

# For the Economy or for Security? Using 5G to Explain Federal Intervention in US-China Technological Competition

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**Abstract** – The United States under the Trump administration shifted federal policy toward greater state intervention in the technology innovation economy in response to perceived advances in this space by the People’s Republic of China (PRC). This shift is noteworthy given the free-market orthodoxy that traditionally defines US politics and has persisted despite similar perceptions of competition from more state-driven economies in the past (e.g., Japan in the 1980s). This paper seeks to understand why this shift in American economic orthodoxy appears to be occurring now, in reaction to Chinese technological innovation. It does so by beginning to investigate the motivations for shifting US federal 5G policy. It evaluates two explanations for the shift: that the economic relationship with China and broader domestic backlash to globalization have initiated a genuine shift in economic thinking toward industrial policy, or that perceptions of great power competition with the PRC create a national security impetus for intervention in the technology space that supersedes economic orthodoxy. While both trends likely play a role in the shift in federal innovation strategy, I find that the national security dimension of the US-China relationship plays the most significant role in shaping this federal policy change.

**Keywords** – Technological Innovation, Great Power Competition, Industrial Policy, 5G

## Introduction

Proponents of 5G pitch the technology as a societal panacea, leading to a ‘fourth Industrial Revolution’ complete with robotic surgeons and near-boundless economic growth.<sup>1</sup> Of course, such predictions are premature – the nascence of this

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<sup>1</sup> Bruce Mehlman, “Why the 5G Race Matters,” *TheHill*, December 10, 2018, <https://thehill.com/blogs/congress-blog/technology/420509-why-the-5g-race-matters>; “How 5G Can Transform Healthcare,” *Verizon*, October 22, 2018, <https://www.verizon.com/about/our-company/5g/how-5g-can-transform-healthcare>; Jason Curtis, “5G Wireless Networks Leading

technology makes impossible predictions of its economic, political, and societal implications.<sup>2</sup> Nevertheless, just as each progression from 1G to 4G brought a greater impact than its predecessor, the transition to 5G holds substantial implications as the largest network overhaul in history, effectually causing tremendous innovation in a myriad of industries and facets of society. As such, beyond questions of bandwidth, spectrum allocation, and mobile capacity, 5G has become rife with questions of politics, cybersecurity, and national prestige.

In particular, China and its “national champion” telecommunications company, Huawei, have become central to the political questions surrounding 5G. Increasingly, those setting the public agenda frame 5G as an area of competition not simply between corporations but between nation-states. Leaders in the Trump administration have particularly emphasized this perspective. For example, in 2020, Attorney General William Barr delivered a speech accusing China of having unfairly gained an advantage in 5G development through the Chinese Communist Party’s (CCP) market-distorting support of Huawei, seeming to imply the US is being cheated in this race and needs to begin to play by China’s rules.<sup>3</sup> Similarly, Secretary of State Mike Pompeo recently warned business leaders in Silicon Valley of the need to be aware of intense technological competition with China, suggesting the CCP and Chinese companies have engaged in widespread cheating to unfairly steal from US companies and gain a technological advantage over the US.<sup>4</sup> This rhetoric draws attention to a more interesting trend: a shift in US government technology policy, particularly in the 5G space.

As China has earned global attention for its technological innovation in 5G, the US has reacted by embracing more intervention and control in the sector. Traditionally, US economic orthodoxy is associated with a free-market system in which innovation derives from competition among private firms. Proponents of American capitalism, representing the orthodoxy of both major political parties, embrace this innovation model as a great strength of the system. As a result, as the US has shifted in spaces like 5G to embrace a more interventionist approach,

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Fourth Industrial Revolution,” *TechRadar*, April 26, 2020, <https://www.techradar.com/news/5g-wireless-networks-leading-fourth-industrial-revolution>.

<sup>2</sup> Tom Wheeler, “5G in Five (Not so) Easy Pieces,” *Brookings* (blog), July 9, 2019, <https://www.brookings.edu/research/5g-in-five-not-so-easy-pieces/>; Chris Donkin, “Verizon VP Warns on 5G Overhype and Under-Delivery,” *Mobile World Live* (blog), April 26, 2019, <https://www.mobileworldlive.com/featured-content/top-three/verizon-vp-warns-on-5g-overhype-and-under-delivery/>.

<sup>3</sup> William Barr, “Attorney General William P. Barr Delivers the Keynote Address at the Department of Justice’s China Initiative Conference,” <https://www.justice.gov/opa/speech/attorney-general-william-p-barr-delivers-keynote-address-department-justices-china>.

<sup>4</sup> Michael Pompeo, *Silicon Valley and National Security* (San Francisco, 2020), <https://www.state.gov/silicon-valley-and-national-security/>.

representatives of this orthodoxy such as *The Economist* have predictably reacted with surprise and disapproval.<sup>5</sup>

This depiction oversimplifies the US economy – the government has played significant and varying roles in technological innovation throughout history – but the *shift* in strategy matters. This shift is particularly puzzling. In the 1980s, fears of Japanese technological innovation outpacing the US were rampant, leading credible voices to call for the adoption of direct government involvement in capital allocation analogous to Japan’s system.<sup>6</sup> However, such a shift from a free market economy to “industrial policy” did not happen: the US never picked specific companies or industries to drive economic growth, did not develop a vast bureaucracy to direct technology adoption and dispersion as Japan’s Ministry of International Trade and Industry did, and did not adopt widespread protectionist measures. Today, the government’s technology strategy shift is not yet on the scale of true industrial policy; however, comments from key administration officials essentially asserting a need to pick “the ‘horse’ we are going to ride in this [5G] race” and the administration’s embrace of tariffs suggest that the reaction to China’s innovation surge is differing from the reaction to Japan’s 40 years ago – which begs the question, why might the US shift now, but not then?

This paper begins to investigate the factors motivating the shift in the US federal government’s innovation strategy for 5G. To understand why the government’s reaction to China’s technological rise differs from its reaction to Japan’s, this paper investigates the relative influence of security versus economic motivation derived from the US-China relationship on federal 5G strategy. The relationship with China differs greatly from that which the US held with Japan in the 1980s – increasingly, policymakers view the relationship through the lens of great power competition. This essay thus considers how the differing security relationship with the People’s Republic of China (PRC) may motivate this shift and investigates the specific ways this may manifest. Economically, the Trump administration represents a shift in economic orthodoxy in the US as industrial policy has become more mainstream. Importantly, this orthodoxy bases itself off of a reaction to global trade, particularly with China. While these motivations are not necessarily mutually exclusive, this paper’s test of the perceived strength of each one thus illustrates the relative influence of perceived security challenges and economic challenges from China on US domestic innovation strategy. It thus reveals what aspects of the US-China relationship most powerfully motivate US 5G innovation strategy changes. It

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<sup>5</sup> “The Qualcomm Manifesto: American State Capitalism Will Not Beat China at 5G,” *The Economist*, February 15, 2020.

<sup>6</sup> Robert B. Reich, “Why the U.S. Needs an Industrial Policy,” *Harvard Business Review*, January 1, 1982, <https://hbr.org/1982/01/why-the-us-needs-an-industrial-policy>.

finds that, while both factors likely play a role, the security aspect of the relationship holds a stronger sway over US innovation strategy than does the economic aspect.

## Literature Review

Understandably, the scope of academic research specifically focusing on the government's recent shift toward greater intervention in 5G innovation is limited, likely due to a combination of the recency of this trend, its ongoing evolution, and the specificity of this change. However, numerous schools of thought have provided useful frameworks for understanding this evolution, and in some cases particular academics have applied these frameworks to questions of US tech policy oriented toward China. The following sections delineate these bodies of literature as they apply to this evolution in US tech policy.

### *The "New Cold War" and the Role of Historical Analogy*

Today, popular discourse increasingly frames the US-China relationship as evolving into a "new Cold War."<sup>7</sup> One key parallel emerging from this discourse is the systemic differences between American democracy and Chinese autocracy.<sup>8</sup> At the same time, many also challenge these claims, illustrating the multiplicity of views of China in popular discourse and the ongoing use of history as a heuristic to understand the Sino-American relationship.<sup>9</sup> The Trump administration has seemed to adopt a more confrontational stance toward China that belies a belief in great power

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<sup>7</sup> For example, see Robert D. Kaplan, "A New Cold War Has Begun," *Foreign Policy*, January 7, 2019, <https://foreignpolicy.com/2019/01/07/a-new-cold-war-has-begun/>; Niall Ferguson, "The New Cold War? It's With China, and It Has Already Begun," *The New York Times*, December 2, 2019, <https://www.nytimes.com/2019/12/02/opinion/china-cold-war.html>; Odd Arne Westad, "The Sources of Chinese Conduct: Are Washington and Beijing Fighting a New Cold War?," *Foreign Affairs* 98, no. 5 (2019): 86–95;

<sup>8</sup> Matthew Kroenig, "Why the U.S. Will Outcompete China," *The Atlantic*, April 3, 2020, <https://www.theatlantic.com/ideas/archive/2020/04/why-china-ill-equipped-great-power-rivalry/609364/>.

<sup>9</sup> Melvyn P. Leffler, "China Isn't the Soviet Union. Confusing the Two Is Dangerous.," *The Atlantic*, December 2, 2019, <https://www.theatlantic.com/ideas/archive/2019/12/cold-war-china-purely-optional/601969/>; Ben Westcott, "There's Talk of a New Cold War. But China Is Not the Soviet Union," *CNN*, January 3, 2020, <https://www.cnn.com/2020/01/02/asia/us-china-cold-war-intl-hnk/index.html>.

competition, perhaps best embodied by its depiction of China as “revisionist” in the 2017 National Security Strategy (NSS).<sup>10</sup>

This discourse holds key implications for US policy. Given its empirical nature and the difficulties with understanding the present and future, history often serves as a heuristic for national leaders – meaning by analogizing the Sino-American relationship with the Cold War, this discourse will in turn shape how leaders view the relationship and the policies they enact.<sup>11</sup> However, a smaller body of literature disagrees, finding that analogies instead serve more as post-hoc justifications for policies.<sup>12</sup> Of course, the framing of China as a wholly “revisionist” power that serves as an ideological and geopolitical foe oversimplifies the relationship and China’s own behavior on the international stage at the expense of empirical accuracy,<sup>13</sup> but the *belief* in such a “new Cold War” nevertheless likely influences US policy toward China. Interestingly, some research suggests less complex leaders use less sophisticated, more simplistic and universalizing historical analogies in foreign policy decision-making.<sup>14</sup> Political psychology naturally involves significant issues with validity, and this study’s sample size is limited; however, its implication suggests that Trump (a less complex leader by its measure of complexity), is particularly inclined to universalizing analogies such as framing the US-China relationship as a Cold War. Such analogizing thus implies that the perception of great power competition with China may be motivating the shift in US technology policy. Indeed, this discourse connecting memory of the Cold War to

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<sup>10</sup> Donald Trump, “National Security Strategy of the United States of America 2017” (The White House, December 2017), <https://www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905-2.pdf>.

<sup>11</sup> Yaacov Y. I. Vertzberger, “Foreign Policy Decisionmakers As Practical-Intuitive Historians: Applied History and Its Shortcomings,” *International Studies Quarterly* 30, no. 2 (1986): 223–47, <https://doi.org/10.2307/2600677>; David Patrick Houghton, “The Role of Analogical Reasoning in Novel Foreign-Policy Situations,” *British Journal of Political Science* 26, no. 4 (1996): 523–52; Yuen Foong Khong, *Analogies at Ear: Korea, Munich, Dien Bien Phu, and the Vietnam Decisions of 1965*, Princeton Paperbacks (Princeton, N.J.: Princeton University Press, 1992); David Bruce MacDonald, *Thinking History, Fighting Evil: Neoconservatives and the Perils of Analogy in American Politics* (Lanham, MD: Lexington Books, 2009), <http://hdl.handle.net/2027/mdp.39015078809848>; Jeffrey Record, *Making War, Thinking History: Munich, Vietnam, and Presidential Uses of Force from Korea to Kosovo* (Annapolis, MD: Naval Institute Press, 2002), <http://hdl.handle.net/2027/mdp.39015054296721>.

<sup>12</sup> Andrew J. Taylor and John T. Rourke, “Historical Analogies in the Congressional Foreign Policy Process,” *The Journal of Politics* 57, no. 2 (1995): 460–68, <https://doi.org/10.2307/2960316>.

<sup>13</sup> Alastair Iain Johnston, “China in a World of Orders: Rethinking Compliance and Challenge in Beijing’s International Relations,” *International Security* 44, no. 2 (November 11, 2019): 9–60.

<sup>14</sup> Stephen Benedict Dyson and Thomas Preston, “Individual Characteristics of Political Leaders and the Use of Analogy in Foreign Policy Decision Making,” *Political Psychology* 27, no. 2 (2006): 265–88.

the technological aspect of great power competition with China is beginning to emerge in popular discussion.<sup>15</sup>

At a baseline level, then, the research detailing government technology strategy during the Cold War will provide a rough idea of the lessons leaders analogizing the present may draw. As Scranton argues, the Cold War national security apparatus routinely dictated innovation strategy and goals across sectors in a departure from market-driven innovation, driven by focus on pre-eminence in key areas such as radar, jet propulsion, and telecommunications. In particular, the government drove innovation primarily via government projects (rather than the creation of state-owned enterprises) organized in the constellation of a few critical government laboratories, a slightly larger group of independent labs and sources of expertise, and then primarily a large array of businesses fulfilling contracts. Crucially, the sheer scope and size of government funding for these projects was dramatic and focused on specific technological achievements rather than basic research.<sup>16</sup> The most powerful technological Cold War analogy is the Space Race. This episode condenses into one idea the notions of technological competition between great powers and is still reflected today by American's general fascination with space and support for 'space leadership.'<sup>17</sup>

### *Securitization*

Another potential way the security relationship with China may influence 5G is the securitization of various facets of the relationship as a result of a rising perception of great power competition. Securitization theory refers to a politicization process in which states/leaders assert policy areas as areas of national security, thereby redefining the way actors treat the issue.<sup>18</sup> Importantly, an array of scholars argue the afore-observed "new Cold War" framing creates depictions of China as a threat that leads to

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<sup>15</sup> Brad Glosserman, "Innovation: The Front Line of the New Great Power Competition," *The Japan Times*, March 4, 2020, <https://www.japantimes.co.jp/opinion/2020/03/04/commentary/world-commentary/innovation-front-line-new-great-power-competition/>.

<sup>16</sup> Philip Scranton, "Technology, Science and American Innovation," *Business History* 48, no. 3 (August 20, 2006): 311–31, <https://doi-org.ezp-prod1.hul.harvard.edu/10.1080/00076790600791763>.

<sup>17</sup> Cary Funk and Mark Strauss, "Majority of Americans Believe Space Exploration Remains Essential" (Pew Research Center, June 6, 2018), <https://www.pewresearch.org/science/2018/06/06/majority-of-americans-believe-it-is-essential-that-the-u-s-remain-a-global-leader-in-space/>.

<sup>18</sup> Michael C. Williams, "Words, Images, Enemies: Securitization and International Politics," *International Studies Quarterly* 47, no. 4 (2003): 511–31; Paul Roe, "Is Securitization a 'Negative' Concept? Revisiting the Normative Debate over Normal versus Extraordinary Politics," *Security Dialogue* 43, no. 3 (June 1, 2012): 249–66, <https://doi.org/10.1177/0967010612443723>.

the securitization of the US-China relationship.<sup>19</sup> Importantly, securitization is a phenomenon that describes how countries/leaders/media understand things as threats. The securitization of something – such as aspects of the US-China relationship – does not imply that said object does not genuinely constitute a security threat. Rather, the theory is useful for understanding discursive constructions of threats, but the determination of whether that construction is justified is a separate question.

Recently, scholars of securitization theory have applied it to the realms of technology and cybersecurity. Hansen and Nissenbaum propose a three-pronged framework for securitization of cyberspace useful for evaluating possible security constructions of 5G. First, securitization in cyberspace includes depictions of entire infrastructures at risk of devastating, irreversible attack. Second, emphasis on everyday security practice in cyberspace creates powerful links between people’s everyday experience with their personal electronic devices and the threat of devastating attack. Third, emphasis on the technical complexity of the security threats (“technification”) powerfully motivates the securitization of a cyber issue and lends credibility to those securitizing it.<sup>20</sup>

Given how recently the Huawei issue has risen to public prominence, understandably only a small body of literature specifically argues US discourse securitizes Huawei (and ZTE, another key Chinese telecommunications company).<sup>21</sup> Of course, a wider body of scholarship investigates the ways cybersecurity/critical infrastructure is constructed or securitized, which implies the potential securitization of specific Chinese companies in such spaces and their technological advances.<sup>22</sup> The

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<sup>19</sup> Weiqing Song, “Securitization of the ‘China Threat’ Discourse: A Poststructuralist Account,” *China Review* 15, no. 1 (May 8, 2015): 145–69; Emma V. Broomfield, “Perceptions of Danger: The China Threat Theory,” *Journal of Contemporary China* 12, no. 35 (May 1, 2003): 265–84, <https://doi.org/10.1080/1067056022000054605>.

<sup>20</sup> Lene Hansen and Helen Nissenbaum, “Digital Disaster, Cyber Security, and the Copenhagen School,” *International Studies Quarterly* 53, no. 4 (2009): 1155–75.

<sup>21</sup> Andrew Stephen Campion, “From CNOOC to Huawei: Securitization, the China Threat, and Critical Infrastructure,” *Asian Journal of Political Science* 28, no. 1 (January 2, 2020): 47–66, <https://doi.org/10.1080/02185377.2020.1741416>; Noah T. Archibald, “Cybersecurity and Critical Infrastructure: An Analysis of Securitization Theory,” *Undergraduate Journal of Politics, Policy and Society* 3, no. 1 (2020): 39–54. Note this work is an undergraduate paper, implying its lack of peer-review. The need to cite an undergraduate paper underscores the lack of scholarly literature in this domain.

<sup>22</sup> Myriam Dunn Cavelty, “From Cyber-Bombs to Political Fallout: Threat Representations with an Impact in the Cyber-Security Discourse,” *International Studies Review* 15, no. 1 (2013): 105–22; Agnes Kasper, “The Fragmented Securitization of Cyber Threats,” in *Regulating ETechologies in the European Union*, ed. Tanel Kerikmäe (Cham: Springer International Publishing, 2014), 157–87, [https://doi.org/10.1007/978-3-319-08117-5\\_9](https://doi.org/10.1007/978-3-319-08117-5_9); Mark Lacy and Daniel Prince, “Securitization and the Global Politics of Cybersecurity,” *Global Discourse* 8, no. 1 (February 15, 2018): 100–115, <https://doi.org/10.1080/23269995.2017.1415082>.

securitization of technology areas has unique implications, such as substantial restrictions to trade (export controls, tariffs, localization requirements, restrictions on foreign direct investment, etc.); this immediate effect in turn leads to greater securitization of technology (creating a feedback loop) and to tensions between nation-states.<sup>23</sup>

### *Industrial Policy*

Industrial policy connotes a specific economic intervention by the government. At a general level, industrial policy supports government intervention into the economy to target the allocation of capital, alter production models, and provide protection for sectors deemed key drivers of economic growth and job production (that, absent said intervention, would perform significantly less well).<sup>24</sup> Japan's rapid economic development in the mid- to late-20<sup>th</sup> century best exemplifies this strategy of a developmental state/convoy capitalism, closely coordinating government and business by limiting the entry of competitors, coordinating technology uptake and knowledge sharing in key industries, forcing/guiding mergers and industry exits, creating recessionary cartels, and providing subsidies through regulating pricing, government purchasing schemes, tax breaks, the use of tariffs, and low interest rate loans.<sup>25</sup> The end result of this process emphasizes the "picking of winners and losers" whereby the government plays a key role in determining which companies become the drivers of certain industries or sectors. While consensus generally assumed this process was almost entirely bureaucracy-driven,<sup>26</sup> more recent scholarship has suggested that elected leaders still played a key role in shaping Japanese industrial policy.<sup>27</sup>

China's strategy, though different from Japan's in the 1980s, nevertheless also reflects the core tenets of industrial policy. Made in China 2025 articulates China's current industrial policy, serving as a ten-year guide to pivot the economy away from

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<sup>23</sup> Karl Grindal, "Trade Regimes as a Tool for Cyber Policy," *Digital Policy, Regulation and Governance* 21, no. 1 (2019): 19–31, <https://doi.org/10.1108/DPRG-08-2018-0042>.

<sup>24</sup> Howard Pack and Kamal Saggi, "Is There a Case for Industrial Policy? A Critical Survey," *The World Bank Research Observer* 21, no. 2 (2006): 267–97, especially 267–268.

<sup>25</sup> Chalmers Johnson, "Japan: Who Governs? An Essay on Official Bureaucracy," in *Japan: Who Governs? The Rise of the Developmental State* (New York, NY: W.W. Norton & Company, 1995), 115–40; Leonard Schoppa, "Productive and Protective Elements of Convoy Capitalism," in *Race for the Exits: The Unraveling of Japan's System of Social Protection* (Ithaca, NY: Cornell University Press, 2006), 36–66.

<sup>26</sup> T. J. Pempel, "The Bureaucratization of Policymaking in Postwar Japan," *American Journal of Political Science* 18, no. 4 (1974): 647–64, <https://doi.org/10.2307/2110551>.

<sup>27</sup> John Creighton Campbell and Ethan Scheiner, "Fragmentation and Power: Reconceptualizing Policy Making under Japan's 1955 System," *Japanese Journal of Political Science* 9, no. 1 (April 2008): 89–113, <https://doi.org/10.1017/S1468109907002836>.

low-quality, labor intensive goods to high-quality, technology-intensive goods and services. The plan provides the framework by which the PRC government will coordinate massive subsidies, preferential market access, and technology uptake from other nations in order to promote specific companies in key industries as ‘national champions.’<sup>28</sup> Made in China 2025 identifies key industries including information technology, and Huawei is one of China’s most successful national champions. Huawei provides a useful case study in Chinese industrial policy: the company benefits from large state subsidies, lucrative contracts with the military, and favorable tax breaks; as a result, it has experienced massive global market growth as it is able to consistently undercut all competitors on pricing.<sup>29</sup>

Much like some American thinkers and leaders called for industrial policy in reaction to Japan in the 1980s, today some call for the strategy in reaction to China.<sup>30</sup> This sentiment may be grounded in somewhat observed phenomena of states modeling their policy behavior off of the actions of one another, particularly in defense policy.<sup>31</sup> Donald Trump and key advisors in his administration such as Peter

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<sup>28</sup> Wayne M Morrison, “The Made in China 2025 Initiative: Economic Implications for the United States,” *Congressional Research Service*, April 12, 2019, <https://fas.org/sgp/crs/row/IF10964.pdf>; James McBride and Andrew Chatzky, “Is ‘Made in China 2025’ a Threat to Global Trade?,” *Council on Foreign Relations*, May 13, 2019, <https://www.cfr.org/background/made-china-2025-threat-global-trade>; “Made in China 2025: Global Ambitions Built on Local Protections” (US Chamber of Commerce, 2017), [https://www.uschamber.com/sites/default/files/final\\_made\\_in\\_china\\_2025\\_report\\_full.pdf](https://www.uschamber.com/sites/default/files/final_made_in_china_2025_report_full.pdf); “Made in China 2025 Backgrounder” (Institute for Security and Development Policy, June 2018), <https://isdp.eu/content/uploads/2018/06/Made-in-China-Backgrounder.pdf>; Scott Kennedy, “Made in China 2025,” *Critical Questions* (Washington, D.C.: Center for Strategic & International Studies, June 1, 2015), <https://www.csis.org/analysis/made-china-2025>.

<sup>29</sup> Lindsay Maizland and Andrew Chatzky, “Huawei: China’s Controversial Tech Giant” (The Council on Foreign Relations, February 12, 2020), <https://www.cfr.org/background/huawei-chinas-controversial-tech-giant>; Chui-Wei Yap, “State Support Helped Fuel Huawei’s Global Rise,” *Wall Street Journal*, December 25, 2019, <https://www.wsj.com/articles/state-support-helped-fuel-huaweis-global-rise-11577280736>.

<sup>30</sup> Robert D. Atkinson, “The Case for a National Industrial Strategy to Counter China’s Technological Rise” (Information Technology and Innovation Foundation, April 13, 2020), <https://itif.org/publications/2020/04/13/case-national-industrial-strategy-counter-chinas-technological-rise>; Gabriel Wildau, “China’s Industrial Policies Work. So Copy Them,” *The Japan Times*, November 19, 2019, <https://www.japantimes.co.jp/opinion/2019/11/19/commentary/world-commentary/chinas-industrial-policies-work-copy/>.

<sup>31</sup> Patrick Major and Rana Mitter, “East Is East and West Is West? Towards a Comparative Socio-Cultural History of the Cold War,” *Cold War History* 4, no. 1 (October 1, 2003): 1–22, <https://doi.org/10.1080/14682740312331391714>; João Resende-Santos, “Anarchy and the Emulation of Military Systems: Military Organization and Technology in South America, 1870–1930,” *Security Studies* 5, no. 3 (March 1996): 193–260, <https://doi.org/10.1080/09636419608429280>; Andrea Gilli and Mauro Gilli, “Why China Has Not

Navarro have strong records of supporting industrial policy, and have made attempts at enacting such an economic strategy both broadly and in relation to China over the previous three years.<sup>32</sup> However, while the administration may have attempted to use strategies like the trade war as a protectionist reaction to China's industrial policy, China's recent behavior and industrial planning have continued to emphasize the industrial policy mentality of Made in China 2025, suggesting thus far the influence of the administration's policies on China's behavior has been limited.<sup>33</sup> Nevertheless, this track record demonstrates that in the US, support for industrial policy empirically derives from interactivity with other nations' economies, and that it is reasonable to suggest the orthodoxy of industrial policy may motivate the Trump administration's economic strategies. Indeed, research is beginning to investigate how industrial policy motivated by economic competition with China specifically influences technology innovation strategies.<sup>34</sup>

## Methodology

### *Operationalization of the Dependent Variable*

Understanding the evolution of government policy toward more intervention and control in technology innovation presents distinct challenges. Because this dependent variable is a recent trend that is continuing to develop, factors that indicate

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Caught Up Yet: Military-Technological Superiority and the Limits of Imitation, Reverse Engineering, and Cyber Espionage," *International Security* 43, no. 3 (2018): 141–89.

<sup>32</sup> Peter Navarro, *Death By China: How America Lost Its Manufacturing Base (Official Version)*, 2016, <https://www.youtube.com/watch?v=mMlmjXtnIXI>; "Strategy for American Leadership in Advanced Manufacturing" (National Science & Technology Council, October 2018), <https://www.whitehouse.gov/wp-content/uploads/2018/10/Advanced-Manufacturing-Strategic-Plan-2018.pdf>; Justin Wolfers, "Why Most Economists Are So Worried About Trump," *The New York Times*, January 11, 2017, <https://www.nytimes.com/2017/01/11/upshot/why-most-economists-are-so-worried-about-trump.html>; Rana Foroohar, "Trump Aims for an Industrial Policy That Works for America," *Financial Times*, May 7, 2017, <https://www.ft.com/content/9b6ed79a-318c-11e7-9555-23ef563ecf9a>; Ted Gayer, "Should Government Directly Support Certain Industries?," *Brookings* (blog), March 4, 2020, <https://www.brookings.edu/policy2020/votervital/should-government-directly-support-certain-industries/>.

<sup>33</sup> Orange Wang and Adam Behsudi, "Beijing's New Industrial Policy Plan Doesn't Address Trump Complaints," *South China Morning Post*, November 20, 2019, <https://www.scmp.com/economy/china-economy/article/3038590/chinas-new-industrial-policy-dismissed-made-china-2025-rehash>.

<sup>34</sup> Kevin Honglin Zhang, "Industrial Policy and Technology Innovation under the US Trade War against China," *The Chinese Economy*, February 27, 2020, 1–11, <https://doi.org/10.1080/10971475.2020.1730553>.

it are subtle. As a result, a composite of indicators best illustrates this change within the past few years. In particular, this shift has three components: protection of domestic technology firms from perceived risks, investment in technological innovation, and intervention specifically designed to support Qualcomm as it competes with Huawei.

The Committee on Foreign Investment in the United States (CFIUS) provides evidence of protection of domestic technology firms from perceived risk. CFIUS is an interagency governmental body that was created in the 1970s to evaluate potential national security implications of various forms of foreign direct investment. Its powers have generally been expanded over time, such that it now holds both a focus on the broader implications of specific investments and on the implications of aggregate investments from certain countries and investors in specific industries. Given this role, its record of enforcement illustrates protection of domestic firms from foreign – and in particular, Chinese – firms. CFIUS’ scope has expanded significantly over the past 15 years as it has increasingly scrutinized Chinese FDI. In 2007, the Foreign Investment and National Security Act officially codified CFIUS (which had previously enjoyed the mandate of only an executive order) in a clear push by Congress to give it more sway in screening FDI. In 2015, *Ralls Corporation v. CFIUS* expanded the presidential powers to use the committee to prevent FDI on claims of national security. The Foreign Investment Risk Review Modernization Act of 2018 further expanded CFIUS’s purview, instructing it to both consider the risks of cumulative investments in particular sectors as well as the broader economic implications of any single investment in national security terms. It also instructs the committee to take into account the country from which FDI originates, signaling its increasing focus specifically on China. In the same year, CFIUS intervened in the hostile takeover of Qualcomm by then-Singaporean-based Broadcom, marking the first instance of the committee intervening before a deal were finalized. The cumulative effect has turned CFIUS into a gatekeeper to the US economy, enjoying broad, unappealable power to dictate FDI.<sup>35</sup>

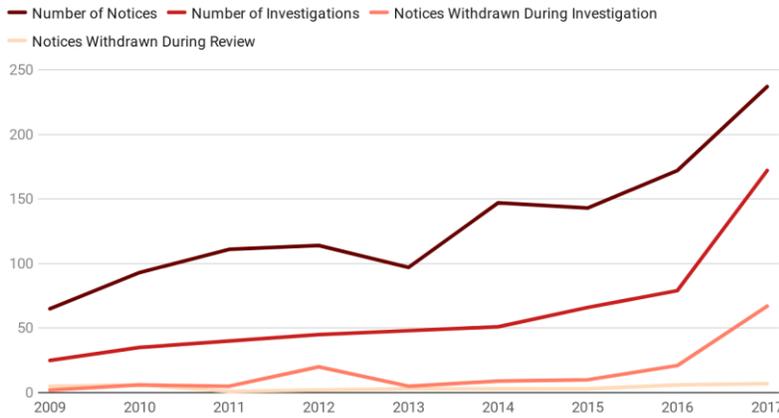
The data demonstrate this expansion of CFIUS intervention over the previous decade. Crucially, the threat of a CFIUS investigation is the most important way CFIUS influences businesses, due to the high costs they must shoulder under an

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<sup>35</sup> James K. Jackson, “The Committee on Foreign Investment in the United States (CFIUS)” (Congressional Research Service, February 14, 2020), <https://fas.org/sgp/crs/natsec/RL33388.pdf>; Grindal, “Trade Regimes as a Tool for Cyber Policy;” Hunter Deeley, “The Expanding Reach of the Executive in Foreign Direct Investment: How *Ralls v. CFIUS* Will Alter the FDI Landscape in the United States,” *American University Business Law Review* 4, no. 1 (2015): 125–52; Kevin Granville, “Cfius, Powerful and Unseen, Is a Gatekeeper on Major Deals,” *New York Times*, March 5, 2018, <https://www.nytimes.com/2018/03/05/business/what-is-cfius.html>.

investigation.<sup>36</sup> Over roughly the past decade, CFIUS has dramatically increased the number of notices it has received as its scope has broadened, and has correspondingly pursued a greater number of investigations over time (see “Increasing CFIUS

**Increasing CFIUS Enforcement and Deterrence, 2009-2017**



Source: Congressional Research Service • Created with Datawrapper

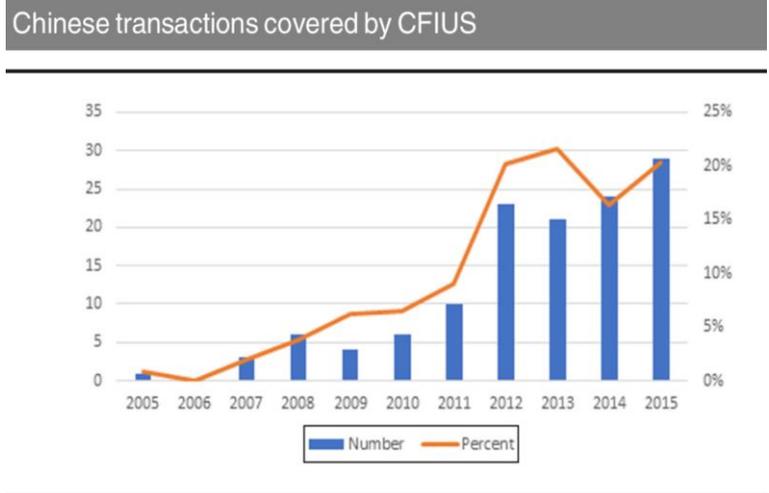
Enforcement and Deterrence, 2009-2017,” above).<sup>37</sup>

Correspondingly, this has deterred companies from following through on their transactions, as the number that have withdrawn their notices during investigation or review has likewise increased, as demonstrated by the chart above.

This expansion of notices has specifically focused on China. Between

2005-2015, CFIUS dramatically increased the number of transactions originating from China that it covered, and Chinese transactions became a larger part of its portfolio (see “Chinese transactions covered by CFIUS,” at right).<sup>38</sup> In addition, between 2016-17 China far outpaced any other country for the number of CFIUS cases explicitly concerned with acquisitions of critical US technology, totaling 38 cases (or just over one fifth of all such cases).<sup>39</sup>

Two cases under the Trump administration demonstrate how the 5G/semiconductor fight has particularly shaped this growth in CFIUS’ power. In 2017,



President Trump directly blocked the takeover of Lattice Semiconductor by a

<sup>36</sup> Paul Connell and Tian Huang, “An Empirical Analysis of CFIUS: Examining Foreign Investment Regulation in the United States,” *Yale Journal of International Law* 39, no. 1 (2014): 131–64.

<sup>37</sup> Data sourced from Jackson, “The Committee on Foreign Investment in the United States (CFIUS).”

<sup>38</sup> Note – chart taken from Grindal, “Trade Regimes as a Tool for Cyber Policy.”

<sup>39</sup> Jackson, “The Committee on Foreign Investment in the United States (CFIUS).”

Chinese-backed investor on the basis of national security.<sup>40</sup> Additionally, as previously mentioned, in 2018 CFIUS intervened to prevent the hostile takeover of Qualcomm on the national security grounds that the deal could potentially undermine America's ability to compete with Huawei.<sup>41</sup> The application of the national security framework citing the threat from China for a case concerning a takeover by a non-Chinese firm underscores how seriously the government has taken 5G.

Tracking government investment into 5G is more difficult – for as many times as the White House has had Infrastructure Week, the government still hasn't seemed to put substantial funding toward 5G. Nevertheless, the government has made a number of steps that collectively signal an increasing level of involvement in the 5G space. The FCC's controversial approval of the T-Mobile and Sprint merger (given the substantial concerns regarding oligopoly among cellular network providers) was explicitly founded on reasoning that it would promote "United States leadership in 5G" and conditioned the deal on the company's provision of 5G to 90% of rural Americans.<sup>42</sup> Moreover, the FCC recently announced a \$9 billion fund for 5G in rural areas.<sup>43</sup> Additionally, the Department of Labor recently created and put \$6 million toward a public private partnership to support education and training for jobs considered key to accelerate 5G deployment.<sup>44</sup>

Most relevant, however, is the Networking and Information Technology Research and Development Program (NITRD). NITRD unites various federal agencies, serving as the primary governmental source of direct government research and development for advanced technologies relating to information technology. The "NITRD Budget Data, FY2011-2020" graph on page 16 captures how the government has ramped up its investment in this area over the past decade.<sup>45</sup> This graph demonstrates three important trends. First, from 2011 to 2018, NITRD's

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<sup>40</sup> Ana Swanson, "Trump Blocks China-Backed Bid to Buy U.S. Chip Maker," *The New York Times*, September 13, 2017, <https://www.nytimes.com/2017/09/13/business/trump-lattice-semiconductor-china.html>.

<sup>41</sup> Aimen N. Mir, "Letter From Treasury Department to Broadcom and Qualcomm Regarding CFIUS," March 5, 2018, <https://www.documentcloud.org/documents/4407490-Letter-From-Treasury-Department-to-Broadcom-and.html>; Chris Sanders, "U.S. Sees National Security Risk from Broadcom's Qualcomm Deal," *Reuters*, March 7, 2018, <https://www.reuters.com/article/us-qualcomm-m-a-broadcom-idUSKCN1G1S8>.

<sup>42</sup> "FCC Approves Merger of T-Mobile and Sprint" (Federal Communications Commission, November 5, 2019), <https://docs.fcc.gov/public/attachments/DOC-360637A1.pdf>.

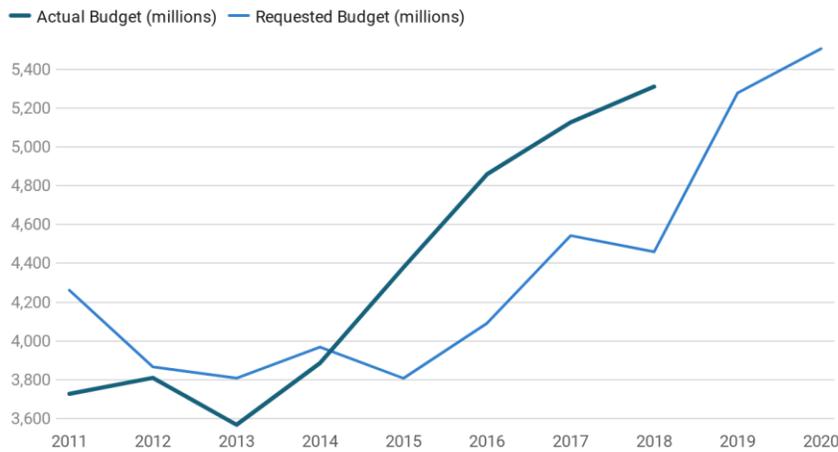
<sup>43</sup> "FCC Proposes the 5G Fund for Rural America" (Federal Communications Commission, April 23, 2020), <https://docs.fcc.gov/public/attachments/DOC-363946A1.pdf>.

<sup>44</sup> "WIA Awarded \$6 Million DOL Grant to Train 5G Workforce" (Wireless Infrastructure Association, February 19, 2020), <https://wia.org/wia-awarded-6-million-dol-grant-to-train-5g-workforce/>.

<sup>45</sup> Data sourced from the NITRD's Supplement to the President's Budgets for Fiscal Years 2012-2020.

budget increased a dramatic 43%, from \$3.7 to \$5.3 billion, illustrating the substantial

### NITRD Budget Data, FY2011-2020



Source: The Networking and Information Technology Research and Development • Created with Datawrapper

shift in the importance the government has placed on its research. While the total amount of funding may seem small by government budget standards, this strong growth rate illustrates the shift to place greater emphasis on the government's role in technology innovation. Second, the executive has begun substantially increasing

its requested budget amount every year beginning in 2016, suggesting an increasing emphasis in the past five years on government investment in IT. Third, the actual budget has outpaced the requested budget for each year recorded since 2015, suggesting Congress has also played a key role in driving this shift toward more government investment.

Finally, the government's involvement specifically regarding Qualcomm and Huawei illustrates how it is willing to take low-frequency, high-visibility actions to protect 5G technology innovation. As previously mentioned, the Trump administration's 2018 intervention to prevent the Broadcom takeover of Qualcomm signaled the degree to which it will intervene to protect this 5G chip-making company it sees as crucial to national competitiveness. This year, the administration has doubled down on this emphasis on Qualcomm, using the Department of Justice (DOJ) to back Qualcomm in an antitrust lawsuit. Interestingly, this lawsuit was first brought against Qualcomm by the Federal Trade Commission under the Obama administration, with a district court ruling in favor of the FTC.<sup>46</sup> Now, the DOJ (with support from the Departments of Defense and Energy) has supported Qualcomm's appeal, explicitly making the argument that the courts should allow the company to

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<sup>46</sup> "United States District Court Findings of Fact and Conclusions of Law (Public Redacted Version), Federal Trade Commission v. Qualcomm Incorporated" (UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA SAN JOSE DIVISION, May 21, 2019), [https://www.ftc.gov/system/files/documents/cases/qualcomm\\_findings\\_of\\_fact\\_and\\_conclusions\\_of\\_law.pdf](https://www.ftc.gov/system/files/documents/cases/qualcomm_findings_of_fact_and_conclusions_of_law.pdf).

maintain its business model on grounds that the company itself is integral to the security of the nation.<sup>47,48</sup>

Similarly, the administration has taken aim specifically at Huawei. In 2019, President Trump issued Executive Order 13873, which dramatically expanded government protections for telecommunications on the basis that such networks faced serious threat from foreign companies and governments and that such threats constituted a national security risk. Though not naming Huawei by name, the move was universally regarded as a reaction to the company's perceived threat in the 5G space. Indeed, at the same time, the Department of Commerce added Huawei to the Entity List, effectually banning Huawei from doing business in the US. The coordination of these actions demonstrates the government's specific targeting of Huawei as the face of the Chinese technological competition with the US.<sup>49</sup>

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<sup>47</sup> "BRIEF OF THE UNITED STATES OF AMERICA AS AMICUS CURIAE IN SUPPORT OF APPELLANT AND VACATUR" (US Department of Justice, August 30, 2019), <https://www.justice.gov/atr/case-document/file/1199191/download>; Kadhim Shubber, "US Regulators Face off in Court Tussle over Qualcomm," *Financial Times*, February 9, 2020, <https://www.ft.com/content/adbca366-49d3-11ea-aeb3-955839e06441>.

<sup>48</sup> Note – the government's support for the T-Mobile-Sprint merger, which (as mentioned earlier) is explicitly premised on 5G rollout to be enabled by consolidated market power, is another example of government intervention supporting anticompetitive behavior in the 5G space. For more, see Thomas M Johnson et al., "Statement of Interest of the United States of America" (United States Department of Justice, December 20, 2019), <https://www.justice.gov/atr/case-document/file/1230491/download>.

<sup>49</sup> Donald Trump, "Executive Order on Securing the Information and Communications Technology and Services Supply Chain, Executive Order 13873" (2019), <https://www.whitehouse.gov/presidential-actions/executive-order-securing-information-communications-technology-services-supply-chain/>; "Department of Commerce Announces the Addition of Huawei Technologies Co. Ltd. to the Entity List" (US Department of Commerce, Office of Public Affairs, May 15, 2019), <https://www.commerce.gov/news/press-releases/2019/05/department-commerce-announces-addition-huawei-technologies-co-ltd>; Tamer Soliman et al., "US Commerce Department Proposes Sweeping New Rules for National Security Review of US Information and Communications Technology or Services Transactions," *Mayer Brown*, December 2, 2019, <https://www.mayerbrown.com/en/perspectives-events/publications/2019/12/us-department-of-commerce-proposes-rule-for-securing-the-nations-information-and-communications-technology-and-services-supply-chain>; Damian Paletta, Ellen Nakashima, and David Lynch, "Trump Administration Cracks Down on Giant Chinese Tech Firm, Escalating Clash with Beijing," *Washington Post*, May 16, 2019, [https://www.washingtonpost.com/world/national-security/trump-signs-order-to-protect-us-networks-from-foreign-espionage-a-move-that-appears-to-target-china/2019/05/15/d982ec50-7727-11e9-bd25-c989555e7766\\_story.html](https://www.washingtonpost.com/world/national-security/trump-signs-order-to-protect-us-networks-from-foreign-espionage-a-move-that-appears-to-target-china/2019/05/15/d982ec50-7727-11e9-bd25-c989555e7766_story.html); Annie Fixler and Mathew Ha, "Washington's Huawei Ban Combats Chinese Espionage Threat," *Foundation for Defense of Democracies*, May 16, 2019, <https://www.fdd.org/analysis/2019/05/16/washingtons-huawei-ban-combats-chinese-espionage-threat/>.

While administration officials have spoken on this subject as well, these statements will not be as useful for signaling the existence of a shift in government policy toward more intervention in 5G innovation.<sup>50</sup> First, this administration's statements have conflicted in this area – for example, in 2019, administration officials openly disagreed on the right level of intervention in 5G policy; although Trump finally decided to oppose direct federal acquisition of Nokia or Ericsson, a year later Attorney General Barr's aforementioned speech revisited the issue and hinted at possible acquisition.<sup>51</sup> Clearly, the statements by the Trump administration send too many conflicting signals to reliably capture the trend of increasing government intervention. Additionally, intervention in the tech space matters for its actual effects on innovation processes, so tracking actions is better than tracking words. However, the concrete actions by CFIUS and the DOJ regarding Qualcomm unequivocally show how the government is increasingly favoring an interventionist approach specific to 5G. Taken together, the data from CFIUS, NITRD, and the government's specific focus on Qualcomm illustrate a growing tendency in the federal government to intervene in technology areas such as 5G in order to promote innovation.

### *Hypotheses*

The emphasis on great power competition has emerged in the government at the same time this shift in innovation policy strategy has occurred. Especially under the Trump administration, key government documents reflect this shift, arguing that China and Russia present the greatest threats to the United States. These documents forward a collection of related ideas: that great power competition/inter-state strategic competition will define the coming decades, that China is a revisionist power, and that this competition is not simply a military one but an ideological one.<sup>52</sup> Interestingly,

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<sup>50</sup> For example, see Barr, "Attorney General William P. Barr Delivers the Keynote Address at the Department of Justice's China Initiative Conference;" Michael Pompeo, *U.S. States and the China Competition: Secretary Pompeo's Remarks to the NGA*, <https://www.youtube.com/watch?v=g1BbswU3i10>; and Pompeo, *Silicon Valley and National Security*.

<sup>51</sup> Margaret Harding McGill, "Trump Rejects Government Intervention in 5G Wireless Networks," *POLITICO*, April 12, 2019, <https://politi.co/2P4erII>; Barr, "Attorney General William P. Barr Delivers the Keynote Address at the Department of Justice's China Initiative Conference;" Peter Newman, "How the US Buying Ericsson or Nokia Would Impact Networking," *Business Insider*, February 10, 2020, <https://www.businessinsider.com/us-could-buy-ericsson-nokia-to-compete-against-huawei-report-2020-2>.

<sup>52</sup> Trump, "National Security Strategy of the United States of America 2017;" Jim Mattis, "Summary of the 2018 National Defense Strategy of the United States of America" (United States Department of Defense, 2018), <https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>; Jim Mattis, "Nuclear Posture Review 2018" (Office of the Secretary of Defense, February 2018), <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF>; Daniel R. Coats, "Worldwide Threat

while most of these documents, including the most authoritative such as the 2017 NSS, have emerged during the years of the Trump presidency, the 2016 Design for Maintaining Maritime Superiority embraced the notion of great power competition between the US and China, showing how this trend is not necessarily inherent to the Trump administration.<sup>53</sup>

Clearly, an emerging trend is the perception of great power competition between the US and China, which seems at first glance to motivate or be invoked in the interventions the government is making into the 5G/technology innovation space. As detailed in the literature review, this trend can motivate political behavior, including through the influence of historical analogy and securitization. Given this trend and the literature on technology as a realm of great power competition, an overarching hypothesis for this shift in government innovation policy follows:

*The perception in the US of great power competition with China has led it to embrace greater intervention in technology innovation*

This hypothesis has two implications alluded to by the literature review. First, this perception of great power competition may lead to Cold War analogizing that motivates the shift in government innovation policy. The body of literature on historical memory as a heuristic for policymakers suggests the Cold War analogizing of the US-China relationship may have distinct political effects. Such effects and the general discourse around a “new Cold War” thus imply that perceptions of great power competition could motivate changes to technological innovation policy. Second, the perception of great power competition may motivate securitization of the 5G space. The literature on securitization suggests that the US may construct technological innovation as a front in great power competition, thereby necessitating intervention on national security grounds. Importantly, both of these scenarios are specific manifestations of the great power competition hypothesis. Testing each of these possibilities, then, illustrates the ways in which the hypothesis may be true. The results of those tests will specifically highlight the mechanisms by which great power competition leads to the shift in technology policy, and more broadly will illuminate the dimensions of this new era of perceived great power competition. Note that these manifestations are neither mutually exclusive nor dependent.

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Assessment of the US Intelligence Community” (Senate Select Committee on Intelligence, January 29, 2019), <https://www.dni.gov/files/ODNI/documents/2019-ATA-SFR---SSCI.pdf>; “Description of the National Military Strategy 2018” (US Joint Chiefs of Staff, 2018), [https://www.jcs.mil/Portals/36/Documents/Publications/UNCLASS\\_2018\\_National\\_Military\\_Strategy\\_Description.pdf](https://www.jcs.mil/Portals/36/Documents/Publications/UNCLASS_2018_National_Military_Strategy_Description.pdf); John Richardson, “A Design for Maintaining Maritime Superiority: Version 2.0” (United States Navy, December 2018), [https://www.navy.mil/navydata/people/cno/Richardson/Resource/Design\\_2.0.pdf](https://www.navy.mil/navydata/people/cno/Richardson/Resource/Design_2.0.pdf).

<sup>53</sup> John Richardson, “A Design for Maintaining Maritime Superiority: Version 1.0” (United States Navy, January 2016), [https://www.navy.mil/cno/docs/cno\\_stg.pdf](https://www.navy.mil/cno/docs/cno_stg.pdf).

To test the potential for Cold War analogizing, I will track analogizing of 5G to the Space Race with the USSR. This test will track rhetoric framing 5G as a “race,” including a specific focus on analogies to US and Soviet achievements in the 1960s, over time. Given the rich literature on historical analogies’ influence on political behavior, a trend of such comparisons increasing over time will demonstrate how the administration is framing technology innovation with great power competition. NASA and the race to the moon represent perhaps the most critical Cold War episode concerning technology innovation in competition with another great power. As such, these comparisons are most likely, given the importance of simplistic analogies in particular, and thus most illustrative of the use of analogizing in viewing 5G. Because the space race represented a pivot toward greater government intervention in technology innovation, its analogy serves as a likely motivator for a similar shift today. Of course, the government’s intervention in support of 5G is nowhere close to the scale of involvement it took in the space race, but the analogy-driven change in policy matters more than the parity in magnitude between government involvement in innovation in the 1960s and 2010s. Admittedly, this data is correlational, though the body of literature on the use of historical memory suggests that the perpetuation of specific analogies influences decision making, meaning the greater the use of the analogy, the more likely it is influencing the shift in innovation strategy.

To test for securitization, I will examine critical documents to understand if a securitizing discourse is being deployed. Securitization is a discursive process, meaning this review of such wording is the most direct way to detect whether or not the government is constructing technology innovation as a realm of security risk. One key implication of securitization is that the national security apparatus absorbs securitized issues, so to test this hypothesis, I will look at key national security documents such as the NSS, National Military Strategy, and Nuclear Posture Review in order to see if national security discourses are intentionally incorporating questions of technological innovation, especially with explicit reference to or focus on 5G.

The literature on the Trump administration’s affinity for industrial policy suggests a different explanation for this shift in innovation strategy, however; rather than a reaction to China based on notions of great power security competition, this shift may derive from a reaction based on notions of economic vulnerability to China. In other words, this industrial policy in the 5G area derives from an economic embrace of industrial policy more broadly, rather than from the security concerns borne out of great power competition. This literature thus suggests the following hypothesis:

*The Trump Administration’s belief in industrial policy has led it to embrace greater intervention in technology innovation*

The strongest evidence that implies the industrial policy hypothesis is the DOJ’s intervention specifically protecting Qualcomm. By specifically advocating for the preservation of an anticompetitive business model, the government is effectively

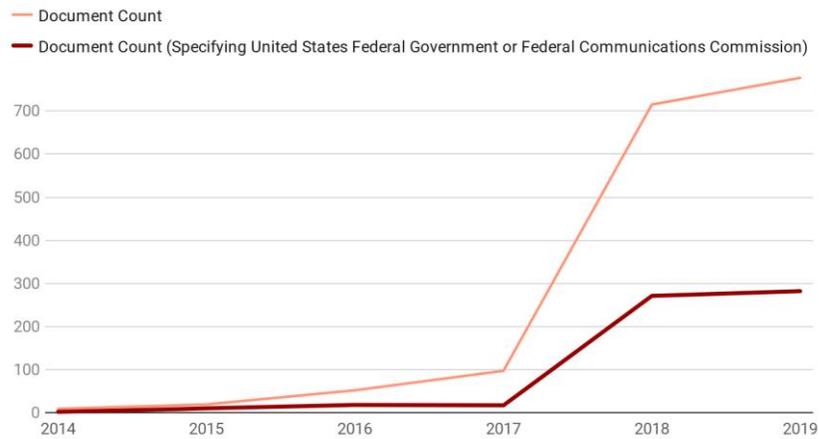
signaling a policy of “picking winners and losers” that characterizes industrial policy. However, to understand if this strategy is industrial policy rather than security strategy, there must be a trend of similar uses of this courts-based strategy that seems to be “picking winners” in sectors beyond 5G. To test this hypothesis, then, I will track the appellate briefs filed by the DOJ’s Antitrust Division to perceive if it is advocating for anticompetitive equilibria that pick winners and losers in other industries as well. The implication of the hypothesis is that the administration is actively embracing the economic orthodoxy of industrial policy, meaning its interventions extend beyond 5G; observing such a trend would thus imply the economic motivation for the 5G intervention, rather than the security motivation. Of course, this tracking method is imprecise – the individual facts and nuances of each case likely shape the content of the DOJ’s appellate briefs. However, surveying all briefs over the previous four years will demonstrate broader trends in the frequency with which the DOJ supports anticompetitive behavior.

## Results

### *Cold War Analogizing*

The data on the use of the phrase “race to 5G” demonstrate a dramatic increase in the use of the analogy beginning in 2018. Using an analysis of documents

**Publications Asserting a "Race to 5G," 2014-2019**



Source: Factiva • Created with Datawrapper

employing the phrase between 2014-2019 (accessed through Factiva), the graph below demonstrates the dramatic adoption of this term as mentions increased from 97 in 2017 to 715 in 2018, a 637% increase. Additionally, when only including documents that specifically make mention of the United States Federal Government or Federal Communications

Commission, the data still demonstrate a similar jump from 17 in 2017 to 271 in 2018, a 1,494% increase.

This increase serves as a rough indicator of the prevalence of technology race analogizing. Factiva aggregates publications using specific keywords, meaning this data

reflect the prevalence of this analogy in the media. However, given the influence of analogies on decision maker's thinking, a greater prevalence implies a greater likelihood of such an analogy shaping public policy. Additionally, isolating the publications that specify the FCC or USFG demonstrates the connection between government action and this perceived technology race. A random sampling of these publications also suggests the vast majority employed the analogy, rather than argued against using it (publications could be asserting something along the lines of "the race to 5G is not real"). Admittedly, establishing causality between government action and the analogy is difficult – the media could be ascribing the analogy to the actions of the government without policymakers ever having employed the analogy. Fortunately, the record demonstrates that policymakers *have* adopted this analogy in recent years. Key figures in the government, including President Trump, FCC Chairman Ajit Pai, Michael Kratsios (Chief Technology Officer of the United States), Chairman of the Senate Committee on Commerce, Science, and Transportation Roger Wicker, and House Energy and Commerce Ranking Member Greg Walden and Communications and Technology Subcommittee Ranking Member Bob Latta, have all employed the analogy.<sup>54</sup> Moreover, Attorney General Barr has explicitly argued the US has not yet had its 'Sputnik moment' in this race, further underscoring the connection to the space race.<sup>55</sup> Taken together, the aggregate data from Factiva and the specific examples from key elected officials provides compelling evidence for "Race to 5G" analogizing.

### *Securitization*

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<sup>54</sup> Todd Haselton, "President Trump Announces New 5G Initiatives: It's a Race 'America Must Win,'" *CNBC*, April 12, 2019, <https://www.cnbc.com/2019/04/12/trump-on-5g-initiatives-a-race-america-must-win.html>; Ajit Pai, "Remarks of FCC Chairman Ajit Pai at the White House" (Washington, D.C., April 12, 2019), <https://docs.fcc.gov/public/attachments/DOC-356994A1.pdf>; Michael Kratsios, "America Will Win the Global Race to 5G," *The White House*, October 25, 2018, <https://www.whitehouse.gov/articles/america-will-win-global-race-5g/>; Roger Wicker, "Wicker Convenes Hearing on the Race to 5G" (Washington, D.C.: Senate Committee on Commerce, Science, and Transportation, February 6, 2019), <https://www.commerce.senate.gov/2019/2/wicker-convenes-hearing-on-the-race-to-5g>; Greg Walden and Bob Latta, "Walden and Latta Statement on Bipartisan Bills to Boost 5G" (Washington, D.C., January 8, 2020), <https://republicans-energycommerce.house.gov/news/press-release/walden-and-latta-statement-on-bipartisan-bills-to-boost-5g/>. To the extent that business leaders' rhetoric on this issue matters as well, see Katie Lobosco, "AT&T Chief: China Isn't Beating the United States on 5G — Yet," *CNN*, March 20, 2019, <https://www.cnn.com/2019/03/20/business/att-randall-stephenson-5g/index.html>.

<sup>55</sup> Barr, "Attorney General William P. Barr Delivers the Keynote Address at the Department of Justice's China Initiative Conference."

The set of documents articulating national security priorities and assessments provides the best source to scour for securitization of 5G technology. Because these documents articulate matters pertaining to the security of the United States, their inclusion of 5G specifically and the domestic technology innovation base more broadly indicates the securitization of these spaces. The most recent Worldwide Threat Assessment from the Director of National Intelligence directly addresses 5G, arguing that the creation and adoption of 5G networks by other countries directly implicates data security within the United States due to the interconnectedness of communications and information technology infrastructure. Additionally, the Assessment connects this data infrastructure to threats posed by decryption capabilities growth, underscoring the technical threats to sensitive data in particular.<sup>56</sup> Similarly, the 2016 Design for Maintaining Maritime Superiority specifically connects great power competition with China and Russia to threats to US information technology systems and argues crucial outputs enabled by 5G such as better AI will dramatically influence balance of power.<sup>57</sup> These depictions conform to the framework Hansen and Nissenbaum propose: they emphasize a threat to the broad data infrastructure in the US posed by foreign development of 5G technologies, and they engage in technification by emphasizing aspects like decryption capabilities growth and complex 5G outputs.

The 2017 NSS is particularly important given its reframing of technology issues in a national security framework. The document identifies the need for the nation to excel in technology and innovation domestically to ensure the security of the nation, which in and of itself may not represent a dramatic shift from previous security orthodoxies that emphasized US domestic innovation as a component of national power. However, the NSS also asserts a new idea of a National Security Innovation Base (NSIB), formalizing the notion that technological innovation across the economy (not simply for defense purposes) is crucial to the balance of power the US must maintain to survive inter-state strategic competition. In creating this idea, the document directly calls out China for intellectual property theft that it argues undermines the NSIB, discursively creating the notion of a Chinese threat to the securitized domestic innovation base.<sup>58</sup> The 2018 National Defense Strategy (NDS) builds on this idea of the NSIB, arguing that non-defense related innovation directly implicates the command of the commons: “The fact that many technological developments will come from the commercial sector means that state competitors and non-state actors will also have access to them, a fact that risks eroding the conventional overmatch to which our Nation has grown accustomed.”<sup>59</sup> Crucially,

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<sup>56</sup> Coats, “Worldwide Threat Assessment of the US Intelligence Community.”

<sup>57</sup> Richardson, “A Design for Maintaining Maritime Superiority: Version 1.0.”

<sup>58</sup> Trump, Donald. “National Security Strategy of the United States of America 2017,” 20-22.

<sup>59</sup> Mattis, “Summary of the 2018 National Defense Strategy of the United States of America.”

what follows from this assessment that commercial innovation is a security issue is the absorption of non-defense technology development into the military's purview, classically modeling the discursive securitization of a policy area and the following policy change as the national security apparatus begins to dictate policy in said area: "A long-term strategic competition requires the seamless integration of multiple elements of national power—diplomacy, information, economics, finance, intelligence, law enforcement, and military. More than any other nation, America can expand the competitive space."<sup>60</sup>

The DOD has specifically applied this notion of commercial innovation as central to command of the commons to 5G. A spokesperson for the DOD framed 5G as a question of ability to function on the battlefield, claiming: "That's where we are with 5G...we are going to run our entire warfighting ecosystem through communications." She directly connected this vulnerability to grand ideas of the balance of power, arguing: "If we don't embrace it and apply it towards our goals, we could be overcome quickly with technical overmatch."<sup>61</sup> Clearly, by connecting 5G innovation to the nation's warfighting ability and conventional military superiority, and by directly echoing the phrase "technical overmatch" used in the 2018 NDS when it discusses the national security importance of the NSIB, the spokesperson frames technology innovation as a question of debilitating collapse of the nation's military, securitizing the issue. The analysis of key national defense documents and statements by members of the national security state thus provides compelling evidence for the securitization of 5G.

### *Industrial Policy*

A review of the roughly 80 appellate briefs filed by the DOJ's Antitrust Division reveals a dramatically limited scope of interventions supporting specific companies' anticompetitive practices analogous to the DOJ's intervention to protect Qualcomm in 2019.<sup>62</sup> During this period, only seven briefs opposed antitrust enforcement. Of these, two related to Qualcomm (briefs for Federal Trade Commission v. Qualcomm, Incorporated and Karen Stromberg, et al. v. Qualcomm Incorporated), excluding them from consideration. A third, for State of New York and Other Plaintiff States v. Deutsche Telekom AG, et al., supports the merger of T-

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<sup>60</sup> Mattis, "Summary of the 2018 National Defense Strategy of the United States of America."

<sup>61</sup> C. Todd Lopez, "Pentagon Official: U.S., Partners Must Lead in 5G Technology Development," *US Department of Defense*, March 26, 2019, <https://www.defense.gov/Explore/News/Article/Article/1796437/pentagon-official-us-partners-must-lead-in-5g-technology-development/>.

<sup>62</sup> To see these briefs, see "Appellate Briefs," US Department of Justice, n.d., <https://www.justice.gov/atr/appellate-briefs>.

Mobile and Sprint conditioned on the company's rollout of 5G infrastructure across America, excluding it from consideration as well.

Among the four remaining briefs, Viamedia, Inc. v. Comcast Corp., et al. only weakly supports the notion that the government is supporting anticompetitive behavior in order to promote specific companies. In this case, the DOJ states that it takes no position on the merits of the plaintiff's claims, only stating that proof of reduced competition in a market is necessary in addition to proof of the existence of agreements considered anticompetitive (arguing that behavior must be effectually anticompetitive to be subject to antitrust laws, not simply anticompetitive based on a company's decisions on paper). Two briefs more strongly demonstrate opposition to antitrust enforcement – those for Continental Automotive Systems, Inc. v. Avanci, LLC, et al. and Apple Inc. v. Robert Pepper, et al. The final brief, for Intel Corporation and Apple Inc. v. Fortress Investment Group LLC, et al., also pushes back against the application of antitrust laws, though in favor of Fortress Investment Group; this behavior is puzzling for the “winners and losers” hypothesis because Apple and Intel would likely be considered American national champions of sorts, implying the government would intervene in *their* favor were it truly interested in promoting their market dominance.

Put simply, too few briefs oppose antitrust enforcement to indicate a trend supporting the industrial policy hypothesis. Due to the limited number, it is not possible to discern a broader trend from the briefs that do oppose antitrust enforcement; the DOJ may take the position it does in these cases simply based on its reading of the law and understanding of the facts in each individual case. Because there is not a sufficiently discernible trend, it is not possible to confirm the hypothesis that the government is engaging in the picking of winners and losers. This finding complements previous findings that the effects of CFIUS investigations are non-discriminatory, implying their use is based on actual national security (their stated purpose), not protectionism of special interests.<sup>63</sup> These findings thus imply the industrial policy hypothesis is less accurate than the great power competition one.

However, watchdogs and journalists have noted that, under the Trump Administration, the DOJ's antitrust division has significantly reduced the application of cartel and merger enforcement,<sup>64</sup> and the number of personnel working on

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<sup>63</sup> Connell and Huang, “An Empirical Analysis of CFIUS: Examining Foreign Investment Regulation in the United States.”

<sup>64</sup> “The State of Antitrust Enforcement and Competition Policy in the U.S.” (American Antitrust Institute, April 14, 2020), <https://www.antitrustinstitute.org/work-product/antitrust-enforcement-report/>; “FCC Proposes the 5G Fund for Rural America;” Kadhim Shubber, “US Antitrust Enforcement Falls to Slowest Rate since 1970s,” *Financial Times*, November 28, 2018, <https://www.ft.com/content/27a0a34e-f2a0-11e8-9623-d7f9881e729f>.

antitrust cases has similarly declined.<sup>65</sup> This trend may indicate an embrace of a permutation of industrial policy, whereby the Trump administration may not be “picking winners and losers” but, rather, allowing rapid consolidation such that the market picks national champions. This evidence thus lends some credence to the industrial policy hypothesis. However, given the observed behavior of the dependent variable includes active intervention to support Qualcomm, this decline in enforcement alone does not provide as good of an explanation for the motivation of the Trump administration’s 5G strategy as does the great power competition hypothesis.

## Conclusion

The assessments from the previous section demonstrate stronger evidence for the great power competition hypothesis. The assessment of aggregate data on publications by Factiva as well as statements by key administration demonstrates the substantial growth of rhetoric analogizing 5G to the Cold War space race. This trend demonstrates how US policymakers are employing historical thinking as they understand the US-China security relationship broadly and competition in the 5G space specifically. The assessment of key national security documents and statements illustrates the securitization of 5G, also providing support for the great power competition hypothesis. In contrast, the assessment of the appellate briefs filed by the DOJ’s Antitrust Division reveals the government’s interventions in support of anticompetitive behavior are almost exclusively limited to the 5G space thus far, meaning evidence for the industrial policy hypothesis does not presently exist. The available evidence thus suggests the security relationship, manifested both in historical analogy and in securitization, is more powerfully motivating the government’s shift toward greater intervention in 5G technology innovation than is the economic relationship and derived inclinations toward industrial policy.

As technological innovation appears to be growing into a key facet of the US-China relationship, the change in government policy represents a manifestation of how the Sino-US relationship is evolving. This change in the technology innovation space is particularly important for understanding the broader US-China relationship. Because areas like 5G and AI are being framed as areas of competition, yet are also areas where the technological developments themselves emerge out of interconnected economies and have impacts felt beyond borders, the ways the US and China interact in this sphere will have implications for the broader relationship. Beyond speaking to the motivations behind the administration’s 5G strategy, the findings in this paper

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<sup>65</sup> Kadhim Shubber, “Staffing at Antitrust Regulator Declines under Donald Trump,” *Financial Times*, February 7, 2019, <https://www.ft.com/content/cf1ed2a6-2619-11e9-b329-c7e6ceb5ffdf>.

shed light on how the US more broadly perceives China's economic/technological behaviors in a national security mindset.

Finally, because this trend is relatively nascent, this paper is only a first step toward understanding changing government policy in technology spaces. Assessing motivations is difficult, and more research into the topic – particularly that involving interviews with the actual policymakers – will help better define this trend as it evolves in the coming years. More research is needed to understand the influence and limits of the emerging industrial policy mindset; in particular, the possibility discussed in the previous section that the Trump administration may be “letting the market pick the winners and losers” in a permutation of traditional industrial policy merits attention. Additionally, given the implication that securitization of domestic technology innovation has led to a shift toward more government intervention in the 5G space, future research may seek to understand other manifestations of this securitization. Finally, scholars should seek a better understanding of the motivations behind securitization. While legitimate security threats may exist, the possibility that proponents of industrial policy see securitization as an effective means to achieve their ends or that leaders of US technology companies see securitization as a useful strategy to secure favorable government policies both suggest a need for future research into the different actors deploying securitizing discourse of 5G.

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