ARTICLE

How Domestic Institutions Shape the Global Tech War

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ABSTRACT

The United States (U.S.), China, and the European Union (EU) are engaged in a national security-driven economic competition over advanced technology. Many scholars and commentators focus on the <u>*external*</u> *dimension of this geopolitical contest; that is, they describe the strategic choices by each actor in terms of geopolitical realities, threat perceptions, and relative power. However, this Article brings to the fore the* <u>*internal*</u> *dimension of the global tech war. We argue that each player's strategy in the tech war is a function of its internal features, including basic constitutional powers, domestic legal institutions, and the relationships between the government and private industry. We show how these internal features enable the United States, China, and the EU to deploy certain strategies while constraining them with respect to other strategies. Comparing key U.S., Chinese, and EU domestic features reveals important insights about their respective strengths and weaknesses in waging the global tech war, and it offers predictive insights about the tech war's likely future.*

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INTRODUCTION

In October 2022, the United States dropped an economic bomb on China. The U.S. government issued far-reaching export controls designed to restrict China's access to leading-edge semiconductors (or "chips").[1] According to U.S. officials, the new controls were intended to choke off China's access to the sophisticated computer chips that power China's military modernization and intelligence surveillance systems, as well as its broader economy.[2] The scope of the export controls was sweeping. The U.S. restrictions would apply to any U.S.-made chip equipment worldwide, shattering the global semiconductor industry and leaving China with few options for sourcing advanced chips from abroad.[3] It was another salvo in a "chip war"—a fierce battle to control supply chains for these

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[1] *See generally* Implementation of Additional Export Controls: Certain Advanced Computing and Semiconductor Manufacturing Items; Supercomputer and Semiconductor End Use; Entity List Modification, 87 Fed. Reg. 62186 (Oct. 13, 2022) (codified at 15 C.F.R. pts. 734, 736, 740, 742, 744, 762, 772, 774).
[2] *See* John D. McKinnon & Asa Fitch, *U.S. Restricts Semiconductor Exports in Bid to Slow China's Military Advance*, WALL ST. J. (Oct. 7, 2022), https://www.wsj.com/articles/u-s-restricts-semiconductor-exports-in-bid-to-slow-chinas-military-advance-11665155702 [https://perma.cc/UYZ2-WQ5S].
[3] *See id.*

critical components of modern computing systems. The Trump Administration appears primed to escalate the contest as part of a broader trade war.[4]

The chip war forms the front line of a broader competition for technological supremacy, one of the most consequential strategic contests of this era. Although many commentators use the rhetoric of "war" to describe that contest—a reflection of the perceived stakes and intensity—we show that much of this rivalry is fought through law. The major players' most important tools for waging this conflict include expanding regulation and passing new legal authorities. Furthermore, we contend that different domestic legal frameworks, including constitutions, are among the most significant enablers of, and constraints on, the strategies each player pursues.

While this global competition involves a range of technologies, we focus on advanced semiconductors. Because semiconductor chips are the backbone of modern computing and enable artificial intelligence (AI) and other key technologies, regulatory conflicts over the chip supply chain are particularly salient. Our analysis of the chip war thus offers insights into the broader technological contest that is unfolding worldwide. Our analysis centers on the legal strategies adopted by the three largest players in this contest: the United States, China, and the European Union (EU). Much of the public conversation around the chip war focuses on the United States and China. However, Europe is not a powerless bystander in this contest. Besides the sheer size of the European market, it holds a key technology—the world's most advanced lithography machines, produced by the Dutch company ASML—giving Europe great leverage in semiconductor supply chains.

Most existing accounts explain the tech war, including the use of economic instruments for national security, in terms of threats and power. The United States seeks to preserve its technological edge over China by restricting its access to critical components and knowledge, with the goal of blunting China's regional hegemonic ambitions, efforts to reshape the global order, and expansion of military capability.[5] China views U.S. measures as an attempt to contain its inexorable economic and military growth and seeks to counter those efforts by boosting its technological self-sufficiency.[6] The EU seeks to avoid being the casualty of the U.S.-China geostrategic competition by focusing on retaining or regaining its "strategic autonomy" in the midst of the intensifying U.S.-China rivalry.[7] President

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[4] *See* Simina Mistreanu, *China Is Bracing for Fresh Tensions with Trump over Trade, Tech, and Taiwan*, AP NEWS (Nov. 7, 2024), https://apnews.com/article/trump-china-tariffs-taiwan-foreign-policy-7351ce1069654f1c1aefb560b36dcc17 [https://perma.cc/N5U8-QVHD]; Britney Nguyen, *Trump's Election Win Could Take the U.S.-China Chip War to a New Level*, QUARTZ (Nov. 6, 2024), https://qz.com/trump-win-election-us-china-chip-war-tsmc-huawei-ai-1851690892 [https://perma.cc/W45J-T2GT]. On the trade war and tech war, *see* David Meyer, *Trump 2.0 Will Have a Massive Impact on Big Tech, AI, Chips and More—in Silicon Valley and Beyond*, FORTUNE (Nov. 6, 2024), https://fortune.com/2024/11/06/trump-2-0-will-have-a-massive-impact-on-big-tech-ai-chips-and-more-in-silicon-valley-and-beyond/ [https://perma.cc/4Y9B-6YEM].

[5] *See infra* Section I(B).

[6] *See id.*

[7] *See id.*

Trump's recent combativeness toward Western European allies may further drive that quest for autonomy.[8] These accounts focus on external factors, especially threat perceptions, security interests, and power relations, to explain how the United States, China, and the EU behave in a dynamic strategic competition.[9]

This Article does not dispute the importance of this existing analysis but supplements that external story with an internal one. It adds, in political scientist Professor Aaron Friedberg's terms, the "*interior dimension of . . . national strategy*."[10] In the U.S.-Soviet Cold War context, Professor Friedberg explained that "the inward-directed, power-creating policies of states are not simply the product of high-level strategic choice; they are also shaped by forces that originate within society itself and by the character of the institutions that link state and society together."[11] Today, we argue, the United States, China, and the EU are not just choosing different power-creating policies in the global chip war based on strategic calculations. Instead, their actions are also a result of contrasting internal features of their respective political and legal systems.

To analyze this internal story of the global tech war, we focus on why and how the three players wield a set of economic tools to control advanced chip supply chains. Those tools include industrial subsidies to promote domestic chip industries, export controls to limit the outflow of chips and related technologies, and regimes restricting foreign investment in the chip sector. With such tools, the ordinary business of tech companies—engaging in investment, research, and product sales—is now scrutinized by these governments under the lens of strategic imperatives.

At first sight, the United States, China, and the EU all appear to resort to similar measures in their pursuit of technological self-sufficiency and economic security. Each is focused on restricting rivals' access to key strategic technologies while at the same time shoring up its domestic capabilities and supply-chain resilience in those same fields. Scott Malcomson goes as far as characterizing the "mission for self-sufficiency" as "the most striking geopolitical feature" of the current era, as major economies are retreating from globalization and ushering in

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[8] Rym Momtaz, *Taking the Pulse: Is the Transatlantic Relationship at a Breaking Point?*, CARNEGIE ENDOWMENT FOR INT'L PEACE (Feb. 20, 2025), https://carnegieendowment.org/europe/strategic-europe/2025/02/taking-the-pulse-is-the-transatlantic-relationship-at-a-breaking-point [https://perma.cc/CCJ2-G5HV].

[9] *See, e.g.*, Fareed Zakaria, *The Rest of the World Doesn't See China the Same Way We Do*, WASH. POST (June 9, 2023), https://www.washingtonpost.com/opinions/2023/06/09/europe-asia-china-policy-trade/ [https://perma.cc/QC3V-2YBX]; Niall Ferguson, *America Still Leads the World, But Its Allies Are Uneasy*, BLOOMBERG (June 18, 2023), https://www.bloomberg.com/opinion/articles/2023-06-18/us-can-t-depend-on-ukraine-coalition-to-stop-china-niall-ferguson [https://perma.cc/2K8B-ZZ3H].

[10] Aaron L. Friedberg, *Why Didn't the United States Become a Garrison State?*, 16 INT'L SEC. 109, 110 (1992) (emphasis added) [hereinafter Friedberg Article]. Friedberg develops this concept and argument further in AARON L. FRIEDBERG, IN THE SHADOW OF THE GARRISON STATE: AMERICA'S ANTI-STATISM AND ITS COLD WAR GRAND STRATEGY (2000) [hereinafter Friedberg Book].

[11] Friedberg Article, *supra* note 10, at 115.

"The New Age of Autarky."[12] In that global pursuit of self-sufficiency, each of the key players seems to wield the same basic tools for the same basic reasons.

However, a closer look at U.S., Chinese, and EU chip war strategies reveals significant variation behind those facially similar approaches. Examining the interior dimension of tech war strategy explains how and why the three players' reorientations of economic policy toward national security imperatives differ in practice. Specifically, our internal account shows why each player has used certain means while refraining from others in its response to growing international tensions. The United States will continue to favor executive-led export controls over large-scale industrial policy, while China will continue to emphasize state-led investment.[13] The EU, on the other hand, will rely on largely national-level solutions, even while it is striving to replace those fragmented policy instruments with a unified, bloc-wide strategy.

Our analytical lens reveals new insights into how the tech war has unfolded to date, including explaining alternating moments of escalation and de-escalation, and how it is likely to evolve going forward. Among other considerations, recasting the tech war in light of domestic features reveals that each player is more constrained than the external account suggests. These constraints act as braking forces against the intensifying "arms race" for technology, as national security-driven escalatory pressures of the chip war are counterbalanced by domestic political and commercial pressures. This, we argue, offers a more optimistic—if not entirely reassuring—picture of how the global tech war could continue to unfold.

Part I of this Article briefly describes the significance of chip supply chains in the global tech war and outlines the basic strategies that the United States, China, and the EU are using to wage that segment of the tech war. It also shows how scholars and analysts often explain these strategies in terms of the *external* relations among the players, especially the threats they perceive from each other and the types of power they wield in addressing those threats. Part II moves from the external analysis to the *internal* one. It views American, Chinese, and European approaches to the chip competition though an internal lens, focusing particularly on domestic legal institutions. It argues that distinct political-legal systems enable each player to pursue certain strategies while constraining its pursuit of other strategies. Part III then draws implications from that analysis.

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[12] Scott Malcomson, *The New Age of Autarky: Why Globalization's Biggest Winners Are Now on a Mission for Self-Sufficiency*, FOREIGN AFFS. (Apr. 26, 2021), https://www.foreignaffairs.com/articles/united-states/2021-04-26/new-age-autarky [https://perma.cc/W5HM-LNDL].

[13] We use the term industrial policy to refer to government intervention in a specific industry to encourage firms to make decisions that boost domestic industrial capacity in a manner not supported by profit motives. *See* Anshu Siripurapu and Noah Berman, *Is Industrial Policy Making a Comeback?*, COUNCIL ON FOREIGN RELS. (Sept. 18, 2023), https://www.cfr.org/backgrounder/industrial-policy-making-comeback [https://perma.cc/5YDA-PEJM].

I. THE EXTERNAL ACCOUNT OF THE STRATEGIC BATTLE TO CONTROL CHIPS

Advanced chips are a key front in the global tech war. Chips are foundational to other critical technology areas, including AI applications and a range of military technologies.[14] The chip industry is therefore the sector within which the United States, China, and the EU are wielding economic statecraft tools most aggressively.[15] Studying this industry is important in its own right, but it also opens a window into understanding the broader tech competition.

This Part offers an overview of the global chip supply chain and its strategic importance. It then summarizes the common analytical frame—the external narrative—that is often used to examine the geopolitical contest over chips. While this external narrative remains important, we argue in the remainder of this Article that it provides an incomplete account of important dynamics driving the wider tech war.

A. The Chip Supply Chain is Critical to the Global Economy

Semiconductors are everywhere. They are often referred to as the "Brains of Modern Electronics," given that they are "an essential component of electronic devices" and "enabl[e] advances in communications, computing, healthcare, military systems, transportation, clean energy, and countless other applications."[16] These chips pervade every aspect of modern life and only stand to proliferate across more devices and applications. Any disruption in access to these chips risks impacting vast segments of the global economy and elevating geopolitical tensions.

Physically, semiconductor chips are little wafers often made of silicon, with complex patterns etched onto their surfaces.[17] These patterns direct the flow of electrical currents, forming the backbone of modern computing devices.[18] Modern chips are immensely sophisticated. For example, just one chip in the iPhone 13 contains fifteen billion transistors.[19] Lithography machines, composed of increasingly precise lasers and mirrors, are used to create billions of etchings on the

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[14] *See*, *e.g.*, Sujai Shivakumar and Charles Wessner, *Semiconductors and National Defense: What Are the Stakes?*, CTR. FOR STRATEGIC & INT'L STUD. (June 8, 2022), https://www.csis.org/analysis/semiconductors-and-national-defense-what-are-stakes [https://perma.cc/2QZS-PVUX].

[15] *See*, *e.g.*, Finbarr Bermingham, *EU Follows US Move to Assess China's Dominance of Legacy Chips*, S. CHINA MORNING POST (April 5, 2024), https://www.scmp.com/news/china/diplomacy/article/3258026/eu-follows-us-move-assess-chinas-dominance-legacy-chips [https://perma.cc/V423-HK4T].

[16] *See Building America's Innovation Economy*, SEMICONDUCTOR INDUS. ASS'N, https://www.semiconductors.org/wp-content/uploads/2021/05/SIA-Industry-Facts_4-20-2022.pdf [https://perma.cc/FQ8E-G84T].

[17] *See* Mike Murphy, *What are Semiconductors?*, IBM (Sept. 15, 2023), https://research.ibm.com/blog/what-are-semiconductors [https://perma.cc/EWU3-ZYMX].

[18] *See id*.

[19] *See* Stephen Shankland, *Apple's A15 Bionic Chip Powers iPhone 13 With 15 Billion Transistors, New Graphics and AI*, CNET (Sept. 14, 2021), https://www.cnet.com/tech/mobile/apples-a15-bionic-chip-powers-iphone-13-with-15-billion-transistors-new-graphics-and-ai/ [https://perma.cc/PQ2H-8GW8].

surface of ever-thinner silicon wafers.[20] This delicate process must be repeated billions of times in order to mass manufacture chips.[21]

Chips that are less than ten nanometers (nm) thick are considered "advanced chips."[22] For comparison's sake, a human red blood cell has a diameter of about 7,000 nm.[23] In 2023, Huawei, a leading Chinese telecommunications firm and chip producer, unveiled its breakthrough production of a seven nm chip—a major development in the chip contest.[24] But seven nm is not on the leading edge of chip production: Apple and the Taiwan Semiconductor Manufacturing Company (TSMC) are in discussions to produce a three nm chip.[25]

Countries rely on chips to fuel their pursuit of AI—the technology widely considered to be the driver of our next transformative economic revolution.[26] ChatGPT was reportedly trained on "10,000 of the most advanced chips currently available," produced by Nvidia.[27] A consensus once prevailed that advances in AI capabilities could only be fueled by massive amounts of computing power and technological breakthroughs in the underlying chips.[28] The small Chinese startup DeepSeek has recently challenged this narrative by claiming to have achieved ChatGPT's results using only approximately 2,000 of Nvidia's lower-performance chips.[29]

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[20] *See* Alex W. Palmer, '*An Act of War': Inside America's Silicon Blockade Against China*, N.Y. TIMES (July 12, 2023), https://www.nytimes.com/2023/07/12/magazine/semiconductor-chips-us-china.html [https://perma.cc/7HAQ-QC5Z].
[21] *See id.*
[22] *See id*; SEMICONDUCTOR INDUS. ASS'N, STATE OF THE U.S. SEMICONDUCTOR INDUSTRY 4 (2024), https://www.semiconductors.org/wp-content/uploads/2024/10/SIA_2024_State-of-Industry-Report.pdf [https://perma.cc/X5TM-EY4D].
[23] *See* Palmer, *supra* note 20.
[24] *See Teardown of Huawei's New Phone Shows China's Chip Breakthrough*, REUTERS (Sept. 4, 2023), https://www.reuters.com/technology/teardown-huaweis-new-phone-shows-chinas-chip-breakthrough-2023-09-04/ [https://perma.cc/LXK7-EVT3].
[25] *See* Andrew Cunningham, *Report: Apple Buys 3 Nm Chip that TSMC Can Make for Next-Gen iPhones and Macs*, ARS TECHNICA (Aug. 7, 2023), https://arstechnica.com/gadgets/2023/08/report-apple-is-saving-billions-on-chips-thanks-to-unique-deal-with-tsmc/ [https://perma.cc/GXP2-E224].
[26] *See PwC's Global Artificial Intelligence Study: Sizing the Prize*, PWC 1, 3 (2021), https://www.pwc.com/gx/en/issues/data-and-analytics/publications/artificial-intelligence-study.html [https://perma.cc/ZAX2-VWQ5].
[27] *See* Palmer, *supra* note 20.
[28] *See, e.g.*, Matt Sheehan and Sam Winter-Levy, *Chips, China, and a Lot of Money: The Factors Driving the DeepSeek AI Turmoil*, CARNEGIE ENDOWMENT (Jan. 28, 2025), https://carnegieendowment.org/posts/2025/01/deepseek-ai-china-chips-explainer?lang=en [https://perma.cc/P2AM-YG9V].
[29] *See* Cade Metz & Meaghan Tobin, *How Chinese A.I. Start-Up DeepSeek Is Competing with Silicon Valley Giants*, N.Y. TIMES (Jan. 27, 2025), https://www.nytimes.com/2025/01/23/technology/deepseek-china-ai-chips.html [https://perma.cc/CU9V-96VA]; Eduardo Baptista, *What Is DeepSeek and Why Is It Disrupting the AI Sector?*, REUTERS (Jan. 28, 2025), https://www.reuters.com/technology/artificial-intelligence/what-is-deepseek-why-is-it-disrupting-ai-sector-2025-01-27/ [https://perma.cc/6L78-Q6GZ].

Still, critically, the United States and China both view chips as a military linchpin. In a twist from many previous technologies, the chips currently required for civilian use are more advanced than those for producing military equipment.[30] The latest iPhone might use three nm chips, while the latest U.S. stealth fighter jet still uses systems incorporating ninety nm chips dating from twenty years ago.[31] Previous-generation chips, such as those twenty-eight nm or larger, are often referred to as "legacy chips."[32] Supply-chain disruptions for these older, legacy chips can entail major geostrategic risks, including vulnerability to deterrent and coercive threats. The Chinese government is aiming to build a dominant position in producing legacy chips; if successful, it would gain significant leverage over the United States.[33]

For national security purposes, policymakers must simultaneously monitor the production of less sophisticated, older-generation chips—to power missiles, jets, and existing military equipment—while also securing access to AI chips, which could be the foundation of future military computing power. For example, the Defense Department has concluded that quantum computers could be essential to future advances in encryption, pattern recognition, and sensing technologies.[34] China has also been using advanced U.S. chip technology to build its capabilities in cyber and disinformation operations, hypersonic missiles, cryptography, and surveillance systems.[35]

The supply chain behind these tiny wafers is quintessentially a global process. China possesses a significant concentration of the critical raw materials

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[30] *See* Liu Zhen, *Tech War: US Ban on Chip Exports to Have Little Effect on Chinese Military for Now, Analysts Say*, S. CHINA MORNING POST (Oct. 29, 2022), https://www.scmp.com/news/china/military/article/3197720/tech-war-us-ban-chip-exports-have-little-effect-chinese-military-now-analysts-say [https://perma.cc/7SLG-UAM8]. The Department of Defense requires the use of chips with a longer service lifespan, which forces the Department to search for "legacy microelectronics" that are obsolete in the commercial sector and are only made through special defense arrangements. Shivakumar and Wessner, *supra* note 14.

[31] *See* Zhen, *supra* note 30; NAT'L ACADS. OF SCI., ENG'G & MED., STRATEGIES TO ENABLE ASSURED ACCESS TO SEMICONDUCTORS FOR THE DEPARTMENT OF DEFENSE 49 (2024), https://nap.nationalacademies.org/catalog/27624/strategies-to-enable-assured-access-to-semiconductors-for-the-department-of-defense [https://perma.cc/3LE4-8KXH] (noting that the Department "utilizes chips in its systems that are typically two generations or more from the cutting-edge" but will increasingly "require [the] use of the most advanced available artificial intelligence (AI) coprocessor chips").

[32] Stephen Ezell, *How Innovative is China in Semiconductors?*, INFO. TECH. & INNOVATION FOUND. (Aug. 19, 2024), https://itif.org/publications/2024/08/19/how-innovative-is-china-in-semiconductors/ [https://perma.cc/2QV5-CKQW].

[33] *See Transcript: Who Is Winning the Chip Wars? With Chris Miller*, FIN. TIMES (Aug. 26, 2024), https://www.ft.com/content/f5c091b3-d9b8-435a-a8b8-23b1cd1dc1e6 [https://perma.cc/2MQA-N6E8].

[34] *See* KELLEY M. SAYLER, CONG. RSCH. SERV., IF11836, DEFENSE PRIMER: QUANTUM TECHNOLOGY 1–2 (2024).

[35] *See* Anna Swanson & Claire Fu, *With Smugglers and Front Companies, China Is Skirting American A.I. Bans*, N.Y. TIMES (Aug. 4, 2024), https://www.nytimes.com/2024/08/04/technology/china-ai-microchips.html [https://perma.cc/V5D2-E6LA].

used in chip manufacturing, including rare earth minerals.[36] At the other end of the supply chain, American companies, led by Nvidia, Intel, and Qualcomm, use special software to produce chip designs.[37] TSMC, a Taiwanese company, then uses these designs to produce the chips in mass quantities in its fabrication plants, known as "fabs."[38] TSMC's fabs, in turn, rely on ASML, a Dutch company that builds the world's most advanced lithography machines.[39] ASML lithography machines are assembled in the Netherlands from subsystems manufactured in California and Connecticut.[40] Just one laser in an ASML machine contains over 450,000 parts.[41] A corporate executive at ASML once stated, "I truly believe our machine is the most complex thing mankind has ever produced."[42] Companies from Japan and South Korea also wield significant influence in the chip supply chain, including by producing semiconductor manufacturing equipment.[43]

Although the chip industry relies on components from across the globe, it is simultaneously concentrated in a single bottleneck: Taiwan. TSMC, the world's top chip manufacturer, resides on an island that is a fault line in one of the world's most volatile geopolitical disputes. By one estimate, TSMC makes 70% of the chips used in China, as well as 92% of the most advanced chips designed by U.S. companies.[44] Chris Miller, a leading economic historian writing on the chip industry, described the potential impact of knocking out TSMC alone as an

[36] *See* Ryan C. Berg, Henry Ziemer, & Emiliano Polo Anaya, *Mineral Demands for Resilient Semiconductor Supply Chains*, CTR. FOR STRATEGIC & INT'L STUD. (May 15, 2024), https://www.csis.org/analysis/mineral-demands-resilient-semiconductor-supply-chains [https://perma.cc/3KJ6-JNCM]; Hyong-Min Kim and Deep Jariwala, *The Not-So Rare Earth Elements: A Question of Supply and Demand*, KLEINMAN CTR. FOR ENERGY POL'Y (Sept. 23, 2021), https://kleinmanenergy.upenn.edu/research/publications/the-not-so-rare-earth-elements-a-question-of-supply-and-demand/ [https://perma.cc/CF3G-ZNAH].

[37] *See* Jane Lee, *Report Warns U.S. Chip Design Market to Plunge Without Government Support*, REUTERS (Nov. 30, 2022), https://www.reuters.com/technology/report-warns-us-chip-design-market-share-plunge-without-government-support-2022-11-30/ [https://perma.cc/BWD8-Z7N5].

[38] *See* Palmer, *supra* note 20.

[39] *Id.*; Ting-Fang Cheng, *TSMC to Receive ASML's Next-Gen Chip Machines This Year*, NIKKEI ASIA (Nov. 1, 2024), https://asia.nikkei.com/Business/Tech/Semiconductors/TSMC-to-receive-ASML-s-next-gen-chip-machines-this-year [https://perma.cc/N7PG-ESLT].

[40] *See* Brittney Wolff Zatezalo, *Inside the Insanely Clean, Precise World of High-Tech Manufacturing*, ASML (Oct. 23, 2020), https://www.asml.com/en/news/stories/2020/inside-high-tech-manufacturing [https://perma.cc/LPC5-HH54].

[41] *Id.*

[42] *See* Palmer, *supra* note 20.

[43] *See* Akhil Thadani & Gregory C. Allen, *Mapping the Semiconductor Supply Chain: The Critical Role of the Indo-Pacific Region*, CTR. FOR STRATEGIC & INT'L STUD. (May 30, 2023), https://www.csis.org/analysis/mapping-semiconductor-supply-chain-critical-role-indo-pacific-region [https://perma.cc/J57G-JQTW].

[44] *See* Richard Cronin, *Semiconductors and Taiwan's "Silicon Shield,"* STIMSON CTR. (Aug. 16, 2022), https://www.stimson.org/2022/semiconductors-and-taiwans-silicon-shield/ [https://perma.cc/222M-REPG].

economic crisis akin to the Great Depression, noting that we would "struggle to build a cell phone anywhere in the world for the next year or so."[45]

Every country that possesses specialized knowledge, raw materials, or manufacturing access can become a chokepoint in this global supply chain. Today, the United States controls the leading-edge design of chips, Europe holds the most sophisticated manufacturing equipment, and China aspires to supplant both. In addition to being vulnerable to disruption during a crisis, such chokepoints can be weaponized to hold up the availability of chips to geopolitical rivals. The challenge of managing these supply chains—to defend against their disruption and to deny rivals access to key links—drives the legal strategies that are the focus of this Article.

B. The Prevalence of the Tech War's External Narrative

Export controls, industrial subsidies, and other instruments of economic statecraft are among the most important means by which the United States, China, and the EU wage the global tech war. The most common account among scholars and policy commentators focuses on the "external dimension" of this rivalry: that the United States, China, and the EU are crafting their grand strategies based on their own national interests, threat perceptions, and relative power vis-à-vis one another. Power relations between these actors, in this external account, drive their statecraft agendas. The external narrative therefore seeks to explain the observable differences in the tech war strategies pursued by the three jurisdictions by focusing on their status as a dominant power (the United States), rising power (China), and declining power (the European Union).

This narrative usually reflects a realist understanding of international politics.[46] As international relations scholar Professor Paul Poast writes, "the machinations of power politics provide the best explanation" for "efforts by Washington to counter and confront Beijing's growing international prominence" through regulations that restrict China's access to cutting-edge technologies.[47] Similarly, Beijing's national security-driven economic and technology policy can be easily understood as a response to rising U.S.-China military tensions.[48] The EU,

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[45] *See* The Ezra Klein Show, *Transcript: Ezra Klein Interviews Chris Miller*, N.Y. TIMES, at 27:16–28:00 (Apr. 4, 2023), https://www.nytimes.com/2023/04/04/podcasts/transcript-ezra-klein-interviews-chris-miller.html [https://perma.cc/QJ34-4GKH].

[46] *See generally* KENNETH WALTZ, THEORY OF INTERNATIONAL POLITICS (1979).

[47] *See* Paul Poast, *Biden's Tech Restrictions on China Aren't Just About Economics*, WORLD POL. REV. (Apr. 18, 2023) https://www.worldpoliticsreview.com/us-china-trade-war-restrictions-semiconductors-tech-biden/ [https://perma.cc/PTC4-RC4U]; *accord* JON BATEMAN, U.S.-CHINA TECHNOLOGICAL "DECOUPLING*"* 2 (2022); Jasper Hansen, *Techno-Nationalism: An Industrial Policy for the Twenty-First Century*, NAT'L INT. (Feb. 20, 2023), https://nationalinterest.org/feature/techno-nationalism-industrial-policy-twenty-first-century-206230 [https://perma.cc/V5QJ-VYMJ].

[48] *See* Edward White & Sun Yu, *Xi Jinping's Dream of a Chinese Military-Industrial Complex*, FIN. TIMES (June 19, 2023), https://www.ft.com/content/6f388e4b-9c4e-4ca3-8040-49962f1e155d [https://perma.cc/K6R3-YFV4]. International affairs scholar Dale Copeland argues that to understand how global commerce in semiconductors "might increase, not reduce, the chance of

in contrast, is geopolitically weaker and economically more dependent on China, which has led it to pursue a less hawkish China policy than that of the United States, at least until recently.[49] However, the United States is pressuring the EU to align its China strategy with its own, arguing alignment is needed to fend off a common geopolitical threat.[50] Leading realist scholar Professor Stephen Walt argues that power and threat perceptions best explain why "the United States will continue to insist that Europe work hard to keep sensitive technology with military applications out of Beijing's hands."[51]

This external account also tracks the recent turn in scholarly literature to "geoeconomics." This term refers to states wielding economic instruments to advance and defend national interests and geopolitical aims.[52] The U.S. foreign policy elite now increasingly argue that America must project its economic power more assertively through new methods of economic statecraft.[53] Such views are heavily motivated by the perception that rivals are driven by strategic competition in critical technology sectors, with the national security risks involved in trading such goods exceeding the mutual benefits of free trade.[54] Several leading scholars in this area warn that "offensive and defensive actions by the incumbent might spur further offensive and defensive moves by the challenger, and both may increase levels of independence."[55] What is common to these analyses is their tendency to

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military conflict [with China], we need to bring in realist insights." *China Is More Concerned About Microchips Than About Pelosi*, NIKKEI ASIA (Aug. 2, 2022), https://asia.nikkei.com/Opinion/China-is-more-concerned-about-microchips-than-about-Pelosi [https://perma.cc/8MDY-9Q8Z]; *see also* Dale C. Copeland, *When Trade Leads to War: China, Russia, and the Limits of Interdependence*, FOREIGN AFFS. (Aug. 23, 2022), https://www.foreignaffairs.com/china/when-trade-leads-war-china-russia [https://perma.cc/97WZ-395T].

[49] *See, e.g.*, Aaron L. Friedberg, *A World of Blocs*, CTR. FOR STRATEGIC & INT'L STUD. (Apr. 6, 2023), https://www.csis.org/analysis/world-blocs [https://perma.cc/R7ZH-8MN5]; Ferguson, *supra* note 9; Suzanne Lynch & Stuart Lau, *Same Trip, Different Plans: EU's von der Leyen Dances Around Macron in China*, POLITICO (Apr. 4, 2023), https://www.politico.eu/article/xi-jinping-emmanuel-macron-ursula-von-der-leyen-different-plans-eu-in-china/ [https://perma.cc/P544-ZJF9]; Zakaria, *supra* note 9; Benjamin Harris, *China in Europe: August 2024*, COUNCIL ON FOREIGN RELS. (Aug. 29, 2024), https://www.cfr.org/article/china-europe-august-2024 [https://perma.cc/V7MZ-LFZ6].

[50] *See, e.g.*, Cagan Koc & Chad Thomas, *Trump to Push Hard on ASML Export Controls, Dutch Premier Says*, BLOOMBERG (Jan. 22, 2025), https://www.bloomberg.com/news/articles/2025-01-22/trump-to-push-hard-on-asml-export-controls-dutch-premier-says [https://perma.cc/U4AF-MGUX].

[51] Stephen M. Walt, *Will Europe Ever Really Confront China?*, FOREIGN POL'Y (Oct. 15, 2021), https://foreignpolicy.com/2021/10/15/will-europe-ever-really-confront-china/ [https://perma.cc/LM4W-NYSH].

[52] *See* ROBERT D. BLACKWILL & JENNIFER M. HARRIS, WAR BY OTHER MEANS: GEOECONOMICS AND STATECRAFT 9 (2017).

[53] *See id*. at 7.

[54] *See* MIKAEL WIGELL ET AL., FINNISH INST. OF INT'L AFFS., NAVIGATING GEOECONOMIC RISKS: TOWARDS AN INTERNATIONAL BUSINESS RISK AND RESILIENCE MONITOR 12 (2022), https://fiia.fi/en/publication/navigating-geoeconomic-risks [https://perma.cc/9GMH-QKQU].

[55] *See* Anthea Roberts, Henrique Choer Moraes & Victor Ferguson, *Toward a Geoeconomic Order in International Trade and Investment*, 22 J. INT'L ECON. L. 655, 668 (2019).

explain U.S., China, and EU tech war actions in terms of geopolitical rivals vying for and protecting their power, in an era when critical technologies are a key ingredient of that very power.

This external analysis of the global tech war is generally correct. The United States and China especially are indeed competing for technological supremacy based on national security concerns. Their governments believe that the country which controls technology—from AI to semiconductors to 5G infrastructure—will also control geopolitical power. The United States perceives a rising China as menacing its security interests in the Indo-Pacific region and beyond. China, on the other hand, views the United States as seeking to maintain its military and economic hegemony, containing China's foreign policy interests, and endangering China's internal stability. The EU is caught in the middle: its Member States, most of which are part of the North Atlantic Treaty Organization with the United States, traditionally align closely with U.S. security and political interests. But the EU lacks the military power of the United States or China, and its economy is heavily reliant on trade with China. The U.S.-EU political alliance is also being tested by the Trump Administration's combative approach to some Western allies, perhaps creating an opening for China to increase Europe's dependence on it.[56]

But this external account only goes so far in illuminating the states' strategic behavior in the global tech war. It explains why, in general, the United States and China are escalating their various strategies to build up their domestic tech industries while restricting the other side's ability to do so. It also broadly explains why the EU is not completely aligned with the United States. But it offers only limited insight into what mixes of economic weapons players will deploy, including why they might hold back on using certain tools.[57] The external account focuses on some features that are important to success—like a state's geopolitical interests, its military capabilities, or its position in the global trading and financial systems[58]—but neglects others.

This Article provides an internal account of the global tech war, focusing on the distinct legal, political, and ideological features of each actor to supplement this existing external account. In developing this internal account, we examine the domestic institutions that shape and constrain each player's tech war strategies—that is, in Professor Friedberg's terms, "the interior dimension of [their] national strategy."[59] Our approach draws on insights from liberal international relations theory, which challenges realism and its core assumptions of unitary state-actors

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[56] *See* Lili Pike, *Trump's Europe Shock Creates an Opening for China*, FOREIGN POL'Y (Feb. 20, 2025), https://foreignpolicy.com/2025/02/20/trump-europe-china-tariffs-defense-spending [https://perma.cc/8MXG-9PFQ]; Gideon Rachman, *Vance's Real Warning to Europe*, FIN. TIMES (Feb. 17, 2025), https://www.ft.com/content/11f121f9-391c-4597-93f7-f12894e1b79d [https://perma.cc/4U3W-RSUE].
[57] *See generally* BLACKWILL & HARRIS, *supra* note 52. For a critique of that literature, see Ling S. Chen & Miles M. Evers, "*Wars Without Gun Smoke": Global Supply Chains, Power Transitions, and Economic Statecraft*, 48 INT'L SEC. 164, 170 (2023).
[58] *See* BLACKWILL & HARRIS, *supra* note 52, at 11.
[59] *See* Friedberg Article, *supra* note 10, at 110.

vying for power.[60] Critics of realism argue that it is inattentive to the different ways states are organized and governed internally.[61] Realists may be right that states wield power to advance their interests, but many liberal theorists argue that those interests are not fixed; they derive from domestic and transnational actors *within* states, whose views and interests are mediated by domestic institutions that vary widely between states.[62] Internal governance, under that latter view, shapes external behavior.

We generally agree with realists that the major state actors are waging the tech war in ways that reflect their geopolitical interests and power. But we believe that features within each state help define that state's interests and shape the use of their legal tools. Like liberal international relations theory, our analytical approach sees features in each country's domestic political, legal, and economic order as imposing constraints on their actions, while also enabling them to implement strategies that may not be available to their competitors. By supplementing the external account, we provide a richer and more accurate understanding of how the tech war has evolved to date, and how it will likely continue to evolve in the coming years.

II. THE INTERIOR DIMENSION OF STRATEGY IN THE GLOBAL CHIP WAR

The United States, China, and the EU each wage the global tech war through a set of economic and legal tools such as industrial subsidies, export controls, and investment screening measures. At first sight, the three players appear to be adopting very similar approaches in their respective efforts to gain greater control over the global chip supply chain. However, a closer look at the internal legal, economic, and political dynamics within each jurisdiction reveals crucial differences in how they pursue technological self-sufficiency. The discussion below shows how varying domestic institutions shape each player's chip war strategy. Focusing on the United States, China, and the EU in turn, we illustrate how their domestic features either *enable* or *constrain* the use of legal instruments in ways that help explain how the tech war has developed and will continue to play out.

A. The United States

A defining feature of the U.S. system is a strong tendency toward free-market politics and economics, sustaining a system in which capitalist competition and private transactions are largely unobstructed by government control. Rooted in a libertarian ideology reaching back through American history, the United States has traditionally been more resistant to regulation than the EU or China.[63] Throughout history, however, this free-market course has episodically collided with

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[60] *See generally* Anne-Marie Slaughter, *Liberal International Relations Theory and International Economic Law*, 10 AM. U. INT'L L. REV. 717 (1995).

[61] *See, e.g.*, Jeffrey Legro & Andrew Moravcsik*, Is Anybody Still a Realist?,* 24 INT'L SEC., 5, 6–7 (1999).

[62] *See* ANDREW MORAVCSIK, *Liberalism and International Relations Theory* 2, (Harv. Univ. Ctr. for Int'l Affs., Working Paper No. 92–6, 1992).

[63] ANU BRADFORD, DIGITAL EMPIRES: THE GLOBAL BATTLE TO REGULATE TECHNOLOGY 7, 35–36 (2023).

crisis-driven political demands for stronger government intervention, such as implementing the New Deal in response to the Great Depression, engaging in the space race during the Cold War, and propping up the banking system during the 2008 financial crisis.[64] Such counter-pressures create a new and temporary settlement between a free-market and an interventionist state, often lasting until the emergency ends and the deeply engrained free-market default rebounds.

Several features of the American political and legal system enhance the U.S. government's ability to wage the chip war effectively. The country's reliance on free markets, balanced over time with targeted security-driven economic intervention, enables the U.S. government to craft policies around promoting domestic high-tech innovation and manufacturing while slowing those of its rivals. The United States' development of chip war strategy is also aided by its constitutional structure, with broad national-security powers often delegated to the executive branch, and the potential for flexible recalibration between free-market and state-interventionist policy. However, several internal characteristics constrain U.S. chip strategy. The atrophied and dispersed nature of executive branch powers limits the government's ability to employ some tech war instruments effectively. And abundant interest group lobbying—a feature emblematic of the U.S. political system—constrains the government's ability to pursue policies that run contrary to the country's powerful business interests.

1. A Free-Market Orientation

The U.S. political system has historically been averse to heavy-handed economic regulation and industrial policy, and that has been especially true of its approach to digital technology. Since the onset of the internet revolution in the 1990s, U.S. tech policy has emphasized soft regulation as a way of protecting technological innovation.[65] Its reliance on free markets was illustrated by loose antitrust enforcement and a lack of strict federal data privacy laws.[66] As one of us has recently written:

> [The United States] has traditionally followed a *market-driven* regulatory model, which has provided the foundation for the global digital economy as it exists today. . . . The American market-driven model exhibits uncompromising faith in markets and embraces a limited role for the government. . . . From this perspective, the government is only expected to step in to protect national security.[67]

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[64] *See* Pedro Nicolaci da Costa, *Federal Reserve 2008: A Timeline of Fed Actions and Financial Crisis Events*, WALL ST. J. (Feb. 21, 2014), https://www.wsj.com/articles/BL-REB-23336 [https://perma.cc/EB6C-23KN]; Anshu Siripurapu & Noah Berman, *Is Industrial Policy Making a Comeback?*, COUNCIL ON FOREIGN RELS. (Sept. 18, 2023), https://www.cfr.org/backgrounder/industrial-policy-making-comeback [https://perma.cc/3XTY-EX2P].

[65] Bradford L. Smith, *The Third Industrial Revolution: Policymaking for the Internet*, 3 COLUM. SCI. & TECH. L. REV. 1, 19–20 (2002).

[66] BRADFORD, *supra* note 63, at 45.

[67] *Id.* at 7.

That last note about national security is now key. Today, we are in one of those periods in which national security politics—specifically vis-á-vis China—are pushing against free-market politics, and a new equilibrium on that continuum has yet to settle. From both the right and the left, American political leaders are calling for stronger government action to combat perceived Chinese national security threats and counter its economic predation.[68] A hawkish policy toward China has become one of the rare bipartisan issues in a deeply divided U.S. Congress.[69] This rising support for government intervention also comes at a time when economic liberalism is under political assault. A policy of free markets and free trade is widely seen today, justifiably, as having delivered neither the promised political openness in China nor the promised economic benefits at home.[70] But domestic political pressures toward more government intervention in the economy often hit strong resistance because of American anti-statist ideology and institutions.

So far, the classification of advanced chips as a national security concern has paved the way for expanded industrial subsidies and regulatory measures.[71] President Biden's National Security Advisor Jake Sullivan announced in 2022: "Given the foundational nature of certain technologies, such as advanced logic and memory chips, we must maintain as large of a lead as possible."[72] Shortly afterward, then-Commerce Secretary Gina Raimondo stated that "China today poses a set of growing challenges to our national security[;]" therefore, "[t]ogether with the private sector, we are going to bolster our system of export controls, enhance our investment screening regimes, strengthen our supply chain resiliency, and develop innovative solutions."[73] A 2024 White House strategy directive on AI emphasized the securing of U.S. chip supply chains and technology against

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[68] Joan E. Greve & Lauren Gambino, *Capitol Hill Finds Rare Bipartisan Cause in China—But It Could Pose Problems*, THE GUARDIAN (Feb. 26, 2023), https://www.theguardian.com/us-news/2023/feb/26/chinese-balloon-bipartisan-capitol-hill-risk [https://perma.cc/7MY2-FFA4].
[69] Rishi Iyengar, *What an Even More Hawkish China Policy Could Look Like*, FOREIGN POL'Y (Nov. 19, 2024), https://foreignpolicy.com/2024/11/19/us-china-commission-report-biden-trump-xi-jinping// [https://perma.cc/8LEQ-923J].
[70] *See The American Left and Right Loathe Each Other and Agree on a Lot*, THE ECONOMIST. (July 15, 2023), https://www.economist.com/united-states/2023/07/13/the-american-left-and-right-loathe-each-other-and-agree-on-a-lot [https://perma.cc/LDL5-P5A4].
[71] *See, e.g.*, David E. Sanger et al., *Senate Poised to Pass Huge Industrial Policy Bill to Counter China*, N.Y. TIMES (June 7, 2021), https://www.nytimes.com/2021/06/07/us/politics/senate-china-semiconductors.html [https://perma.cc/5HG4-D7LN]; Kristen E. Eichensehr & Cathy Hwang, *National Security Creep in Corporate Transactions*, 123 COLUM. L. REV. 556, 556–59 (2023).
[72] Jake Sullivan, U.S. Nat'l Sec. Advisor, Remarks at the Special Competitive Studies Project Global Emerging Technologies Summit (Sept. 16, 2022), https://bidenwhitehouse.archives.gov/briefing-room/speeches-remarks/2022/09/16/remarks-by-national-security-advisor-jake-sullivan-at-the-special-competitive-studies-project-global-emerging-technologies-summit/ [https://perma.cc/PA4H-FNDN].
[73] Gina M. Raimondo, U.S. Sec'y of Com., Remarks on the U.S. Competitiveness and the China Challenge (Nov. 30, 2022), https://www.commerce.gov/news/speeches/2022/11/remarks-us-secretary-commerce-gina-raimondo-us-competitiveness-and-china [https://perma.cc/L3FZ-VLJM].

competitors.[74] The second Trump Administration appears poised to expand these export controls further to "eliminate loopholes"[75] in the current regulatory scheme, while also considering tariffs to support U.S. chip production.[76] These bipartisan statements illustrate how the China challenge has created a powerful counter-force to the American default commitment to markets, mitigating the country's discomfort with economic intervention.

In the modern era, there have been other periods of security-driven government intervention to spur domestic industries like chips.[77] In the 1960s, the U.S. government invested in the chip market as part of the U.S.-Soviet arms and space race.[78] In the 1970s and 80s, the government supported American chip and other industries in its economic competition with Japan.[79] But, as Professor Friedberg notes, even during the Cold War, "[i]deology was the primary source of . . . executive branch aversion to extended preferential treatment to particular firms and sectors."[80] At the height of U.S.-Soviet tensions, "top officials from the president on down were convinced of the virtues of freely functioning markets and were reluctant to intervene, regardless of possible short-term political gains and despite appeals to the needs of national security."[81]

Today, the United States is again engaged in security-driven intervention to support the high-tech sectors deemed most essential to countering China, even though the U.S. government is still deciding where to draw lines between economic interests and national security interests.[82] After the Cold War, U.S. policymakers placed much of their faith in free-market liberalism to grow the economy at home and forge peaceful relations abroad. "In the past decade," however, Professors Henry Farrell and Abraham Newman note that "economics and national security

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[74] *See* Mohar Chatterjee & Joseph Gedeon, *New Biden Policy Takes a Big Swing at AI — and Sets Political Traps*, POLITICO (Oct. 24, 2024), https://www.politico.com/news/2024/10/24/biden-ai-policy-national-security-00185407 [https://perma.cc/XFS5-28H2].

[75] Presidential Memorandum, *America First Trade Policy* (Jan. 20, 2025), https://www.whitehouse.gov/presidential-actions/2025/01/america-first-trade-policy/ [https://perma.cc/87UV-QEGJ].

[76] Gerrit De Vynck & Annabelle Timsit, *Trump Says New Tariffs on Computer Chips, Semiconductors Are Coming Soon*, WASH. POST (Jan. 28, 2025), https://www.washingtonpost.com/technology/2025/01/28/trump-tariffs-chips-semiconductors-taiwan/ [https://perma.cc/2963-G334].

[77] *See, e.g.*, MARIANA MAZZUCATO, THE ENTREPRENEURIAL STATE: DEBUNKING PUBLIC VS. PRIVATE SECTOR MYTHS 70–88 (2013).

[78] *See, e.g.*, CHRIS MILLER, CHIP WAR 29 (2022).

[79] *See id.* at 85–90.

[80] Friedberg Book, *supra* note 10, at 201.

[81] *Id.*

[82] *See* Jake Sullivan, U.S. Nat'l Sec. Advisor, Remarks on Renewing American Economic Leadership at the Brookings Institution (Apr. 27, 2023), https://bidenwhitehouse.archives.gov/briefing-room/speeches-remarks/2023/04/27/remarks-by-national-security-advisor-jake-sullivan-on-renewing-american-economic-leadership-at-the-brookings-institution/ [https://perma.cc/KAW9-9RL6].

have collided, turning government inside out and upside down."[83] This collision is now propelling the United States' tech war with China. In this contest, the U.S. government's strategies reflect a new political settlement between, at one end, the tenacious American default toward free markets and, at the other end, heavy-handed government intervention in critical sectors. It is impossible to predict where this line will ultimately settle and how stable it will be, but recent trends indicate a clear shift toward interventionism.

2. Internal Features as Enablers

Whereas external accounts emphasize the United States' position as a geopolitical powerhouse to explain its assertive use of economic tools, we show how two internal features of the U.S. government are critical in enabling the use of those tools: the strong executive powers embedded in its constitutional structure and its ability to flexibly recalibrate between free-market policy and security-driven intervention.

At the most basic level, the United States benefits from a strong executive that is equipped with vast powers to wage the tech war. Constitutionally, the federal government has almost complete powers over foreign policy, and its law is supreme over state law when they conflict.[84] We say "almost complete powers," because states and even local governments occasionally enact policies to address foreign policy issues (even if sometimes as political posturing), including some recent state-level efforts to bar the Chinese app TikTok and to restrict certain Chinese tech investments.[85] In contrast to the EU, the United States' relevant economic statecraft powers—including many statutory authorities that date to the Cold War—are largely centralized in the executive branch, to which Congress delegates significant discretion.

As a legal matter, the President can deploy many instruments that are central to the chip war either alone or with minimal congressional oversight. Many of the United States' recent tech war salvos derive from the International Emergency Economic Powers Act (IEEPA),[86] which grants the President sweeping power to regulate economic transactions following the declaration of a national emergency,

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[83] *See* Henry Farrell & Abraham Newman, *The New Economic Security State; How De-risking Will Remake Geopolitics*, FOREIGN AFFS. (Oct. 2023), https://www.foreignaffairs.com/united-states/economic-security-state-farrell-newman [https://perma.cc/KT7B-8E5X].

[84] Recently, some individual states have been adopting their own restrictions aimed at Chinese technology. Alan Rappeport, *Spreading State Restrictions on China Show Depths of Distrust in the U.S.*, N.Y. TIMES (Aug. 21, 2023), https://www.nytimes.com/2023/08/21/us/politics/china-restrictions-distrust.html [https://perma.cc/ES4J-Q9WP]. For additional discussion of U.S. states' authorities in regulating Chinese entities, *see generally* Matthew S. Erie, *Property as National Security*, 2024 WIS. L. REV 255 (2024).

[85] *See* Sapna Maheshwari, Cecilia Kang & David McCabe, *Bans on TikTok Gain Momentum in Washington and States*, N.Y. TIMES (Dec. 20, 2022) (discussing TikTok), https://www.nytimes.com/2022/12/20/technology/tiktok-ban-government-issued-devices.html [https://perma.cc/67VB-KUYU]; Kyle A. Jaros & Sara A. Newland, *Paradiplomacy in Hard Times: Cooperation and Confrontation in Subnational U.S-China Relations*, 54 PUBLIUS: J. FEDERALISM 599, 602 (2024) (discussing investment restrictions).

[86] 50 U.S.C. § 1701 *et seq.*

which can be defined broadly.[87] IEEPA has been used in pivotal moments of the tech war. For example, in 2019, the Trump Administration declared an emergency under IEEPA to institute a Huawei ban,[88] and in 2020 it declared another emergency to combat "Investments that Finance Chinese Military Companies."[89]

Export controls have emerged as perhaps the United States' most influential front-line legal tool in the chip war, though some experts question their long-term effectiveness.[90] Here, again, the executive branch has very broad statutory authority to set policy; the main constraints are therefore more political than legal. Relying on that authority, recent administrations have gradually escalated export controls to cut off China's access to leading-edge chips, their component parts, and some ingredients essential to manufacturing them.

The Department of Commerce's Bureau of Industry and Security (BIS) maintains lists of advanced technologies that require a license before being exported.[91] In 2018, Congress strengthened the U.S. export control regime through the Export Control Reform Act (ECRA), which, among other things, provided the BIS with broad authority to identify and control exports of "emerging and foundational technologies."[92] Further, the ECRA required that U.S. exporters apply to the BIS for a license to export any dual-use technologies regulated under the Export Administration Regulations and listed on the Commerce Control List.[93] In addition to regulating types of technologies, the Commerce regulations also contain a list of foreign individuals, businesses, government entities, and research institutions that cannot receive certain sensitive items.[94]

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[87] *See* CHRISTOPHER A. CASEY, IAN F. FERGUSSON, DIANNE E. RENNACK & JENNIFER K. ELSEA, CONG. RSCH. SERV., R45618, THE INTERNATIONAL EMERGENCY ECONOMIC POWERS ACT: ORIGINS, EVOLUTION, AND USE 2 (2019), https://crsreports.congress.gov/product/pdf/R/R45618/1 [https://perma.cc/VBT2-EM32].

[88] Exec. Order No. 13,873, 84 Fed. Reg. 22689 (May 15, 2019).

[89] Exec. Order No. 13,959, 85 Fed. Reg. 73185 (Nov. 12, 2020).

[90] *See* GREGORY C. ALLEN, CTR. FOR STRATEGIC & INT'L STUD., THE TRUE IMPACT OF ALLIED EXPORT CONTROLS ON THE U.S. AND CHINESE SEMICONDUCTOR MANUFACTURING EQUIPMENT INDUSTRIES 2–8 (2024), https://www.csis.org/analysis/true-impact-allied-export-controls-us-and-chinese-semiconductor-manufacturing-equipment [https://perma.cc/G5H4-F3NR]; Scott Kennedy, *How America's War on Chinese Tech Backfired*, FOREIGN AFFS. (Nov. 26, 2024), https://www.foreignaffairs.com/united-states/how-americas-war-chinese-tech-backfired [https://perma.cc/QV2F-BN4K].

[91] *See U.S. Export Regulations*, INT'L. TRADE ADMIN., https://www.trade.gov/us-export-regulations-0 [https://perma.cc/3AQJ-UUMP]; *Commerce Control List Classification*, BUREAU OF INDUS. & SEC., https://www.bis.doc.gov/index.php/licensing/commerce-control-list-classification [https://perma.cc/H4EF-EYLL].

[92] Export Control Reform Act of 2018, Pub. L. No. 115-232, § 1758, 132 Stat. 2208, 2218–23 (2018); KAREN M. SUTTER & CHRISTOPHER A. CASEY, CONG. RSCH. SERV., IF11627, U.S. EXPORT CONTROLS AND CHINA 1–2 (2022), https://www.congress.gov/crs_external_products/IF/PDF/IF11627/IF11627.6.pdf [https://perma.cc/J594-4FWB].

[93] *See* 15 C.F.R. § 730 *et seq*.

[94] *See Entity List*, BUREAU OF INDUS. & SEC., https://www.bis.doc.gov/index.php/policy-guidance/lists-of-parties-of-concern/entity-list [https://perma.cc/N95J-5X55]; Press Release,

In 2018 and 2019, the United States began to impose such export restrictions on China in earnest, but instituted a sweeping hike in October 2022.[95] At that time, as noted earlier, the BIS dramatically revised export controls to cut off China's access to advanced chips, parts, manufacturing equipment, and industry know-how.[96] Since then, the Commerce Department—with varying levels of cooperation from allies—has further tightened the controls, including enacting measures to plug loopholes.[97] These measures reflected the Biden Administration's declared "small-yard, high-fence" policy: the idea that the United States will keep the universe of restricted technologies limited, but the curbs will be severe.[98] In line with this policy, the United States has sought to implement more extensive controls over the most essential technologies, including chips. In October 2023, for example, the Commerce Department expanded the list of controlled chip equipment and imposed other new requirements on chip technology exports, and it did so again in March 2024,[99] and then again in December 2024. Policymakers are suggesting that the United States will continue to turn these screws,[100] with top Trump Administration appointees making strong public statements following China's DeepSeek AI breakthrough.[101]

Export controls are an attractive weapon for the U.S. government because of the interconnectedness of U.S. exports in global supply chains, as well as the

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Bureau of Indus. & Sec., Commerce Adds Six to Entity List for Supporting PRC Military Modernization, Intelligence, and Reconnaissance Activities (Feb. 10, 2023), https://www.bis.doc.gov/index.php/documents/about-bis/newsroom/press-releases/3220-2023-02-10-bis-press-release-six-prc-entities-final-3/file [https://perma.cc/46TE-4QGX]; BUREAU OF INDUS. & SEC., FREQUENTLY ASKED QUESTIONS TO EXPORT LICENSING REQUIREMENTS 8 (2018), https://www.bis.doc.gov/index.php/documents/pdfs/286-licensing-faq/file [https://perma.cc/3EWU-6CW3]; Additions to the Entity List, 90 Fed. Reg. 14046 (Mar. 25, 2025) (to be codified at 15 C.F.R. pt. 744); Demetri Sevastopulo, *US Adds Dozens of Chinese Entities to Export Blacklist*, FIN. TIMES (Mar. 25, 2025), https://www.ft.com/content/91397064-74d3-466e-b122-00c2726859e0 [https://perma.cc/V6TA-CXYH].

[95] *See supra* note 1 and accompanying text.

[96] *See* Sujai Shivakumar et al., *Balancing the Ledger: Export Controls on U.S. Chip Technology to China*, CTR. FOR STRATEGIC & INT'L STUD. (Feb. 21, 2014), https://www.csis.org/analysis/balancing-ledger-export-controls-us-chip-technology-china [https://perma.cc/N225-ZUZU].

[97] *See Are America's Allies the Holes in Its Export-Control Fence?*, THE ECONOMIST (Oct. 17, 2023), https://www.economist.com/business/2023/10/16/are-americas-allies-the-holes-in-its-export-control-fence [https://perma.cc/P7KA-87VC].

[98] *See* Sullivan, *supra* note 82 ("[W]e are protecting our foundational technologies with a small yard and high fence.").

[99] *See U.S. Updates Export Curbs on AI Chips and Tools to China*, REUTERS (Mar. 29, 2024), https://www.reuters.com/technology/us-commerce-updates-export-curbs-ai-chips-china-2024-03-29/ [https://perma.cc/Z2LJ-JDAC].

[100] *See* Jim Gomez, *US Is Constantly Assessing Expansion of Export Controls on Chips that Could Boost China's Military*, ASSOCIATED PRESS (Mar. 11, 2024), https://apnews.com/article/us-china-military-export-controls-11971be177fcee42e2ec8fd5a575a66e [https://perma.cc/CRT6-P8SF]. Some analysts criticize this policy on the grounds that the size of the yard keeps expanding and that it inadequately considers tradeoffs. *See, e.g.*, Kennedy, *supra* note 90.

[101] *See, e.g.*, Miranda Nazzaro, *Trump Commerce Pick Slams China: 'Stop Using Our Tools to Compete'*, THE HILL (Jan. 29, 2025), https://thehill.com/policy/technology/5113247-howard-lutnick-china-ai-competition/ [https://perma.cc/X4L7-ZLX4].

breadth of the congressional delegation to the executive branch. In a marked contrast to China and the EU, U.S. export controls also benefit from their vast extraterritorial reach. The Foreign Direct Product Rule—which allows the U.S. government to stop sales of products made and sold in a foreign country if they contain American technology—is the clearest example of that legal reach.[102] As one former BIS official describes, the Rule "subjected all semiconductors on the planet to American law, because every foundry on the planet uses U.S. tools at least in part . . . . If you have one U.S. tool and 100 non-American tools in your fab, that taints any wafer moving across the line."[103] In other words, the BIS can set rules governing third-country companies' chips, thereby cutting off China's ability to skirt export controls by simply turning to another foreign supplier.[104]

Investment screening is a less potent, but still agile, U.S. government tool. Specifically, a long-standing legal authority created the Committee on Foreign Investment in the United States (CFIUS), again with significant discretion delegated to the President.[105] CFIUS is an interagency committee that reviews inbound foreign investments that may pose national security risks.[106] Although the committee is chaired by the Treasury Department, the national security bureaucracy also plays an important role in the review process.[107] An institutionalized process like the present one has existed since the 1990s, but it had only formally blocked five investment transactions before 2018.[108] That year, CFIUS was bolstered by the Foreign Investment Risk Review Modernization Act of 2018 (FIRRMA), which made it easier for the government to block foreign investments in U.S. businesses involving critical technologies.[109] Such actions can be taken without further

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[102] Foreign-Direct Product (FDP) Rules, 15 C.F.R. § 734.9 (2020).
[103] *See* Palmer, *supra* note 20.
[104] *See* Damely Perez & Kimberly Shi, *Back to the Future: The Committee on Foreign Investment in the United States (CFIUS) Scuppers Another Semiconductor Transaction*, CLIFFORD CHANCE (Jan. 11, 2022), https://www.cliffordchance.com/insights/resources/blogs/antitrust-fdi-insights/2022/01/cfius-scuppers-another-semiconductor-transaction.html [https://perma.cc/7C4U-ZPDU].
[105] Defense Production Act of 1950 § 721, 50 U.S.C. § 4565 (2012).
[106] *See id.* §§ 4565(b), (k).
[107] *See* CATHLEEN D. CLIMINO-ISSACS & KAREN M. SUTTER, CONG. RSCH. SERV., IF10177, THE COMMITTEE ON FOREIGN INVESTMENT IN THE UNITED STATES (2023), https://crsreports.congress.gov/product/pdf/IF/IF10177 [https://perma.cc/XHC7-B3H7].
[108] *See* National Defense Authorization Act for Fiscal Year 1993, Pub. L. No. 102-484, § 837, 106 Stat. 2315, 2463–64 (1992) (amending the CFIUS statute to require mandatory investigations of certain mergers, acquisitions, or takeovers involving entities related to foreign governments); JAMES K. JACKSON, CONG. RSCH. SERV., RL33388, THE COMMITTEE ON FOREIGN INVESTMENT IN THE UNITED STATES (CFIUS) 23 (2020), https://www.congress.gov/crs-product/RL33388 [https://perma.cc/TEA7-TQFF].
[109] *See* John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, §§ 1701–28, 132 Stat. 1636, 2174–207 (2018) (containing the Foreign Investment Risk Review Modernization Act of 2018); JACKSON, *supra* note 108, at 1–2.

congressional approval. As a result, it is now all but impossible for Chinese companies to invest in semiconductor technology in the United States.[110]

The United States has recently turned its attention to outbound investment review. As one expert testified to Congress, addressing only inbound investment left gaping holes in the American regulatory regime: A Chinese entity "can freely solicit American money to develop the technology in [China]. There's no barrier to this at all . . . . And it's actually the worst outcome, since we are helping China become more self-sufficient."[111] For example, at the same time that U.S. chipmaker Intel is receiving government support, its venture capital arm is reportedly investing in AI start-ups in China, directly undermining U.S. government efforts to limit China's technological capabilities.[112] Congress has not yet been able to agree on a bill to address this issue,[113] but it is still considering legislation to address outbound investment in sectors with national security implications.[114]

Meanwhile, drawing on vast delegated authority under IEEPA, President Biden implemented outbound investment review controls in August 2023 through an executive order.[115] Recognizing that "certain United States investments may accelerate and increase the success of the development of sensitive technologies" in rival countries, the order applied to advancement in "semiconductors and microelectronics, quantum information technologies, and artificial intelligence capabilities" by "countries of concern."[116] In October 2024, the Treasury

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[110] *See* Perez & Shi, *supra* note 104; J. Tyler McGaughey, *What Dealmakers Need to Know About CFIUS and Semiconductors*, WINSTON & STRAWN (July 21, 2021), https://www.winston.com/en/blogs-and-podcasts/global-trade-and-foreign-policy-insights/what-dealmakers-need-to-know-about-cfius-and-semiconductors [https://perma.cc/M776-Z6LD].

[111] *See* Derek Scissors, *Written Statement for the House Select Committee on the Chinese Communist Party on Ensuring U.S. Leadership in the Critical and Emerging Technologies of the 21st Century,* AM. ENTERPRISE INST. (July 26, 2023), https://selectcommitteeontheccp.house.gov/sites/evosubsites/selectcommitteeontheccp.house.gov/files/evo-media-document/scc-expert-written-testimony_20230726_derek-scissors.pdf [https://perma.cc/S3YC-XLMY].

[112] *See* Tabby Kinder, et al., *Intel Venture Arm's China Tech Stakes Raise Alarm in Washington*, FIN. TIMES (July 16, 2024), https://www.ft.com/content/0217cab2-c9a3-4ffa-993a-39874d6d803f [https://perma.cc/6QY2-GHPN].

[113] *See U.S. Launches Outbound Investment Screening Targeting China with Further Developments Forthcoming*, COVINGTON & BURLING (Feb. 7, 2024), https://www.cov.com/en/news-and-insights/insights/2023/08/us-launches-outbound-investment-screening-targeting-china-with-further-developments-forthcoming [https://perma.cc/GNX7-68QA].

[114] In late December 2024, Chairman John Moolenaar of the House Select Committee on the Chinese Communist Party introduced the Comprehensive Outbound Investment National Security (COINS) Act limiting U.S. outbound investments in key military and economic sectors, complementing companion Senate legislation. *See* Press Release, H. Select Comm. on the CCP, Moolenaar, Barr Introduced Bill to Restrict U.S. Investment in China (Jan. 2, 2025), https://selectcommitteeontheccp.house.gov/media/press-releases/icymi-moolenaar-barr-introduced-bill-restrict-us-investment-china [https://perma.cc/782M-7TZ5]; Comprehensive Outbound Investment National Security (COINS) Act of 2024, H.R. 10559, 118th Cong. (2024).

[115] *See generally* Exec. Order No. 14,105, 88 Fed. Reg. 54867 (Aug. 9, 2023).

[116] *Id.*

Department issued final regulations implementing that order.[117] On his first day back in office, President Trump directed the Treasury Secretary to review the August 2023 Executive Order and associated implementing regulations.[118]

Even though strong executive branch legal powers have been a key enabler of U.S. export controls and investment restrictions, the U.S. government's deployment of another critical tool—industrial subsidies—requires significant congressional action. However, the disbursement of subsidies benefits from another enabling feature of the U.S. system: the system's ability to flexibly shift, as needed, between free-market, light-touch economic regulation and more aggressive, national security-based intervention. This flexibility helps the government design and implement subsidy policies in ways that reflect both ambition and restraint.

Having relied for decades on the power of free markets to govern global chip supply chains, the United States adopted a major policy shift with the CHIPS Act in August 2022.[119] The CHIPS Act aims to incentivize re-shoring key supply chain nodes to the United States and promote domestic manufacturing of both legacy and leading-edge chips. The Act provides for $280 billion in funding, allocating $53 billion for semiconductor research and $39 billion for manufacturing incentives.[120] The Department of Commerce has latitude in deciding which projects will receive funds[121] and has tried to use those funds in ways that also draw in large

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[117] *See* Josh Boak, *Biden Moves to Restrict Investments in China to Protect National Security*, AP NEWS (Aug. 9, 2023), https://apnews.com/article/biden-china-investment-ai-national-security-dd6a5b138e6c7cba31468dc89f776e8d [https://perma.cc/XU5H-V9EJ]; Press Release, U.S. Dep't of the Treasury, Additional Information on Final Regulations Implementing Outbound Investment Executive Order (E.O. 14105) (Oct. 28, 2024), https://home.treasury.gov/news/press-releases/jy2690 [https://perma.cc/CT2L-47BW].

[118] Memorandum on America First Trade Policy § 4(e), 2025 DAILY COMP. PRES. DOC. 145 (Jan. 20, 2025), https://www.whitehouse.gov/presidential-actions/2025/01/america-first-trade-policy/ [https://perma.cc/S3TX-RH9AJX5B-9JPP]; Memorandum on America First Investment Policy, § 2(j), 2025 DAILY COMP. PRES. DOC. 2 (Feb. 21, 2025), https://www.whitehouse.gov/presidential-actions/2025/02/america-first-investment-policy/ [https://perma.cc/CNY7-5YX4]; Eleanor Mueller, *Senate Unveils Its Bid to Curb US Investment in China as House Waits*, SEMAFOR (Mar. 13, 2025), https://www.semafor.com/article/03/13/2025/senate-unveils-its-bid-to-curb-us-investment-in-china-as-house-waits [https://perma.cc/KH9U-VXN3].

[119] *See* Michelle Kurilla, *What Is the CHIPS Act?*, COUNCIL ON FOREIGN RELS. (Apr. 29, 2024), https://www.cfr.org/in-brief/what-chips-act [https://perma.cc/8WMD-6ZRS]; *see also* Sujai Shivakumar, Charles Wessner, and Thomas Howell, *The Strategic Importance of Legacy Chips*, CTR. FOR STRATEGIC & INT'L STUD. (Mar. 3, 2023), https://www.csis.org/analysis/strategic-importance-legacy-chips [https://perma.cc/28WT-E4CD].

[120] *Fact Sheet: CHIPS and Science Act Will Lower Costs, Create Jobs, Strengthen Supply Chains, and Counter China*, THE WHITE HOUSE (Aug. 9, 2022), https://bidenwhitehouse.archives.gov/briefing-room/statements-releases/2022/08/09/fact-sheet-chips-and-science-act-will-lower-costs-create-jobs-strengthen-supply-chains-and-counter-china/ [https://perma.cc/453J-JLKC].

[121] Michael Herrera & Tyler Robbins, *CHIPS Act Allocates $52 Billion in Subsidies to Revitalize Semiconductor Manufacturing*, JD SUPRA (Sept. 2, 2022), https://www.jdsupra.com/legalnews/chips-act-allocates-52-billion-in-4571804/ [https://perma.cc/V3B6-SUQQ].

amounts of private investment.[122] CHIPS Act subsidies are, however, doled out with tight strings—often referred to as "guardrails"—to ensure that they are used only in ways that advantage U.S. industry without also aiding China or other states of concern.[123] During his presidential campaign, President Trump said he would roll back chip subsidy programs, and at this point his administration appears poised to renegotiate their terms in line with his economic agenda.[124] This turn toward industrial policy holds promise for boosting American production of both older legacy chips and the newest advanced chips, but much of its success regarding the latter will depend on how effectively the subsidy program can incentivize the long-term research and capital investment needed to push forward the leading edge of the sector.[125]

The CHIPS Act is not the first time the U.S. government has stepped in to support the advancement of chips. Indeed, federal contracts were critical to the earliest development of chips in the 1960s.[126] In that era, Fairchild Semiconductor and Texas Instruments grew and developed their semiconductor business because they had reliable government customers like the Air Force and NASA.[127] In the 1980s, Defense Department initiatives gave government contracts and R&D support to Silicon Valley semiconductor companies.[128] The early use of chips in the

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[122] *See* Yuka Hayashi, *Why Washington Went to Wall Street to Revive the U.S. Chips Industry*, WALL ST. J. (Aug. 25, 2023), https://www.wsj.com/politics/policy/why-the-white-house-went-to-wall-street-to-revive-the-u-s-chips-industry-fe0a0aac [https://perma.cc/EL42-LH5X].

[123] Ana Swanson, *Congress Is Giving Billions to the Chip Industry. Strings Are Attached,* N.Y. TIMES (Aug. 3, 2022), https://www.nytimes.com/2022/08/03/business/economy/chip-industry-congress.html [https://perma.cc/7KHC-SGCZ].

[124] *See* Mike Stone, Fanny Potkin & Wen-Yee Lee, *Exclusive: Trump Prepares to Change US CHIPS Act Conditions, Sources Say*, REUTERS (Feb. 13, 2025), https://www.reuters.com/technology/trump-prepares-change-us-chips-act-conditions-sources-say-2025-02-13/ [https://perma.cc/ZC4J-RTAZ]; Andrea Shalal & Nandita Bose, *Trump Says He Will Introduce 25% Tariffs on Autos, Pharmaceuticals and Chips*, REUTERS (Feb. 18, 2025), https://www.reuters.com/business/autos-transportation/trump-auto-tariff-rate-will-be-around-25-2025-02-18/ [https://perma.cc/A3EP-3A5J]. Since taking office, President Trump has further escalated his rhethoric on the CHIPS Act, telling Congress to "get rid of [it]." Christine Mui, *Trump Tells Congress to End CHIPS Act*, POLITICO (Mar. 4, 2025), https://www.politico.com/live-updates/2025/03/04/trump-joint-address-to-congress/trump-tells-congress-to-end-chips-act-00212871 [https://perma.cc/D5PF-Y3GV].

[125] *See* Chris Miller, Jordan Schneider & Arrian Ebrahimi, *To Win the Chip War, the U.S. Must Prioritize Revolutionary Research*, WASH. POST (May 30, 2024), https://www.washingtonpost.com/opinions/2024/05/30/semiconductor-industry-china-research-development/ [https://perma.cc/2JGQ-XSVP].

[126] *See generally* NORMAN J. ASHER & LELAND D. STRAM, INST. FOR DEF. ANALYSIS, THE ROLE OF THE DEPARTMENT OF DEFENSE IN THE DEVELOPMENT OF INTEGRATED CIRCUITS (1977), https://apps.dtic.mil/sti/tr/pdf/ADA048610.pdf [https://perma.cc/YZ6F-6459].

[127] *See* MILLER, *supra* note 78, at 20–22; Phil Goldstein, *How the Government Helped Spur the Microchip Industry,* FEDTECH MAG. (Sept. 11, 2018), https://fedtechmagazine.com/article/2018/09/how-government-helped-spur-microchip-industry [https://perma.cc/H853-DVZ7].

[128] *See* Stephen Mihm, *How the Department of Defense Bankrolled Silicon Valley*, N.Y. TIMES (July 9, 2019), https://www.nytimes.com/2019/07/09/books/review/the-code-margaret-omara.html [https://perma.cc/N7UG-4F5U], *reprinted in* STANFORD ENG'G (July 9, 2019),

military production market allowed for economies of scale that then made semiconductors affordable in the consumer market.[129] Government support, however, waned in ensuing decades. The United States later lost much of its global market share in semiconductor manufacturing as market forces pushed U.S. firms to globalize their supply chains and outsource production overseas for greater efficiency.[130]

At first sight, the recent CHIPS Act and the chip subsidies of past decades appear to conflict with the United States' longstanding ideological commitment to free markets by allowing national security interests to dominate. However, market-driven instincts still moderate the U.S. government's implementation of the subsidies. Instead of picking winners or supporting national-champion firms, the U.S. government channels public funding in ways that encourage competition and entrepreneurship.[131] Seen this way, interventionist subsidies take place within an American political system in which free market anti-statism is moderated by security imperatives.

In theory, then, an advantage of the U.S. system is its flexibility to combine varying levels of market-driven innovation with security-driven government intervention to fill market gaps. Although it is impossible to predict exactly where the balance between these pressures will settle, the U.S. system has the potential to combine the virtues of a free-market tech innovation ecosystem with targeted government interventions. As explained below in Part III, this adjustable system proved strategically adaptive in the Cold War and has the potential to do so again in the ongoing tech war against China.

3. Internal Features as Constraints

The preceding examples show how the American governmental structure —featuring broad executive branch authority and capacity for flexible rebalancing between free markets and industrial support—endows the United States with potent tools to wage the tech war. However, two internal features of the U.S. system, distributed power and political lobbying, constrain the use of its tools. First, although Congress delegates to the President control of many relevant policy tools, Congress retains significant authority over others, including subsidies. Even where Congress has delegated discretion to the President, power often remains dispersed within the executive branch. Second, potent industry influence frequently shapes or compromises policy implementation. Both constraints can limit the effectiveness of tech war tools over time.

The structural dispersion of power within the U.S. government limits its ability to rely heavily on industrial subsidies. For starters, funding for such programs must come from Congress; thus, the executive branch has considerably less autonomy and agility than it does in deploying other tools like export

https://systemx.stanford.edu/news/2019-07-09-000000/how-department-defense-bankrolled-silicon-valley [https://perma.cc/W52D-YTC4].
[129] *Id.*
[130] *See* MILLER, *supra* note 78, at 188–89.
[131] *See* BRADFORD, *supra* note 63, at 59.

controls.[132] Industrial policy generally aims to depoliticize economic administration in favor of managerial efficiency, but Congress's electoral orientation toward partisan and parochial interests means that industrial policy inevitably gets politicized.[133] Congress nearly derailed the CHIPS Act because of disputes over other government spending, as congressional Republicans attempted to condition industrial subsidies on other spending priorities or cuts.[134] Likewise, Democrats attached progressive agenda items as preconditions for receiving subsidies, including workforce diversity efforts and employer child-care.[135] In return for supporting the Act, legislators also sought to direct subsidies to their home districts, further politicizing the allocation of the funds.[136]

In addition, partisan swings in executive and congressional control make it difficult to reliably maintain subsidy programs.[137] This stands in stark contrast to China which, in the words of former Google CEO Eric Schmidt, "has a CHIPS Act every year."[138] Together, these structural features of the U.S. legal and political system will undermine any U.S. tech war strategy that relies heavily on subsidies

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[132] *See* Gina Raimondo, *Secretary Raimondo: An Update on CHIPS Act Implementation*, CTR. FOR STRATEGIC & INT'L STUD. (Feb. 26, 2024), https://www.csis.org/analysis/secretary-raimondo-update-chips-act-implementation [https://perma.cc/QZ3K-2XK7] (thanking Congress for the inclusion of tax credits in the CHIPS Act and noting that the Commerce Department has been able to "do so much with relatively limited grant money").

[133] *See* Robert W. Russell, *Congress and the Proposed Industrial Policy Structures*, in THE POLITICS OF INDUSTRIAL POLICY 318, 322–31 (Claude E. Barfield & William A. Schambra, eds. 1986).

[134] *See* Gavin Bade, *In Victory for Democrats, Congress Sends Chip Subsidy Bill to Biden*, POLITICO (July 28, 2022), https://www.politico.com/news/2022/07/28/in-victory-for-democrats-congress-sends-chip-subsidy-bill-to-biden-00048539 [https://perma.cc/JHT6-JEPZ].

[135] Annelies Goger & Banu Ozkazanc-Pan, *The CHIPS and Science Act Won't Build Inclusive Innovation Ecosystems on Its Own*, BROOKINGS INST. (May 3, 2023), https://www.brookings.edu/articles/the-chips-and-science-act-wont-build-inclusive-innovation-ecosystems-on-its-own/ [https://perma.cc/M5FH-C99X]; Katie Lobosco, *America Funded Nationwide Child Care During WWII. Here's How Biden is Trying to Revive That Effort*, CNN (Apr. 9, 2023), https://www.cnn.com/2023/04/09/politics/biden-child-care-chips-law/index.html [https://perma.cc/3PBQ-HXFF].

[136] Ana Swanson, *Schumer Wields Political Heft in Bid for New York Chips Funds*, N.Y. TIMES (Aug. 6, 2023), https://www.nytimes.com/2023/08/06/business/economy/schumer-new-york-chips-funds.html [https://perma.cc/97NF-F6B8]; *see also* Cecilia Kang, *How Arizona Is Positioning Itself for $52 Billion to the Chips Industry*, N.Y. TIMES (Feb. 22, 2023), https://www.nytimes.com/2023/02/22/technology/arizona-chips-act-semiconductor.html [https://perma.cc/SXY4-QVED]; *see also* Zolan Kanno-Youngs, Madeleine Ngo & Don Clark, *Intel Receives $8.5 Billion in Grants to Build Chip Plants*, N.Y. TIMES (Mar. 20, 2024), https://www.nytimes.com/2024/03/20/us/politics/chips-act-grant-intel.html [https://perma.cc/RW5V-9YQV].

[137] Christopher A. Thomas, *A Semiconductor Strategy for the United States*, BROOKINGS INST. 4 (Oct. 2022), https:/www.brookings.edu/wpcontent/uploads/2022/11/FP20221103semiconductorstrategy.pdf [https://perma.cc/2D5C-B9DB].

[138] David Ignatius, *What if the United States Loses the AI Race Against China?*, WASH. POST (Sept. 13, 2022), https://www.washingtonpost.com/opinions/2022/09/13/artificial-intelligence-ai-high-tech-race-with-china/ [https://perma.cc/7PM4-E6SJ] (internal quotation marks omitted).

over the long term—whether for on-shoring manufacturing of legacy chips or for spurring domestic development of leading-edge ones.

Another structural feature of the U.S. national government constrains its deployment of subsidies and export controls: the dispersed allocation of powers across the executive branch. Key government departments and agencies often lack the resources and clout to aggressively wield the authorities delegated to them.

Strong American anti-statist traditions have largely organized the executive branch to advance free markets; some of the departments central to the tech war have over years been built and staffed around deeply entrenched commitments to economic globalization. For example, the executive branch lacks any single department devoted to domestic industry; because the United States has resisted top-down industrial policy, it has never, like China, developed agencies dedicated to government-sponsored managerial efficiency.[139] The CHIPS Act puts the Commerce Department in charge of managing chip subsidies, but for decades, the department has instead been focused on promoting American commercial interests through open global trade and investment.[140] True, it has in recent years quickly recruited outside experts to help design and implement chip policies,[141] but it still lags in cultivating the requisite know-how to carefully target industrial policy to key nodes in rapidly evolving tech supply chains.[142] The department is also responsible for administering export controls—and it has very broad legal authorities to do so—but the relevant bureau lacks the resources to match its increased role in conducting U.S. national security policy.[143] Cumbersome interagency processes slow deployment of successive rounds of export controls, while also opening doors for the types of lobbying discussed below.[144] Meanwhile, the Treasury Department is the lead agency for inbound and outbound national security investment restrictions, but for decades, its foreign policy role and

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[139] *Cf.* Hugh Heclo, *Industrial Policy and the Executive Capacities of Government,* in THE POLITICS OF INDUSTRIAL POLICY 292, 302–10 (Claude E. Barfield & William A. Schambra eds., 1986).

[140] *See* Penny Pritzker, *Exit Memo: A Record of Past Progress and a Roadmap for the Future*, THE WHITE HOUSE (Jan. 5, 2017), https://obamawhitehouse.archives.gov/administration/cabinet/exit-memos/department-commerce [https://perma.cc/4XKR-LZAP].

[141] Hayashi, *supra* note 122; Mackenzie Hawkins, Jenny Leonard, Ian King & Eric Martin, *Ex-Wall Streeters Help Washington Divvy Up $100 Billion to Win the Global Chip Race*, BLOOMBERG (Sept. 25, 2023), https://www.bloomberg.com/news/articles/2023-09-25/chips-act-commerce-taps-wall-streeters-to-help-shape-semiconductor-deals?embedded-checkout=true [https://perma.cc/6FPA-53MM].

[142] *See* Farrell & Newman, *supra* note 83.

[143] *See* Gregory C. Allen, Emily Benson & William Alan Reinsch, *Improved Export Controls Enforcement Technology Needed for U.S. National Security*, CTR. FOR STRATEGIC & INT'L STUD. (Nov. 30, 2022), https://www.csis.org/analysis/improved-export-controls-enforcement-technology-needed-us-national-security [https://perma.cc/5QYC-HNF7]; Shivakumar et al, *supra* note 96.

[144] *See Emergency Pod: Biden's Final Export Controls Misfire?*, CHINATALK (Dec. 3, 2024), https://podcasts.apple.com/us/podcast/chinatalk/id1289062927?i=1000679067280 [https://perma.cc/B2JJ-FQDU].

expertise prioritized sustaining the global financial system and promoting the free flow of capital—a mission in tension with interventionist strategies.[145]

Finally, powerful corporate lobbying also constrains the United States' options for tech war strategy. The role of lobbying is much more salient in the United States than in China or the EU, as corporate contributions to political campaigns magnify the private sector's control over policymaking. Because U.S. economic policy has been grounded in free-market and pro-globalization thinking for so long, government decisionmakers and advisors are accustomed to deferring to industry views. In the tech war, corporate interest groups have multiple arguments against government intervention, including that regulation undermines competitiveness and technological innovation—each of which, they argue, is also important to national security as well as economic growth.[146] This friction stands in stark contrast to China, where corporations ultimately remain beholden to the government, and to the EU, where corporate lobbying is prevalent but less effective due to the limited role of money in elections.[147]

To illustrate the policy implications of corporate influence in the United States, consider chip subsidies. The vast array of semiconductor companies and their trade associations have lobbied Congress to obtain large pieces of the subsidy pie.[148] Some companies have also pushed to relax conditions that restrict subsidy

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[145] *See* Robert M. Kimmit, Dep. Sec'y, U.S. Dept. of the Treasury, Remarks at the European Institute Luncheon: CFIUS Reform and International Investments: Balancing Security & Investment (Oct. 27, 2006), https://home.treasury.gov/news/press-releases/hp155 [https://perma.cc/KY4E-TM7B]; Jacob J. Lew, *America and the Global Economy: The Case for U.S. Leadership*, 95 FOREIGN AFFS. 56, 59–61 (2016).

[146] *SIA Comments: Export Controls Should Protect National Security Without Undermining Innovation*, SEMICONDUCTOR INDUS. ASS'N (Jan. 26, 2023), https://www.semiconductors.org/sia-comments-export-controls-should-protect-national-security-without-undermining-innovation/ [https://perma.cc/SS3W-S8XL].

[147] *See, e.g.*, Evelyn Cheng, *Hard Lesson for U.S. Investors: Chinese Companies Don't Make the Rules in China*, CNBC (Aug. 18, 2021), https://www.cnbc.com/2021/08/19/lobbying-china-firms-cant-influence-government-like-us-companies-do.html [https://perma.cc/UR36-BVLS]; Christine Mahoney, *Why Lobbying in America is Different*, POLITICO (June 4, 2009), https://www.politico.eu/article/why-lobbying-in-america-is-different/ [https://perma.cc/TGV8-GXHE].

[148] Bob Davis, Asa Fitch & Kate O'Keeffe, *Semiconductor Industry to Lobby for Billions to Boost U.S. Manufacturing*, WALL ST. J. (May 31, 2020), https://www.wsj.com/articles/semiconductor-industry-to-lobby-for-billions-to-boost-u-s-manufacturing-11590919201 [https://perma.cc/2FZ7-T6YV]; Mackenzie Hawkins, *Biden Issues China Restrictions on Companies Getting Chip Funds*, BLOOMBERG (Sept. 22, 2023), https://www.bloomberg.com/news/articles/2023-09-22/biden-issues-china-restrictions-on-companies-getting-chip-funds [https://perma.cc/H7FA-3FAU]; Ana Swanson & Don Clark, *Chip Makers Turn Cutthroat in Fight for Share of Federal Money*, N.Y. TIMES (Feb. 23, 2023), https://www.nytimes.com/2023/02/23/business/economy/chip-makers-fight-federal-money.html?smid=url-share [https://perma.cc/M4NF-YNDK]; Brendan Bordelon & Caitlin Oprysko, *Everybody in Washington Wants a Byte of the CHIPS Law*, POLITICO (Mar. 17, 2023), https://www.politico.com/news/2023/03/17/chips-law-companies-washington-lobbying-00086687 [https://perma.cc/6767-AAES].

recipients from expanding their lucrative operations and facilities in China.[149] Here, industry lobbying serves as a double-edged sword for U.S. strategy. On one hand, it can serve as a check on commercially inefficient conditions attached to subsidies—like tight limits on recipients' investments in China. Such restrictions may hurt the U.S. domestic chip industry, and lobbying against them could thereby protect a key aspect of the U.S. chip war strategy. On the other hand, that same lobbying could undercut legitimate national security efforts aimed at preventing U.S. investment in China's chip industry, thereby undermining a different key aspect of U.S. strategy.

Industry lobbying has constrained semiconductor export controls as well as investment restrictions. Major U.S. chip manufacturers like Intel, Qualcomm, and Nvidia have spent many years selling to China, which accounts for a significant percentage of their revenue.[150] Nvidia, a U.S. company known for its high-end AI chips, had a 90% share of China's AI chip market prior to the imposition of U.S. export controls.[151] Nvidia's CEO Jensen Huang has stated that, "[i]f we are deprived of the Chinese market, we don't have a contingency for that. There is no other China, there is only one China."[152] Qualcomm, another California-based semiconductor company, is also dependent on China. In an annual report to the SEC, Qualcomm notified regulators and investors of its geopolitical risk, writing that "[a] significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions."[153]

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[149] Karl Evers-Hillstrom, *Intel Hiked Lobbying Spending by 65 Percent Amid Chip Subsidies Push*, THE HILL (July 21, 2022), https://thehill.com/lobbying/3568079-intel-hiked-lobbying-spending-by-65-percent-amid-chip-subsidies-push/ [https://perma.cc/manage/create?folder=3970-255250-255252]; Doug Palmer, *Intel, Others Seek Weaker China Rules in Chips Bill*, POLITICO (July 18, 2022), https://www.politico.com/newsletters/weekly-trade/2022/07/18/intel-others-seek-weaker-china-rules-in-chips-bill-00046278 [https://perma.cc/2TRN-USY9]; Alex Gordon & David Isaacs, *SIA Urges Balanced Approach to Implementation of CHIPS Act Guardrails,* SEMICONDUCTOR INDUS. ASS'N (May 22, 2023), https://www.semiconductors.org/sia-urges-balanced-approach-to-implementation-of-chips-act-guardrails/ [https://perma.cc/GS27-N4GZ].

[150] Jenny Leonard & Ian King, *Chip Leaders Head to Washington to Lobby for China Rules Relief*, BLOOMBERG (July 14, 2023), https://www.bloomberg.com/news/articles/2023-07-15/chip-leaders-head-to-washington-to-lobby-for-china-rules-relief [https://perma.cc/4CKY-57LR].

[151] Reuters, *Nvidia is Developing New Chips for China to Comply with US Export Curbs*, CNN (Dec. 6, 2023), https://www.cnn.com/2023/12/06/tech/nvidia-china-chip-development-us-curbs/index.html [https://perma.cc/6SXQ-83G2]. Even after the imposition of export controls, Nvidia expected its 2024 sales outside the United States to exceed $10 billion. Tripp Mickle & Paul Mozur, *Nvidia's Booming A.I. Business Collides with U.S.-Chinese Tensions*, N.Y. TIMES (Dec. 19, 2024), https://www.nytimes.com/2024/12/19/technology/nvidia-chip-sales-us-china.html [https://perma.cc/Y9N5-9DRZ].

[152] Madhumita Murgia, Tim Bradshaw & Richard Waters, *Chip Wars With China Risk 'Enormous Damage' to US Tech, Says Nvidia Chief*, FIN. TIMES (May 24, 2023), https://www.ft.com/content/ffbb39a8-2eb5-4239-a70e-2e73b9d15f3e [https://perma.cc/8G7B-AY57] (internal quotation marks omitted).

[153] Iain Morris, *U.S. Chip Exposure to China Grew Even More Last Year*, LIGHTREADING (Mar. 24, 2023), https://www.lightreading.com/semiconductors/us-chip-exposure-to-china-grew-even-more-last-year [https://perma.cc/2YH5-KUXN] (internal quotation marks omitted).

A critical question is how industry lobbying is and will be received by the second Trump Administration. When the outgoing Biden Administration announced last-minute export controls, a top Nvidia official protested: "We would encourage President Biden to not preempt incoming President Trump by enacting a policy that will only harm the U.S. economy, set America back, and play into the hands of U.S. adversaries."[154] At a moment when President Trump has established close ties to large American technology companies, China appears to be using its regulatory tools, discussed in Section II(B), to target those firms—including semiconductor companies—as a way of exploiting industry influence.[155] At the same time, however, DeepSeek's recent AI breakthrough may invite greater scrutiny of corporate influence, in particular due to bipartisan accusations that Biden-era export control loopholes promoted by industry lobbying enabled it.[156]

The combination of industry lobbying and the institutional challenges of congressional lawmaking have also limited efforts to enact new statutory authorities for investment controls. Despite strong support among its members for outbound investment screening,[157] for example, Congress has been unable to pass a bill. As the *New York Times* explained, a "broader proposal in Congress [in 2022] to review outbound investments in critical sectors including infrastructure and medicine prompted pushback from groups like the U.S. Chamber of Commerce and the U.S.-China Business Council."[158] The result was the very modest August 2023 executive order described above, which will likely be watered down further in response to more lobbying.[159] Here, again, the open U.S. political system has afforded companies a large role in pushing back against and thereby weakening government tech war policies.[160]

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[154] *Nvidia Criticizes Reported Biden Plan for AI Chip Export Curbs*, REUTERS (Jan. 9, 2025), https://www.reuters.com/technology/nvidia-criticizes-reported-biden-plan-ai-chip-export-curbs-2025-01-10/ [https://perma.cc/5764-J4N6] (internal quotation marks omitted).

[155] Liza Lin & Raffaeli Huang, *China's Strategy in Trade War: Threaten U.S. Tech Companies*, WALL ST. J. (Feb. 9, 2025), https://www.wsj.com/tech/china-trade-war-us-tech-03578671 [https://perma.cc/2K4C-CTSQ].

[156] Eva Dou, *Senators Urge Tougher Chip Controls to Stymie Chinese AI Advance*, WASH. POST (Feb. 3, 2025), https://www.washingtonpost.com/technology/2025/02/03/deepseek-china-export-controls-ai/ [https://perma.cc/QB37-LR6H].

[157] *U.S. Launches Outbound Investment Screening Targeting China with Further Developments Forthcoming*, COVINGTON & BURLING (Aug. 11, 2023), https://www.cov.com/en/news-and-insights/insights/2023/08/us-launches-outbound-investment-screening-targeting-china-with-further-developments-forthcoming [https://perma.cc/HQP6-6QVR]; National Defense Authorization Act for Fiscal Year 2024, Pub. L. No. 118-31, 137 Stat. 136 (2023).

[158] Ana Swanson & Lauren Hirsch, *U.S. Aims to Curtail Technology Investment in China*, N.Y. TIMES (Feb. 9, 2023), https://www.nytimes.com/2023/02/09/business/us-china-investing-tech-biden.html [https://perma.cc/K4CY-RDA3].

[159] *See id.*

[160] Tripp Mickle, David McCabe & Ana Swanson, *How the Big Chip Makers Are Pushing Back on Biden's China Agenda*, N.Y. TIMES (Oct. 5, 2023), https://www.nytimes.com/2023/10/05/technology/chip-makers-china-lobbying.html [https://perma.cc/9GLD-BBLX].

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The U.S. system's flexible balance between free-market anti-statism and security-driven market intervention can be a strategic asset in the tech war. Softer-touch regulation than that of its rivals can spur American innovation while still allowing the government to intervene where necessary to boost domestic industry and correct security-related market failures. But although the United States has vast power to deploy subsidies and control trade and investment, its ability to use those tools is restrained by the way its legal powers are dispersed across the national government and moderated by corporate lobbying.

B. China

The Chinese government has pursued a decade-long quest to drive forward science and technological innovation, with Chinese President Xi Jinping calling upon Chinese scientists to "realize high-level scientific and technological self-sufficiency and strength" (*shixian gaoshuiping keji zili ziqiang*).[161] In its efforts to do so, the political leadership of the Chinese Communist Party (CCP) has sought to bring greater swaths of technological development under its direct control.

China's chip policy draws its strengths from China's centralized political coordination and integrated control over private sector actors. While the United States also exercises centralized regulatory power, China's authorities operate with nearly unconstrained discretion, lacking the statutory and constitutional bounds embedded in the U.S. legal system. And whereas the United States only intermittently engages in targeted industrial intervention, China extensively practices it. But the Chinese system's focus on party-state control creates opportunities for capture and graft, and the inefficient transmittal of negative information to higher levels of government renders the system less capable of correcting the unintended negative effects of its policies.

Crafted within this state-centered system, Chinese chip strategy focuses on subsidies and state investment as key tools for building the domestic supply chain. The Chinese government also superintends a critical supply of raw materials, using export controls and investment review to limit foreign access to minerals essential to semiconductor speed and performance. In short, the Chinese government pursues a strategy unique to its economic structure: the creation of a market comprised of actors within the party-state ecosystem. The government oversees the firms that produce chips and the firms that are their customers, betting on the scale of the Chinese domestic market to compensate for the loss of foreign technology and trade.

1. Top-Down Control and Party-State Capitalism

[161] *Xi Jinping Emphasizes the Effective Strengthening of Basic Research and the Consolidation of the Foundation of Self-Reliance and Self-Improvement in S&T During the Third Collective Study Session of the Politburo of the CCP Central Committee*, CTR. FOR STRATEGIC & INT'L STUD. (Feb. 21, 2023), https://interpret.csis.org/translations/xi-jinping-emphasizes-effective-strengthening-of-basic-research-and-consolidation-of-the-foundation-of-self-reliance-and-self-improvement-in-st-during-the-third-collective-study-session-of-the-po/ [https://perma.cc/7VB5-CKJB].

China's defining internal features are its top-down political structure and its unique form of "party-state capitalism."[162] In the Chinese hierarchical political system, power flows from the top down, creating "upward accountability."[163] At the top of the political system sits the CCP leadership, the Politburo Standing Committee.[164] This central leadership sets policy priorities, which are then transmitted downward through a bureaucratic system of ministries, which in turn exercise oversight over the companies and firms under their purview.[165] All local governments at the province and city levels also sit within the Communist Party's hierarchy chain.[166]

The CCP's top-down control not only extends horizontally and vertically through the government, but also into the Chinese economy, in stark contrast to the United States' free-market system. The term "party-state capitalism" refers to the CCP's ability to exert control over private economic activity.[167] The party-state's political survival is the ultimate aim of the economic system, leading to policy choices based on the regime's political strengths and fears.[168] Within this system, the lines between the public and private spheres are blurred and often not enforced.[169] Chinese companies must often show fealty to CCP policy priorities to survive and have no meaningful capacity to reject government directives, as there is no independent judicial review or other forms of check on the government's regulatory authority.[170] Successful corporations depend on extensive ties to the state to flourish.[171] These two distinctive features—top-down political control and party-state capitalism—have resulted in a chip war strategy that centers the state as a provider of subsidies and other forms of state investment.

But the need to respond to U.S. legal measures, including by shifting away from investing abroad and focusing instead on the domestic supply chain, also molds the Chinese government's chip strategy. A decade ago, China's strategy centered around state-driven investment in *foreign* markets: Chinese investment

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[162] Margaret Pearson, Meg Rithmire & Kellee S. Tsai, *Party-State Capitalism in China*, 120 CURRENT HISTORY 207, 207 (2021).
[163] ANGELA HUYUE ZHANG, HIGH WIRE: HOW CHINA REGULATES BIG TECH AND GOVERNS ITS ECONOMY 10 (2024).
[164] *See id.* at 9.
[165] *See id.* at 10.
[166] *See id*.
[167] *See* Pearson, *supra* note 162, at 209 (noting that three key developments in creating this system included further encroachment by the party-state on the economy, the blurring of state and private sectors, and demands for political fealty from firms).
[168] *See id.*
[169] *See id.* ("[S]tate versus capital, public versus private—party-state capitalism displays a novel blending of state power and firm organization, funding, and activities, a mixture that renders such dyads increasingly irrelevant.").
[170] *See* Su Lin Han, *Administrative Enforcement in China: Background Memorandum*, PAUL TSAI CHINA CTR. (Dec. 2017), https://law.yale.edu/china-center/resources/administrative-enforcement-china [https://perma.cc/A5FP-GZQC].
[171] *See* Scott Livingston, *The New Challenge of Communist Corporate Governance*, CTR. FOR STRATEGIC & INT'L STUD. (Jan. 15, 2021), https://www.csis.org/analysis/new-challenge-communist-corporate-governance [https://perma.cc/B2FM-RZR3].

into U.S. tech companies peaked at $9.9 billion in 2015.[172] During that time, Chinese state-backed investment firms successfully acquired multiple American chip-related companies and poured money into Silicon Valley.[173] In 2016, AMD, one of America's biggest semiconductor companies, entered into a joint venture agreement to help a Chinese partner firm develop key chip technologies.[174] Chinese chip strategy thus aimed to buy from and collaborate with Western companies.

After a few years, however, foreign perception caught up to the fact that there is often not much of a meaningful separation between the Chinese state and a private tech company. Starting around 2018, the first Trump Administration stepped up CFIUS enforcement against Chinese-U.S. tech deals, blocking transactions related to semiconductors.[175] Shortly thereafter, the U.S. Commerce Department restricted exports to Huawei.[176] U.S. and EU policymakers' concerns over Chinese state involvement in tech acquisitions became a major source of tensions in the global tech war. As discussed in Sections II(A) and II(C), these concerns triggered major policy changes in the United States and Europe to respond to the perceived national security threat posed by Chinese foreign investment.

These new restrictions spurred China's development of the "domestic and international dual circulation" strategy (*guonei guoji shuang xunhuan*).[177] In April 2020, President Xi first mentioned the idea that the Chinese economy will expand its reliance on "internal circulation"—*i.e.*, domestic consumption and production—in a shift away from international supply chains and export-led growth.[178] The

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[172] Cory Bennett & Bryan Bender, *How China Acquires the Crown Jewels of U.S. Technology*, POLITICO (May 22, 2018), https://www.politico.com/story/2018/05/22/china-us-tech-companies-cfius-572413 [https://perma.cc/X2JE-XZAC].

[173] Yangpeng Zheng, *China's State-Backed Private Equity Starts a Fund to Buy Out Distressed Debt, Take Advantage of Nation's Delveraging Campaign*, S. CHINA MORNING POST (May 9, 2019), https://www.scmp.com/business/companies/article/3009531/chinas-state-backed-private-equity-starts-fund-buy-out [https://perma.cc/26BJ-C8EJ].

[174] Kate O'Keefe & Brian Spegele, *How a Big U.S. Chip Maker Gave China the 'Keys to the Kingdom*,' WALL ST. J. (June 27, 2019), https://www.wsj.com/articles/u-s-tried-to-stop-china-acquiring-world-class-chips-china-got-them-anyway-11561646798 [https://perma.cc/4BEV-95T9].

[175] *See, e.g.*, *CFIUS Prepares to Block Semiconductor Sale to Chinese Entity*, MORRISON FOERSTER (Sept. 3, 2021), https://www.mofo.com/resources/insights/210903-cfius-semiconductor-chinese-entity [https://perma.cc/LTX7-4ZRA].

[176] *See* Press Release, U.S. Dep't of Com., Commerce Addresses Huawei's Efforts to Undermine Entity List, Restricts Products Designed and Produced with U.S. Technologies (May 15, 2020), https://2017-2021.commerce.gov/news/press-releases/2020/05/commerce-addresses-huaweis-efforts-undermine-entity-list-restricts.html [https://perma.cc/E3BD-8LCG].

[177] President Xi Jinping, Speech at the Seventh Meeting of the Central Financial and Economic Affairs Commission (中央财经委员会): Certain Major Issues for Our National Medium- to Long-Term Economic and Social Development Strategy (国家中长期经济社会发展战略若干重大问题) (Guojia zhongchangqi jingji shehui fazhan zhanlue ruogan zhongda wenti) (Apr. 10, 2020) (transcript and translation available at the Georgetown Ctr. for Sec. & Emerging Tech.).

[178] *See id.*; Kevin Yao, *Explainer: What We Know About China's 'Dual Circulation' Economic Strategy*, WORLD ECON. FORUM (Sept. 14, 2020),

strategy still aims to keep "external circulation" open, but sought to minimize China's vulnerability to future U.S.-led trade disruptions.[179] Additionally, as the tech war heated up, Chinese policymakers began to refer to the "new whole nation system" (*xinxing juguo tizhi*).[180] This is a whole-of-society, mass mobilization approach to developing technology under an authoritarian system. The concept is a rhetorical callback to the 1950s–1970s planned-economy innovation system associated with the development of China's nuclear and satellite technologies, with "the central state . . . extract[ing] resources from all sectors" to spearhead scientific breakthroughs.[181] The new system adapts this idea of socialist innovation to China's contemporary, more market-focused economy and to the priorities of the tech war.[182]

Further escalations of U.S. export controls in October 2022 led President Xi to issue a call to action: "We will focus on national strategic needs, gather strength to carry out indigenous and leading scientific and technological research, and resolutely win the battle in key core technologies."[183] Now in the battle for chip self-sufficiency, Chinese policymakers wield the tools of party-state capitalism to support Chinese corporations. By operating in the government-favored chip industry and advancing the government's pursuit of self-sufficiency, Chinese chip companies benefit from access to capital and fast-tracked regulatory approval. In addition to direct subsidies, the Chinese state has provided other forms of state aid to companies, including low-interest loans, tax breaks, discounted real estate, and more.[184] In contrast to the U.S. system's tug-of-war between state and market, the Chinese state-and-market relationship operates more as a hierarchy: The state

https://www.weforum.org/agenda/2020/09/chinas-dual-circulation-economic-strategy/ [https://perma.cc/5K5S-HGB3].

[179] *See* Yu Yongding, *Dual Circulation Strategy, a Necessary Adjustment*, CHINA DAILY (Nov. 16, 2023), https://www.chinadaily.com.cn/a/202311/16/WS65558fffa31090682a5ee85a.html [https://perma.cc/NH87-3CY2] ("The rapid deterioration of the Sino-US relationship and the US' sudden instigation of a trade war against China in 2017 have significantly added to the urgency for China to adjust its development strategy and trade policies.").

[180] Xiao Tan & Yao Song, *China's 'Whole Nation' Effort to Advance the Tech Industry*, THE DIPLOMAT (Apr. 21, 2022), https://thediplomat.com/2022/04/chinas-whole-nation-effort-to-advance-the-tech-industry/ [https://perma.cc/2MKD-3SXS] (internal quotation marks omitted).

[181] Lin Zhang & Tu Lan, *The New Whole State System: Reinventing the Chinese State to Promote Innovation*, 55 ENV'T & PLAN. A. 201, 204–05 (2023).

[182] Barry Naughton et al., *Reorganization of China's Science and Technology System* 1–40 (UC Inst. of Conflict and Coop., Working Paper, 2023), https://ucigcc.org/wp-content/uploads/2023/08/2023_wp10_naughton_v2-FINAL.pdf [https://perma.cc/W422-4WUN].

[183] John Liu & Gao Yuan, *China's Xi Pledges Victory in Tech Battle After US Chip Curbs*, BLOOMBERG (Oct. 16, 2022), https://www.bloomberg.com/news/articles/2022-10-16/china-s-xi-pledges-victory-in-tech-battle-after-us-chip-curbs; Eduardo Baptista, *Key Xi Quotes at China's 20th Communist Party Congress*, REUTERS (Oct. 16, 2022), https://www.reuters.com/world/china/key-xi-quotes-chinas-20th-communist-party-congress-2022-10-16/ [https://perma.cc/DRE9-FYVH].

[184] *Taking Stock of China's Semiconductor Industry,* SEMICONDUCTOR INDUS. ASS'N (July 13, 2021), https://www.semiconductors.org/taking-stock-of-chinas-semiconductor-industry/ [https://perma.cc/8J3F-P4HZ].

instructs the market on its priorities and the market complies. The following sections address the benefits and drawbacks of such an approach.

2. Internal Features as Enablers

The Chinese government's chip policy takes advantage of two key enablers in its governing structure: centralized coordination of its industrial policy strategy and nearly unfettered regulatory power over the private sector.

First, the consolidation of power in the CCP allows the central government to direct key actors in executing industrial policy plans: government ministries, local governments, and both state-owned and private enterprises. These layers of control come together to empower the scale, longevity, and reach of China's chip subsidies.

In 2014, the State Council published the Outline for Advancing the National Integrated Circuit Industry ("the Outline"), laying out a plan to "accelerate the development of the integrated circuit industry in China."[185] The Outline notes that "[t]here is still a relatively large gap in the development of the industry compared with that of advanced countries."[186] Two of the Outline's key to-do items depict core features of the Chinese political structure that have been central to the country's chip war strategy.

First, the Outline states that China should form "a national integrated circuit industry development leading group" that will be "responsible for top-level coordination, planning, [and] resource allocation."[187] The emphasis on "top-level planning" foreshadowed the creation of the Central Science and Technology Commission (CSTC). Launched in 2023, the CSTC functions as a "super-agency," overseeing all science and technology policy and centralizing the implementation of the new whole-nation system.[188] While government ministries like the Ministry of Science and Technology operate under the State Council within defined jurisdictions, the CSTC, in contrast, has overarching authority as a Party body and

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[185] Guojia Jicheng Dianlu Chanye Fazhan Tuijin Gangyao (国家集成电路产业发展推进纲要) [Outline for Advancing National Integrated Circuit Industry] (promulgated by the St. Council, June 26, 2014, effective June 26, 2014), para. 1, *reprinted in* Gongxinbu Zhengshi Gongbu "Guojia Jicheng Dianlu Chanye Fazhan Tuijin Gangyao" (工信部正式公布《国家集成电路产业发展推进纲要》) [The Ministry of Industry and Information"Technology Officially Announces the "Outline for Advancing National Integrated Circuit Industry"], CYBERSPACE ADMIN. OF CHINA (June 26, 2014), https://www.cac.gov.cn/2014-06/26/c_1111325916.htm [https://perma.cc/96MZ-Z58F]. An integrated circuit is another term for a semiconductor chip. *See Integrated Circuit*, ENCYCLOPEDIA BRITANNICA (Apr. 9, 2025), https://www.britannica.com/technology/integrated-circuit [https://perma.cc/L6N3-GA8K].

[186] Outline for Advancing National Integrated Circuit Industry, *supra* note 185, art. I.

[187] *Id.* art. IV(i)

[188] *See* Naughton et al., *supra* note 182, at 3; Wang Xueying, *China Reshuffles its Research and Development*, EAST ASIA FORUM (Aug. 16, 2023), https://eastasiaforum.org/2023/08/16/china-reshuffles-its-research-and-development/ [https://perma.cc/DDN3-785G]; Charles Mok, *The Party Rules: China's New Central Science and Technology Commission*, THE DIPLOMAT (Aug. 23, 2023), https://thediplomat.com/2023/08/the-party-rules-chinas-new-central-science-and-technology-commission/ [https://perma.cc/9Q98-M9JD].

can supervise decisions across ministries, agencies, and local governments.[189] The creation of the CSTC reflects a broader trend in the Party's history of turning to centralization when facing "acute external security threats."[190] The Party previously created high-level technology advancement committees when under international sanctions, including in the wake of the 1989 Tiananmen Square crackdown.[191] The revival of the idea demonstrates the high political priority the Party sets on developing domestic self-sufficiency as a counter to U.S. sanctions.

Second, the Outline directed the government to set up a national chip industry investment fund.[192] That year, the Chinese government established the first phase of the "Big Fund," the colloquial name for its chip investment reservoir.[193] The Big Fund invests in companies along the semiconductor supply chain, with most of the spending going toward the building of fabs and the purchasing of domestic semiconductor equipment.[194] In May 2024, China set up the latest iteration of the Big Fund, allocating a $47.5 billion boost to the semiconductor industry.[195]

The Big Fund draws heavily from and is largely controlled by three major constituencies: government ministries, municipal governments, and state-owned banks. The Ministry of Finance is the biggest shareholder in the Big Fund.[196] The Shenzhen, Beijing and Shanghai governments each contributed through their investment firms,[197] alongside capital committed by six state-owned banks.[198] The State Council commented on the investment in a press release, stating: "This investment represents a strategic deployment that is in line with the nation's key

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[189] *See* Naughton et al., *supra* note 182, at 12.
[190] *Id.* at 7.
[191] *See id.*
[192] Outline for Advancing National Integrated Circuit Industry, *supra* note 185, art. IV(ii).
[193] *See* Laura He, *China Is Pumping Another $47.5 Billion Into Its Chip Industry*, CNN (May 28, 2024), https://www.cnn.com/2024/05/27/tech/china-semiconductor-investment-fund-intl-hnk/index.html [https://perma.cc/CK38-24QR]; *Taking Stock of China's Semiconductor Industry,* SEMICONDUCTOR INDUS. ASS'N (July 13, 2021), https://www.semiconductors.org/taking-stock-of-chinas-semiconductor-industry/ [https://perma.cc/W5YG-3E58]; Julie Zhu et al., *Exclusive: China to Launch $40 Billion State Fund to Boost Chip Industry,* REUTERS (Sept. 5, 2023), https://www.reuters.com/technology/china-launch-new-40-bln-state-fund-boost-chip-industry-sources-say-2023-09-05/ [https://perma.cc/37G3-TRLV].
[194] Julie Zhu, *Exclusive: China Readying $143 Billion Package for Its Chip Firms in Face of U.S. Curbs*, REUTERS (Dec. 14, 2022), https://www.reuters.com/technology/china-plans-over-143-bln-push-boost-domestic-chips-compete-with-us-sources-2022-12-13/ [https://perma.cc/88N8-9TW5].
[195] *China Sets Up Third Fund with $47.5 Bln to Boost Semiconductor Sector*, REUTERS (May 27, 2024), https://www.reuters.com/technology/china-sets-up-475-bln-state-fund-boost-semiconductor-industry-2024-05-27/ [https://perma.cc/BCM2-FLG6].
[196] *Id.*
[197] Yuan Gao, *China Creates $47.5 Billion Chip Fund to Fuel Self-Resilience*, THE JAPAN TIMES (May 28, 2024), https://www.japantimes.co.jp/business/2024/05/28/china-chip-fund-self-resilience/ [https://perma.cc/23T3-2LA4]; Shunsuke Tabeta, *China Launches $47bn Chip Fund to Counter U.S. Restrictions*, NIKKEI ASIA (May 27, 2024), https://asia.nikkei.com/Spotlight/Supply-Chain/China-launches-47bn-chip-fund-to-counter-U.S.-restrictions [https://perma.cc/VZ5Q-B7N9].
[198] He, *supra* note 193.

policies for the development of the integrated circuit industry."[199] These entities function as the state's levers over capital in the Chinese economy.

The government's industrial interventions also extend to the recipients of the subsidies. China's chip subsidies frequently go to firms like Huawei and the Semiconductor Manufacturing International Corporation.[200] These are well-known "national champion" firms—large industrial companies whose business models are dependent, in part, on strong government backing and oversight.[201] The national-champion model sharply contrasts with the U.S. aversion to designating specific firms as instruments of the state. As one news account described, "Huawei's assignment to lead the national team in chip manufacturing was a direct order from top central government officials."[202] As discussed below, the state also has other non-monetary ways of encouraging Huawei's economic success, such as by requesting that other Chinese tech conglomerates buy and use Huawei chips.[203]

Finally, the Chinese government focuses on an invest-and-subsidize strategy because it is well-practiced in executing such policies. Whereas the U.S. CHIPS Act seeks to revive dormant systems in the United States—or construct new ones—China has a legal system in place that has facilitated similar projects for decades. Perhaps the most famous example is the Made in China 2025 plan, which utilizes "government guidance" (*zhengfu yindao*) funds to spur investment in "core and critical technologies" (*guanjian hexin jishu*).[204] The program has experimented with professionally-managed private equity funds making investments on behalf of

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[199] *Six Banks to Invest in Big Way in IC Fund*, THE ST. COUNCIL: THE PEOPLE'S REPUBLIC OF CHINA (May 29, 2024), https://english.www.gov.cn/news/202405/29/content_WS66569746c6d0868f4e8e7987.html [https://perma.cc/TX2Z-5GKA].

[200] Che Pan, *Tech War: SMIC, Huawei Projects Among Top Government-Supported Endeavours in 2024,* S. CHINA MORNING POST (Feb. 20, 2024), https://www.scmp.com/tech/tech-war/article/3252558/tech-war-smic-huawei-projects-among-top-government-supported-endeavours-2024 [https://perma.cc/YDD5-SRDZ].

[201] *See* Sharon Poczter, Aldo Musacchio & Sergio G. Lazzarini, *How to Compete Against the New Breed of National Champions*, MIT SLOAN MGMT. REV. (May 30, 2018), https://sloanreview.mit.edu/article/how-to-compete-against-the-new-breed-of-national-champions/.

[202] Antonia Hmaidi, *Huawei is Quietly Dominating China's Semiconductor Supply Chain*, MERICS (Apr. 9, 2024), https://merics.org/en/report/huawei-quietly-dominating-chinas-semiconductor-supply-chain [https://perma.cc/RD8L-CY6D].

[203] *See infra* Section II(B)(3).

[204] *See U.S. Investment in China's Capital Markets and Military-Industrial Complex: Hearing Before the U.S.-China Econ. & Sec. Rev. Comm'n*, 117th Cong. 31 (2021) [hereinafter USCC Hearing] (testimony of Meg Rithmire, Assoc. Professor, Harv. Bus. Sch.), https://www.uscc.gov/sites/default/files/2021-03/March_19_2021_Hearing_Transcript.pdf [https://perma.cc/K4NS-364B]; Zhongguo Zhizao 2025 (中国制造 2025) [Made in China 2025] (promulgated by the St. Council, May 8, 2015), St. Council Gaz., June 10, 2015, https://www.gov.cn/zhengce/content/2015-05/19/content_9784.htm [https://perma.cc/BH2A-UFV4].

the state.[205] Such investments are described as "market drive[n], government guided."[206] A former head of the Big Fund described its strategy as essentially investing in key enterprises at each step in the industrial chain, focusing on the top three companies in each sector.[207] Furthermore, China can provide indirect forms of monetary support that are not practically available in the United States or the EU. For example, the Chinese government owns all the land in its economy, and parcels can be sold at preferential prices to favored firms, such as those pursuing chip projects.[208]

Chinese chip strategy is also enabled by the government's rule-by-decree relationship with the private sector and its control over access to the Chinese market, as evidenced by its foreign inbound investment regulatory structure. Since 1995, China has issued catalogues of regulations governing foreign investment, encouraging some projects while prohibiting others. In 2013, for example, the government listed 190 economic sectors as "restricted" or "prohibited" for purposes of foreign investment.[209] China identified rare earth minerals as a strategic resource in 1990 and foreign investment in the sector is still prohibited under China's current list of investment restrictions.[210]

Going even further, the State Council published a new set of Rare Earth Management Regulations in June 2024. Those rules state: "Rare earth resources belong to the state. No organization or individual may encroach upon or destroy rare earth resources."[211] The Regulations place the nationwide rare earth industry under the supervision of the State Council and note that the "import and export of rare earth products and related technologies, processes and equipment" must

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[205] USCC Hearing, *supra* note 204, at 31; Guowuyuan Bangongting Guanyu Cujin Zhengfu Touzi Jijin Gaozhiliang Fazhan De Zhidao Yijian (国务院办公厅关于促进政府投资基金 高质量发展的指导意见) [Guidelines of the General Office of the State Council on Promoting the High-Quality Development of Government Investment Funds] (promulgated by the Gen. Off. of the St. Council, Jan. 2, 2025), St. Council Gaz., Jan. 20, 2025, at 12, https://www.gov.cn/zhengce/content/202501/content_6996729.htm [https://perma.cc/2WZD-BWP6].

[206] USCC Hearing, *supra* note 204, at 32; *China to Set Up National Venture Capital Guidance Fund, State Planner Says*, REUTERS (Mar. 6, 2025), https://www.reuters.com/world/china/china-set-up-national-venture-capital-guidance-fund-state-planner-says-2025-03-06/ [https://perma.cc/QBW4-QHP3].

[207] Dujia: Ding Wenwu Xiangjie Dajijin (独家丨丁文武详解大基金) (Exclusive: Ding Wenwu Explains the Big Fund in Detail), SOHU (Oct. 23, 2017), https://www.sohu.com/a/199698015_464075 [https://perma.cc/WN36-WKBH].

[208] ORIANA SKYLAR MASTRO, UPSTART: HOW CHINA BECAME A GREAT POWER 166 (2024).

[209] Amigo L. Xie, Frank Voon, and Carrie Yijia Luo, *China's 'New' Foreign Investment Law*, K&L GATES HUB (Mar. 16, 2020), https://www.klgates.com/The-New-Foreign-Investment-Law-of-China-03-16-2020 [https://perma.cc/DF5M-SD2F].

[210] *See id.* at 7.

[211] Xitu Guali Tiaojian [稀土管理条例] [Regulations on Rare Earth Administration], (promulgated by the St. Council, June 22, 2024, effective Oct. 1, 2024), art. 4, St. Council Gaz., July 20, 2024, at 24, https://www.gov.cn/zhengce/content/202406/content_6960152.htm [https://perma.cc/4U7B-PTAT].

comply with relevant export controls.[212] Such actions are consistent with China's dual circulation strategy, which emphasizes domestic control over both raw materials and the processing capability needed to support high-value domestic production.[213]

While the United States began the chip war from a free-market default—previously allowing foreign private investment nearly across the board—China started the chip war with extensive limits on private sector activity already in place and has only continued to expand them.[214] First, China has sought to wield its influence over the domestic mineral industry in retaliation against the United States by implementing new export controls. In 2023, China began requiring exporters to obtain a license to ship certain gallium and germanium compounds and, at the end of 2024, escalated these restrictions by banning exports of gallium, germanium, and antimony to the United States.[215] In contrast to the United States' struggles with export control loopholes, Chinese exports of these minerals to the United States dropped to zero after the 2023 restrictions.[216] China has also used other legal tools

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[212] *Id.* at art. 15, art. 24.

[213] *See* KRISTIN VEKASI, HARV. PROGRAM ON U.S.-JAPAN RELS., GREEN TECHNOLOGY, NATIONAL SECURITY, AND RAW MATERIALS 22 (2022), https://usjapan.wcfia.harvard.edu/sites/projects.iq.harvard.edu/files/us-japan/files/22-vk_vekasi_kristin.pdf [https://perma.cc/6LJL-3VET].

[214] *See* Feng Zhou, Xiang (Shawn) Cao, Zhilian Huang & Wenhan Cao, *Doing Business in a Reopened China, Junhe Legal Updates*, JUNHE (Apr. 4, 2023), https://www.junhe.com/legal-updates/2113?locale=en [https://perma.cc/QL9Q-7EM7].

[215] Shangwu Bu: Haiguan Zong Shu Gonggao 2023 Nian Di 23 Hao Guanyu Dui Jia, Zhe Xiangguan Wu Xiang Shishi Chukou Guanzhi de Gonggao (商务部 海关总署公告 2023 年第 23 号 关于对镓、锗相关物项实施出口管制的公告]), [Ministry of Commerce and General Administration of Customs Announcement No. 23 of 2023, Announcement on the Implementation of Export Controls on Items Related to Gallium and Germanium], (promulgated by Ministry of Com., July 3, 2023, effective Aug. 1, 2023), MINISTRY OF COM. OF THE PEOPLE'S REPUBLIC OF CHINA (July 3, 2023), http://www.mofcom.gov.cn/article/zwgk/gkzcfb/202307/20230703419666.shtml [https://perma.cc/FN4T-5XCH]; Clement Tan, *China Slaps Export Curbs on Chipmaking Metals in Tech War Warning to U.S., Europe*, CNBC (Jul. 7, 2023), https://www.cnbc.com/2023/07/04/china-imposes-export-curbs-on-chipmaking-metals-in-tech-war-with-the-us.html [https://perma.cc/535T-GQD4]; Shangwu Bu Gonggao 2024 Nian Di 46 Hao Guanyu Jiaqiang Xiangguan Liangyong Wu Xiang Dui Meiguo Chukou Guanzhi de Gonggao (商务部公告 2024 年第 46 号 关于加强相关两用物项对美国出口管制的公告) [Ministry of Commerce Announcement No. 46 of 2024, Announcement on Strengthening Export Control of Relevant Dual-Use Items to the United States], (promulgated by Ministry of Com., Dec. 3, 2024, effective Dec. 3, 2024), MINISTRY OF COM. OF THE PEOPLE'S REPUBLIC OF CHINA (Dec. 3, 2024), https://aqygzj.mofcom.gov.cn/flzc/gzjgfxwj/art/2024/art_daaa02c05d8946179dcf5d1ba499ac46.html [https://perma.cc/7YV9-D7S9]; James Temple, *What China's Critical Mineral Ban Means for the US*, MIT TECH. REV. (Dec. 6, 2024), https://www.technologyreview.com/2024/12/06/1108020/what-chinas-critical-mineral-ban-means-for-the-us/ [https://perma.cc/MQL6-WCFR].

[216] Solomon Cefai, *China's Tighter Gallium, Germanium Export Controls: More of the Same or a Shift in Approach?*, FASTMARKETS (Dec. 17, 2024) https://www.fastmarkets.com/insights/chinas-tighter-gallium-germanium-export-controls-more-of-the-same-or-a-shift-in-approach/ [https://perma.cc/54XN-9WGN] ("China's customs data shows no exports of either metal to the US since the [2023] control was implemented.").

to retaliate against U.S. export controls, including antitrust investigation and cybersecurity review of U.S. firms.[217] The Chinese government banned Micron chips from being used in Chinese critical information infrastructure due to alleged cybersecurity risks and opened an antitrust probe into Nvidia, accusing the company of violating a prior commitment to sell chips in the Chinese market.[218] These actions collectively demonstrate the Chinese government's use of a wide range of legal authorities to open and close the Chinese market at will. Although the Chinese government is generally wielding tools of law that are also available in the United States and the EU, China's retaliatory measures are strengthened by the private sector's lack of recourse against these bans and investigations.

In sum, the Chinese government utilizes the systems of party-state capitalism to direct the flow of goods in the global chip supply chain. China's state-centric system enables its chip strategy focused on domestic investment, as the government is willing to reshape its economy from day one. While the United States and EU face fresh questions about the scale and scope of subsidies, China has experimented with forms of allocating state capital to the chip sector for over a decade. The Chinese government can also select its choice of legal instrument—ranging from rare earth mineral regulations to antitrust law—to restrict access to the Chinese market. The government's high degree of baseline regulatory power over the private sector facilitates its efforts to exert control over and seek compliance from foreign and domestic actors.

3. Internal Features as Constraints

Centralized control, however, does not mean effective control. Over the past decade, China's chip industrial policy has been littered with examples of failures. The extraordinary power wielded by those who run the Big Fund has attracted graft and corruption. City-level initiatives have ground to a halt due to underfunding and

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[217] *See* Lin & Huang, *supra* note 155.

[218] Meiguang Gongsi Zai Hua Xiaoshou Di Chanpin Wei Tongguo Wangluo Anquan Shencha (美光公司在华销售的产品未通过网络安全审查) [Micron Products Sold in China Failed to Pass Cybersecurity Review], CYBERSPACE ADMIN. OF CHINA (May 21, 2023), https://www.cac.gov.cn/2023-05/21/c_1686348043518073.htm [https://perma.cc/BLC5-Q4ET]; Loudong Pinfa, Guzhanglv Gao Ying Xitong Paicha Yingte'er Chanpin Wangluo Anquan Fengxian (漏洞频发、故障率高 应系统排查英特尔产品网络安全风险) [Frequent Vulnerabilities and High Failure Rates: There Must be Systemic Investigation of Intel Products' Network Security Risks], CYBERSEC. ASS'N OF CHINA (Oct. 16, 2024), https://mp.weixin.qq.com/s/rgRmOfoPr7x1TZhyb-1ifg [https://perma.cc/XA59-HD3T]; Dylan Butts, *Intel Faces Headwinds in China as Trade Body Calls for Security Probe*, CNBC (Oct. 17, 2024), https://www.cnbc.com/2024/10/17/intel-faces-headwinds-in-china-as-trade-body-calls-for-security-probe.html [https://perma.cc/3W2N-7XHB]; Liam Mo & Brenda Goh, *China Targets Nvidia with Antitrust Probe, Escalates US Chip Tensions*, REUTERS (Dec. 10, 2024), https://www.reuters.com/technology/china-investigates-nvidia-over-suspected-violation-antimonopoly-law-2024-12-09/ [https://perma.cc/9R9N-UZJL]; Lester Ross, Kenneth Zhou, & Neena Shenai, *China Imposes Series of Measures to Counter US Export Restrictions*, WILMERHALE (Dec. 26, 2024), https://www.wilmerhale.com/en/insights/client-alerts/20241223-china-imposes-series-of-measures-to-counter-us-export-restrictions [https://perma.cc/J96K-ZKKX].

government-backed corporations have gone bankrupt. Regulatory capture, faulty information flows, and overly rigid directives will likely continue to undermine China's chosen chip strategy.

Professors Curtis Milhaupt and Wentong Zheng have identified "the degree of state intervention and porousness of its institutions" as two reasons why the Chinese state is vulnerable to capture in ways that weaken its state investment strategy.[219] First, they argue, the sheer size of China's economy increases the opportunities and payoffs from capture, and second, the Chinese state lacks procedural checks on the allocation of state largesse.[220] Under party-state capitalism, firms are incentivized to remain close to the party to receive its protection and its potential benefits.[221] Being in the good graces of the party leads to gaining economic benefits like cheap capital; being out of favor leads to regulatory penalties.[222] These interconnections—and the lack of procedural checks on government policymaking—create opportunities for graft and kickbacks.

Take, for example, Tsinghua Unigroup, a Chinese state-owned enterprise that offered to buy the U.S. chip firm Micron in 2015.[223] Tsinghua Unigroup received financial backing from the state as it pursued the buying of semiconductor expertise from abroad.[224] But in 2021, the company went bankrupt and, the following year, three of its executives were placed under investigation for corruption.[225] The government alleged that the head of the company used his power to buy commodities from friends and family at prices significantly above the market rate, resulting in significant economic losses to the state.[226] Four other major executives—including the former head of the Big Fund—were also publicly removed from their posts for corruption in 2022.[227] The Tsinghua Unigroup bankruptcy and the Big Fund corruption scandal illustrate how graft and capture cause setbacks for China's chip industrial policy. Although large sums of capital

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219 Curtis J. Milhaupt & Wentong Zheng, *Beyond Ownership*, 103 GEO. L.J. 665, 689 (2015).
220 *See id.* at 691.
221 *See id.* at 691–92.
222 *See, e.g.*, *id*. at 689–90; Michelle Toh, *Jack Ma Loses More Than Half of His Wealth After Criticizing Chinese Regulators*, CNN (July 12, 2023), https://www.cnn.com/2023/07/12/business/china-jack-ma-wealth-drop-intl-hnk/index.html [https://perma.cc/Y637-RG88].
223 Simon Sharwood, *Beijing Bails Out Bankrupt Chinese Chipmaker Tsinghua Unigroup*, THE REG. (Apr. 5, 2022), https://www.theregister.com/2022/04/05/beijing_bails_out_tsinghua_unigroup/ [https://perma.cc/E48A-7HKT].
224 *See* Zeyi Yang, *Corruption Is Sending Shock Waves Through China's Chipmaking Industry,* MIT TECH. REV. (Aug. 5, 2022), https://www.technologyreview.com/2022/08/05/1056975/corruption-chinas-chipmaking-industry/ [https://perma.cc/XT7P-RDZP] (noting that the Big Fund "invested at least $2 billion in Unigroup and its subsidiaries to develop wafer manufacturing, flash memory chips, and 5G chips").
225 *See id.*
226 *See id.*; Sharwood, *supra* note 223; *Ex-Head of State-Owned Chip Firm Busted for Corruption, as Anti-Graft Efforts Intensify*, GLOBAL TIMES (Mar. 20, 2023), https://www.globaltimes.cn/page/202303/1287611.shtml [https://perma.cc/6ZYF-MY2J].
227 *See* Yang, *supra* note 224.

were raised in both endeavors, it became apparent that significant portions of the funds were not efficiently directed toward the pursuit of chip technology.

China's system of centralized control also falters because those who are at the top lack the requisite information to make up-to-date and nimble choices. This information asymmetry complicates China's ability to wage the chip war through command-and-control policies. Professor Angela Zhang has analyzed the Chinese government's inefficient information transmission system. In order for key government actors to make decisions on tech strategy, they must first receive timely and accurate information about the effects of their policy decisions.[228] But the CSTC sits at the top of the government's hierarchical pyramid—close to the central Politburo and far from the local officials who might see a policy's effects first. Those actually implementing chip policies may be hesitant to transmit bad news upwards, creating an information lag where the central government's decision-making is divorced from realities on the ground.[229]

This information lag can be especially problematic when China's chip policies play out in ways that are unforeseen by the central government—an issue most salient in areas where technology develops rapidly, like chips. The government's initial call to action in the Big Fund illustrates this. The central government encouraged localities to get involved in the semiconductor sector. In 2014, after the publishing of the Outline and the announcement of the Big Fund, a rush of Chinese cities unveiled initiatives to support the chip sector.[230] But the political leadership failed to foresee that city governments may over-implement the directive.[231] Cities rapidly invested in chip projects that were not well-developed, and which fell apart shortly thereafter. For example, projects in Wuhan, Chengdu, and Nanjing faltered and stalled as they ran out of funds or went bankrupt.[232] After years of costly failures, the central government appears to have finally revised its policy. In the latest round of the Big Fund, only three economically central regions—Guangdong, Beijing, and Shanghai—were included.[233]

In another ambitious plan, the government has now embraced a "Delete A" policy that asks Chinese firms to delete American-made technology from their

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[228] ZHANG, *supra* note 163, at 13.
[229] *See id.* at 14–15.
[230] *See* Bien Perez, *Beijing Push to Support Rapid Growth in Chip Industry*, S. CHINA MORNING POST (Dec. 30, 2014), https://www.scmp.com/business/china-business/article/1670554/beijing-push-spur-rapid-growth-chip-industry [https://perma.cc/ZTQ7-T75R].
[231] *See* ZHANG, *supra* note 163, at 274.
[232] Sidney Leng & Orange Wang, *China's Semiconductor Drive Stalls in Wuhan, Exposing Gap in Hi-Tech Production Capabilities*, S. CHINA MORNING POST (Aug. 28, 2020), https://www.scmp.com/economy/china-economy/article/3099100/chinas-semiconductor-drive-stalls-wuhan-exposing-gap-hi-tech [https://perma.cc/9V9S-DKR6].
[233] Yuan Gao, *China's Betting Nearly $48 Billion on Renewed Chip Tech Plan*, BLOOMBERG (May 28, 2024), https://www.bloomberg.com/news/newsletters/2024-05-28/is-a-48-billion-chip-fund-enough-for-china-to-withstand-us-sanctions [https://perma.cc/NHA4-KC74].

supply chains.[234] This national effort to minimize vulnerability to U.S. sanctions may be difficult to implement in practice.[235] In September 2022, Chinese government officials issued a government directive requiring state-owned companies to replace foreign software in their IT systems by 2027.[236] After the December 2024 round of U.S. export controls, four Chinese industry associations urged Chinese companies to stop using U.S. chip products because they are "no longer reliable or safe."[237] The China Association of Automobile Manufacturers, for example, stated that U.S. export controls have shaken the Chinese car industry's "trust and confidence" in U.S. chips.[238] The Ministry of Industry and Information Technology has separately requested that major Chinese carmakers like SAIC Motor and BYD increase their procurement of Chinese-made auto chips to 20 to 25%.[239]

The difficulties inherent in the "Delete A" policy illustrate an essential background constraint on the Chinese government: its pursuit of political legitimacy through economic growth.[240] As China's economic productivity growth has fallen in recent years, the government has emphasized technological development and indigenous innovation as a new pathway to sustain fast domestic growth.[241] The Chinese government's industrial plans aim to aggressively push forward "new quality productive forces" (*xinzhi shengchanli*) in "future industries"

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[234] Liza Lin, *China Intensifies Push to Delete American Tech*, WALL ST. J. (Mar. 8, 2024), https://www.wsj.com/world/china/china-technology-software-delete-america-2b8ea89f [https://perma.cc/2BW3-XGFJ].

[235] *See* Ma Si & Yang Cheng, *AI Data Training Center Supported by Domestic Chips, Supercomputers*, CHINA DAILY (Apr. 30, 2024), https://www.chinadaily.com.cn/a/202404/30/WS6630274ba31082fc043c4bb6.html [https://perma.cc/5QEP-RQ89].

[236] *See* Lin, *supra* note 234.

[237] Eduardo Baptista & Brenda Goh, *US Chips Are 'No Longer Safe,' Chinese Industry Bodies Say in Latest Trade Salvo*, REUTERS (Dec. 4, 2024), https://www.reuters.com/technology/chinese-firms-should-diversify-chip-sources-internet-society-china-says-2024-12-03/ [https://perma.cc/393C-EF38]; Shengming (声明) [Statement], CHINA ASS'N OF COMM. ENTERS. (Dec. 3, 2024), https://www.cace.org.cn/NEWS/COUNT?a=5992 [https://perma.cc/APP4-4VK3]; Shengming (声明) [Statement] INTERNET SOC'Y OF CHINA (Dec. 3, 2024), https://www.isc.org.cn/article/23033267061780480.html [https://perma.cc/MLK6-GLAV]; Shengming (声明) [Statement], CHINA SEMICONDUCTOR INDUS. ASS'N (Dec. 3, 2024), https://web.csia.net.cn/newsinfo/7815648.html [https://perma.cc/NBQ4-RJSF].

[238] Shengming (声明) [Statement], CHINA ASS'N OF AUTO. MFRS. (Dec. 3, 2024), http://www.caam.org.cn/chn/1/cate_148/con_5236592.html [https://perma.cc/7T3T-PTR7].

[239] Cheng Ting-Fang et al., *China Asks Carmakers to Use Up to 25% Local Chips by 2025*, FIN. TIMES (May 23, 2024), https://www.ft.com/content/98a50ed8-1265-4f31-986f-6c874bc815f0 [https://perma.cc/SGZ7-GZCX].

[240] Weijia Rao, *Signaling Through National Security Lawmaking*, 59 U.C. DAVIS L. REV. (forthcoming 2025) (manuscript at 5, 34–35) (on file with authors); *see* Sarah Eaton & Reza Hasmath, *Economic Legitimation in a New Era: Public Attitudes to State Ownership and Market Regulation in China*, 246 CHINA Q. 447, 447 (2021).

[241] *See* Arthur R. Kroeber, *Unleasing 'New Quality Productive Forces': China's Strategy for Technology-Led Growth*, BROOKINGS INST. (June 4, 2024), https://www.brookings.edu/articles/unleashing-new-quality-productive-forces-chinas-strategy-for-technology-led-growth/ [https://perma.cc/BJF6-EZ4P].

(*weilai chanye*).[242] But the future industries highlighted, including electric vehicles and AI, are some of the most chip-intensive and are likely to rely on China's continued access to American chip suppliers.[243] While the relevant trade associations voiced enthusiasm for the "Delete A" policy, these statements are to be expected within a system in which companies are reluctant to publicly describe any policy's challenges. A lack of timely and open industry feedback could inhibit assessment of the policy's ongoing positive and negative effects.

The information lag in Chinese tech policy is a symptom of the tension between placing the government in the driver's seat of technological development and reaping the benefits of private sector growth. The January 2025 developments around DeepSeek's AI models demonstrate how, while the government can broadly set a direction for industrial policy, the government faces challenges in overseeing *how* the private sector moves toward those goals. As discussed above, DeepSeek released an AI model that utilized far less computing power than previously thought necessary.[244] Its success may render Chinese AI firms less dependent on U.S. chips, achieving a major priority for the Chinese government. But unlike most of the Chinese companies discussed in this Section, DeepSeek did not rely on government funding nor operate under close government supervision.[245] Instead, innovation stemmed from a hedge fund pouring money into a small, agile startup. As one tech expert noted, DeepSeek was "[not] on the government's five-year plan."[246] The Chinese state now faces a choice about how much influence to assume over the company's continued development. While Section II(B)(2) noted that national champion firms are a core part of China's industrial policy strategy, DeepSeek's emergence poses a test for whether private sector innovation can continue to be fostered in conformity with the state-backed model.

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When faced with the tradeoff between order and innovation, the Chinese leadership has repeatedly chosen order, heightening its control and supervision over actors in the domestic chip ecosystem. The state's chosen policies highlight the "inherent tensions . . . between the state's extra-economic responsibilities and [the] market's profit-maximization logic."[247] Through government investment and national champion firms, China's system seeks to harness market-based innovation in service of the state's self-sufficiency agenda. But its stringent control over

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[242] *Id.*
[243] *See*, *e.g.*, Liza Lin & Raffaele Huang, *Beijing Pushes to Use China-Made Chips in Its EVs*, WALL ST. J. (Dec. 31, 2024), https://www.wsj.com/tech/beijing-pushes-to-use-china-made-chips-in-its-evs-d89212de [https://perma.cc/C4JX-Q423].
[244] *See supra* Section I(A); Meaghan Tobin, Paul Mozur, & Alexandra Stevenson, *DeepSeek's Rise: How a Chinese Start-Up Went from Stock Trader to A.I. Star*, N.Y. TIMES (Jan. 28, 2025), https://www.nytimes.com/2025/01/28/business/deepseek-owner-china-ai.html [https://perma.cc/LP2U-VMCA8X8C-UK9E].
[245] *See Chinese Quant Whiz Built DeepSeek in the Shadow of a Hedge Fund Rout*, BLOOMBERG (Jan. 28, 2025), https://www.bloomberg.com/news/articles/2025-01-28/chinese-quant-whiz-built-deepseek-in-the-shadow-of-a-hedge-fund-rout [https://perma.cc/H9DJ-GFPK].
[246] Tobin, *supra* note 244.
[247] Zhang & Lan, *supra* note 181, at 213.

economic decisionmaking—with extensive restrictions on inbound investment, exports, and more—could box in innovative companies and leave them with limited room to pursue their own growth.

C. The European Union

The EU differs from the United States and China most notably in its constitutional structure. The EU is not a state but a political construction of twenty-seven sovereign states. Its constitutional structure delineates authority between the EU and its Member States and, importantly, vests the bloc with more limited legal authority with which to wage the tech war. This characteristic explains why the EU is often severely constrained in its ability to hand out EU-level industrial subsidies or wield geoeconomic instruments, including export controls and investment screening measures.

While the EU's constitutional structure constrains some strategies in the battle over chips, the EU's ideological commitments enable others. Europeans are not as vested in promoting free markets as Americans are, and many Member States are comfortable with state involvement in the economy.[248] At least in principle, this paves the way for an ambitious industrial policy. In practice, however, the EU has limited common funds with which to pursue industrial policy and any subsidy program remains reliant on Member State budgets. This limits the size and impact of any European subsidy program. The EU also struggles to reconcile the push for strategic autonomy in the tech war with its longstanding commitment to free trade and multilateral cooperation.

1. Divided Constitutional Powers and Conflicted Ideological Commitments

The EU Treaties allocate authority between the EU and its Member States, and powers that Member States have not conferred to the EU in the treaties remain the prerogatives of those Member States.[249] For example, while the EU enjoys extensive powers over economic policy—including the authority to negotiate international trade agreements on behalf of the Member States—national security remains a national-level competence.[250] As a result, when economic policy moves closer to national security, the EU risks losing its authority to act. This explains why the EU is often severely constrained in its ability to deploy geoeconomic instruments, including export controls and investment screening measures. This constitutional limitation elevates the role of individual Member States in the tech war, which has led to a fragmented European response and created internal divisions that both the United States and China can strategically exploit.

Operating within this constitutional structure, Europeans are not as ideologically committed to free markets as Americans are, and many Member

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[248] The EU's commitment to the social market economy is explicitly mentioned as a common objective for Europe. *See* Consolidated Version of the Treaty on the Functioning of the European Union art. 3, 2012 O.J. (C 326) 13 [hereinafter TFEU].
[249] *See generally id.* art. 5(1).
[250] *See id.* art. 4(2).

States are accustomed to state involvement in the economy. Compared to the United States, the government enjoys greater public trust in the EU.[251] For this reason, there is less opposition to active industrial policy. In terms of the influential literature on "varieties of capitalism," most European countries exhibit features of a "coordinated market economy" as opposed to a "liberal market economy," meaning that they generally reserve a greater role for government regulation and non-market institutions.[252] In principle, Europeans can therefore more easily accept the idea that the state shapes the market economy by handing out subsidies or restricting the ability of companies to export certain goods or invest in critical assets.

Some Member States—like France in particular—are more practiced in industrial policy than others.[253] At the same time, however, several other Member States have strong reservations about heavy-handed industrial intervention, including the Nordic countries, the Baltics, the Netherlands, and Ireland, which are traditionally more committed to free markets and open trade.[254] The latter group used to benefit from the support of the free market-oriented United Kingdom (UK), but the UK's departure from the EU has paved the way for the EU's shift toward even more aggressive industrial policy.[255]

The EU's strategic autonomy agenda, including export controls and other unilateral trade restrictions, is also difficult to reconcile with the EU's long-standing ideological commitment to an open international order and multilateral cooperation.[256] The EU and its key Member States were among the main architects of the existing liberal international order and its key institutions. As such, the EU is politically invested in the maintenance of that order. Being itself a construct of multilateralism, the EU has an identity-driven, even existential interest in preserving multilateralism as a foundation for international relations. The global battle over chips is therefore fundamentally at odds with the EU mindset and its

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[251] *See id.* art. 3.
[252] *See generally* PETER A. HALL & DAVID SOSKICE, VARIETIES OF CAPITALISM: THE INSTITUTIONAL FOUNDATIONS OF COMPARATIVE ADVANTAGE (2001).
[253] *See generally* Ben Clift, *Comparative Capitalism, Ideational Political Economy and French Post-Dirigiste Responses to the Global Financial Crisis,* 17 J. NEW POL. ECON. 565 (2012); Salih I. Bora, *'A Sovereign Europe'? Strategic Use of Discourse at the Service of French Economic Interests in EU Politics (2017–2022)*, 61 J. COMMON MKT. STUD. 1281 (2023), available at https://onlinelibrary.wiley.com/doi/full/10.1111/jcms.13463 [https://perma.cc/QZ9X-D29G]; *Emmanuel Macron Appeals Directly to Europe's Voters*, THE ECONOMIST (Mar. 7, 2019), https://www.economist.com/europe/2019/03/07/emmanuel-macron-appeals-directly-to-europes-voters [https://perma.cc/4TCR-CA2K].
[254] *See Smart and Selective Use of the ICPEI Instrument*, *Joint Non-Paper by the Czech Republic, Denmark, Finland, Ireland, Latvia, Lithuania, Poland, the Netherlands, Slovakia, Spain and Sweden* (Apr. 28, 2021), at 1, https://www.government.se/articles/2021/09/smart-and-selective-use-of-the-ipcei-instrument/ [https://perma.cc/96LE-945C].
[255] *See* Donato Di Carlo & Luuk Schmitz, *Europe First? The Rise of EU Industrial Policy Promoting and Protecting the Single Market*, 30 J. EUR. PUB. POL'Y 2063, 2076 (2023).
[256] *See Multilateral Relations*, EUR. UNION EXTERNAL ACTION (Aug. 26, 2021), https://www.eeas.europa.eu/eeas/multilateral-relations_en [https://perma.cc/9MPY-WUHH] ("The European Union's commitment to effective multilateralism . . . is a central element of the EU's external policy.").

governing philosophy about itself and the world. Waging this war thus requires a major political reversal of the EU's orientation toward free trade and multilateralism, calling into question the EU's role as the champion of an open and global economic order.

2. Internal Features as Enablers

The absence of a formal legal authority to fight the tech war—especially when it comes to leading-edge chips—has not prevented the EU from seeking to coordinate EU Member States' policy measures, including on export controls, investment screening, and the granting of subsidies. To drive a common European policy, EU institutions often use deliberately ambiguous rhetorical devices to harness broad coalitions behind a malleable policy goal.[257] For example, the EU has successfully promoted a number of policies around the vague term "competitiveness," allowing it to push a neoliberal economic policy agenda when needed.[258]

More recently, the EU institutions have adopted a new political rhetoric around "strategic autonomy" and "technological sovereignty" to justify the need for a more coordinated European response to the chip war.[259] This shift in language has enabled EU institutions to reorient political support for the EU's strategies in that competition. The intentional vagueness of the term has further allowed a diverse set of actors "to project their hopes and fears into the term."[260] The idea of strategic autonomy has also effectively tapped into a common European fear that—absent a common European response—the EU will fall behind the United States and China and lose its ability to defend its interests and values.[261]

Today, the strategic autonomy agenda is increasingly embraced by all key EU institutions, including the Commission (representing the EU interest), the Council (representing the Member States), and the European Parliament (representing European citizens). This political narrative has helped these actors use their limited legal authority to the fullest and ensure that individual Member States coordinate their national strategies in ways that advance the common European interest. This framing is designed to offset the EU's tendencies to promote open trade and multilateral engagement, recasting the EU's core interests in the age of geopolitical conflict. This re-orientation has also paved the way for

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[257] *See generally* Luuk Schmitz & Timo Seidl, *As Open as Possible, as Autonomous as Necessary: Understanding the Rise of Open Strategic Autonomy in EU Trade Policy*, 61 J. COMMON MKT. STUD. 834 (2023).

[258] *See*, *e.g.*, *An EU Compass to Regain Competitiveness and Secure Sustainable Prosperity*, EU COMM. (Jan. 28, 2025), https://ec.europa.eu/commission/presscorner/detail/en/ip_25_339 [https://perma.cc/A9AE-N784].

[259] *See* Raluca Csernatoni, *The EU's Rise as a Defense Technological Power: From Strategic Autonomy to Technological Sovereignty*, CARNEGIE ENDOWMENT (Aug. 12, 2021), https://carnegieendowment.org/research/2021/08/the-eus-rise-as-a-defense-technological-power-from-strategic-autonomy-to-technological-sovereignty?lang=en&center=europe [https://perma.cc/MDD8-2WCT].

[260] *See* Schmitz & Seidl, *supra* note 257, at 835.

[261] *See generally id*.

the adoption of the 2023 European Economic Security Strategy, [262] which lays out the EU's "comprehensive strategic approach to economic security, de-risking and promoting its technological edge in critical sectors." [263]

The European Commission, which is vested with the power to initiate and enforce EU legislation, has repeatedly endorsed the need for greater European-level coordination of chip war strategies.[264] Among EU institutions, the Commission is generally viewed as the greatest proponent of closer European integration and hence inclined to endorse measures aimed at greater European unity. For the Commission, the tech war provides the opportunity to pursue deeper European integration with the gradual transfer of additional powers from the Member States to the EU, elevating the role of the Commission itself in the process.[265] However, the two other key EU institutions—the Council and the European Parliament—need to approve any legislative measure that the Commission proposes. The Commission therefore needs to get the Member States behind its agenda.

Among the Member States, France has played a key role as an enabler of the EU's industrial policy agenda, being the most enthusiastic proponent of European strategic autonomy and digital sovereignty.[266] Given its affinity with a *dirigiste* economic policy and heavy state intervention in economic governance,[267] it is not surprising that France has assumed a leading role in pushing the EU to embrace industrial policy.[268] President Macron himself has advocated for assertive European industrial policy, emphasizing that "[i]f we don't build our own champions in all new areas . . . our choices . . . will be dictated by others."[269] But France is not alone in advocating for policy instruments that enhance European economic security and technological sovereignty. Germany, another powerful Member State, is increasingly siding with France in favoring state intervention,[270]

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[262] *See* Joint Communication to the European Parliament, the European Council, and the Council on "European Economic Security Strategy," JOIN (2023) 20 final (June 6, 2023), https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52023JC0020 [https://perma.cc/436E-DB9F].
[263] *Id.* at 2.
[264] *See infra* notes 273–275 (referencing several proposed EU policy measures).
[265] *See, e.g.,* Joint Communication to the European Parliament, the European Council, and the Council, *EU-China - A Strategic Outlook*, JOIN (2019) 5 final (Mar. 12, 2019) https://commission.europa.eu/system/files/2019-03/communication-eu-china-a-strategic-outlook.pdf [https://perma.cc/Y9HF-QFZF].
[266] *See* Kenneth Propp, *France's New Mantra: Liberty, Equality, Digital Sovereignty*, ATL. COUNCIL (Feb. 7, 2022), https://www.atlanticcouncil.org/blogs/new-atlanticist/frances-new-mantra-liberty-equality-digital-sovereignty/ [https://perma.cc/Y552-3BA3].
[267] Ben Clift, *Comparative Capitalism, Ideational Political Economy and French Post-Dirigiste Responses to the Global Financial Crisis,* 17 J. NEW POL. ECON. 565, 568 (2012).
[268] *See*, *e.g.*, *Emmanuel Macron Appeals Directly to Europe's Voters*, *supra* note 253; Bora, *supra* note 253, at 1293.
[269] *Interview du Président Emmanuel Macron à la Revue le Grand Continent*, LE GRAND CONTINENT (Nov. 6, 2020), https://legrandcontinent.eu/fr/2020/11/16/macron/ [https://perma.cc/W8MC-QFGQ].
[270] *See* Press Release, French Ministry of Econ. & Fin. and German Ministry of Bus. & Energy, A Franco-German Manifesto for a European Industrial Policy Fit for the 21st Century (Feb. 19,

whereas the traditional free-market coalition has weakened with the UK's departure from the EU.[271] Even the Member States that have traditionally resisted industrial policy are viewing economic security as an increasingly salient priority, paving the way for greater EU-level policies aimed at coordinating investment restrictions, export controls, and subsidies.[272]

The strategic autonomy agenda has recently resulted in a number of legislative measures designed to facilitate this EU-level coordination in the chip war. In March 2019, the EU adopted a Regulation to establish an EU-wide framework to coordinate Member States' foreign investment screening,[273] identifying dual-use items, including semiconductors, as sensitive assets.[274] Momentum is now building to further strengthen that investment review. In January 2024, the Commission proposed to reform the Regulation, with the goal of mandating that all Member States adopt a national foreign direct investment screening regime.[275] The revised regulation is expected to enter into force in 2026, suggesting that the Commission is prepared to gradually push for greater European-level coordination in this policy domain.[276]

2019) (on file with author); Daniel Hojnacki, *Robert Habeck on Germany's New Approach to 'Economic Security' and 'Selective Multilateralism,'* ATL. COUNCIL (Sept. 22, 2023), https://www.atlanticcouncil.org/blogs/new-atlanticist/robert-habeck-on-germanys-new-approach-to-economic-security-and-selective-multilateralism/ [https://perma.cc/8VN9-9JDJ]; Martin Greenacre, *France, Germany, Italy Call for Single EU Industrial Strategy*, SCI. BUS. (Apr. 9, 2024), https://sciencebusiness.net/news/industry/france-germany-italy-call-single-eu-industrial-strategy [https://perma.cc/27YX-5X7W].

[271] *Cf.* Helene Von Bismarck, *Margaret Thatcher: The Critical Architect of European Integration,* UK IN A CHANGING EUR. (May 4, 2016), https://ukandeu.ac.uk/margaret-thatcher-the-critical-architect-of-european-integration/ [https://perma.cc/ABW6-YJFK] (describing UK involvement in the development of the European internal free market).

[272] *See generally* Joint Communication to the European Parliament, the European Council, and the Council on "European Economic Security Strategy," *supra* note 262 (conveying broad commitment by member states to economic security as a key policy goal).

[273] Regulation (EU) 2019/452, of the European Parliament and of the Council of 19 March 2019 Establishing a Framework for the Screening of Foreign Direct Investments into the Union, 2019 O.J. (L 791), 1–14 [hereinafter Foreign Direct Investments Regulation]; *see* European Commission Press Release IP/21/4601, Strengthened EU Export Control Rules Kick In (Sept. 9, 2021), https://ec.europa.eu/commission/presscorner/api/files/document/print/en/ip_21_4601/IP_21_4601_EN.pdf [https://perma.cc/KC5A-LWAP].

[274] *See* Foreign Direct Investments Regulation, *supra* note 273, at 1, 13-14.

[275] *See Proposal for a New Regulation on the Screening of Foreign Investments*, COM (2024) 23 final(Jan. 23, 2024), https://eurlex.europa.eu/legalcontent/EN/TXT/?uri=CELEX%3A52024PC0023 [https://perma.cc/QEB2-ZLJY]; *Fourth Annual Report on the Screening of Foreign Direct Investments into the Union*, at 8, COM (2024) 464 final (Oct. 17, 2024); *Commission Staff Working Document on Screening of FDI Into the Union and Its Member States*, at 23, SWD (2024) 234 final (Oct. 17, 2024), https://ec.europa.eu/transparency/documents-register/detail?ref=COM(2024)464&lang=en [https://perma.cc/FKX5-WHP3].

[276] *See* Jean-Maxime Blutel et al., *Reform of the EU Foreign Direct Investment Screening Regulation – How Might M&A Transactions be Impacted?*, MAYER BROWN (Mar. 26, 2024),

The EU is also joining the intensifying subsidy race in an effort to bolster its homegrown technological capabilities and thereby reduce its dependencies on foreign technologies. Europe's concern over its supply chain dependencies is well-founded and reflects a fear of being left behind and dependent on foreign suppliers. According to former Commissioner Thierry Breton, Europe was "naïve" to outsource much of its semiconductor capabilities abroad and now needs to "redress the balance."[277] In 2021, the Commission announced that the EU's goal was to produce 20% of the world's semiconductors by 2030.[278] To deliver on this goal, EU institutions reached a political compromise on a European Chips Act in April 2023, paving the way for its entry into force in September that year.[279] The EU Chips Act allocated a combined €43 billion toward revitalizing the European semiconductor industry, from research and development to building manufacturing capacity.[280]

Although these policies may sound similar, the disbursement of subsidies under the EU Chips Act will differ markedly from the way subsidies are allocated in the United States and China. Whereas the U.S. CHIPS Act has triggered extensive lobbying and Chinese chip subsidy allocations remain opaque, the EU administers its Chips Act in a way that stresses transparency and fairness through its subsidy allocation.[281] For example, any subsidy decisions can be appealed to the European Ombudsman and challenged before the General Court of the EU.[282] This is likely to enhance legitimacy and shore up support for the policy.

As acknowledged earlier, the concern over Europe's dwindling technological sovereignty has been the primary driver behind the EU's chip war

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https://www.mayerbrown.com/en/insights/publications/2024/03/reform-of-the-eu-foreign-direct-investment-screening-regulation-how-might-m-and-a-transactions-be-impacted#_edn1 [https://perma.cc/5ZUJ-X7E5].

[277] Natalia Drozdiak, *EU's Breton Says Time to Fix 'Naïve' Approach to Chip Supply*, BLOOMBERG (May 5, 2021), https://www.bloomberg.com/news/articles/2021-05-05/europe-looks-to-secure-chip-supply-after-naive-past-approach.

[278] *European Chips Act*, EUR. COMM'N, https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/european-chips-act_en [https://perma.cc/W4PJ-EDVL]; Regulation (EU) 2023/1781 of the European Parliament and of the Council of 13 September 2023 establishing a framework of measures for strengthening Europe's semiconductor ecosystem and amending Regulation (EU) 2021/694 (Chips Act), 2023 O.J. (L 229), https://eur-lex.europa.eu/eli/reg/2023/1781/oj/eng [https://perma.cc/CU7U-T5UY].

[279] *See* Pieter Haeck, *EU Legislators Strike Deal on €43B Chips Plan*, POLITICO (Apr. 18, 2023), https://www.politico.eu/article/eu-legislator-strike-deal-e43-billion-plan-boost-chips-production/ [https://perma.cc/79P9-TQSK]; *European Chips Act*, EUR. COMM'N, https://digitalstrategy.ec.europa.eu/en/policies/european-chipsact#:~:text=The%20European%20Chips%20Act%20Regulation,force%20on%2021%20September%202023 [https://perma.cc/2PSN-UURM].

[280] *See European Chips Act, supra* note 278; Samuel Stolton, *Europe Subsidy Green Deal Industrial Plan State Aid,* POLITICO (Feb. 1, 2023), https://www.politico.eu/article/europe-subsidy-green-deal-industrial-plan-state-aid/ [https://perma.cc/J9NV-7NUB?type=standard].

[281] *Governance,* CHIPS-JU, https://www.chips-ju.europa.eu/Governance/ [https://perma.cc/5WN8-G2JD]; *EU Chips Act: Risks and Opportunities for Businesses*, NORTON ROSE FULBRIGHT (Sept. 2023), https://www.nortonrosefulbright.com/en/knowledge/publications/f176610c/eu-chips-act-risks-and-opportunities-for-businesses [https://perma.cc/TE8P-2Q4Q].

[282] *See EU Chips Act: Risks and Opportunities*, *supra* note 281.

strategies. But in some instances, the EU's restrictive measures have been further supported by key European values such as its commitment to human rights. For example, the EU's 2009 export control regime was revised in 2021 to prohibit the export of products to end-users who would be likely to use the products for internal repression or the violation of human rights.[283] Under this regulation, the EU has limited the exports of certain technologies to China, including advanced computing and AI.[284] This appeal to human rights as a basis for restricting exports to repressive regimes gives the EU an additional, principled rationale to act in ways that are consistent with its values.

These examples show that constitutional constraints have not altogether prevented the EU from coordinating its chip war strategy. The Member States have remained key actors but have accepted the need for EU-level coordination of national strategies, as the EU institutions and powerful Member States such as France have successfully steered policymaking around concepts such as strategic autonomy. Other factors, including the Europeans' lesser commitment to free market orthodoxy, have enabled the EU to use its limited authority to the fullest and obtain buy-in for measures such as export controls, investment screening, and subsidies. However, internal constraints remain significant, as will be shown below, explaining the relative weakness in the European response to date.

3. Internal Features as Constraints

The EU faces a number of internal constraints in implementing its strategic autonomy agenda. Without a doubt, the most significant limitation to the EU's ability to wage the tech war stems from its constitutional structure: the split between EU-level powers and individual Member State powers. As national security remains the prerogative of the EU Member States, the EU has struggled to devise a unified EU-level response to the geopolitical challenges it faces. This often leaves the EU with a set of fragmented policy responses that weaken the EU externally and internally, as national-level policy measures have the potential to compromise the integrity of the European single market.

While the EU has amassed significant powers over trade policy, its competence in the national security domain remains limited as the individual EU Member States have retained their authority over national security policy.[285] In the tech war, control of advanced chips and other critical technologies falls in between those two policy categories.[286] The EU would have full legal authority to negotiate treaties to open trade on semiconductors with China. But when it attempts to close trade on national security grounds, that authority remains vested in the Member

[283] *See* BEATRIX IMMENKAMP, EUR. PARLIAMENT RSCH. SERV., PE 589.832, REVIEW OF DUAL-USE EXPORT CONTROLS 3–4 (2021) .
[284] *See* European Commission Press Release IP/21/4601, *supra* note 273.
[285] *See supra* Section III(C)(1); *see also* TFEU, *supra* note 248, art. 4(2) ("The Union shall respect the equality of Member States before the Treaties as well as their national identities . . . it shall respect their essential State functions, including . . . safeguarding national security").
[286] *See* TFEU, *supra* note 248, art 4(2).

States.[287] The EU's ensuing inability to aggressively deploy export controls, implement investment restrictions, or directly grant chips subsidies has therefore led to a fragmented response, further weakening the EU's ability to pursue meaningful strategic autonomy amid escalating U.S.-China tensions.

The design of all EU tech war instruments reflects this constitutional constraint. Even though there is an EU-level export control regime and the EU has the power to mandate licensing for certain restricted exports under its Dual-Use Regulation, as noted above, its powers are limited by the EU Member States' abilities to concurrently exercise their own powers. EU Member States play key policy roles in two respects. First, they are in charge of implementing the Regulation. There is no EU licensing authority, and the exporter must obtain the license from the individual Member State authority that established it.[288] Second, EU Member States can add their own national restrictions on additional items to any EU-level export restrictions for "reasons of public security."[289] This gives individual Member States broad discretion to undertake measures that are deemed to serve their national security interests, undermining European unity.

The EU's limited power was displayed in March 2023 when the Netherlands announced that it would ban certain semiconductor exports to China following an agreement with the United States and Japan.[290] The Netherlands is home to ASML, the world's leading manufacturer of lithography machines that are critical in advanced semiconductor production.[291] In justifying the decision, the Dutch government cited its national security concerns.[292] Since 2019, ASML has not been allowed to sell the most cutting-edge machines to China.[293] The new restrictions announced in 2023 extended these earlier controls by banning exports of ASML's second-most advanced machines, too, which are available only from the

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[287] *See id*.

[288] *See* Regulation (EU) 2021/821 of the European Parliament and of the Council of 20 May 2021 on The Control of Exports, Brokering, Technical Assistance, Transit, and Transfer of Dual-Use Items, art. 9, 2021 O.J. (L 206) 1, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32021R0821 [https://perma.cc/ZX52-SGY4].

[289] *See Comment on U.S.-EU Export Control Cooperation*, SEMICONDUCTOR INDUS. ASS'N (Jan. 20, 2022), https://www.semiconductors.org/sia-encourages-the-united-states-and-europe-to-collaborate-on-export-control-policy/ [https://perma.cc/M567-ATN3].

[290] *See Announcement of Upcoming Export Control Measures for Advanced Semiconductor Production Equipment,* TWEEDE KAMER (HOUSE OF REPRESENTATIVES OF THE NETHERLANDS), https://www.tweedekamer.nl/kamerstukken/brieven_regering/detail?id=2023Z04037&did=2023D09406 [https://perma.cc/D9Y5-2A6L] (Netherlands).

[291] *See* Katie Tarasov, *ASML Is the Only Company Making the $200 Million Machines Needed To Print Every Advanced Microchip. Here's an Inside Look*, CNBC (Mar. 23, 2022), https://www.cnbc.com/2022/03/23/inside-asml-the-company-advanced-chipmakers-use-for-euv-lithography.html [https://perma.cc/WL2K-GCX6].

[292] *See* Pieter Haeck, *How the Dutch Turned On Chinese Tech*, POLITICO, (Mar. 9, 2023), https://www.politico.eu/article/chips-netherlands-mark-rutte-china/ [https://perma.cc/R5RH-LYVY].

[293] *See id.*; Ana Swanson, *Netherlands and Japan Said to Join U.S. in Curbing Chip Technology Sent to China*, N.Y. TIMES, (Jan. 28, 2023), https://www.nytimes.com/2023/01/28/business/economy/netherlands-japan-china-chips.html [https://perma.cc/9XEF-2SN3].

Netherlands, the United States, and Japan.[294] In September 2024, the Dutch government imposed additional export controls over certain ASML equipment, requiring the company to seek licenses before exporting immersion lithographic systems.[295] Export licenses will be expanded to additional technologies in 2025.[296]

Even though the EU has effectively been sidelined from the decision-making, it has not disputed that these actions fall within the Netherlands' national authority because they pertain to national security. In announcing the decision, the Dutch government invited other EU Member States to adopt similar legislation to show European unity as a geopolitical actor, even though no other company in Europe can currently replicate ASML's technology.[297] But Dutch leaders also adamantly defended their control over national security matters, insisting that they made the decision at the right level.[298]

Although it might seem at first glance that national-level export control measures only bolster EU-level controls, those domestic measures pose a number of challenges for the EU that limit the practical utility of the tool. First, if some Member States go it alone with national-level controls, other Member States can always undercut them by allowing those restricted exports to be shipped from their territory to a third country, as there are no border controls within the EU.[299] Export controls also have ripple effects on other EU Member States, including those that supply components to ASML and hence are also affected by curtailed export opportunities for ASML.[300] In addition, if China were to sue the Netherlands before the World Trade Organization (WTO) over its export controls, the European Commission would need to defend the Dutch measure because it falls within the EU authority to represent the Member States in all WTO negotiations and litigation.[301] The CEO of ASML, Peter Wennink, has himself pointed out the strategic limitations of this constitutional structure, noting that "European governments will have to hand over control of parts of their foreign affairs, defense

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[294] *See id.*
[295] *See* Toby Sterling, *Dutch Government Retakes Export Control Over Two ASML Tools from US*, REUTERS (Sept. 6, 2024), https://www.reuters.com/technology/dutch-government-retakes-export-control-over-two-asml-tools-us-2024-09-06/ [https://perma.cc/NCG8-D3QB].
[296] *See Netherlands to Expand Export Controls on Semiconductor Equipment*, REUTERS (Jan. 15, 2025), https://www.reuters.com/technology/netherlands-expand-export-controls-semiconductor-equipment-2025-01-15/ [https://perma.cc/7PHR-28DD].
[297] *See* Andy Bounds, *Netherlands Puts Servicing of Chipmaking Tools in China Under Review,* FIN. TIMES, (Mar. 9, 2023), https://www.ft.com/content/2454c019-3b53-4679-b70f-ad1ac929bdd7 [https://perma.cc/F2YG-ZCVC].
[298] *See id.*
[299] *See id.*
[300] *See* Pieter Haeck, *EU Sidelined in US-Dutch Deal to Block Chips Exports to China*, POLITICO, (Jan. 31, 2023), https://www.politico.eu/article/eu-sidelined-in-us-dutch-deal-to-block-chips-exports-to-china/ [https://perma.cc/R8A6-FQQD].
[301] *See* Tobias Gehrke & Julian Ringhof, *The Power of Control: How the EU Can Shape the New Era of Strategic Export Restrictions*, EUR. COUNCIL ON FOREIGN RELS. (May 2023), at 16, https://ecfr.eu/wp-content/uploads/2023/05/The-Power-of-Control-How-the-EU-can-shape-the-new-era-of-strategic-export-restrictions.pdf [https://perma.cc/9VGS-U2C9].

and trade powers if the bloc wants to protect itself from Chinese competition and American pressure."[302]

The EU's constitutional structure similarly hampers the EU's ability to restrict foreign investment. Investment screening would at first glance seem to fall within the EU's authority under the EU Treaties because the EU considers investment to be part of its common commercial policy.[303] However, the national security exceptions embedded in the EU Treaties limit the EU's authority in instances where a Member State restricts investment on national security grounds.[304] The 2019 EU-wide framework for foreign investment screening therefore merely encourages EU Member States to establish their own screening mechanisms and sets common criteria for any such mechanism that is put in place.[305] The EU also issues non-binding opinions on Member States' reviews, to which the reviewing Member State must give "due consideration."[306] Ultimately, however, the Member State has the final say on whether the foreign investment is allowed. This risks creating fragmentation akin to the varying Member State policies toward the Chinese vendor Huawei as a provider of 5G networks in Europe, with some states embracing Huawei contracts while others adopted Huawei bans.[307]

The EU's constitutional structure also impedes the disbursement of robust subsidies. Despite the bloc's aggregate wealth, the EU itself has a limited budget, which restricts its ability to conduct effective industrial policy at the European level. As a result, any large-scale subsidies inevitably rely on contributions by individual Member States. For example, of the €43 billion envisioned by the European Chips Act, a mere €3.3 billion comes from the EU's budget, while the rest will be covered by national governments and private funding.[308] Any subsidies granted by individual Member States are also likely to remain modest compared to the alternative of a large-scale, EU-wide subsidy regime, making it difficult for the EU to keep up with the United States and China in the subsidy race.

Yet perhaps the greatest constraint on the EU's chip war strategy stems from the threats that the strategic autonomy agenda poses to the integrity of the European single market. This threat is pertinent in the escalating subsidy contest. If Europe wants to compete with the United States and China, it cannot opt out of that race.

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[302] *See* Pietar Hieck, *Top Tech Boss Tells EU: Tool Up for Global Trade Fight*, POLITICO (Jan. 25, 2024), https://www.politico.eu/article/eu-common-trade-defense-dutch-tech-ceo-asml-peter-wennink/ [https://perma.cc/8XF9-E9EW].
[303] *See* TFEU, *supra* note 248, arts. 206–07.
[304] *See id.* arts. 65, 346.
[305] *See* Regulation No. 452/2019, of the European Parliament and of the Council of 19 March 2019 Establishing a Framework for the Screening of Foreign Direct Investments into the Union, 2019 O.J. (L 79I) 1, 6.
[306] *Id.* at 9.
[307] *See* BRADFORD, *supra* note 63, at 301-02.
[308] *See The European Chips Act*, EUR. COMM'N, https://www.european-chips-act.com/ [https://perma.cc/38US-6WW4]; Toby Sterling, *EU's Virkkunen Says Commission Plans New Semiconductor Support Progamme*, REUTERS (Mar. 27, 2025), https://www.reuters.com/technology/eus-virkkunen-says-commission-plans-new-semiconductor-support-programme-2025-03-27/ [https://perma.cc/AX4J-BL5D].

However, given its limited budget, the EU is not positioned to dole out subsidies by itself. Instead, any subsidies would need to be disbursed by Member State governments—a practice which the EU Treaties generally prohibit to guarantee a level playing field and fair competition across the EU.[309] The EU is now gradually loosening its reins over state aid control, allowing Member States to better support the research, production, and commercialization of semiconductors.[310] But this position is proving to be controversial, as not all Member States can subsidize their industries. As a result, the biggest Member States like France and Germany are likely to benefit disproportionately, dispensing sizable state funds that allow their companies to outpace their rivals from smaller Member States.[311] This disparity causes resentment among the smaller Member States and deepens divisions within the EU, raising the costs for the EU to deploy this strategy.

For this reason, several EU Member States have opposed relaxing the EU rules on subsidies, stressing that increased state aid will cause "significant negative effects including the fragmentation of the internal market."[312] This reflects a broader concern that the EU now faces a trade-off between the EU's global competitiveness and the attempts to preserve a level playing field in Europe, with one diplomat noting how "[t]he whole state aid debate is a double-edged sword. If we relax subsidy restrictions too much, then we compromise the integrity of the single market . . . But if we do nothing, we concede failure. That isn't an option."[313] The chip war therefore presents the EU with a difficult dilemma: how to advance European strategic autonomy and enhance its external competitiveness without compromising the EU's internal coherence and its foundational commitment to European integration.

The chip war raises other fundamental questions for the EU that can act as constraints on its strategy. Sticking points include the EU's longstanding commitment to fostering international cooperation and multilateral rulemaking. To pursue greater strategic autonomy, the EU will be forced to rethink its commitment to multilateralism and international institutions as cornerstones of its engagement with the world. Unsurprisingly, some European leaders continue to urge the EU to defend economic openness and international cooperation despite geopolitical shifts vis-à-vis China, arguing that, otherwise, little hope exists for reversing the zero-

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309 *See* TFEU, *supra* note 248, art. 107–08.

310 *See* Press Release, Eur. Comm'n, Remarks by Executive Vice-President Vestager on the Communication on a Competition Policy Fit for New Challenges (Nov. 18, 2021), https://ec.europa.eu/commission/presscorner/detail/en/ip_21_6101 [https://perma.cc/M3C5-X9Y6]; *see also* Press Release, Eur. Comm'n, Competition: Commission Outlines Contribution of Competition Policy and Its Review to Green and Digital Transition, and to a Resilient Single Market (Nov. 18, 2021), https://ec.europa.eu/commission/presscorner/detail/en/ip_21_6101 [https://perma.cc/98MU-QW4R].

311 *See* Foo Yun Chee & Sabine Siebold, *EU Eases State Aid Rules in Multi-Billion Euro Boost for Chip Sector*, REUTERS (Feb. 8, 2022), https://www.reuters.com/technology/eu-lays-out-billion-euro-plan-boost-chip-production-2022-02-08/ [https://perma.cc/R45J-JNRC].

312 *See* Samuel Stolton & Pieter Haeck, *Europe Embarks on Subsidy Race It Can't Win*, POLITICO EU (Feb. 1, 2023), https://www.politico.eu/article/europe-subsidy-green-deal-industrial-plan-state-aid/ [https://perma.cc/4CFV-EN9G].

313 *Id.*

sum mentality governing the ongoing tech race.[314] Other leaders reject this view, arguing that the EU would be naïve in letting others take advantage of Europe's openness while not extending that same openness to Europeans, and thus call for the EU to reverse its traditional views.[315]

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The above discussion focusing on the internal account of the EU reveals that the EU's weakness in deploying some tech war strategies—especially those based on heavy export controls and subsidies—lies less in its lack of technological and geopolitical prowess and more in its lack of legal authority to concentrate that prowess. In other words, what marginalizes the EU in the chip war and broader technological competition is, first and foremost, its constitutional structure. Despite some enabling internal features, including Europe's lesser ideological resistance to industrial policy, the EU's response remains fragmented. The EU knows it needs to shore up its strategic autonomy in the tech war but has to date struggled to consolidate the power of its individual Member States into a cohesive, pan-European industrial strategy.

III. IMPLICATIONS OF THE INTERNAL ANALYSIS

Part II examined the internal features that are shaping the strategies pursued by the United States, China, and the EU respectively. We now turn to discussing the key implications that flow from that discussion. Our internal analysis augments conventional, external analyses of the tech war in three important—and in some cases counter-intuitive—ways.

First, although the three powers all pursue the same general goal of greater technological self-sufficiency and use what appear to be similar devices to do so (a mix of export controls, investment restrictions, and subsidies), their internal features lead them to deploy these tools very differently. Our internal story sheds light on the relative strengths and weaknesses that the three players have in exercising these policies and explains the different mix of tools the players use in formulating their strategies.

Second, our internal focus better explains why tough chip competition has to date neither pushed countries toward all-out economic warfare nor paved the way

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[314] *See, e.g.,* Trade Talks Podcasts, *WTO Ministerials-Now and Then* (17 Jan. 2021) (comments by S. Weyland), https://podcasts.apple.com/us/podcast/17-wto-ministerials-now-and-then/id1270804213?i=1000554103739 [https://perma.cc/4BYU-BEBC]; Tobias Gehrke, *EU Open Strategic Autonomy and the Trappings of Geoeconomics*, 27 EUR. FOREIGN AFFS. REV. 61, 68 (2022).

[315] *See, e.g.*, *Interview du Président Emmanuel Macron à la Revue le Grand Continent*, LE GRAND CONTINENT (Nov. 16, 2020), https://www.elysee.fr/en/emmanuel-macron/2020/11/16/interview-granted-to-le-grand-continent-magazine-by-the-french-president-emmanuel-macron [https://perma.cc/QFR3-VJXE]; Charles Michel, Pres. of the Eur. Council, Speech at the Brussels Economic Forum: Recovery Plan: Powering Europe's Strategic Autonomy (Sept. 8, 2020), https://www.consilium.europa.eu/en/press/press-releases/2020/09/08/recovery-plan-powering-europe-s-strategic-autonomy-speech-by-president-charles-michel-at-the-brussels-economic-forum/ [https://perma.cc/6MBW-V9ZW].

for a meaningful detente. A deeper understanding of the internal features of each jurisdiction suggests that escalatory pressures continue to be moderated by de-escalatory counter-pressures.

Third, our analysis invites a question of whether the internal features remain fixed or are capable of changing over time as a result of the tech war. If internal features influence tech war strategies, might those strategies also influence internal structures and even change nations from within? Here, too, our analysis offers new analytical payoffs: We conclude that the tech war may shift the players' internal features by degrees, but it will not transform their basic internal attributes.

While our analysis has focused on advanced chips, our insights inform our understanding of the broader tech war, including the ongoing competitions over quantum computing, artificial intelligence, and biotechnology. All of these technologies are dual-use, capable of serving commercial and defense or national security applications alike, and all of them are built on advanced chips. No doubt, supply chains for chips have unique traits. Those supply chains developed to maximize efficiency during the decades when the public had faith in economic globalization, whereas more nascent technologies like quantum computing reflect an intensifying tech war and greater intranational attention to self-sufficiency at the outset. Still, for the United States, China, and the EU, the same internal enablers and constraints that shape chip competition strategies will in many cases exert similar pushes and pulls on policy regarding other critical technologies.

A. Diverging Strategies and Respective Strengths and Weaknesses

Our internal account helps explain how the parties are waging the chip war—the "interior dimension" of that external strategy—including what mix of tools they are best positioned to deploy and which comparative advantages or disadvantages they hold vis-à-vis their rivals. This approach also offers insights as to how the other players can adjust their strategies in light of the internal features that constrain or enable their rivals. After all, the essence of strategy is not a set of unilateral and independent moves; it is a dynamic process of responding to or anticipating moves by others.

Starting with the United States, our internal account shows that U.S. moves toward government intervention to build up domestic chip research and production will be tempered by the gravitational pull of free-market ideology. Attempts to cut off China from U.S. technological advancements will also be tempered by strong corporate lobbying. Subsidies and export controls appear to be among the U.S. government's most potent tools and currently receive significant bipartisan political support. But whereas the United States has substantial economic capacity for subsidies, it will be politically difficult to maintain and tailor them over time.[316] By contrast, the U.S. government will be able to maintain export controls for the long haul but has limited capacity to enforce them in practice.

[316] *See* Mui, *supra* note 124 (noting that the Trump administration is considering reversing course on the CHIPS Act).

Comparison of the U.S.-China tech war to the U.S.-Soviet Cold War bolsters these conclusions. Professor Friedberg argues that the United States' strong commitment to free markets, moderated by security needs, helped it win an extended struggle against a centrally planned foe.[317] He describes how the United States helped build Silicon Valley with industrial subsidies to defense-related firms and created research and development arms of the Defense Department.[318] But the free-market ideology always restrained those interventionist impulses. The resulting balance allowed for the United States to out-innovate the Soviets in producing military power without bankrupting the United States or corrupting its democratic institutions.[319]

A challenge for the United States today is finding a strategically effective balance between state intervention and market-driven innovation in the tech war against China. Two big differences between the Cold War and the tech war shed light on what that balance might look like.

First, whereas the U.S. and Soviet economies were isolated from each other by design,[320] the U.S. and Chinese economies are deeply entangled. For decades, the United States enjoyed economic benefits from Chinese markets and expected that economic openness would lead to Chinese political openness. China, meanwhile, gained economic power and access to U.S. technology.[321] An external account of the tech war would suggest that this interdependence gives both sides opportunities for leverage, but only at the risk of damaging their own economic strength, especially if trade restrictions escalate. Our internal account enriches this analysis by looking to the role of corporate lobbying—an internal element that is prevalent in the United States but far more muted in China—highlighting an asymmetry that the external analysis lacks. Despite the overt power of U.S. sanctions, the U.S. strategy could be undermined by lobbying that aims to defang U.S. efforts to cut China off from U.S. technology, reflecting an internal constraint that is less potent within the Chinese system.

But, on the positive side of the ledger, free-market checks within the U.S. system—which often empower allocative efficiencies in private innovation to an extent not matched in a top-down system—may be even better suited to the current tech war than the Cold War. Today, commercial and military technology development, including with respect to chip technology, deeply intertwine, and much of the technology critical to national security originates from private sector innovation. During the early Cold War, the last moment of major national security-driven industrial policy, U.S. government-supported R&D in the defense sector

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[317] *See* Friedberg Book, *supra* note 10, at 141–42.
[318] *See id.* at 199–244, 296–339.
[319] *See id.* at 141–42.
[320] *See* ABRAHAM S. BECKER, RAND, N-2682-RC, U.S.-SOVIET TRADE IN THE 1980S 5, 7 (1987), https://www.rand.org/content/dam/rand/pubs/notes/2009/N2682.pdf [https://perma.cc/6NE5-LZMT].
[321] *See* Oren Cass & Gabriela Rodriguez, *The Case for a Hard Break With China*, FOREIGN AFFS. (July 25, 2023), https://www.foreignaffairs.com/china/case-for-hard-break-with-beijing-economic-derisking [https://perma.cc/VF4L-FYTT].

often produced technological innovations that, in turn, flowed to commercial sectors. Today that directionality runs the opposite way—and the pace of innovation is faster.[322] From a national security standpoint, especially vis-à-vis China, the U.S. government seeks balanced policy formulas that avoid heavy-handedly stifling the very innovation critical to its defense.[323]

In many ways, China's strengths and weaknesses are inverted to those of the United States. China's tech war strategy relies on extensive state control over public and private actors to take actions that are unavailable to the U.S. government or EU institutions. Its chip-focused Big Fund and Made in 2025 plans are large-scale government initiatives aiming to reorganize sectors of China's economy.[324] In contrast to the U.S. system, once the Chinese government sets a course, its firms largely fall in line: Huawei and other chip suppliers operate today as champions of the national interest.[325] All three players can provide subsidy support to their firms and implement regulations governing critical sectors. But Chinese forms of state support and prohibition are far more varied and powerful.[326] For example, the government has declared that all rare earth minerals are the property of the state and created a mega-firm to manage the sector.[327] In contrast, the United States and EU rely on comparatively "light-touch" subsidies to firms, like financing and tax benefits, but cannot (except in extreme circumstances) unilaterally rearrange resources or firms.

But China's state-led economy poses its own disadvantages. Because its government directives are not subject to formal checks, China's system fails to counterbalance and adjust when the central authorities pursue an inefficient or mistaken path. Without mitigating constraints on government power, its system is more exposed to government mistakes. The government's desire to retain supervision over the actions of all actors in the system can also impede rapid innovation: "[F]rom the Party's perspective[,] any marginal benefits in terms of innovation would not be worth the marginal loss in control."[328] Given these strengths and weaknesses, the Chinese government will likely continue to lean on subsidies and other forms of state support to boost its domestic chip industry. But in doing so, and in further centralizing political control over these tools, China risks magnifying the features dragging down its chip war strategy—creating new

[322] *See* Ina Fried, *Pentagon's Bridge to Tech's Private Sector*, AXIOS (Aug. 9, 2022), https://www.axios.com/2022/08/19/pentagon-tech-private-sector-defense-innovation [https://perma.cc/E6FC-CD9M]; *see also* Friedberg Book, *supra* note 10, at 342–43.

[323] *See* Jim Garamone, *Hicks Makes Case that Effective Defense Innovation Is Moving Forward*, U.S. DEP'T OF DEF. (Jan. 30, 2024), https://www.defense.gov/News/News-Stories/Article/Article/3661297/hicks-makes-case-that-effective-defense-innovation-is-moving-forward/ [https://perma.cc/C7NE-WA3V].

[324] *See supra* Section II(B)(2).

[325] *See id.*

[326] *See id.*

[327] *See* Gabriel Gavin, *Precious Rare Earth Metals Belong to the State, China Declares*, POLITICO.EU (June 30, 2024), https://www.politico.eu/article/precious-rare-earth-metals-belong-to-the-state-china-declares/ [https://perma.cc/YV82-Z6GS].

[328] MASTRO, *supra* note 208, at 176.

opportunities for graft and aggravating information-transmission problems up its political hierarchy. While the U.S. system can toggle between free-market and industrial-intervention policies, the Chinese political turn toward even tighter CCP control over the past decade renders any free-market shift in Chinese policies unlikely, locking China into a government-heavy strategy for the foreseeable future.

For the EU, we identify its constitutional structure as its greatest comparative constraint in the tech war, limiting the effectiveness of each of the policies the EU seeks to deploy. The EU has sought to overcome this constraint, rallying the individual Member States behind its strategic autonomy agenda. Yet today, strategic autonomy remains a distant goal for the EU. The lack of a unified EU position also makes the EU vulnerable to various divide-and-conquer strategies that China and the United States can deploy to undermine the EU's policies. For example, the U.S. government only had to get the Netherlands on board to implement tight export controls without having to negotiate with the entire EU. Any such negotiation vests the United States with greater bargaining leverage compared to when it negotiates with the EU as a major economic actor.[329] Similarly, if the Netherlands cooperates with further U.S.-led export controls, other EU nations may experience negative impacts on their own economic relationships with China. This retaliation would not be unprecedented: China has previously exploited intra-EU divisions by strategically targeting some Member States to get them to exert pressure on others. In 2022, China sought to discourage Lithuania's pro-Taiwan diplomacy by threatening consequences for major German businesses—leading those German firms to pressure Lithuania to change course.[330]

Overall, our analysis helps explain why many of the EU's key tech war battles will remain internal. Whether the EU becomes a more autonomous geopolitical actor can be measured in part by how the EU fares against the United States and China in terms of military, economic, technological, and other forms of power. But ultimately, the more pertinent question is whether the pro-EU coalitions within the bloc can offset the resistance of anti-EU coalitions toward deepening European integration and transferring more authority to the Union itself. Should the EU be able to undertake such constitutional reform internally, the bloc will gain greater leverage vis-à-vis the other powers. If not, the EU is left to wage the tech war with national-level export controls, uncoordinated investment controls, and continuing battles over how to fund EU-level subsidies without undermining the integrity of the single market.

Whether and how the EU reallocates its economic statecraft power internally—an issue taken up below—is thus one of the key determinants of the future of the tech war and the EU's position within it. The EU has been pushing its

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[329] *See supra* Section II(C).
[330] *See* Matthew Reynolds and Matthew P. Goodman, *China's Economic Coercion: Lessons from Lithuania*, CTR. FOR STRATEGIC & INT'L STUD. (May 6, 2022), https://www.csis.org/analysis/chinas-economic-coercion-lessons-lithuania [https://perma.cc/P6VH-Y6KP].

constitutional limits recently by exercising its limited legal authorities, such as Article 122 of the Treaty on the Functioning of the European Union, which vests the EU with the power to act in economic emergencies.[331] The EU has also found other innovative ways to circumvent its constitutional constraints during crises. These methods include pursuing "enhanced cooperation" within a smaller group of Member States that are prepared to deepen integration amongst themselves.[332] At times the EU has also relied on a Treaty provision that allows for a more simplified legislative procedure.[333] However, legal scholars have warned that these alternative legal pathways cannot substitute for proper Treaty reform and hence provide a questionable legal basis for enhancing the powers of the EU.[334]

B. Are Internal Features Driving the Tech War Toward De-Escalation?

A closer analysis of their internal features suggests that each player is, on balance, more restrained in its conduct of the chip war than an external account alone suggests. This finding helps explain the current state of the conflict but also suggests that continuing détente is likely in the coming years.

Many external accounts foresee a treacherous spiral in which each actor continues to escalate offensive moves against the other, especially the United States and China.[335] Some analysts see an intensifying tech war accelerating a broader economic decoupling.[336] More grimly, Professors Farrell and Newman predict that aggressive tech war policies make it "more likely that Cold War reflexes could hijack the new economic security agenda, pushing the [United States] down a risky path of tit-for-tat escalation between the major powers."[337] American security policy scholar Professor Graham Allison offers one of the most dire projections, going so far as to call eventual military conflict "more likely than not."[338] Such

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[331] *See* Peter Lindseth & Päivi Leino-Sandberg, *Democratizing Draghi: Why the 'Competitiveness Report' Demands Treaty Reform*, VERFBLOG (Sept. 12, 2024), https://verfassungsblog.de/draghi-report-investment-eu-competition-treaty-reform [https://perma.cc/GU66-Y2SA].
[332] *See id.*
[333] *See id.*
[334] *See id.*
[335] *See* Farrell & Newman, *supra* note 83.
[336] *See, e.g.*, Jon Bateman, *The Fevered Anti-China Attitude in Washington Is Going to Backfire*, POLITICO (Dec. 15, 2022), https://www.politico.com/news/magazine/2022/12/15/china-tech-decoupling-sanctions-00071723 [https://perma.cc/U5JH-MDCS]; Edward Luce, *The Risks of US-China Decoupling*, FIN. TIMES (Feb. 9, 2024), https://www.ft.com/content/6072fef7-f32d-491a-84b8-c1c25c1f828a [https://perma.cc/A8RT-6V7G]; Vivek Mishra, *The Great US-China Tech Decoupling: Perils Of Techno-Nationalism*, EURASIA REV. (Mar. 5, 2023), https://www.eurasiareview.com/05032023-the-great-us-china-tech-decoupling-perils-of-techno-nationalism-analysis/ [https://perma.cc/7JR8-P8V4]; Don Weinland, *The Tech War Between America and China Is Just Getting Started*, THE ECONOMIST (Nov. 18, 2022), https://www.economist.com/the-world-ahead/2022/11/18/the-tech-war-between-america-and-china-is-just-getting-started [https://perma.cc/E745-3KJL].
[337] Farrell & Newman, *supra* note 83.
[338] *See* Graham Allison, DESTINED FOR WAR: CAN AMERICA AND CHINA ESCAPE THUCYDIDES' TRAP? (2018); *see also* Dale Copeland, *U.S. Must Avoid Turning China Chip War into Hot War*, NIKKEI ASIA (Nov. 18, 2022), https://asia.nikkei.com/Opinion/U.S.-must-avoid-turning-

warnings about dangerous escalation often point to Taiwan's prominent role in the semiconductor supply chain, which some allege could provide China with an impetus to invade the island, potentially triggering a U.S. military response and drawing in the EU.[339]

Compared to these alarming projections, our internal account offers grounds for cautious optimism. To be clear, an external account, emphasizing states' power and interests, could explain why aggressive policy moves and counter-moves will not continue to escalate. Perhaps the parties will deter each other or reach some sort of equilibrium, whether tacit or negotiated. After all, the threat of escalation can be stabilizing, a sort of mutually assured economic destruction. Or, perhaps one side will decisively dominate the other. Like in the Cold War, that is, one side might "win." But we have also identified several internal features *within* each actor that act as brakes on escalation. A closer look into those features suggests that each player remains severely constrained in its capacity or propensity to escalate the tech war.

Given the commercial benefits of the continuing economic interdependence discussed in Section II(A), U.S. tech companies could use their political influence to push the U.S. government toward restraint. These companies profit immensely from access to the Chinese market, just as Chinese tech companies are eager to continue to benefit from U.S. suppliers, consumers, and investors.[340] None of the major players—whether democratic or authoritarian—can disregard the interests of their tech companies, which are their greatest assets in the tech rivalry. But this corporate influence will likely be a stronger restraint in the United States, where lobbying is so pervasive.[341] As long as the Chinese market remains a key customer base for U.S. firms like Intel, AMD, and Nvidia, the Chinese government can indirectly harness corporate lobbying in the United States for its own benefit. In the face of the Trump Administration's hardline tactics and threatened trade war, the

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China-chip-war-into-hot-war [https://perma.cc/77CX-6VYX] (warning that the tech war "could even lead to an actual hot war, or at least to crises that increase the risk of a military clash between the two great powers").

[339] *See* John Lee & Jan-Peter Kleinhans, *Would China Invade Taiwan for TSMC?,* THE DIPLOMAT (Dec. 15, 2020), https://thediplomat.com/2020/12/would-china-invade-taiwan-for-tsmc/ [https://perma.cc/9678-XBF9]; Thomas J. Shattuck, *Believe Biden When He Says America Will Defend Taiwan*, FOREIGN POL'Y RSCH. INST. (May 25, 2022), https://www.fpri.org/article/2022/05/believe-biden-when-he-says-america-will-defend-taiwan/ [https://perma.cc/R8RD-8MMJ]; Henry Boyd et al., *Taiwan, Cross-strait Stability and European Security: Implications and Response Options*, INT'L INST. STRATEIC STUD. 1, 25–31 (Mar. 2022), https://www.iiss.org/globalassets/media-library---content--migration/files/research-papers/2022/03/taiwan-cross-strait-stability.pdf [https://perma.cc/4R6Z-DYMR].

[340] Tripp Mickle, David McCabe & Ana Swanson, *How The Big Chip Makers Are Pushing Back on Biden's China Agenda*, N.Y. TIMES (Oct. 5, 2023), https://www.nytimes.com/2023/10/05/technology/chip-makers-china-lobbying.html [https://perma.cc/3FWK-X4E4].

[341] *See* Yuka Hayashi & Asa Fitch, *U.S. Tightens Curbs on AI Chip Exports to China, Widening Rift with Nvidia and Intel*, WALL ST. J. (Oct. 17, 2023), https://www.wsj.com/tech/u-s-tightens-curbs-on-ai-chip-exports-to-china-widening-rift-with-u-s-businesses-3b9983df [https://perma.cc/GGW8-V2QH].

Chinese government has signaled that it will seek to use antitrust law and other tools to exert pressure on American companies including Apple and Synopsys, a chip-design software firm.[342]

In addition to the restraining effects of tech industry lobbying, U.S. ideological commitments may remain a barrier to more aggressive subsidies and industrial policy, especially over the long term. True, the U.S. government has increasingly intervened in the markets over the past years. The second Trump Administration has also come into office combatively—and unilaterally—wielding tariffs and other command-style interventions in markets.[343] It is therefore not surprising that some commentators have worried that the United States will "become like China"[344] in its effort to "out-China China."[345] However, our analysis suggests that such fears are overblown. The ideological beliefs of many U.S. policymakers are likely to act as brakes on such a slide, with Congress ultimately limiting the extent of subsidies that will be disbursed.[346] Some lawmakers in the United States remain skeptical of the government's ability to pick winners and supplant the tendency of free markets to allocate resources in an efficient way. They also view the ongoing tech war as an ideological contest, like during the U.S.-Soviet Cold War, in which the United States has a strategic interest in showcasing globally that the U.S. economic system is superior to China's.[347]

China similarly faces de-escalatory pressures that place brakes on its chip strategy. China has thus far not retaliated significantly against U.S. and EU export controls, despite occasional rhetoric. In fact, China appears to select retaliatory

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[342] *See* Lin & Huang, *supra* note 155.
[343] *See* Alan Beattie, *Trump's Cataclysmic Damage Is Going Way Beyond Tariffs*, FIN. TIMES (Feb. 3, 2025), https://www.ft.com/content/c26b417d-549e-49f1-9478-7c381b4ad226 [https://perma.cc/CC2Q-J8CV]; Andrew Shalal & Nadita Bose, *Trump Says He Will Introduce 25% Tariffs on Autos, Pharmaceuticals and Chips*, REUTERS (Feb. 18, 2025), https://www.reuters.com/business/autos-transportation/trump-auto-tariff-rate-will-be-around-25-2025-02-18/ [https://perma.cc/FB4E-69Q7]; Tim Wu, *Trump's Economy Looks Like Command Capitalism*, N.Y. TIMES (Jan. 29, 2025), https://www.nytimes.com/2025/01/29/opinion/trump-economy-tiktok.html [https://perma.cc/9EF6-RPSP].
[344] *See* James Pethokoukis et al., *Cold War II: Should the US Embrace High-Tech Industrial Policy to Counter China?*, AEI (May 24, 2018), https://www.aei.org/economics/competing-with-china-an-aeideas-online-symposium/ [https://perma.cc/MFC3-VXRV]; *see also* Scott Kennedy, *China Is the Wrong Model for the United States*, CTR. FOR STRATEGIC & INT'L STUD. (Aug. 9, 2022), https://www.csis.org/analysis/china-wrong-industrial-policy-model-united-states [https://perma.cc/Y6AP-ZWFF].
[345] *See*, *e.g.*, Kaiser Kuo, *The Myths and Realities of China's Civil-Military Fusion Project*, THE CHINA PROJECT (July 6, 2023), https://thechinaproject.com/2023/07/06/the-myths-and-realities-of-chinas-military-civil-fusion-program/ [https://perma.cc/H476-VLBZ].
[346] *See* Stephen Groves, *House Speaker Johnson Says GOP May Try to Repeal CHIPS Act, Then Walks It Back*, AP (Nov. 1, 2024), https://apnews.com/article/mike-johnson-chips-act-d5504f76d3aa0d5b401216f3592c9a09 [https://perma.cc/88GH-UE8J].
[347] *See* Jeffrey Cimmono & Matthew Kroenig, *The China Challenge*, ATL. COUNCIL (Dec. 16, 2020), https://www.atlanticcouncil.org/content-series/atlantic-council-strategy-paper-series/the-china-challenge/ [https://perma.cc/U9RT-YES]; Bonnie Gerard, *Is There Really a 'Chinese Model,'* THE DIPLOMAT (July 13, 2018), https://thediplomat.com/2018/07/is-there-really-a-china-model/ [https://perma.cc/C44U-FP63].

measures in part for their lack of negative domestic effects: Investigating Nvidia for antitrust violations, for example, may not impose significant domestic costs when Nvidia cannot sell many of its advanced chips in China.[348] Additionally, China had already restricted exports of germanium and gallium to the United States in August 2024, rendering its December 2024 retaliatory "ban" largely symbolic.[349] These measures can be viewed as exerting pressure toward *de-escalation* by operating as "warning shots"—signaling future avenues by which China can inflict economic pain and incentivizing companies to exert pressure against additional U.S.-led measures.[350] A further escalation of the chip war may be detrimental to the Chinese government's other industrial plans for its economy, including the development of critical technology sectors and its overarching pursuit of economic growth.[351] The government's legitimacy derives in part from its continued ability to provide growth in these sectors.[352] China's top-down form of economic management relies on continued successful development of technologies prioritized by the state and a rapidly escalating tech war would derail these initiatives.[353]

Alongside these internal U.S. and Chinese pressures toward de-escalation, the EU's abilities to further tighten its export controls, implement investment restrictions, or hand out extensive subsidies also remain limited by its persistent internal divisions. While the EU has made strides in pursuing more assertive economic statecraft in recent years, Member States have guarded their national security powers and remain hesitant to grant the EU full authority to fight the tech war on their behalf.[354] Thus, the more the tech war escalates and evolves into a geopolitical conflict with national security (as opposed to just economic) ramifications, the fewer tools the EU has to respond to threats and actions from China. The latest EU move to address the tech war is a Recommendation calling on Member States to review their companies' outbound investments in industries including semiconductors, AI, and quantum technology.[355] While the

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[348] *See* Liam Mo & Brenda Goh, *China Targets Nvidia with Antitrust Probe, Escalates US Chip Tensions*, REUTERS (Dec. 10, 2024), https://www.reuters.com/technology/china-investigates-nvidia-over-suspected-violation-antimonopoly-law-2024-12-09/ [https://perma.cc/U3WG-XE3T].
[349] Gracelin Baskaran & Meredith Schwartz, *China Imposes Its Most Stringent Critical Minerals Export Restrictions Yet Admist Escalating U.S.-China Tech War*, CTR. FOR STRATEGIC & INT'L STUD. (Dec. 4, 2024), https://www.csis.org/analysis/china-imposes-its-most-stringent-critical-minerals-export-restrictions-yet-amidst [https://perma.cc/4EVW-F4AM].
[350] *See* Rao, *supra* note 240, at 34; Andy Home, *China Fires Latest Warning Signal with Antimony Controls*, REUTERS (Aug. 28, 2024), https://www.reuters.com/markets/commodities/china-fires-latest-warning-signal-with-antimony-controls-2024-08-28/ [https://perma.cc/2URQ-VR4D].
[351] *See* Kroeber, *supra* note 241.
[352] *See* Rao, *supra* note 240, at 34; Eaton & Hasmath, *supra* note 240, at 447.
[353] *See* Rao, *supra* note 240, at 4 ("Lawmaking allows China to communicate its resolve to both foreign and domestic audiences without incurring the significant economic costs of actually employing these actions, a particularly pressing concern given the current economic challenges China faces.").
[354] *See, e.g.,* Bounds, *supra* note 297.
[355] *Commission Recommendation 2025/63 of 15 January 2025 on reviewing outbound investments in technology areas critical for the economic security of the Union*, EUR. COMM'N. (Jan. 15, 2025), https://eur-lex.europa.eu/eli/reco/2025/63/oj/eng [https://perma.cc/3RZZ-DL8P].

Recommendation includes "guidance to Member States on how to identify and assess potential risks" posed by outbound investment flows, the Recommendation can only ask that the Member States undertake their own reviews.[356] This regulatory gap shows how, absent a transfer of new powers to the EU over national and economic security, the EU will continue to wage the tech war as a fragmented entity of twenty-seven sovereign states. This fragmentation limits its escalatory policy options in its quest for strategic sovereignty.

Finally, we note that our internal analysis offers some cautious optimism on the active or reactive nature of the chip war by examining the features that limit the speed and degree of a country's reaction. The dynamics of the chip war have drawn repeated comparisons to the Sputnik moment during the Cold War, which was itself a series of moments of action and reaction between the United States and the Soviet Union. After the Soviet Union successfully launched the first Sputnik satellite in October 1957, the U.S. government poured money into its space program to catch up.[357] In January 1958, the United States launched its first satellite.[358] For the decade to come, U.S. policymakers pumped investments into missile technology in fear of a "missile gap" between the Soviet and U.S. arsenals.[359] But, as Professor Friedberg identifies, prevailing views on U.S. free-market ideology prevented the United States from exercising the full range of its potential interventionist tools to react to Soviet developments.

Writers drew the analogy to Sputnik earlier in the tech war in 2019 when the United States targeted Huawei as a national security threat and cut the company off from purchasing critical U.S. chips.[360] These actions forced Huawei to fully invest in a Chinese chip supply chain.[361] More recently, others have referred to DeepSeek's success in producing an AI model as a Sputnik moment for the U.S. AI industry, serving as a "wake-up call" for Silicon Valley firms.[362] DeepSeek's

[356] *Commission Calls on Member States to Review Outbound Investments and Assess Risks to Economic Security*, EUR. COMM'N. (Jan. 14, 2025), https://ec.europa.eu/commission/presscorner/detail/en/ip_25_261 [https://perma.cc/ZMA4-TDE5].
[357] *See Sputnik, 1957*, DEP'T OF STATE OFF. OF THE HISTORIAN, https://history.state.gov/milestones/1953-1960/sputnik [https://perma.cc/BC75-U667].
[358] *Id.*
[359] *Id.*
[360] Fareed Zakaria, *The Blacklisting of Huawei Might be China's Sputnik Moment*, WASH. POST (May 23, 2019), https://www.washingtonpost.com/opinions/global-opinions/the-blacklisting-of-huawei-might-be-chinas-sputnik-moment/2019/05/23/9352fc66-7d99-11e9-a5b3-34f3edf1351e_story.html [https://perma.cc/3TL5-TE5U]; Eva Dou, *How Huawei Brought on a Sputnik Moment in World Trade*, WASH. POST (Jan. 4, 2025), https://www.washingtonpost.com/technology/2025/01/04/huawei-export-controls-us-china-trade-chips-telecommunications/ [https://perma.cc/2MY7-3WR4].
[361] *See* Zakaria, *supra* note 360.
[362] Oliver Hotham, *DeepSeek's 'Sputnik Moment' Exposes Holes in US Chip Curbs*, AFP (Jan. 29, 2025), https://www.yahoo.com/news/deepseeks-sputnik-moment-exposes-holes-070123302.html; Daron Acemoglu, *A Sputnik Moment for AI*, PROJECT SYNDICATE (Feb. 4, 2025), https://www.project-syndicate.org/commentary/china-ai-deepseek-raises-difficult-questions-for-united-states-by-daron-acemoglu-2025-02 [https://perma.cc/JN52-D6B8]; Louis-Vincent Gave, *Another Sputnik Moment*, GAVEKAL RESEARCH (Jan. 27, 2025), http://research.gavekal.com/article/another-sputnik-moment/ [https://perma.cc/9V7E-QEDU].

success itself can be traced through a chain of chip war actions and reactions, including the imposition of U.S. export controls in October 2022 and the resulting need for efficiency in Chinese AI development. In a noted difference from the Cold War, the key actors in this reactionary cycle are private firms as much as national governments. But more Sputnik moments are likely to come as the United States, China, and the EU continue to race against each other's capabilities.

While the external narrative may seek to predict the substance of each actor's next strategic move, our internal analysis offers a contribution by examining the degree and timing of the reaction. For example, in responding to a future Chinese breakthrough, the United States' reaction time will be shortened by the possibility of strong unilateral executive action.[363] But if interagency action—or worse, legislative action—is required, the U.S. reaction will likely be delayed, regardless of the external impetus.[364] Similarly, our analysis suggests that the EU will remain constrained in its ability to react against Chinese breakthroughs or U.S. pressure, given the difficulty of coming to any intra-EU consensus on the extent of the response.[365] The constraints we have highlighted in each Section serve not only to constrain each country's pursuit of its chosen strategy, but also to limit their ability to respond to moves made by other actors.

At the same time, our internal account still suggests that the costly chip war will not wane any time soon. There is likely no ceasefire—not to mention permanent peace—in sight.[366] As mentioned in Part II, anti-China hawkishness is one of the few areas of bipartisan agreement in Washington these days.[367] Even if there remains intense disagreement over what to do about rising tensions, "Republican and Democratic members of Congress alike agree that Beijing is Washington's foremost geopolitical competitor."[368] At a time when any U.S. administration will face political pressure to look and act tough on China, the availability of delegated authority from Congress affords presidents many ready options to ramp up trade or investment restrictions. Such actions may be tempered by lobbying and limitations on enforcement resources, but they will still be readily exercisable—and presidents of both parties have in the recent years only been ratcheting them up, not down.

The Chinese government has also shown its structural aptitude for continuing the tech war, including by leaning into state intervention even when such intervention is costly. The Chinese commitment to chip self-sufficiency has endured for over a decade, and the government has shown its willingness to keep experimenting with new approaches for combining state and private power to invest in the industry. China is also unlikely to relinquish the keys to its rare earth sector,

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[363] *See supra* Section II(A)(2).
[364] *See supra* Section II(A)(3).
[365] *See supra* Section II(C)(3).
[366] *See* Shivakumar et al., *supra* note 96.
[367] *See supra* Section II(A)(1).
[368] Ali Wyne & Ryan Hass, *Questioning the Presumption of a US 'Consensus' on China Policy*, BROOKINGS INST. (July 15, 2024), https://www.brookings.edu/articles/questioning-the-presumption-of-a-us-consensus-on-china-policy/ [https://perma.cc/LM9T-L6UL].

keeping foreign investment at bay and seeking to guard its processing technology through export controls. As for the EU, despite its constitutional constraints, the bloc has still managed to use its limited authority to coordinate Member State policies and muster an increasingly—if only incrementally—hawkish approach toward Chinese technology. This trend will likely continue as the Europeans' attitudes toward China harden, in particular after the Russian invasion of Ukraine and China's refusal to condemn that invasion.[369]

Our analysis suggests that each of the three actors will sustain a difficult balancing act between commercial and geopolitical interests, prolonging the tech war while keeping both extremes—a truce or an escalatory spiral—at bay. Additionally, each actor faces constraints in exercising its tools in the action-reaction cycle. Such an outcome may be discouraging to those who wish to see continuing economic decoupling of Chinese and Western economies, regarding interdependence as a long-term security threat. But for those who fear ever-widening and intensifying rifts, our analysis offers a more encouraging, if not entirely reassuring, assessment of the tech war's future course.

C. Will the Tech War Remake Internal Features?

Even if key actors' internal features have had restraining influences in the tech war to date, it is important to ask whether these features may change in response to external developments. That is, while internal features affect the tech war, might the tech war itself also alter these features? If so, some constraints on the use of these tools could loosen over time, potentially paving the way to escalation.

One might expect that the constraints imposed by the United States' internal features—the wide dispersal of power throughout the government and the friction of lobbying—could weaken as the tech war heats up. Bipartisan support for hardline geoeconomic policy toward China, for example, may lead to a revamping of the federal bureaucracy, or it might simply overwhelm interest group lobbying. The structure and operation of the executive branch is not fixed. It could evolve and may ultimately need to do so to effectively battle for tech supremacy. Some experts have already called for structural overhauls, such as creating a new economic intelligence apparatus on par with military intelligence, new agencies dedicated to developing advanced technologies, and new bodies to coordinate policy across the departments and agencies responsible for pieces of the tech war.[370]

But if such an evolution does occur, it will take time—and because the battle for tech supremacy is in large part a race, time is key. Security-driven reorganization of the U.S. government has usually occurred in moments of emergency, like the creation of a unified Defense Department after World War II or the creation of the

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[369] *See* Luke Johnson, *What Europe Thinks ... About China*, INTERNATIONALE POLITIK QUARTERLY (Mar. 24, 2023), https://ip-quarterly.com/en/what-europe-thinks-about-china [https://perma.cc/53Y3-3RSK].
[370] *See* Farrell & Newman, *supra* note 83.

Department of Homeland Security after the September 11, 2001 terrorist attacks.[371] Despite widespread political support for related policies, the current tech war has not engendered any comparable mobilizing urgency in the United States. Present challenges around China's rise are more gradual than sudden.

As of early 2025, President Trump's agenda remains a major wildcard impacting U.S. internal features, especially as he has come into office looking to bulldoze government bureaucracy.[372] His current approach centralizes executive power in the Oval Office,[373] where he currently relies heavily on tech-affiliated leaders for advice.[374] Besides eroding checks on presidential power, President Trump is personally intervening in markets in ways that buck American norms. As Professor Tim Wu explains, President Trump's approach "hints at a new era in economic policy for the United States that is centered" on a president "actively picking winners and losers."[375] Simultaneously, however, the second Trump Administration is trying to spur tech innovation through deregulation,[376] and thus far the Administration has not targeted the departments most responsible for the tech war in initial policy changes. In the face of executive-driven actions, it remains to be seen how effectively checks on presidential power will hold. Aggressive moves to renegotiate the bounds of power across the executive branch and with Congress could open up new possibilities for tech war policy. Still, while President Trump's actions weaken some constraints on how the United States engages in global tech competition in the short-term, it remains doubtful whether the chip war will galvanize sufficient energy to overcome longstanding domestic constraints in the longer run.

On the EU side, leaving national security as a prerogative of individual EU Member States—including most measures designed to enhance economic security—severely compromises the EU's ability to wield any collective leverage.

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[371] *See* President Harry S. Truman, *Special Message to the Congress Recommending the Establishment of a Department of National Defense* (Dec. 19, 1945), https://www.trumanlibrary.gov/library/public-papers/218/special-message-congress-recommending-establishment-department-national [https://perma.cc/2KHS-7RAK]; *Creation of the Department of Homeland Security*, DEPT. OF HOMELAND SEC., https://www.dhs.gov/creation-department-homeland-security [https://perma.cc/6PBW-Y2YZ].

[372] Noah Millman, Opinion, *Welcome to America's Fourth Great Constitutional Rupture*, N.Y. TIMES (Feb. 10, 2025), https://www.nytimes.com/2025/02/10/opinion/trump-caesar-constitutional-rupture.html [https://perma.cc/28LB-UC4G].

[373] *See* Charlie Savage, *Trump Issues Order to Expand His Power Over Agencies Congress Made Independent*, N.Y. TIMES (Feb. 18, 2025), https://www.nytimes.com/2025/02/18/us/trump-executive-order-sec-ftc-fcc.html [https://perma.cc/4FSS-BHUJ].

[374] Thomas Beaumont, *Elon Musk's Prominence During Inauguration Ceremonies Stamps Tech Titan's Place in Trump's Orbit*, AP (Jan. 20, 2025), https://apnews.com/article/trump-inauguration-elon-musk-mars-tech-billionaires-70ad9d5f854fce40f44cdabbd8084734 [https://perma.cc/D8RL-NVRY].

[375] Wu, *supra* note 343.

[376] *See* Pablo E. Carrillo et al., *U.S. AI Export Controls and Strategic Shifts Under the Trump Administration*, NAT'L L. REV. (Feb. 17, 2025), https://natlawreview.com/article/us-ai-export-controls-and-strategic-shifts-under-trump-administration [https://perma.cc/6475-QD5B].

As a result, political pressures are now building within the EU to reconsider its existing constitutional settlement so as to become a more forceful geopolitical actor. For example, in the wake of the Dutch announcement implementing national-level controls on ASML's exports to China, European Commission Vice President Valdis Dombrovskis indicated that he supports an EU-wide approach to chip export controls and other strategic technologies to "ensure coherence in our policy on security, trade and technology."[377] It is possible that the EU is now approaching a "constitutional moment" that leads Member States to transfer powers to the EU over economic security.[378]

This momentum toward greater EU integration in economic security matters accelerated when former Italian Prime Minister and former President of the European Central Bank Mario Draghi released his much-awaited report on European competitiveness in September 2024.[379] The report painted a dire picture of the EU's competitiveness and called for the EU to "radically change" in response to the "existential challenge[s]" the bloc is facing.[380] Given Draghi's stature as a legendary politician and an authoritative leader—he is known as the "Super Mario" who saved the Eurozone from collapsing at the height of the Euro crisis in 2012—his message reverberates across the EU and is now guiding the European Commission's agenda.[381] In his report, Draghi addresses the chip competition, calling for the European Chips Act to be "stepped up" and advocating for managing subsidies and export controls at the EU level.[382] This message is likely to help EU institutions rally support for greater integration in economic security matters.

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[377] Jorge Valero, Alberto Nardelli, & Jillian Deutsch, *EU Ready for Coordinated Approach to Advanced Chip Restrictions*, BLOOMBERG (Mar. 9, 2023), https://www.bloomberg.com/news/articles/2023-03-09/eu-ready-for-coordinated-approach-to-advanced-chip-restrictions [https://perma.cc/X3XC-SWP4].

[378] *Cf.* 1 BRUCE ACKERMAN, WE THE PEOPLE: FOUNDATIONS, 288–94 (1991) (laying out a theory of a "constitutional moment" in which constitutional changes are discussed in the national political discourse and thereby legitimated).

[379] *See generally The Draghi Report on EU Competitiveness*, EUR. COMM'N (Sept. 2024), https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en#paragraph_47059 [https://perma.cc/R8G5-PDS9].

[380] MARIO DRAGHI, THE FUTURE OF EUROPEAN COMPETITIVENESS, PART A: A COMPETITIVENESS STRATEGY FOR EUROPE 7 (2024), https://commission.europa.eu/document/download/97e481fd-2dc3-412d-be4c-f152a8232961_en?filename=The%20future%20of%20European%20competitiveness%20_%20A%20competitiveness%20strategy%20for%20Europe.pdf [https://perma.cc/AUA9-9H45].

[381] *A Competitiveness Compass for the EU*, at 26, COM (2025) 30 final (Jan. 29, 2025), https://commission.europa.eu/document/download/10017eb1-4722-4333-add2-e0ed18105a34_en [https://perma.cc/PX34-N59N]; *see* Kim Mackrael & Laurence Norman, *'Super Mario' Draghi Pitches Radical Change to Fix Europe's Economy*, WALL ST. J. (Sept. 9, 2024), https://www.wsj.com/world/europe/super-mario-draghi-pitches-radical-change-to-fix-europes-economy-2610494b [https://perma.cc/EJ9U-N4XR].

[382] MARIO DRAGHI, THE FUTURE OF EUROPEAN COMPETITIVENESS, PART B: IN-DEPTH ANALYSIS AND RECOMMENDATIONS 88–90 (2024), https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf [https://perma.cc/V23C-3ZGR].

Despite these growing pressures toward greater integration, an ambitious constitutional reform in the EU is unlikely, even if possible.[383] It would require altering the foundational Treaties that allocate the powers between the EU and the Member States. Amending the Treaties is never easy, although not unprecedented. The foundational EU Treaties were revised multiple times between 1958 and 2009, and those Treaty amendments always trended toward greater, not lesser, EU integration.[384] In addition, the European courts have over the decades interpreted the Treaties in ways that have vested EU institutions with more powers, judicially moving the EU toward greater integration one judgment at a time.[385] At the same time, such a development would be politically contentious today, especially among the various anti-EU parties whose influence is growing within Europe.[386] Just exploring possibilities for loosening these constraints would risk turning the tech war into a heated intra-EU political battle between European federalists and Member State sovereigntists, touching on some of the most existential questions about the nature of the European political project.

In comparison to the United States and the EU, the internal features in China appear relatively stable. We do not expect the tech war to significantly alter the composition of China's internal features for two reasons. First, the Chinese government launched its chip industrial policy as early as 2014, in contrast to more recent U.S. and EU policy decisions and conversations. The government's agenda can trace its roots in China's state-planned economy going back to the original whole-nation system, as well as to longstanding foreign investment bans. China's chip policies are thus embedded in foundational political features within its party-state system. Second, Chinese responses to the chip war operate in alignment with the broader Chinese political shift over the past decade that emphasizes the power of the Communist Party over the power of government ministries or of the private sector.[387] Any dramatic shift would likely require the Chinese state to embrace a

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[383] European Parliament Resolution on the Call for a Convention for the Revision of the Treaties, 2022/2705 (RSP), (June 9, 2022), https://www.europarl.europa.eu/doceo/document/TA-9-2022-0244_EN.pdf [https://perma.cc/78ZF-4W5V].

[384] *See*, *e.g.*, Single European Act, 17 February 1986, 1987 O.J. (L169) 1, 25 I.L.M. 506; Maastricht Treaty, TEU or Union Treaty: Treaty on European Union, 7 February 1992, 1992 O.J. (C191) 1, 31 I.L.M. 253, Treaty of Lisbon, 13 December 2007, 2007 O.J. (C306) 1; Jo Shaw, *European Integration*, OXFORD PUB. INT'L L. (June 2022), https://opil.ouplaw.com/display/10.1093/law-oeeul/law-oeeul-e102 [https://perma.cc/8MS8-397F]; Stefan Lehne, *Does the EU Need Treaty Change?*, CARNEGIE EUR. (June 16, 2022), https://carnegieendowment.org/research/2022/06/does-the-eu-need-treaty-change?lang=en&center=europe [https://perma.cc/L2YV-GR6Y].

[385] *See* Renaud Dehousse, THE POLITICS OF JUDICIAL INTEGRATION (Neil Nugent, et al. 1998); Arjen Boin & Susanne K. Schmidt, *The European Court of Justice: Guardian of European Integration*, in GUARDIANS OF PUBLIC VALUE 141, 141–154 (Arjen Boin, et al. 2021).

[386] Ruth Green, *The Year of Elections: The Rise of Europe's Far Right*, INT'L BAR ASS'N (Sept. 30, 2024), https://www.ibanet.org/The-year-of-elections-The-rise-of-Europes-far-right [https://perma.cc/C2W2-M3PX].

[387] *See, e.g.*, Livingston, *supra* note 171; Mei Mei Chu & Laurie Chen, *China Passes Law Granting Communist Party More Control Over Cabinet*, REUTERS (Mar. 11, 2024), https://www.reuters.com/world/china/china-passes-law-granting-communist-party-more-control-over-cabinet-2024-03-11/ [https://perma.cc/JLV5-YCSU].

greater role for other autonomous actors, including private companies, which remains unlikely given its recent moves toward deepening government control.

In sum, even while we recognize that some constraints may be loosening in the United States and the EU, any radical remaking of the ideological or political identity of any player is unlikely, at least in the near future. Instead, we are more likely to see all players shift within the continuum of the policy space already defined by their existing domestic constraints. Within that continuum, we observe a shift that is common to all players: a greater move toward centralization. The United States is facing pressure to centralize more authority in the executive branch, while China is placing even greater policy discretion directly in the hands of top-level Communist Party entities. The chip war is also pressuring the EU to become more centralized in its attempt to better coordinate policy measures across the Union. Thus, the chip war is encouraging internal centralization of authority as each country is adjusting to the new era of strategic competition. However, any such shifts toward centralization are likely to fall short of dramatic governmental overhaul. While we view the domestic features as dynamic, at least in principle, we also recognize that a radical re-orientation of the tech war is unlikely—precisely because those features currently shaping the tech war are foundational, entrenched in existing legal frameworks, and deeply rooted in the ethos of these societies.

CONCLUSION

This Article has focused on the "interior dimension" of the global tech war, showing how the distinct internal features of the United States, China, and the EU influence their strategies in the chip war. As Professor Friedberg concludes in his Cold War study, "[a]pproaches to providing for the national defense that might seem desirable on strategic grounds . . . can be rejected if they have internal requirements that run counter to the dominant ideology or to the interests of influential societal groups."[388] We agree and would add domestic laws and legal institutions to that list. Few of the many recent books about the U.S.-China rivalry have much to say about law at all, and much of that discussion focuses on *international* law. We have shown how key tools of economic statecraft, including sanctions, export controls, investment restrictions, and other restrictive trade measures, require harnessing *domestic* legal systems for geostrategic ends. Our analysis illuminates how these domestic laws and institutions have moderated—and will likely continue to moderate—strong strategic impulses toward escalation, even as the tech war continues.

While our primary goal has been to advance the scholarly conversation on the global tech war, our analysis is also relevant for policymakers crafting strategies to wage it. Similarly, tech companies that have become frequent casualties of the tech war—or occasional beneficiaries of it—have much to learn from examining the internal features of the relevant actors. This analysis can help them better appreciate the drivers that shape the tech war they are forced to navigate. Finally, we have shown how the study of economic statecraft today is methodologically

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388 Friedberg Article, *supra* note 10, at 116.

incomplete without paying close attention to the domestic legal orders that, alongside power relations among states, are shaping modern geopolitical contests. We hope this will open new avenues to advance scholarly conversations and enhance understanding of ongoing and emergent international conflicts.