these conflicts. Adopting this prophylactic approach would mean banning a dominant firm from entering any market that it already serves as a platform—in other words, from competing directly with the businesses that depend on it.

Id. (footnote omitted). Khan has since developed this proposal further, suggesting a "separation regime" limiting mergers "only if a dominant platform that controlled a key distribution channel or marketplace sought to acquire a firm that would compete in that marketplace." Lina M. Khan, *The Separation of Platforms and Commerce*, 119 COLUM. L. REV. 973, 1087 (2019) [hereinafter Khan, *Platforms and Commerce*].

[419] We are not suggesting that the Hart-Scott-Rodino threshold be lowered overall. Many acquisitions by nondominant firms or in other industries don't raise the concerns we identify here.

nondominant company willing to pay a reasonable price, even if lower than the incumbent would pay).[420]

Things are more complicated if the startup doesn't compete directly with the incumbent. Acquisition of a truly unrelated firm is unlikely to do much competitive harm (though it also won't offer any great benefits). And acquisitions of complementary firms can enhance efficiency, as we noted above.[421] So we shouldn't ban all acquisitions by incumbents. At the same time, much of the potential harm from acquisitions comes not in the form of suppression of direct competition but in accreting complementary technologies and shutting down potentially disruptive alternatives.

Currently the law pays little if any attention to noncompetitive mergers involving startups.[422] We need a much greater focus on mergers that involve adjacent or potentially market-disrupting technologies.[423] Traditional merger doctrine focused on the problem of entrenching existing monopolies and was therefore particularly restrictive of mergers in already concentrated markets.[424] We think that is sound antitrust policy. A presumption against those mergers may also be appropriate, though it should be a weaker presumption that could be rebutted by sufficient proof of efficiencies from the merger. And it could also be rebutted by strong evidence that the startup's technology is uniquely complementary to the incumbent's, so that it is unlikely to be profitably deployed by anyone other than the incumbent.[425]

Our focus on merger review, which the antitrust agencies police, limits the potential for abuse of our proposal by private plaintiffs. And the fact that

[420] This is consistent with the "failing firm" defense to mergers in antitrust law. That defense requires proof that a company (1) is in danger of imminent business failure, (2) cannot reorganize successfully in bankruptcy, and (3) made unsuccessful good faith efforts to find alternative purchasers. *See* Int'l Shoe Co. v. FTC, 280 U.S. 291, 301 (1930).

[421] *See supra* notes 119-26 and accompanying text.

[422] For a detailed discussion of this fact and why it's a mistake, see Kevin A. Bryan & Erik Hovenkamp, *Antitrust Limits on Startup Acquisitions*, 56 REV. INDUS. ORG. 615, 616 (2020); and Bryan & Hovenkamp, *supra* note 396, at 331.

[423] Shapiro, *supra* note 395, at 78 ("[A]gencies and the courts could express greater wariness when a dominant incumbent firm seeks to acquire a firm operating in an adjacent market, especially if the target firm is well positioned to challenge the incumbent's position in the foreseeable future.").

[424] For a discussion, see Sean P. Sullivan, *Anticompetitive Entrenchment*, 68 U. KAN. L. REV. 1133, 1135 (2020).

[425] For example, a company that developed an add-on specific to Microsoft Word might be valuable only to Microsoft. This exception will be hard to prove. That's by design. We don't want the exception to swallow the rule. Investors who don't think they'll be able to make that argument of complementarity won't buy that startup. Corporations may have to do more innovation in-house.

consummated mergers so often prove inefficient means that any false positives created here will likely be less costly than any false positives we might create were we to reform other parts of antitrust doctrine—for example, by breaking up existing incumbents.[426]

Our approach won't eliminate acquisitions of startups, and it isn't intended to. It will make it harder for *incumbent monopolists* to acquire startups. We think that's a good thing. But it will drive startups to look for alternative strategies—not all of them exits. As we suggest above, some of those alternatives, like continuing to operate as a profitable company, are better for the world. Even sales to nondominant firms are better for the world than reinforcing the power of incumbency. It may also drive investors to change their approach, and so a stronger merger enforcement policy may need to be coupled with some of the carrots we described above to ensure that VCs or others are willing to fund startups.

There is some risk that this approach will drive VCs and others out of the business of funding startups, which hurts innovation. We think that risk is overstated. We had a vibrant startup market twenty years ago when selling out

[426] While Frank Easterbrook famously warned that the risks of overenforcement in antitrust were greater than the risks of underenforcement, *see* Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 3 (1984), that was before three decades of systematic weakening of antitrust. *See* Stacey L. Dogan & Mark A. Lemley, *Antitrust Law and Regulatory Gaming*, 87 TEX. L. REV. 685, 700 (2009). As Doug Melamed testified before Congress, "[h]orizontal mergers might be an especially fruitful area for [potential antitrust reform] . . . for three reasons":

> First, there are studies that suggest underenforcement, i.e., false negatives, in the past. Second, there are studies that suggest parties often fail to realize anticipated efficiencies from mergers and, thus, that the costs of false positives might be less than previously thought. Third, merger enforcement is largely a matter for the expert enforcement agencies, and adjusting the legal standards for merger enforcement is therefore less likely to lead to abuse by private litigants.

Does America Have a Monopoly Problem? Examining Concentration and Competition in the U.S. Economy: Hearing Before the Subcomm. on Antitrust, Competition Pol'y & Consumer Rts., S. Comm. on the Judiciary, 116th Cong. 9 (Mar. 5, 2019) (prepared statement of A. Douglas Melamed, Professor of the Practice of Law, Stanford Law School), https://www.judiciary.senate.gov/imo/media/doc/Melamed%20Testimony.pdf [https://perma.cc/XZA7-W6S4]; *see also* Bryan & Hovenkamp, *Antitrust Policy*, *supra* note 396, at 332, 347 (reviewing similar points); Khan, *Platforms and Commerce*, *supra* note 418, at 1074-75 (same).

By contrast, breaking up integrated firms like Google or Facebook presents troubling issues. *Cf.* United States v. United Shoe Mach. Corp., 110 F. Supp. 295, 348 (D. Mass. 1953) ("United conducts all machine manufacture at one plant in Beverly, with one set of jigs and tools, one foundry, one laboratory for machinery problems, one managerial staff, and one labor force. It takes no Solomon to see that this organism cannot be cut into three equal and viable parts."). We discuss those issues *supra* notes 303-04 and accompanying text.

to incumbents wasn't the dominant business model. And in any event, startups aren't an end in themselves. Society should value startups only if they give us technologies or competitive choices we want. A startup market that is little more than a pipeline to enable incumbents to employ smart new engineers seems less socially useful. Nonetheless, we think it is important not to discourage investment in startups. That's why we think these sticks need to be coupled with some of the carrots we discussed above that will keep investment in startups attractive.

Incumbents will react, too. If they can't buy up firms, they may try other ways to get access to their technology. One possibility is to license it or to create a joint venture with the startup. That still might be better than a merger. Nonexclusive licenses in particular give the incumbent the benefit of the technology, allowing its customers to use the technology, but do not give the incumbent the power to prevent others from using the technology too. But exclusive licenses and many joint ventures might allow only the incumbent to use the technology. That is worrisome, and antitrust needs to police that conduct as well. Fortunately, the agencies do scrutinize licensing deals, with joint ventures in particular already subject to special scrutiny.[427]

Another way incumbents might react if they can't buy the startup and its technology is to develop and deploy their own competing technology. Companies often engage in a "make or buy" decision when deciding whether and how to implement a new technology.[428] If they can't buy, incumbents often make. We think that's mostly as it should be—it's healthy market competition and better for the world than just buying up the technology and denying it to others. The exception involves IP rights. If an incumbent infringes a startup's patents or takes its trade secrets in an effort to appropriate its technology, IP law can (and should) stop it.[429]

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[427] *See* FED. TRADE COMM'N & U.S. DEP'T OF JUST., ANTITRUST GUIDELINES FOR COLLABORATION AMONG COMPETITORS 2 (2000), https://www.ftc.gov/sites/default/files/attachments/dealings-competitors/ftcdojguidelines.pdf [https://perma.cc/M9SH-UJW7]. That said, the scrutiny is not always so scrupulous. *See* Texaco Inc. v. Dagher, 547 U.S. 1, 6 (2006) (holding oil producers' joint venture not *per se* illegal even where the coventurers refined and marketed their gasoline separately).

[428] *See* L.E. Cánez, K.W. Platts & D.R. Probert, *Developing a Framework for Make-or-Buy Decisions*, 20 INT'L J. OPERATIONS & PROD. MGMT. 1313, 1314-17 (2000).

[429] Some moves by incumbents to copy the technology of their rivals or complements appears to come very close to this line. *See, e.g.*, Wakabayashi, *supra* note 25, at A1 (surveying the ways some startups argue that Amazon has "strip-mined" their innovations without paying for them).

For a broader argument that courts should enforce structural separations between platform monopolies and the markets they interact with, see generally Khan, *Platforms and Commerce*, *supra* note 418. We have not required unbundling in other industries with vertically integrated

More aggressive merger enforcement isn't a panacea. Among other things, it won't undo concentration that results from decades of exit strategy thinking. But it can open up markets for the next generation of startups and lay the groundwork for Schumpeterian competition. And while antitrust has long been in decline, that is changing. In this political moment, members of both parties are willing to set antitrust limits on tech industry dominance.[430]

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What we offer in this Article is not a full policy blueprint but a menu of options. All those options have costs; for some, the costs may be too great. There may be other options we haven't considered. We don't need to do everything on this list, and we probably don't want to. But we need to pick some options from the menu to bring back the idea that is at the heart of this Article—that the goal in starting a new company shouldn't be to see how fast you can cash out and shut it down.

CONCLUSION

The concept of starting a company by planning to end it is perverse. It's not the way successful businesses have traditionally been built. And while the dominant exit strategy has made lots of money for founders and VCs, it is less and less good at turning great ideas into great products. When startups sell to incumbents rather than dislodge them, we cement market power and perpetuate the tech giants that worry so many people today. And we often fail to benefit from the very innovation the VC ecosystem has funded. We need to disrupt that ecosystem, returning startups to the business of making products and building new markets rather than making deals and selling out. Challenging market leaders will never be easy, safe, or entirely well-funded work, even with the best of incentives. But law can help encourage profitable firms to stay in business rather than sell to incumbent monopolists. By doing so, it can restore competition and innovation to a technology market that is losing both.

monopolists, though perhaps we should have. *Cf.* Mark A. Lemley & Lawrence Lessig, *The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era*, 48 UCLA L. REV. 925 (2001) (making a similar argument for Internet bandwidth providers).

[430] *See* Jacob M. Schlesinger, Brent Kendall & John D. McKinnon, *Hunting for Giants*, WALL ST. J., June 8, 2019, at B1.