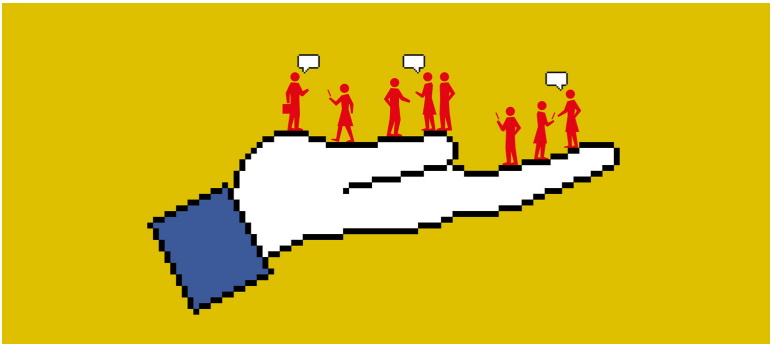
THE TECH GIANTS, MONOPOLY POWER, AND PUBLIC DISCOURSE



The National Security Case for Breaking Up Big Tech

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In November 2019, the Knight First Amendment Institute convened a major symposium at Columbia University, titled "The Tech Giants, Monopoly Power, and Public Discourse," to address concerns arising from the dominance of a small number of technology companies over a wide range of economic and expressive activity. The essays in this series were originally presented and discussed at this two-day event. Written by scholars and experts in law, computer science, economics, information studies, journalism, political science, and other disciplines, the essays focus on two questions: how and to what extent the technology giants' power is shaping public discourse, and whether anti-monopoly tools might usefully be deployed to expose or counter this power.

The symposium was conceptualized by Knight Institute staff, including Jameel Jaffer, Executive Director; Katy Glenn Bass, Research Director; Alex Abdo, Litigation Director; and Larry Siems, Chief of Staff. The essay series was edited by Glenn Bass with additional support from Lorraine Kenny, Communications Director; Sarah Guinee, Research Fellow; and Madeline Wood, Communications and Research Coordinator.

The full series is available at knightcolumbia.org/research/

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INTRODUCTION

In recent years, scholars, commentators, former tech company founders, and political leaders have made the case for breaking up and regulating big tech companies like Alphabet (the parent company of Google), Facebook, and Amazon. The proposals to break up and regulate big tech companies are specific: Unwind mergers, require tech platforms to separate from businesses that operate on the platform, regulate platforms with nondiscrimination principles drawn from public utilities and public accommodations laws, and adopt privacy regulations.[1] Advocates for breaking up and regulating big tech hold that these companies have become a danger to the economy, society, and democracy.[2]

Opponents of breaking up and regulating big tech have put forward a variety of responses, but among them is the assertion that breaking up big tech is problematic in an era of resurgent great power competition, particularly between the United States and China.[3] This argument takes different forms. Some commentators have argued that the United States and China are in a Cold War-style arms race over artificial intelligence (AI); big tech, they argue, is needed to win that contest.[4] Alphabet's for-

mer chief, Eric Schmidt, has thus highlighted U.S.-Chinese competition for technology in response to arguments that tech should be broken up.[5] A second argument is that if big American tech companies are broken up and regulated, one consequence will be that the big Chinese tech companies will become dominant globally. Facebook's Mark Zuckerberg and Sheryl Sandberg have taken this position, with Zuckerberg noting that the Chinese companies "do not share the values that we have."[6] Even Congressman Ro Khanna and Senator Mark Warner, who have both been critical of big tech companies, have expressed concerns along these lines, namechecking Alibaba, Baidu, and Tencent as potential global powerhouses.[7]

The claim that breaking up and regulating big tech might have consequences for great power competition deserves to be taken seriously. The problem is that upon serious consideration, the national security case against breaking up and regulating big tech is not just weak—it is backwards. Far from being a threat to the United States, breaking up and regulating big tech are *necessary* to preserve America's competitiveness, national defense, and democratic freedoms in an era of great power competition.

First, big tech companies are not competing with China in some kind of new Cold War arms race; rather, many are integrated with China, seeking to expand further into China, and cooperating with Chinese companies and (by extension) likely with the Chinese government. Big tech's integration with China thus supports the rise and export of digital authoritarianism; deepens economic dependence that can be used as leverage against the United States in future geopolitical moments; forces companies to self-censor and contort their preferences to serve Chinese censors and officials; and makes profit-seeking corporations and their lobbyists less trustworthy in advocating for the interests of the United States in Washington, D.C. Second, in an era of great power competition, innovation and a strong defense industrial base are essential. But relying on a small number of big tech companies (and, in particular, failing to enforce antitrust laws and regulate the sector) means less competition—and that in turn means less innovation, particularly when compared with a system of robust competition and public investment in research and

development. Concentration in the tech sector also weakens the defense industrial base by making the government dependent on a small number of contractors and redirecting taxpayer dollars from research to monopoly profits. Taking into account all of these dynamics, national security arguments do not favor protecting big tech companies from competition and regulation. American national security would be strengthened by breaking up and regulating big tech companies.

BIG TECH, GLOBAL ENTANGLEMENTS, AND GREAT POWER COMPETITION

AT A TIME OF RESURGENT great power competition, claims that big tech companies are assisting that competition are superficially appealing, but they largely do not hold up to scrutiny. Many of the biggest tech companies are global players, operating in China, working with that government (knowingly or unknowingly), and seeking to expand their footprint. This not only means that their work abroad assists technological development in China but also that the Chinese government has increased leverage over those companies and the United States. Breaking up these companies would create a domestic technological ecosystem in which a more significant part of the marketplace is not dependent on Chinese markets, thereby making the United States more resilient.

How Big Tech Helps Strengthen China

The claim that big American tech companies are somehow an alternative to Chinese dominance—or, in the more extreme form, that they are

competing with China on behalf of the United States—is largely backwards. In fact, many big American tech companies are operating in China, working with Chinese companies, and seeking to expand. Because markets and the state are intertwined in China, interactions with Chinese companies and investments in China are likely to pass along operational and technological developments to the Chinese government and military, including in ways that advance its emerging surveillance state—and accelerate its ability to spread its model of digital authoritarianism around the world. In short, big tech companies that operate in China are likely assisting the rise of China, not acting as a hedge against it.

Rather than competing with China, many big tech companies are integrating with China or attempting to deepen their integration with China. Google has announced an AI center in Beijing,[8] and it is exploring a partnership with Tencent that involves using the Chinese tech giant's cloud service as an alternative to Google Cloud.[9] In 2018, the company also proposed Project Dragonfly, which would have created a search engine that would be in compliance with Chinese censorship regulations behind the Great Firewall.[10] That endeavor created controversy within the firm and criticism from human rights groups.[11]

Other companies also operate in China or are seeking to do so. Microsoft is expanding data centers in China and has built an operating system, "Windows 10 China Government Edition," for the Chinese government.[12] After Alibaba, Amazon provides the largest cloud service in China, and its Amazon Web Services division works with local companies and is expanding its data centers.[13] Apple, of course, famously designs its phones in California but makes them in China.[14] In 2017, Apple announced a partnership with a Chinese firm with close ties to the government and a year later moved its Chinese iCloud and iCloud encryption services to China.[15] Notably, Facebook isn't operating in China—but not for lack of trying. The company has repeatedly attempted to gain access but has been blocked by government officials.[16]

Merely operating in China might not seem like it undermines the claim of U.S.-Chinese competition. After all, it might be that American companies are seeking to steal market share from Chinese companies in China. Global dominance requires, unsurprisingly, dominance around

the globe, including in the world's biggest markets. The problem is that, according to scholars, U.S. government officials, and even American business associations, any U.S. company that is developing AI in China, making significant technological investments in China, or simply operating in China is likely supporting the Chinese government and military.

Chinese companies are often state-run, partly owned by the state, or have informal ties to state and Communist Party officials, as scholars have documented.[17] Formal and informal ties allow the government to have influence over many companies, and they create an incentive for companies to comply with party preferences preemptively even without formal government pressure.[18] Cooperation and partnerships with these companies therefore mean cooperation with state-directed aims. "No major Chinese company," Senator Mark Warner has noted, "is independent of the Chinese government and Communist Party."[19] An official at the U.S. Chamber of Commerce goes even further, arguing that American firms going to China have "to please the Chinese government and the Communist Party."[20]

Moreover, because artificial intelligence is a dual-use technology, ostensibly commercial innovations can also have military implications. China's stated doctrine of "civil-military fusion" thus virtually guarantees that companies are indirectly assisting the military if they are working with Chinese entities.[21] Under that doctrine, "any technologies held by the private or academic sectors—whether imported or developed in-house—must be shared with the Chinese military."[22] When combined with the corporate-state relationship in China, this means the technological innovations in the private sector are likely being shared with the government for military purposes. As former defense secretary Ash Carter has noted, "If you're working in China, you don't know whether you're working on a project for the military or not."[23]

The fact that Chinese companies and the state are intertwined means that American companies working in China are potentially helping accelerate the adoption of digital authoritarianism within China and its spread abroad. In general, the development of artificial intelligence "offers a plausible way for big, economically advanced countries to make their citizens rich while maintaining control over them."[24] Big data, combined

with AI, enables governments and big tech companies not only to predict but also to shape what individuals will do. Politically, this means that governments will have the power to preempt dissenters to a far greater degree than authoritarian regimes of the past.[25] Economically, it means that centralized economic planning might find greater success than in the past, because governments and companies can shape the behavior of individuals.[26] And over time, behavioral changes shape beliefs, potentially building support for the regime itself.[27] These dynamics suggest that the new "digital authoritarianism" may have greater staying power than its low-tech precursors.[28]

At home, China has long been concerned about domestic disharmony and has pursued a policy of "social management" to achieve "holistic" security—not just national security but party organization and the management of the social order.[29] The Chinese State Council sees AI as "irreplaceable" in ensuring social harmony in the future.[30] China has taken steps to develop a "social credit system," in which individuals are assessed in every interaction to determine their trustworthiness, their compliance with laws and social norms, and the degree to which their social networks are also compliant. Chinese tech companies have reportedly agreed to share data with the government in support of this project.[31] Local governments and tech companies are cooperating to develop "credit cities," the local counterpart to a full-on national system.[32] Chinese companies are also already exporting surveillance technologies abroad, including biometric censors and facial recognition software.[33]

Given that many big American tech companies are operating in China or seeking to do so and that engagement with Chinese entities likely means information is transferred to the government, the idea that big American tech companies are helping the United States vis-à-vis China in some kind of Cold War-style technology arms race makes little sense. It is just as likely, if not much more so, that firms operating in China are directly or indirectly furthering China's emergent domestic surveillance capabilities, its military use of those technologies, and its spread of digital authoritarianism abroad as well.[34]

How Big Tech's Entanglements Threaten American Power and Values

In addition to benefiting Chinese power, big tech's integration with China threatens the United States by creating leverage over the United States, and it could, in the future, undermine the American ecosystem of free speech and expression. This could happen in multiple ways: Integration opens the United States to espionage and surveillance, creates economic leverage over the United States, and preemptively forces companies to adhere to the standards of Chinese censors, thereby restricting speech and expression particularly on issues related to democracy.

Most obviously, integration with China raises concerns about espionage and surveillance. For example, Pentagon officials have been concerned that if the Chinese company Huawei operates 5G systems among American allies, the United States will have to restrict intelligence sharing along such systems; if those systems have surveillance capacities or backdoors, information across the system could be captured by the Chinese government.[35] Federal regulators have also flagged a Chinese company's acquisition of the dating app Grindr, which has a great deal of personal information that could be used to pressure or blackmail users.[36]

More broadly, economic interdependence can be used as leverage for political purposes. Scholars refer to this by a variety of terms, including "geoeconomics,"[37] "reverse entanglement,"[38] and "weaponized interdependence."[39] But the tactics are similar regardless of the label—and China utilizes them frequently. To retaliate against South Korea's adoption of a U.S. missile defense system, China blocked tourism to the country.[40] And it blocked imports from Norway after dissident Liu Xiaobo was awarded the Nobel Peace Prize.[41]

Interdependence in the economy generally, and in the technology sector specifically, thus bring significant risks to the United States in an era of great power competition. The more integrated the economies of two countries, the more likely it is that a foreign country will have leverage over the United States. The use of boycotts is one example. But raising tariffs to start a trade war could devastate sectors of the economy, and interrupting a supply chain for essential parts and components (whether consumer, commercial, or military) could have significant consequences,

particularly in a crisis.

Integration also means that corporations are contorting their operations *outside of* China in order to comply with the preferences of Chinese censors. The most prominent concern is self-censorship—companies and other actors that change their messages, artistic choices, or statements for fear of offending Chinese censors. For example, the general manager of the Houston Rockets basketball team tweeted support for the Hong Kong protestors, only to backtrack in the face of concerns about the Chinese reaction.[42] The *People's Daily* branded Mercedes-Benz an "enemy of the people" after the car manufacturer posted a quote from the Dalai Lama on Instagram; Mercedes later deleted the post.[43] Some university researchers are concerned about self-censorship within academia on topics related to China.[44] Hollywood studios are reportedly changing dialogue, scenes, and themes in movies in order to comply with Chinese censors.[45] And tech companies too have taken steps toward compliance with Chinese internet regulations: Apple, for example, "removed VPNs [virtual private networks] from the Chinese version of its App Store."[46] Google's Project Dragonfly was controversial internally with employees for the same reason.

Why does it matter if corporations change their behaviors based on Chinese preferences? After all, global companies have done so for many years. McDonald's and Coca-Cola, for example, offer different menus and beverages in different countries to respond to the tastes and preferences of consumers. The shift in corporate behavior in response to Chinese preferences differs in two ways. First, unlike the McDonald's and Coca-Cola examples, companies aren't just changing their products *within* China. They are doing so globally. That the leaders of Mercedes won't quote the Dalai Lama and Hollywood writers are changing scripts for blockbuster films because they might offend Chinese censors means that *American* audiences are subject to the views of Chinese censors, as is the rest of the world.

Second, the willingness of these companies to adhere to Chinese preferences calls into question whether global firms can be trusted when they seek to lobby or influence the U.S. government. In the mid-twentieth century, the maxim "what's good for General Motors is good for America"

suggested a link between corporate success and national success. That is unlikely to be the case anymore (if it ever was). Under the dominant ideology of contemporary corporate lawyers—who see shareholder profits as the sole aim of corporate managers—corporate managers are required to pursue profitable operations; American national interests are not part of the calculus.[47] A global corporation that gains most of its profits from abroad might therefore have profit-based interests that do not align with American national interests. To put a fine point on it, one could imagine a company that seeks to expand its access into China lobbying the United States government in ways that are detrimental to American interests and, indeed, even serve the interests of the Chinese government. This is not to say that corporate executives or lobbyists are foreign agents deliberately pursuing such an aim—or that they think of themselves that way and would state as much to government officials. This wolf comes in sheep's clothing: Policies will likely be justified as pursuing neutral economic principles, and many who advocate for them might not even see the broader connections.

Defenders of integration often suggest that narrowly drawn regulations can address any problems that might arise from integration, though at least some defenders consider even limited restrictions on economic integration to be disastrous.[48] For example, one set of think tank scholars have argued for requiring transparency in Chinese corporation ownership (that is, to identify state-owned or -invested companies) as a way to prevent Chinese influence over American corporations.[49] Another set says that U.S. policy should consider "who owns a company's stock, how the company is governed, and whether it has sizable contracts with the Chinese military or defense industry. … Similarly, companies with executives close to the state, through either prior employers or personal connections, warrant further scrutiny."[50] A third argues that "the United States should work with its allies and trading partners to pressure Beijing to open up the Chinese market to foreign companies, curb its preferential treatment of Chinese firms, and better protect foreign companies' intellectual property."[51]

If it is correct that the Chinese state and market are integrated, as a number of senior defense officials and scholars of the Chinese state

and market have argued,[52] then these policy solutions cannot meet the nature of the challenge. Transparency rules will not solve the problem of informal ties between government and private sector in China, nor do they place mandates on companies if there are formal ties. Careful investigation of the relevant relationships and ownership ties might miss important connections, ignore the fact that Chinese doctrine requires civil-military fusion, and neglect to address the incentive companies have to comply preemptively with Chinese government preferences, even absent any specific connection to the government or pressure from the government. Finally, efforts to reduce preferential treatment and protect American intellectual property run counter to the fact that the integration of state and market in China is not a bug, but a central feature of the system.

How Breaking Up Big Tech Builds a More Resilient Economy and Democracy

What does bigness have to do with integration? Or to put it differently, is the real problem integration with China rather than a weak antitrust and regulatory regime to govern big tech companies? The question of integration with China as a general matter is beyond the scope of this essay, but the size and dominance of American tech companies is part of the problem, and breaking up big tech should therefore be part of the solution.

To see why, compare a concentrated ecosystem with a small number of big companies to a competitive ecosystem with a large number of small companies. In a concentrated ecosystem with few players, China will have far more leverage over the United States. A small number of big tech companies that are integrated with China will be more dependent on Chinese markets for consumers and profits—and, in turn, more vulnerable to pressure from the Chinese government. In contrast, in a fractured market with many players, it is much more likely that some will seek other sources for supply chains, develop domestic American capacities, or simply choose not to engage in the Chinese market—whether because of idiosyncratic preferences, competitive dynamics, product differentiation, higher costs, or other factors.

It is theoretically possible that we might instead expect another out-

come: A small number of tech firms making monopoly profits might not need Chinese markets and therefore would be more independent from that country's fusion of politics and economics. Likewise, a multi-player ecosystem of smaller companies, each with razor-thin profit margins, might push all of these players to dependence on Chinese markets for consumers and profits (this is, of course, where debates over integration versus disentanglement are relevant). But theory is not reality, and this alternative hypothesis has not been borne out. In our current highly concentrated tech market, big tech companies are not forsaking Chinese markets out of a combination of morality, patriotism, and monopoly profits. They are operating in China and are desperate to integrate further.

Concerns about censorship and distorted practices are also significantly reduced in a competitive ecosystem of smaller players because some companies and creative gatekeepers won't aim to comply with Chinese government preferences. Consider the Hollywood context. Disney's share of box office sales domestically, for example, approaches 40 percent, and the six biggest studios have 85 percent of box office sales.[53] These companies produce fewer films and, because of their market power, can contractually require that those films be shown in theaters in ways that block other films.[54] These companies are also increasingly integrating vertically across production and distribution: Netflix both produces shows and operates a streaming service, as does Amazon and now even Disney. The result is that smaller players are likely to face a tilted playing field because integrated behemoths can prioritize their own content over competitors and might not take chances on content that isn't likely to maximize their viewership goals.[55] If these big integrated companies comply with Chinese censors because of their ambitions in the Chinese market, then American consumers will not see content that doesn't adhere to Chinese government preferences. In contrast, in a system with a large number of small studios, many would not have the size and scope to play to the Chinese market, let alone be dependent on the Chinese market. They also wouldn't have the power and scale to preference their own content over competitors through vertical integration. The result would be an ecosystem in which Americans will have a range of content choices—including entertainment that might not accord with the views of

foreign censors.

Big tech companies are not likely immune from what is happening in Hollywood—as well as what has happened to Mercedes and other entities that seek to operate in China. Many of these companies, like Amazon and Google, seek access to Chinese markets and operate as both content producers and distributors or platforms. To the extent that they have divisions whose work is objectionable to censors in foreign countries (Amazon, of course, creates its own content; as does YouTube, which is a subsidiary of Google), they too will feel pressure to preemptively shape that content in ways that are palatable to censors. And because of their market power within the United States, U.S. consumers are likely to be left with fewer and fewer serious scalable alternatives.

Finally, in a competitive ecosystem with many players, concerns about the ill effects of lobbying are mitigated as well. In a system with a few dominant players, efforts to lobby the United States government should be seen as highly questionable because of companies' dependence on Chinese markets. A multi-player ecosystem addresses this challenge in two ways: First, many companies will not be dependent on Chinese markets. Second, in a multi-player ecosystem, differentiated companies are less likely to have shared interests and are more likely to end up on different sides of policy questions.[56] This means that their lobbying efforts are less likely to cut in a single direction and thus less likely to capture government. This insight is not a new one—it is foundational to American political and constitutional thought. In *Federalist* 10, James Madison argued that in a political ecosystem with many groups with differentiated interests, no particular faction would be able to capture government.[57] Instead, they would cancel each other out and enable policymakers to pursue the public good. Competition between interests, not the dominance of a few interests (particularly if foreign-influenced), preserves a free and democratic government.

BIG TECH AND THE FOUNDATIONS OF AMERICAN POWER

AMERICAN POWER IS also critical in a time of great power competition. Here too, the case for protecting big tech and restricting competition in the tech sector is weak. Under conventional market theory—and economic practice—competition sparks innovation. If the United States wants to continue to be at the forefront of technological innovation, then more competition is desirable, not less. Breaking up and regulating big tech will thus improve innovation, not reduce it. America's position in a great power rivalry also depends on its defense industrial base—the resilience and capacity of its defense sector. But a concentrated defense sector means less innovation in defense, higher prices for taxpayers to procure defense systems, and a functional redistribution of taxpayer funds from R&D or other kinds of spending to profits for defense contractors. As technology becomes more integrated with defense, the same dangers of a concentrated defense industrial base could emerge with respect to the defense technological base. Breaking up and regulating big tech, combined with R&D funding, would likely instead create a

more competitive defense sector and a more innovative, more resilient, and cheaper one too.

Big Tech, Competitiveness, and Innovation

One of the central arguments against breaking up and regulating big tech on national security grounds is that big tech companies are essential for innovation in the tech sector and thus for American competitiveness and ultimately for national security. Historically, however, innovation has come from a mix of competition and public funding of research and development. Breaking up and regulating tech companies thus doesn't mean ceding ground to the Chinese on technological innovation—it means creating a competitive marketplace with great innovative capacity.

Whether or not they say it explicitly, those who want to protect big tech from antitrust and regulation support a national champions model. The national champions approach suggests that innovation takes place within big companies that are protected from competition and therefore have resources to spend on research and development. Some associate this approach with Joseph Schumpeter, who suggested that firms in competitive markets might be less innovative than monopolists.[58] In this vein, commentators celebrate how Bell Labs was able to innovate for generations and see Google X, Facebook, and other tech companies as similarly investing in frontier research that will ultimately lead to innovative breakthroughs.[59]

While innovation can take place under a national champions model, innovation does not require national champions—and there are strong arguments that the national champions approach is limited and even counterproductive. First, as Tim Wu has noted, "[B]oth history and basic economics suggest we do much better trusting that fierce competition at home yields stronger industries overall."[60] This response, of course, has been commonplace in basic economics for decades and in debates on competition is linked to the views of Kenneth Arrow.[61] Market competition is good for innovation because competitors have to find ways to differentiate themselves in order to survive and expand. In contrast, large protected firms get lethargic, are slow to innovate, and rest on their laurels.

Wu points out that we also have evidence—not just theory—to show that protecting national champions is inferior to encouraging competition. In the 1980s, Wu argues, Japan took the approach of protecting its national champions in the electronics industry. Powerhouses like NEC, Panasonic, and Toshiba had direct government support. In contrast, the United States took the opposite tack with IBM. The computer firm was brought under antitrust scrutiny, and the legal battle went on for more than a decade, along the way chilling Big Blue from engaging in any conduct that could even potentially run afoul of the antitrust laws. The result, Wu notes, was to create the space for a variety of hardware and software companies, Microsoft, Lotus, and Apple among them. Competition led to innovation and the creation of some of the most forward-looking companies of the era.[62]

Second, national champions can actually limit innovation because they have an incentive to avoid research and innovations that might jeopardize their business model or undermine their dominant position. Bell Labs, for example, has long been celebrated for its role as an "ideas factory."[63] But Bell and AT&T also suppressed innovations when they threatened its business model. Bell inventors, for example, developed recording devices in the 1930s that could have been used for answering machines. But AT&T's management blocked their emergence for fear that they would jeopardize use of the telephone.[64]

An alternative approach to innovation is one that relies less on protectionism for national champions and more on market competition and on public investment in research and innovation. Competition, as noted already, can be a powerful motivator for innovation. When big tech incumbents face little competition, society forgoes the innovation benefits that come from competition. Who knows if Instagram or WhatsApp could have dethroned Facebook's primacy and developed even more new and innovative products? Facebook's moves to acquire those firms prevented us from ever finding out. What small businesses might emerge if they didn't have to compete with Amazon Basics on Amazon's Marketplace? Unwinding mergers and separating platforms from companies that do business on the platform would help spur competition and lead to innovation.

Some might argue that robotics, AI, and quantum computing are so resource-intensive that an ecosystem of smaller companies engaged in fierce competition would mean that no company would have the resources available to invest in those next-generation technologies. There are a few responses to this argument. First, it is not clear that breaking up and regulating big tech would prevent those firms from having the considerable resources to develop the technologies of the future. Facebook would still have billions of users, even without Instagram and WhatsApp, for example. Amazon's platform would still have enormous market power.

Second, and more importantly, part of the answer is that the decision to break up and regulate tech companies should be accompanied by public investment in R&D. One of the primary arguments for the national champions view is that monopolists have the resources to be able to invest in innovation because they do not face competitive pressures.[65] But any system of innovation operates against a backdrop of laws and public policy.[66] The ability to capture the gains of innovation depends on intellectual property law. The possibility of winning government contracts for frontier projects that require innovation is determined by procurement policies. And, of course, an alternative to monopolist investment in R&D is public investment in R&D. These policy choices all shape the innovation ecosystem, and it is not at all obvious why society has to accept national champions instead of thinking about revising these laws and policies more broadly. Given the emphasis that proponents of national champions place on research and development, it is worth noting that historically, as Mariana Mazzucato has argued, government has been a significant driver of innovation through its research and development efforts.[67] Today, one could easily imagine the government spending considerable sums of money on R&D in artificial intelligence, robotics, quantum computing, augmented and virtual reality, and other technological research.

Public investment in research has a variety of benefits. First, because it is not tied to the profit motive and business model of a single company, it covers a wider range of subjects, leading potentially to innovations that would otherwise go undiscovered. Public investment extends to basic research that does not have immediate or foreseeable commercial appli-

cations. It could also include research into areas that might challenge the incumbency and business models of existing companies.

Second, and relatedly, public investment into research is less likely to be geared toward improving surveillance capacity. As long as the biggest companies have surveillance, personalized targeting, and behavioral response at the heart of their business models, research and innovation within those companies will likely be geared, in no trivial part, toward improving those activities. A digital authoritarian country might see that as a valuable public goal, but it is not at all clear why a free and democratic society should. Public-sponsored research might instead be directed toward a variety of socially beneficial uses other than continual improvement of individual monitoring and behavioral reactions. Notably, as there are more opportunities in research outside of the big tech companies, many talented people might choose to work on a wider range of problems.

Third, public investment in R&D has the potential to spread the benefits of technology, innovation, and industry throughout the country. At present, much of the country's technological and intellectual prowess is concentrated in a few regions, the most prominent being northern California, Seattle, and Boston. Geographic inequality has a variety of negative consequences—economic, social, and political.[68] But, as economists Jonathan Gruber and Simon Johnson show in their book *Jump-Starting America*, there is no reason that public investment couldn't spur successful economies in dozens of mid-sized cities all over the country, with spillover benefits for their regions.[69] Unlike government action, technology companies have no reason to develop the capacities of all regions of the country. Amazon's so-called competition for its second headquarters is a good example. After much public attention, the company settled on New York City and a suburb of Washington, D.C., two superstar cities.

Artificial intelligence, of course, requires considerable data in order to improve precision and accuracy. One of the arguments for big tech is that such companies alone are able to collect this data and use it. But there is no reason why this has to be the case either. Consider two alternate possibilities. First, the United States could create a public data commons that would be highly regulated to protect privacy. The public data

commons would include publicly available data from a variety of government sources, and qualifying businesses, local governments, or nonprofits could train their machines using this data. Any new data they collect from users could then be fed back into the data commons (de-identified), so that the data commons improves in quality and quantity of data over time.[70] Second, we could imagine requiring big tech companies to make their data available in interoperable formats. If these companies effectively have a monopoly power over data, then they could be regulated as monopolies—and one condition of their continued protection as monopolies could be enabling access to the datasets. Again, there is no legal or regulatory reason why these kinds of policy options are impossible. And in either case, they would enable a larger number of players to innovate than does the status-quo, stand-pat approach to protecting big tech from competition.

Big Tech and the Defense Industrial Base

Concentration in the tech sector also threatens the defense industrial base due to higher costs, lower quality, less innovation, and even corruption and fraud.[71] Each of these dynamics has already been a problem for America's over-consolidated defense industrial base. As technology becomes more and more central to defense and national security, it is likely that these same dynamics will replicate themselves with big tech companies. This will become a national security threat, both directly, in terms of the quality and speed of procurement, and indirectly, by reducing innovation and functionally redirecting defense budgets from research spending to higher monopoly profits.[72]

Conventional economic theory suggests that monopolists have the ability to increase prices and reduce quality because consumers are captive.[73] When it comes to defense spending, the Government Accountability Office commented in 2019 that "competition is the cornerstone of a sound acquisition process and a critical tool for achieving the best return on investment for taxpayers."[74] At the same time, the GAO observed that "portfolio-wide cost growth has occurred in an environment where awards are often made without full and open competition."[75] Indeed, it found that 67 percent of 183 major weapons systems contracts had no compe-

tition and almost half of contracts went to a handful of firms. Of course, consolidation also means that the Defense Department is in a symbiotic relationship with these big contractors. Some startup executives wanting to sell to the government thus see the Pentagon as "a bad customer, one that is heavily skewed in favor of larger, traditional players," and they don't feel like they can break into the sector.[76]

Standard stories about political economy and capture also suggest that these firms will have outsized power over government.[77] As Frank Kendall, the former head of acquisitions at the Pentagon, has said, "With size comes power, and the department's experience with large defense contractors is that they are not hesitant to use this power for corporate advantage."[78] In the defense context, that means monopolists retain power (and profits), even if they overcharge taxpayers and risk the safety of military personnel in the field.

In an important article in *The American Conservative* on concentration in the defense sector, researchers Matt Stoller and Lucas Kunce argue that contractors with de facto monopoly at the heart of their business models threaten national security. They write that one such contractor, TransDigm, buys up companies that supply the government with rare but essential airline parts and then hike up the prices, effectively holding the government "hostage."[79] They also point to L3, a defense contractor that had ambitions to be a "Home Depot" for the Pentagon, as its former CEO put it. L3's de facto monopoly over certain products, according to Stoller and Kunce, means that it continues to receive lucrative government contracts, even after admitting in 2015 that it knowingly supplied defective weapons sights to U.S. forces.[80]

Consolidation also threatens U.S. defense capacity. The decline of competition, according to a 2019 Pentagon report, leaves the military vulnerable to "sole source suppliers, capacity shortfalls, a lack of competition, a lack of workforce skills, and unstable demand."[81] With a limited number of producers, there is less talent and knowhow available in the country if there is a need to build capacity rapidly.[82] In 2018, the Defense Department released a report on vulnerable items in the military supply chain, including numerous items in which only one or two domestic companies (and, in some cases, zero domestic companies) produced the

essential goods.[83]

How did the United States lose so much of its industrial base? The combination of consolidation and global integration is part of the story. As Stoller and Kunce argue, companies consolidated in the 1980s and 1990s while shifting emphasis from production and R&D to Wall Street-demanded profits. Globalization then allowed them to shift production overseas at a lower cost. The result was to gut America's domestic industrial base—and, in many cases, to shift it to China, which engaged in a decades-long strategic plan to develop its own industrial base. The result, in the words of the 2018 Defense Department report, is that "China is the single or sole supplier for a number of specialty chemicals used in munitions and missiles." In other areas too, the risks of losing access to critical resources are real. Describing the problem of limited carbon fiber sources, the same Pentagon report notes, "[a] sudden and catastrophic loss of supply would disrupt DoD missile, satellite, space launch, and other defense manufacturing programs. In many cases, there are no substitutes readily available."[84]

As technology becomes more integral to the future of national security, it is hard to see how big tech will not simply go the way of the big defense contractors. Corporate mottos not to "be evil" are long gone,[85] and big tech companies spend millions on conventional Washington, D.C., lobbying efforts.[86] Over time, as contracts move to tech behemoths, there will no longer be competitive alternatives, and the Pentagon will likely be locked into relationships with big tech companies—just as they currently are with big defense contractors.[87] Some commentators suggest that robust antitrust policies are a problem because only a small number of tech companies can contract for defense projects.[88] But there is another way to look at it: The goal should be to encourage competition in the tech sector so that there are multiple contractors available. As former secretary of homeland security Michael Chertoff has said, defending the antitrust case against Qualcomm, "a single-source national champion creates an unacceptable risk to American security—artificially concentrating vulnerability in a single point. … We need competition and multiple providers, not a potentially vulnerable technological monoculture."[89]

The consequence of consolidation in tech is that taxpayers will likely

see higher bills even as innovation slows due to reduced competition. Worse still, every taxpayer dollar that goes to monopoly profits—whether in the form of higher prices or fraud and corruption—is a dollar that is not going toward innovation for the future. A concentrated defense sector means not only less innovation due to the lack of competition in the sector; it means that funding that could have been available for innovation instead gets redirected via monopoly profits to the pockets of big tech executives and shareholders.

CONCLUSION

IT IS PERFECTLY UNDERSTANDABLE why big tech companies don't want to be broken up or regulated. They are profitable, growing, and powerful. It is also perfectly understandable why they deploy national security arguments to defend against the prospect. National security arguments have long been a trump card in law, policy, and politics, forming an exception to the normal rules that govern the economy.[90]

But if we take seriously national security imperatives in a time of great power competition, the case for shielding big tech from competition is surprisingly weak. Tech companies are not competing with China so much as integrating with China, and their integration comes with threats to the United States. The best route to broad and transformative innovation is competition coupled with public spending on R&D—not concentration into monopolies. Rather than threatening national security, breaking up big tech will help bolster it.

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90 *Cf.* Ganesh Sitaraman & Ingrid Wuerth, *The Normalization of Foreign Relations Law*, 128 Harv. L. Rev. 1897 (2015) (describing foreign affairs exceptionalism in the legal context).

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