

ARTICLE

CHIP SECURITY: Reconciling Industrial Subsidies with WTO Rules and National Security Exception

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ABSTRACT

Justified as a national security law, the CHIPS and Science Act (“CHIPS Act”) channels an unprecedented \$53 billion federal investment to reshore semiconductor production and reduce dependence on chips manufactured in China. This article documents the unique supply chain risks and institutional history that have led the United States to recognize the semiconductor supply chain as a matter of national security. Despite its success in incentivizing \$450 billion in private investment at home, the CHIPS Act inspired retaliation from China and a \$380 billion global chip subsidy war in which Members of the World Trade Organization (“WTO”) compete for technological superiority.

By utilizing the CHIPS Act as a case study, this article surveys the legal issues that would be contested if industrial subsidies that advance economic security objectives were challenged in the WTO’s judicial arm. Such subsidies would breach fundamental nondiscrimination obligations under Articles I and III of the General Agreement on Tariffs and Trade (“GATT”) and are unlikely to satisfy the narrow test for general exceptions under Article XX. For these reasons, the controversial “national security exception” under Article XXI would be the last resort for such measures to be deemed consistent with WTO law. Despite the strength and frequency of national security justifications, the CHIPS Act would not satisfy the WTO Panels’ interpretation of Article XXI that confines the use of the national security exception to respond to a war or complete severance of diplomatic, trade, and political relations. The article then both explores the policy implications of a potential Dispute Settlement Body (“DSB”) finding that the CHIPS Act or like measures contravene WTO rules, and previews China’s current WTO complaints challenging U.S. semiconductors export controls and the Inflation Reduction Act (“IRA”), a parallel industrial subsidy for electric vehicles. The CHIPS Act debate exemplifies the growing divergence between international and domestic law as the

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line between trade and security is blurred and countries increasingly sideline the WTO to redefine the meaning of national security on their own terms.

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INTRODUCTION

When he signed the landmark CHIPS and Science Act of 2022, President Biden may have anticipated that the law would serve as a conclusive policy solution to the global semiconductor shortage that had reduced the U.S. GDP by an estimate

of \$240 billion in 2021.¹ In 2021 alone, the chip shortage prevented production of 7.7 million cars and resulted in more than \$500 billion in revenue loss for the global economy.² As an industrial policy designed to outcompete China and build resilience against such supply chain disruptions, the CHIPS Act facilitated an unprecedented federal investment of \$52.7 billion to secure an undisrupted supply of chips and rebuild manufacturing capacity at home.³ The landmark spending bill has been remarkably successful in achieving its promise of economic boon and reshoring manufacturing and, in within a year of its enactment, semiconductor manufacturers had announced nearly \$450 billion in private investment that would create 118,000 new jobs in sixteen states.⁴ Accordingly, in the words of National Security Advisor Jake Sullivan, the CHIPS Act is a core pillar of the “modern American industrial strategy” that channels \$805 billion in federal subsidy to “specific sectors that are foundational to economic growth, strategic from a national security perspective, and where private industry on its own isn’t poised to make the investments needed to secure our national ambitions.”⁵

In practice, however, the CHIPS Act served as an American shot in the ongoing global subsidy war in which countries have spent or pledged a staggering \$380 billion in public investment into the semiconductor industry.⁶ This subsidy war had its roots in the pandemic, when many countries experienced semiconductor supply shortages and resolved to create a reliable supply of critical products and

¹ Press Release, U.S. Dep’t of Com., Analysis for CHIPS Act and BIA Briefing (April 6, 2022), <https://www.commerce.gov/news/press-releases/2022/04/analysis-chips-act-and-bia-briefing> [<https://perma.cc/RUC8-JRGA>].

² *Id.*; 2022 *Semiconductor Industry Outlook*, DELOITTE (Dec. 21, 2021), <https://www.deloitte.com/za/en/Industries/telecom-media-entertainment/perspectives/semiconductor-industry-outlook.html> [<https://perma.cc/3HPS-C4VK>].

³ Press Release, White House, Fact Sheet: CHIPS and Science Act Will Lower Costs, Create Jobs, Strengthen Supply Chains, and Counter China (Aug. 9, 2022), <https://www.whitehouse.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/X4C8-YABV>] [hereinafter White House Fact Sheet on CHIPS Act].

⁴ Press Release, Semiconductor Indus. Ass’n, Tracking the CHIPS Incentives Program Awards (Sept. 16, 2024), <https://www.semiconductors.org/chips-incentives-awards> [<https://perma.cc/LFQ2-W7RS>]; Press Release, Semiconductor Indus. Ass’n, The CHIPS Act Has Already Sparked \$200 Billion in Private Investments for U.S. Semiconductor Production (Dec. 14, 2022), <https://www.semiconductors.org/the-chips-act-has-already-sparked-200-billion-in-private-investments-for-u-s-semiconductor-production> [<https://perma.cc/F7RZ-ZTDP>] [hereinafter Tracking the CHIPS Incentives Program Awards].

⁵ Jake Sullivan, Nat’l Sec. Advisor, Remarks by National Security Advisor Jake Sullivan on Renewing American Economic Leadership at the Brookings Institution (Apr. 27, 2023), <https://www.whitehouse.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/56T3-W6LF>]; Inu Manak, *The Curse of Nostalgia: Industrial Policy in the United States*, COUNCIL ON FOREIGN REL. (Jan. 22, 2024), <https://www.cfr.org/article/curse-nostalgia-industrial-policy-united-states> [<https://perma.cc/VB6S-XWYA>].

⁶ Mackenzie Hawkins et. al., *Global Chips Battle Intensifies With \$81 Billion Subsidy Surge*, BLOOMBERG (May 12, 2024), <https://www.bloomberg.com/news/features/2024-05-12/chip-technology-spending-gets-81-billion-boost-in-china-rivalry> [<https://perma.cc/5F4DT3UP>].

raw materials.⁷ Notably, China created a \$41 billion fund to create a self-sufficient semiconductors industry,⁸ the EU adopted a €43 billion “European Chips Act,” and South Korea passed the “K-Chips Act” to provide \$55 billion in tax incentives.⁹ Many other countries have followed suit with their own announcements for semiconductor production and R&D: Japan (\$26 billion), India (\$25 billion), Germany (\$21.5 billion), Taiwan (\$16 billion), Spain (\$12.9 billion), Italy (\$4.6 billion), Netherlands (\$2.7 billion), and the United Kingdom (\$1.3 billion).¹⁰ The underlying assumption of these programs is that states can no longer rely on the free market and global economic integration to provide steady access to advanced semiconductors.¹¹ Instead, the global technology race will be increasingly shaped by the state’s renewed industrial policy and subsidies that support domestic chipmakers, reshore domestic production, and reduce dependence on semiconductors produced in foreign countries.

What distinguishes the CHIPS Act from other U.S. subsidy programs is that there is a persuasive argument to be made that the law is a national security measure—or, at a minimum, an economic measure designed to mitigate national security risks. The CHIPS Act originated from a White House finding that, “as semiconductors become increasingly embedded in and essential to technologies throughout the economy, secure supply chains are of growing importance to U.S. economic and national security” and “the lack of domestic production capability also puts at risk the ability to support current and future national security and critical infrastructure needs.”¹² Throughout the legislative process and executive rulemaking, both Democratic and Republican lawmakers underscored that the

⁷ *Id.*

⁸ Abhishek Vishnoi & Jenny Yu, *China Seeks \$40 Billion to Drive Chipmaking, Reuters Says*, BLOOMBERG (Sept. 5, 2023), <https://www.bloomberg.com/news/articles/2023-09-05/china-seeks-40-billion-fund-to-drive-chipmaking-reuters-says> [https://perma.cc/C6VG-SPB9]; Che Pan & Finbarr Bermingham, *China’s Imports of Dutch Chip-making Equipment Surged Tenfold in November after Washington Tightened Restrictions*, S. CHINA MORNING POST (Dec. 22, 2023), <https://www.scmp.com/tech/article/3246046/chinas-imports-dutch-chip-making-equipment-surged-tenfold-november-after-washington-tightened> [https://perma.cc/C99T-H3XT].

⁹ Press Release, Council of Eur. Union, *Chips Act: Council and European Parliament Strike Provisional Deal* (Apr. 18, 2023), <https://www.consilium.europa.eu/en/press/press-releases/2023/04/18/chips-act-council-and-european-parliament-strike-provisional-deal/>; Jeong-Ho Lee & Sohee Kim, *South Korea Passes Its ‘Chips Act’ Amid US-China Friction*, BLOOMBERG (Mar. 29, 2023), <https://www.bloomberg.com/news/articles/2023-03-29/south-korea-to-pass-its-own-chips-act-amid-us-china-friction> [https://perma.cc/FER2-TPA7]; Sohee Kim, *South Korea Lays Out \$470 Billion Plan to Build Chipmaking Hub*, BLOOMBERG (Jan. 15, 2024), <https://www.bloomberg.com/news/articles/2024-01-15/south-korea-lays-out-470-billion-plan-to-build-chipmaking-hub> [https://perma.cc/P9C5-YVYF]; RAJ VARADARAJAN ET AL., *EMERGING RESILIENCE IN THE SEMICONDUCTOR SUPPLY CHAIN* 9 (2024).

¹⁰ Hawkins et al., *supra* note 6.

¹¹ Sullivan, *supra* note 5.

¹² WHITE HOUSE, *BUILDING RESILIENT SUPPLY CHAINS, REVITALIZING AMERICAN MANUFACTURING, AND FOSTERING BROAD-BASED GROWTH: 100-DAY REVIEWS UNDER EXECUTIVE ORDER 14017 73* (2021), <https://www.whitehouse.gov/wp-content/uploads/2021/06/100-day-supply-chain-review-report.pdf> [https://perma.cc/HJU9-ZQ8G] [hereinafter White House 100-Day Review Report].

dependence on East Asia for chip production poses genuine national security concerns.¹³ In the same vein, after the bill had been signed into law, the Department of Commerce separately promulgated the “National Security Guardrails” rule to prohibit all funding recipients from expanding manufacturing production in China or engaging in joint research, transaction, or licensing with a Chinese entity.¹⁴ The CHIPS Act therefore blurs the line between economic and national security policy and, in the eyes of some critics, exemplifies the “weaponization” of trade.¹⁵

The chip subsidy race and the resulting “securitization of trade” have significant implications for international trade law that restricts subsidies and prohibits discrimination.¹⁶ Other countries have already begun to raise trade complaints against U.S. subsidies at the WTO. For example, China protested the CHIPS Act in the WTO and, in March 2024, filed a WTO complaint against the Electric Vehicle (“EV”) tax credits of the IRA, a parallel industrial subsidy justified on similar economic and national security grounds.¹⁷ By assuming that the CHIPS Act will also be challenged in the WTO’s judicial arm, this paper explains why an industrial subsidy like the CHIPS Act or the IRA can be expected to violate both Article I, Most Favoured Nations (“MFN”), and Article III, national treatment obligations, of the GATT without qualifying under Article XX’s general exceptions.¹⁸ Consequently, the United States would be forced to defend the CHIPS Act with the controversial national security exception under GATT Article XXI.¹⁹ Nonetheless, all WTO Panels have constructed an extremely narrow interpretation of Article XXI that, under existing geopolitical conditions, the CHIPS Act is unlikely to satisfy.²⁰

¹³ See *infra* Part II.

¹⁴ *Id.*

¹⁵ See, e.g., Bryce Hoffman, *The Weaponization of Trade is Making You a Foot Soldier in the Geopolitical Chess Game*, FORBES (Sept. 3, 2022), <https://www.forbes.com/sites/brycehoffman/2022/09/03/the-weaponization-of-trade-is-making-you-a-foot-soldier-in-the-geopolitical-chess-game/> [https://perma.cc/7KAV-AAHK]; William Alan Reinsch, *Weaponizing Trade*, CTR. FOR STRATEGIC & INT’L STUD. (Dec. 7, 2021), <https://www.csis.org/analysis/weaponizing-trade> [https://perma.cc/MU3T-U2BK].

¹⁶ Mona Pinchis-Paulsen, *Let’s Agree to Disagree: A Strategy for Trade-Security*, 25 J. INT’L ECON. L. 527, 527 (2022).

¹⁷ Request for Consultations by China, *United States—Certain Tax Credits under the Inflation Reduction Act*, WTO Doc. WT/DS623/1 (adopted March 28, 2024) at 4–5 [hereinafter China’s *US – IRA* Consultation Request]; Xinmei Shen, *Tech War: China Slams US Chips Act Subsidies at WTO in Beijing’s Latest Protest Against Washington’s Restrictions: Xinhua*, S. CHINA MORNING POST (May 4, 2023), <https://www.scmp.com/tech/tech-war/article/3219279/tech-war-china-slams-us-chips-act-subsidies-wto-beijings-latest-protest-against-washingtons> [https://perma.cc/MRG2-HQQP].

¹⁸ See General Agreement on Tariffs and Trade art. I, III, XX, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194 [hereinafter GATT 1947].

¹⁹ *Id.* at art. XXI.

²⁰ See Panel Report, *Russia—Measures Concerning Traffic in Transit*, WT/DS512/R (adopted Apr. 26, 2019) [hereinafter *Russia—Traffic in Transit*]; Panel Report, *Saudi Arabia—Measures Concerning the Protection of Intellectual Property Rights*, WT/DS567/R (adopted June 16, 2020) [hereinafter *Saudi Arabia—IPRs*]; Panel Report, *United States—Certain Measures on Steel and Aluminium Products*, WT/DS544/R (adopted Dec. 9, 2022) [hereinafter *US—Steel and*

The application of the CHIPS Act into the existing WTO case law is also instructive because of semiconductors' unique properties and supply chain that make them highly susceptible to trade and national security disputes. In 2022, semiconductors became the world's most traded good, making up 15% of the global trade in goods.²¹ Global semiconductor sales totaled \$526.8 billion in 2023 and are projected to surpass \$1 trillion by 2030.²² The semiconductor industry is also interdependent on a complex transnational value chain and completely reliant on East Asia, where 75% of the global supply is manufactured.²³ Semiconductors are also paradigmatic examples of dual-use goods, meaning that they can be used for both commercial and military purposes.²⁴ The importance of semiconductors to national security and defense is difficult to understate because they power virtually all military systems, including advanced autonomous systems, cybersecurity, space and hypersonics, directed energy, and even nuclear arsenals and weapons of mass destruction ("WMD").²⁵ For this reason, semiconductors have emerged as a cornerstone of the U.S.-China technology race, and the Trump and Biden administrations pursued aggressive export controls on semiconductors and emerging technologies, banned the sale of chips and equipment to leading Chinese chipmakers, imposed tariffs on semiconductors, and blocked Chinese investments in U.S. chip manufacturers.²⁶ In December 2022, China challenged U.S. semiconductor export controls regulations in the WTO and the growing tensions over semiconductor policy make it likely that China would challenge the CHIPS Act in the current *US—Semiconductors* dispute or altogether launch a new WTO dispute soon.²⁷ Trade disputes concerning semiconductors or similar industrial subsidies will compel a WTO Panel to wrestle with novel legal questions that remain unanswered.

Aluminium]; Panel Report, *United States—Origin Marking Requirement*, WT/DS597/R (adopted Dec. 21, 2022) [hereinafter *US—Origin Marking*].

²¹ VARADARAJAN ET AL., *supra* note 9, at 37.

²² U.S. INT'L TRADE COMM'N, RECENT DEVELOPMENTS IN GLOBAL SEMICONDUCTOR INDUSTRY 1 (2023),

https://www.usitc.gov/publications/332/executive_briefings/ebot_recent_developments_in_global_semiconductor_industry.pdf [<https://perma.cc/JC9V-JYGU>]; *Global Semiconductor Sales Decrease 8.2% in 2023; Market Rebounds Late in Year*, SEMICONDUCTOR INDUS. ASS'N (Feb. 5, 2024), <https://www.semiconductors.org/global-semiconductor-sales-decrease-8-2-in-2023-market-rebounds-late-in-year> [<https://perma.cc/T72A-6ZDQ>].

²³ White House 100-Day Review Report, *supra* note 12, at 27.

²⁴ ANTONIO VARAS ET AL., GOVERNMENT INCENTIVES AND US COMPETITIVENESS IN SEMICONDUCTOR MANUFACTURING 33 (2020), <https://web-assets.bcg.com/27/cf/9fa28eeb43649ef8674fe764726d/bcg-government-incentives-and-us-competitiveness-in-semiconductor-manufacturing-sep-2020.pdf> [<https://perma.cc/F8RR-NCMH>].

²⁵ White House 100-Day Review Report, *supra* note 12, at 25.

²⁶ Pinchis-Paulsen, *supra* note 16, at 531–32; Anthea Roberts et al., *Toward a Geoeconomic Order in International Trade and Investment*, *Journal of International Economic Law*, 22 J. INT'L ECON. L. 655 (2019).

²⁷ Arjun Kharpal, *China Brings WTO Case Against U.S. and Its Sweeping Chip Export Curbs as Tech Tensions Escalate*, CNBC (Dec. 13, 2022), <https://www.cnbc.com/2022/12/13/china-brings-wto-case-against-us-chip-export-restrictions.html> [<https://perma.cc/6FX2-BFH7>].

This article assesses the accordance of the CHIPS Act with WTO law to demonstrate why and how industrial subsidies justified by economic security and supply chain objectives conflict with the core assumptions that underpin international trade law. The purpose of this research is not to make normative judgements about industrial policy, the CHIPS Act, or WTO case law. Rather, it is to enrich the existing policy discourse about economic security, DSB reform, and Article XXI by predicting how industrial subsidies would affect international trade rules and the U.S.-China “technological war,” fought with trade and security tools, such as export controls, investment screening, and tariffs.²⁸ This paper is organized as follows: Part I outlines the semiconductor supply chain, U.S. institutional history, and the evolution of semiconductor production from an economic issue to a matter of national security. Part II provides a holistic overview of the text, negotiating history and administration of the CHIPS Act, and its national security imperatives. Part III assesses the CHIPS Act’s impact on reshoring, technological competition with China, and global semiconductor subsidy race. Parts IV and V explain that there is a strong case that the CHIPS Act violates MFN and national treatment while failing to fall within the general exceptions under Article XX. Part VI reviews past WTO Panel interpretations of Article XXI, the GATT essential security exception, and outlines why a Panel would find that the CHIPS Act is inconsistent with Article XXI. Part VII critiques the Panels’ substantive interpretation of Article XXI and discusses its implications on state sovereignty and trade measures that have economic security objectives.²⁹

I. BACKGROUND

A. U.S. Context and China Competition

Prior the CHIPS Act, the U.S. government had only made one substantial non-research investment in the U.S. semiconductor industry. In 1987, the Defense Advanced Research Projects Agency (“DARPA”) invested \$500 million to help U.S. chipmakers that struggled to compete with their Japanese counterparts, and formed the Semiconductor Manufacturing Technology (“Sematech”), a public-private consortium comprised of the Pentagon and domestic chipmakers.³⁰

²⁸ Roberts et al., *supra* note 26, at 655, 667; *The Tech Wars are About to Enter a Fiery New Phase*, THE ECONOMIST (Apr. 25, 2024), <https://www.economist.com/international/2024/04/25/the-tech-wars-are-about-to-enter-a-fiery-new-phase> [<https://perma.cc/GX6Z-HVCY>].

²⁹ See Panel Report, *China—Additional Duties on Certain Products from the United States*, ¶ 7.105, WTO Doc. WT/DS558/R (circulated Aug. 16, 2023) [hereinafter *China—Additional Duties*]; *US – Steel and Aluminium*, *supra* note 20, ¶ 7.127.

³⁰ CHARLES WESSNER & THOMAS HOWELL, IMPLEMENTING THE CHIPS ACT: SEMATECH’S LESSONS FOR THE NATIONAL SEMICONDUCTOR TECHNOLOGY CENTER 1–2 (2023), https://csis-website-prod.s3.amazonaws.com/s3fs-public/2023-05/230519_Wessner_Implementing_CHIPS_0.pdf [<https://perma.cc/45YP-YL84>] [hereinafter Wessner & Howell]. For example, the U.S. share of the global dynamic random-access memory (“DRAM”) semiconductor market declined from 70% to 20% between 1978 and 1986, while Japan’s share increased from 30% to 75% in the same period. See Douglas A. Irwin, *The U.S.-*

Sematech is credited with streamlining industrywide R&D efforts and helping the U.S. chip industry retain its status as the global market share leader.³¹ But the consortium had mixed success as a public investment program and received criticism for investing \$70 million in GCA, an American chip equipment maker, which nonetheless failed and resulted in the loss of the only remaining U.S. manufacturer in the global lithography industry.³² While Sematech ceased accepting federal funding after 1996, DARPA continues to fund university research and cutting-edge semiconductor R&D projects.³³ The semiconductor R&D programs also paralleled trade policy actions, such as anti-dumping investigations and market-access deals with Japan, which in practice yielded few gains for the U.S. chipmakers.³⁴

The growth of the U.S. semiconductor industry was thus driven by global outsourcing and innovation within Silicon Valley, not subsidies or federal policy. Even DARPA and Sematech were primarily R&D programs for which job creation was a secondary objective.³⁵ With the exception of \$1.7 billion of annual funding for R&D, large-scale federal investment in the U.S. semiconductor industry was nonexistent until the passage of the CHIPS Act.³⁶ The U.S. government's restrained approach contrasted with the practices of East Asian countries that hand-picked industry champions and provided expansive subsidies to promote their global competitiveness and incentivize chip production at home. For example, TSMC, the global leader for foundry manufacturing, received nearly half of its \$200 million in startup funding from the Taiwanese government.³⁷ Similarly, Samsung entered the semiconductor business with a \$400 million investment from the South Korean government.³⁸ China's past and pledged public investment into its semiconductor

Japan Semiconductor Trade Conflict, in THE POLITICAL ECONOMY OF TRADE PROTECTION 7 (Anne O. Krueger, ed. 1996).

³¹ Wessner & Howell, *supra* note 30, at 9; Gary Clyde Hufbauer & Euijin Jung, *DARPA Made US Chip Industry More Competitive and Triggered an Employment Boom*, PETERSON INST. INT'L ECON. (Nov. 11, 2021), <https://www.piie.com/research/piie-charts/darpa-made-us-chip-industry-more-competitive-and-triggered-employment-boom> [<https://perma.cc/8Q4B-9X2S>].

³² CHRIS MILLER, CHIP WAR: THE FIGHT FOR THE WORLD'S MOST CRITICAL TECHNOLOGY 108 (2022) [hereinafter MILLER]; Chris Miller, *The Chip Patterning Machines that Will Shape Computing's Next Act*, MIT TECH. REV. (June 23, 2023), <https://www.technologyreview.com/2023/06/23/1074321/chip-patterning-machines-shape-future> [<https://perma.cc/9PKG-CP35>].

³³ MILLER, *supra* note 32, at 88; MICHAELA D. PLATZER ET AL., CONG. RSCH. SERV., R46581, SEMICONDUCTORS: U.S. INDUSTRY, GLOBAL COMPETITION, AND FEDERAL POLICY 40 (2020).

³⁴ GARY CLYDE HUFBAUER & EUIJIN JUNG, SCORING 50 YEARS OF US INDUSTRIAL POLICY, 1970–2020, 36–38 (2021).

³⁵ *Id.* at 71, 73.

³⁶ MILLER, *supra* note 32, at XXIII; SAIF M. KHAN ET AL., THE SEMICONDUCTOR SUPPLY CHAIN: ASSESSING NATIONAL COMPETITIVENESS 13, CTR. FOR SEC. & EMERGING TECH. (2021), <https://cset.georgetown.edu/wp-content/uploads/The-Semiconductor-Supply-Chain-Issue-Brief.pdf> [<https://perma.cc/YXP6-QP98>]; SPARKING INNOVATION: HOW FEDERAL INVESTMENT IN SEMICONDUCTOR R&D SPURS U.S. ECONOMIC GROWTH AND JOB CREATION 2 (2020).

³⁷ MILLER, *supra* note 32, at 167.

³⁸ *Id.* at 131.

industry totals a staggering \$332 billion.³⁹ The Semiconductor Industry Association (“SIA”) estimates that such extensive industrial subsidies and government incentives lowered the total cost of ownership for semiconductor fabrication (meaning production) by 25-30% in South Korea, Taiwan, and Singapore, 30-40% in China, and less than 15% in Japan.⁴⁰

In the early 2010s, semiconductors rapidly evolved into a new battleground for Beijing and Washington to vie for technological superiority. In 2014, China adopted the Made in China 2025 industrial strategy, which sought to develop a self-sufficient chip industry by 2030.⁴¹ To achieve that end, China created the state-funded China Integrated Circuit Investment Industry Fund, known as the “Big Fund,” which channeled \$150 billion in state funding in 2014 and \$29 billion in 2019, with the goal of expanding its domestic chip production to meet 80% of domestic demand by 2030.⁴² Once President Trump entered office, the trade relations between the two superpowers deteriorated and the United States adopted multiple rounds of Section 301 tariffs on \$300 billion worth of Chinese imports.⁴³ Semiconductors were subjected to the first round of the tariffs and were specifically characterized by the Office of the United States Trade Representative (“USTR”) as “advanced technology as set forth in its industrial plans, such as ‘Made in China 2025.’”⁴⁴ By one estimate, the 25% Section 301 tariff on semiconductors imported from China cost the American chipmakers \$750 million.⁴⁵

³⁹ KAREN M. SUTTER ET AL., CONG. RSCH. SERV., R47558, SEMICONDUCTORS AND THE CHIPS ACT: THE GLOBAL CONTEXT 2 (2023), <https://crsreports.congress.gov/product/pdf/R/R47558> [<https://perma.cc/M8S6-DWWC>].

⁴⁰ ANTONIO VARAS ET AL., *supra* note 24, at 19..

⁴¹ SUTTER ET AL., *supra* note 39, at 18; John VerWey, *Chinese Semiconductor Industrial Policy: Past and Present*, J. OF INT’L COM. & ECON. 1, 14 (2019); KAREN M. SUTTER, CONG. RSCH. SERV., IF10964, “MADE IN CHINA 2025” INDUSTRIAL POLICIES: ISSUES FOR CONGRESS 65 (2023), <https://sgp.fas.org/crs/row/IF10964.pdf> [<https://perma.cc/A435-SCU5>]. *See also* Gregory C. Allen, *China’s New Strategy for Waging the Microchip Tech War*, CTR. STRATEGIC & INT’L STUDS. (May 3, 2023), <https://www.csis.org/analysis/chinas-new-strategy-waging-microchip-tech-war> [<https://perma.cc/J6TP-V7XP>].

⁴² *Id.*; SUTTER ET AL., *supra* note 39, at 18–19.

⁴³ Hans Nichols, *Scoop: Biden Preparing to Keep Many of Trump’s China Tariffs*, AXIOS (Jan. 5, 2024), <https://www.axios.com/2024/01/05/biden-keep-many-trump-china-tariffs> [<https://perma.cc/996W-CSL8>]. Section 301 empowers the USTR to impose duties if “an act, policy, or practice of a foreign country is unreasonable or discriminatory and burdens or restricts United States commerce.” *See* Trade Act of 1974, Pub. L. No. 93-618, § 301, 88 Stat. 1978, 2041–43 (1975) (codified as 19 U.S.C. § 2411).

⁴⁴ Notice of Action and Request for Public Comment Concerning Proposed Determination of Action Pursuant to Section 301, 83 Fed. Reg. 28710 (June 20, 2018); Press Release, Office of the U.S. Trade Rep., Under Section 301 Action, USTR Releases Proposed Tariff List on Chinese Products (Apr. 3, 2018), <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2018/april/under-section-301-action-ustr> [<https://perma.cc/5LDG-ZZ8Z>].

⁴⁵ *Growth-Based Incentives, Not Tariffs, Will Strengthen U.S. Chip Manufacturing and Leadership*, SEMICONDUCTOR INDUS. ASS’N (July 2, 2020), <https://www.semiconductors.org/growth-based-incentives-not-tariffs-will-strengthen-u-s-chip-manufacturing-and-leadership> [<https://perma.cc/L8L5-7YMR>].

During these tense trade relations, the Trump administration also turned to national security tools and aggressive export controls to cut off Chinese chipmakers' access to U.S.-made chips and technologies.⁴⁶ Under the Export Administration Regulations ("EAR"), the Bureau of Industry and Security ("BIS") of the Commerce Department is empowered to add an entity or party that is "involved, or poses a significant risk of being or becoming involved in activities that are contrary to the national security or foreign policy interests of the United States" to an "Entity List."⁴⁷ Once added, the EAR prohibits export, re-export, and transfer of items to a listed entity unless the exporting party secures an export license from BIS.⁴⁸ Citing national security risks and intellectual property theft, the Trump administration added several leading Chinese chipmakers to the Entity List.⁴⁹ Because U.S.-produced chips, components, and equipment are essential to chipmaking, the export restrictions dealt existential blows to these leading Chinese manufacturers, which were forced to suspend or delay production.⁵⁰ On top of the Entity List, the Committee on Foreign Investments in the United States ("CFIUS"), an interagency group that screens inbound investment, barred a Chinese-state-financed private equity fund from acquiring Lattice, a U.S. chipmaker, for posing

⁴⁶ Sujai Shivakumar et al., *Balancing the Ledger: Export Controls on U.S. Chip Technology to China*, CTR. STRATEGIC & INT'L STUDS. (Feb. 21, 2024), <https://www.csis.org/analysis/balancing-ledger-export-controls-us-chip-technology-china> [<https://perma.cc/DFZ8-4SWG>].

⁴⁷ 15 C.F.R. § 744.11 (2024).

⁴⁸ *Id.*

⁴⁹ Press Release, Dep't of Com., Addition of Fujian Jinhua Integrated Circuit Company, Ltd (Jinhua) to the Entity List (Oct. 29, 2018), <https://2017-2021.commerce.gov/news/press-releases/2018/10/addition-fujian-jinhua-integrated-circuit-company-ltd-jinhua-entity-list.html> [<https://perma.cc/G5JS-SUD8>]; Press Release, Dep't of Commerce, 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/DLC9-QRAH>]; Press Release, Dep't of Com., Commerce Department Further Restricts Huawei Access to U.S. Technology and Adds Another 38 Affiliates to the Entity List (Aug. 17, 2020), <https://2017-2021.commerce.gov/news/press-releases/2020/08/commerce-department-further-restricts-huawei-access-us-technology-and.html> [<https://perma.cc/8B59-JEHI>].

⁵⁰ Fujin and ZTE were forced to suspend production and ZTE nearly went bankrupt before President Trump intervened at the personal request of President Xi. See Jeb Su, *How the U.S. Export Ban Effectively Bankrupts China's Telecom Giant ZTE: Analysis*, FORBES (Apr. 26, 2018), <https://www.forbes.com/sites/jeanbaptiste/2018/04/17/how-the-u-s-export-ban-effectively-bankrupts-chinas-telecom-giant-zte/> [<https://perma.cc/W5BY-J254>]; Cheng Ting-Fang & Shinsuke Tabeta, *China's Chip Industry Fights to Survive U.S. Tech Crackdown*, NIKKEI ASIA (Nov. 30, 2022), <https://asia.nikkei.com/Spotlight/The-Big-Story/China-s-chip-industry-fights-to-survive-U.S.-tech-crackdown> [<https://perma.cc/ZF5V-Z4KS>]. Huawei was forced to delay 5G network rollout and shrink its smartphone and server businesses once it could no longer use components produced with U.S. technology and software in its 5G and telecommunications equipment. Without the components, Huawei had no choice but to delay 5G network rollout and shrink its smartphone business and server businesses. See MILLER, *supra* note 32, at 316; Hal Brands, *Huawei's Decline Shows Why China Will Struggle to Dominate*, BLOOMBERG (Sept. 19, 2021), <https://www.bloomberg.com/opinion/articles/2021-09-19/huawei-s-decline-shows-why-china-will-struggle-to-dominate> [<https://perma.cc/79F9-MYVD>].

a risk to U.S. national security.⁵¹ Such actions reflected a growing consensus in Washington that Beijing's semiconductor policy was a matter of U.S. national security and set the stage for the Biden administration's CHIPS Act deliberation.

B. Global Supply Chain and Vulnerabilities

The global semiconductor supply chain relies on a highly complex model of geographic specialization in which each region and country excels in different segments of production.⁵² A few countries make up the bulk of the global semiconductor supply chain: the U.S. (39%), South Korea (16%), Japan (14%), Taiwan (12%), Europe (11%), and China (6%).⁵³ As a result of such extreme geographic specialization, SIA projects that there are fifty choke points in which a single region controls more than 65% of the total global market share of a required semiconductor value chain activity.⁵⁴

While significant segments of the semiconductor value chain are in the U.S. or Europe, the vast majority of global semiconductor manufacturing occurs in Taiwan, South Korea, China, and Japan.⁵⁵ East Asia alone is responsible for 75% of global production—or 90% of all memory chips, 75% of processor chips, and 80% of silicon wafers.⁵⁶ This lopsided manufacturing capacity can be attributed to the dominant “fabless” model, in which leading chipmakers and tech companies design chips but outsource production to “foundries,” such as Samsung and TSMC.⁵⁷ Taiwan currently dominates the foundry market with 63% of the global market share, trailed by South Korea with 18%, and China with 6%.⁵⁸ In particular, the rest of the world is completely dependent on Taiwan and Korea for the most cutting-edge semiconductors.⁵⁹ Taiwan alone produces 60% of the worldwide supply of chips and 90% of advanced chips used in advanced weapons systems, military defense, and corporate computing.⁶⁰ Taiwan-based TSMC supplies up to 90% of chips for leading U.S. tech companies, including Apple, Amazon, Google,

⁵¹ Press Release, U.S. Dep't of Treasury, Statement on the President's Decision Regarding Lattice Semiconductor Corporation (Sept. 13, 2017), <https://home.treasury.gov/news/press-releases/sm0157> [<https://perma.cc/VW7F-YXTS>].

⁵² KHAN ET AL., *supra* note 36, at 4.

⁵³ *Id.* at 8.

⁵⁴ ANTONIO VARAS ET AL., STRENGTHENING THE GLOBAL SEMICONDUCTOR SUPPLY CHAIN IN AN UNCERTAIN ERA 39 (2021), https://www.semiconductors.org/wp-content/uploads/2021/05/BCG-x-SIA-Strengthening-the-Global-Semiconductor-Value-Chain-April-2021_1.pdf [<https://perma.cc/R7EQ-FXG6>].

⁵⁵ U.S. INT'L TRADE COMM'N, *supra* note 22, at 1.

⁵⁶ Map of Memory Chip Production in East Asia, in MILLER, *supra* note 32, following p. 196.

⁵⁷ White House 100-Day Review Report, *supra* note 12, at 34.

⁵⁸ *Id.* at 35.

⁵⁹ *Id.* at 39; Yifan Yu, *Intel Joins 1.4-Nanometer Chip Race Against TSMC and Samsung*, NIKKEI ASIA (Feb. 22, 2024), <https://asia.nikkei.com/Business/Tech/Semiconductors/Intel-joins-1.4-nanometer-chip-race-against-TSMC-and-Samsung> [<https://perma.cc/BFL8-45UC>].

⁶⁰ *Taiwan's Dominance of the Chip Industry Makes It More Important*, THE ECONOMIST (May 6, 2023), <https://www.economist.com/special-report/2023/03/06/taiwans-dominance-of-the-chip-industry-makes-it-more-important> [<https://perma.cc/3CUJ-9QJJ>].

Qualcomm, Nvidia, and AMD, and the company's high-performance computing chips are indispensable to AI accelerators, 5G, artificial intelligence, data centers, smart phones, and personal computers.⁶¹ Because of the importance of TSMC to global chip production, it is estimated that a disruption in Taiwanese logic chip foundries could cost \$500 billion in revenue for the global electronic devices manufacturers.⁶² More broadly, any disruption in the region harms not just semiconductor companies themselves, but also the other myriad industries that depend on semiconductor technology.

The concentration of chip production in East Asia has already resulted in large-scale disruptions and shortages.⁶³ According to SIA, an hour-long power outage in a Taiwanese memory fab impacted 10% of the global DRAM supply.⁶⁴ In 1999, an earthquake in Taiwan shut down a science park and resulted in a three-fold increase of memory-chip prices.⁶⁵ In 2011, an earthquake in Japan affected 25% of the global production of silicon wafers and 75% of hydrogen peroxide required for chip production.⁶⁶ In 2019, the historically contentious relationship between Japan and South Korea escalated into to a full-scale trade dispute after Japan imposed export controls on chemicals used to produce smartphone chips.⁶⁷ This bilateral tit-for-tat impacted \$7 billion in semiconductor exports every month for four years and led to a WTO dispute, which was withdrawn after Tokyo and Seoul negotiated a political agreement.⁶⁸ These prior breakdowns in supply were overshadowed by the 2020 global chip shortage, which cost 1% of the U.S. GDP (\$240 billion) and was caused by a combination of factors, including the COVID-19 pandemic, a surge in the demand for chips and automobiles, a fire in a Japanese plant, a drought in Texas that led to plant closures, U.S.-China trade disputes, and the Russia-Ukraine war.⁶⁹ Most recently, in April 2024, a high-magnitude

⁶¹ Saheli Roy Choudhury, *Tough Road Ahead for U.S. Firms Trying to Cut Reliance on Taiwan Chipmakers*, CNBC (Apr. 13, 2021), <https://www.cnbc.com/2021/04/13/semiconductor-shortage-us-tech-companies-and-their-reliance-on-taiwan.html> [<https://perma.cc/4BDY-MY7S>]; Vlad Savov & Jane Lanhee Lee, *More Than Half of TSMC's Sales Are Now High-End Chips Like AI*, BLOOMBERG (July 18, 2024), <https://www.bloomberg.com/news/articles/2024-07-18/more-than-half-of-tsmc-s-sales-are-now-high-end-chips-like-ai> [<https://perma.cc/GKU4-W7RN>].

⁶² White House 100-Day Review Report, *supra* note 12, at 25.

⁶³ VARAS ET AL., *supra* note 54, at 4.

⁶⁴ *Id.* at 40.

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ *Id.*; Mari Yamaguchi, *Japan to Reinstate South Korea as Preferred Trade Nation from July 21 as Two Sides Improve Ties*, ASSOCIATED PRESS (June 27, 2023), <https://apnews.com/article/japan-south-korea-trade-dispute-export-control-china-f43cf2a0cb43605f6f4626e5985abf7b> [<https://perma.cc/A597-ZMU4>].

⁶⁸ Yamaguchi, *supra* note 67; Joyce Lee & Heekyong Yang, *South Korea to Halt WTO Dispute Process While Discussing Japan's Export Curbs*, REUTERS (Mar. 6, 2023), <https://www.reuters.com/markets/asia/skorea-halt-wto-dispute-process-while-discussing-japans-export-curbs-2023-03-06> [<https://perma.cc/4S8K-C5HE>].

⁶⁹ White House 100-Day Review Report, *supra* note 12, at 26; Thadani & Allen, *infra* note 363, at 1; VARAS ET AL., *supra* note 54, at 40.

earthquake in Taiwan disrupted production and temporarily shut down TSMC and Taiwanese chipmakers' factories and manufacturing facilities.⁷⁰

Notwithstanding these past disruptions, the largest geopolitical threat to the global supply chain is the risk that China may invade Taiwan. President Xi Jinping and the Chinese government have repeatedly pledged to conquer Taiwan and use force, if necessary.⁷¹ China regularly pressures Taiwan by entering the air defense identification zone and conducting military exercises and missile tests just off Taiwan's coast.⁷² Maintaining that a Chinese invasion of Taiwan is unacceptable, the United States has staked out a position as a strong ally of Taiwan.⁷³ President Biden affirmed that the United States would intervene if Taiwan were invaded, and the United States recently passed \$8 billion in military assistance for Taiwan to "counter communist China and ensure a strong deterrence in the region."⁷⁴ Amidst this escalating geopolitical tension, Taiwan's semiconductor capability is a critical consideration for all stakeholders. A war in Taiwan could destroy 37% of the global computing power overnight and cost the world economy \$10 trillion—or 10% of global GDP.⁷⁵ For this reason, Taiwan's leaders characterize its dominant semiconductor industry as a "holy mountain range protecting the country" and a "silicon shield" that will deter Chinese invasion and secure military support from the United States.⁷⁶ The White House and Pentagon have both acknowledged that preserving Taiwan's chip industry is critical to U.S. national security and defense interests.⁷⁷ A war will have devastating and immediate consequences for the U.S.

⁷⁰ Sasha Rogelberg, TSMC Shrugs Off Taiwan's Biggest Earthquake in 25 Years, Showing its Massive Chip Foundry Mega-Complexes Are Nearly Quake-Proof, *FORTUNE* (Apr. 3, 2024), <https://fortune.com/2024/04/03/tsmc-taiwan-earthquake-nvidia-apple-chip-semiconductor-manufacturing> [<https://perma.cc/J2VY-WJC4>].

⁷¹ MARK F. CANSIAN ET AL., *THE FIRST BATTLE OF THE NEXT WAR: WARGAMING A CHINESE INVASION OF TAIWAN* 9–10 (2023).

⁷² Nectar Gan et al., *China Starts 'Punishment' Military Drills Around Taiwan Days After Island Swears in New Leader*, *CNN* (May 23, 2024), <https://www.cnn.com/2024/05/22/asia/china-military-drills-taiwan-punishment-intl-hnk/index.html> [<https://perma.cc/3Hnk-579P>].

⁷³ David Brunnstrom & Trevor Hunnicut, *Biden Says U.S. Forces Would Defend Taiwan in the Event of a Chinese Invasion*, *REUTERS* (Sept. 19, 2022) <https://www.reuters.com/world/biden-says-us-forces-would-defend-taiwan-event-chinese-invasion-2022-09-18/> [<https://perma.cc/9FKD-A6N8>] (confirming President Biden's statement that he would defend Taiwan if invaded).

⁷⁴ Jonathan Yerushalmy, *What Does Taiwan Get from the Foreign Aid Bill and Why is the US Economy Among the Biggest Winners?*, *THE GUARDIAN* (Apr. 3, 2024), <https://www.theguardian.com/world/2024/apr/26/us-foreign-aid-bill-package-details> [<https://perma.cc/R37Z-58BR>].

⁷⁵ Miller, *supra* note 32, at 341.

⁷⁶ Yimou Lee et al., *Taiwan Chip Industry Emerges as Battlefield in U.S.-China Showdown*, *REUTERS* (Dec. 27, 2021), <https://www.reuters.com/investigates/special-report/taiwan-china-chips/> [<https://perma.cc/D33E-JGET>].

⁷⁷ See, e.g., Press Release, U.S. Dep't of Def., U.S. Strengthening Deterrence in Taiwan Strait (Sept. 19, 2023), <https://www.defense.gov/News/News-Stories/Article/article/3531094/us-strengthening-deterrence-in-taiwan-strait/> [<https://perma.cc/DK5N-DZXW>]; Sujai Shivakumar et al., *A World of Chips Acts: The Future of U.S.-EU Semiconductor Collaboration*, *CTR. FOR STRATEGIC & INT'L STUD.* (Aug. 20, 2024), <https://www.csis.org/analysis/world-chips-acts-future-us-eu-semiconductor-collaboration> [<https://perma.cc/FE57-7E6C>].

defense establishment, because the U.S. armed forces are entirely reliant on Taiwan for the military-specific semiconductors that power AI systems, F-35 fighters, and other advanced military systems.⁷⁸

C. Biden Administration's Industrial Policy

Following recent supply chain disruptions, economic security has also received traction in international economic policy.⁷⁹ While there is no accepted definition for economic security, the concept generally encapsulates the understanding that security is intertwined with building resilience and reducing risks arising from global economic integration.⁸⁰ Benson, Mouradian, and Palazzi further elaborate that economic security is linked to “the notion of reducing foreign dependency, which translates into limited economic vulnerability related to external shocks” and “achieving economic resilience through several key policies, including enhanced supply chain early-warning systems, increased indigenous technology and industrial capacity, and secure access to critical resources.”⁸¹ To date, South Korea, the United Kingdom, the European Union, Japan, and Germany have adopted an economic security agenda.⁸² China also enacted national security laws that expanded the definition of national security to include economic and technological issues.⁸³ In 2023, the G7 adopted the “Leaders’ Statement on Economic Resilience and Economic Security” that outlined building resilient supply chains, building resilient critical infrastructure, and preventing leakage of critical and emerging technologies as policy objectives.⁸⁴

⁷⁸ Eric Lee, *How Taiwan Underwrites the US Defense Industrial Complex*, THE DIPLOMAT (Nov. 9, 2021), <https://thediplomat.com/2021/11/how-taiwan-underwrites-the-us-defense-industrial-complex> [<https://perma.cc/B62C-TCKL>]; Sujai Shivakumar & 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/622L-ZJ89>].

⁷⁹ EMILY BENSON ET AL., TOWARD A U.S. ECONOMIC SECURITY STRATEGY: TWENTY-FIRST GUIDANCE FOR DOMESTIC AND INTERNATIONAL POLICYMAKING, V (2024).

⁸⁰ See generally Eur. Comm’n, Joint Comm. to the Eur. Parliament, The Eur. Council and The Council on “Eur. Econ. Sec. Strategy,” Doc. 52023JC0020 (2023), <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52023JC0020&qid=1687525961309> [<https://perma.cc/7TDJ-VTKM>].

⁸¹ BENSON ET AL., *supra* note 79, at 3–4.

⁸² Emily Benson & Catherine Mouradian, *How Do the United States and Its Partners Approach Economic Security?*, CTR. FOR STRATEGIC & INT’L STUD. (Nov. 8, 2023), <https://www.csis.org/analysis/how-do-united-states-and-its-partners-approach-economic-security> [<https://perma.cc/RUX3-T9G3>].

⁸³ J. Benton Heath, *The New National Security Challenge to the Economic Order*, 129 YALE L. J. 1020, 1036 (2020).

⁸⁴ Press Release, White House, G7 Leaders’ Statement on Economic Resilience and Economic Security (May 20, 2023), <https://www.whitehouse.gov/briefing-room/statements-releases/2023/05/20/g7-leaders-statement-on-economic-resilience-and-economic-security> [<https://perma.cc/CHW2-JDS7>].

Scholars have argued that economic security tools are hardly novel inventions in U.S. trade law.⁸⁵ In her critique of “trade’s security exceptionalism,” Professor Kathleen Claussen explains that trade and security cannot be divorced and segregated concepts; instead, trade has been a source and tool for economic security throughout U.S. history.⁸⁶ Integration of trade and economic security is also reflected in longstanding U.S. trade laws, including Section 301 of the Trade Act of 1974, which served as a basis for the Trump and Biden administrations’ tariffs on semiconductor imports from China.⁸⁷ Professor Paulsen also argues that the integration of economics and security was a core assumption throughout the U.S. and GATT negotiating history.⁸⁸ Similarly, Professors Roberts, Moraes, and Ferguson theorize a new geoeconomic order characterized by the “securitisation of economic policy and economisation of strategic policy.”⁸⁹ They argue that the United States and China will pursue “managed interdependence,” in which they prioritize economic resilience and self-sufficiency to secure the supply of critical technologies necessary to attain economic and military objectives.⁹⁰ Treasury Secretary Yellen echoed the idea of increasing integration of economics and security in her frank admission that, “going forward, it will be increasingly difficult to separate economic issues from broader considerations of national interest, including national security.”⁹¹ Under the economic security framework, economic, trade, and national security policies are thus interchangeable and non-mutually exclusive.

Economic security justifications underpin the Biden administration’s industrial policy that channels \$805 billion in industrial subsidies through the CHIPS Act, the IRA, and the Bipartisan Infrastructure Law.⁹² The administration offered several rationales for the unprecedented subsidies. First, outsourcing and supply chain risks are market failures and can only be addressed by robust public investment and government intervention.⁹³ Second, trade rules permitted China to expand military ambitions and subsidize key industries, creating economic and security dependencies that China can exploit.⁹⁴ Third, the U.S. must rebuild

⁸⁵ See Mona Pinchis-Paulsen, *The Past Present, and Potential of Economic Security*, 50 YALE J. INT’L L. (forthcoming 2025) (manuscript at 1),

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4604958 [<https://perma.cc/57D5-TB36>].

⁸⁶ Kathleen Claussen, *Trade’s Security Exceptionalism*, 72 STANFORD L. REV. 1097, 1138–39 (2020).

⁸⁷ *Id.* at 1122, 1117.

⁸⁸ Pinchis-Paulsen, *supra* note 85 (manuscript at 4–5).

⁸⁹ Roberts et al., *supra* note 26, at 655.

⁹⁰ *Id.* at 669–70.

⁹¹ Janet Yellen, Sec’y of Treasury, Address to the Atl. Council (Apr. 13, 2022),

<https://www.atlanticcouncil.org/news/transcripts/transcript-us-treasury-secretary-janet-yellen-on-the-next-steps-for-russia-sanctions-and-friend-shoring-supply-chains> [<https://perma.cc/5R2H-HQAL>].

⁹² JENNIFER A. HILLMAN & INU MANUK, *RETHINKING INTERNATIONAL RULES ON SUBSIDIES 1* (2023), <https://www.cfr.org/report/rethinking-international-rules-subsidies> [<https://perma.cc/E6YF-KS9D>].

⁹³ See Sullivan, *supra* note 5.

⁹⁴ See *id.*

domestic manufacturing capacity to strengthen resilience from natural disasters and geopolitical shocks.⁹⁵ Fourth, the U.S. industrial policy embraces “friendshoring,” or selective supply chain integration with like-minded WTO members.⁹⁶ Lastly, the new priority for trade policy is creating diversified and resilient supply chains and, by extension, no longer tariff reduction, free trade, or market access.⁹⁷ The Biden administration’s National Security Strategy also acknowledged the CHIPS Act and semiconductor policy as key components of the U.S. national security agenda.⁹⁸ The Strategy echoed Sullivan’s rhetoric, highlighting that “markets alone cannot respond to the rapid pace of technological change, global supply disruptions, nonmarket abuses by the PRC and other actors” and that the administration is “identifying and investing in key areas where private industry, on its own, has not mobilized to protect our core economic and national security interests, including bolstering our national resilience.”⁹⁹ The Biden administration’s industrial policy thereby elevates federal subsidies, technological competition with China, and semiconductor supply chain resilience as strategic priorities for U.S. national security.¹⁰⁰

Biden’s industrial policy also signals that the United States does not believe that WTO disputes can resolve its grievances towards China’s semiconductor industrial subsidies. Sullivan stated that the Biden administration is committed to the WTO but suggested that reform is required to address nonmarket economic practices and ensure that trade policies benefit workers.¹⁰¹ A White House report that served as a factual basis for the CHIPS Act alleged that “genuine private-sector investment is almost non-existent” and “China’s novel subsidy strategy – primarily in the form of government equity ‘investments’ – aggressively exploits gray areas in international trade rules in World Trade Organization (WTO) discipline.”¹⁰² This finding is a reference to a longstanding U.S. grievance about the WTO Appellate Body’s “public body” ruling made under the Subsidies and Countervailing Measures (“SCM Agreement”), a multilateral treaty that empowers the WTO to discipline subsidies and also permits states to seek remedies for another state’s subsidies.¹⁰³ The Appellate Body adopted a narrow interpretation of the “public body” ruling that made it extremely difficult for a Member to impose countervailing duties or seek remedies against a state owned enterprise (“SOE”) unless it possesses, exercises, or is vested with governmental authority.¹⁰⁴ The White House

⁹⁵ *See id.*

⁹⁶ *See Yellen, supra* note 91.

⁹⁷ *See id.*

⁹⁸ WHITE HOUSE, NATIONAL SECURITY STRATEGY 14–15 (2022), <https://www.whitehouse.gov/wpcontent/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf> [<https://perma.cc/Q3U3-YFBW>].

⁹⁹ *Id.*

¹⁰⁰ *See id.*

¹⁰¹ Sullivan, *supra* note 5.

¹⁰² White House 100-Day Review Report, *supra* note 12, at 63, 60.

¹⁰³ HILLMAN & MANUK, *supra* note 92, at 9–10.

¹⁰⁴ *Id.* at 11–12; Mark Wu, *The “China, Inc” Challenge to Global Trade Governance*, 57 HARVARD I. L. J. 261, 303 (2016).

report thus alleges that China's Integrated Circuit Industry Investment Fund is intentionally structured as a "venture capital" model and, "by characterizing the National IC Fund as a private, market-driven investment fund free from government intervention, China is avoiding the transparency requirements of the WTO subsidy regime and is likely seeking to avoid future WTO dispute settlement."¹⁰⁵ Such practical concerns about the adverse case law pushed the Biden administration to conclude that the solution to China's industrial subsidy is not WTO litigation but a commensurate U.S. chip subsidy program that builds domestic capacity at home.

II. THE CHIPS ACT AND NATIONAL SECURITY OBJECTIVES

A. *Legislative History and Executive Intent*

The Biden administration's semiconductor policy can be traced back to February 2021 when the President signed Executive Order 14017, directing White House aides and the Secretary of Commerce to submit a report identifying risks in the semiconductor manufacturing supply chains.¹⁰⁶ The Executive Order was prompted by the 2020 chip shortage that delayed or halted car production for numerous automakers and eventually cost \$210 billion in lost revenue for the global automotive industry.¹⁰⁷ In June 2021, the White House released a 100-day supply chain review report concluding that, "as semiconductors become increasingly embedded in and essential to technologies throughout the economy, secure supply chains are of growing importance to U.S. economic and national security."¹⁰⁸ The findings included the decline of U.S. share of global chip production from 37% in 1990 to 12% in 2021; U.S. chipmakers' "almost exclusive reliance" on Asian producers for the most advanced (7 nm or less chips); and the fact that the U.S. has no production capacity for the leading edge (under 10 nm) chips for which Taiwan had 92% of the global share.¹⁰⁹ Emphasizing that China had spent \$100 billion in subsidies to support the growth of home-grown chipmakers, the report warned that the U.S. production is directly threatened by Chinese domestic investments while "the lack of domestic production capability also puts at risk the ability to support current and future national security and critical infrastructure needs."¹¹⁰ The report proposed public investment of at least \$50 billion in semiconductor manufacturing and R&D.¹¹¹

¹⁰⁵ White House 100-Day Review Report, *supra* note 12, at 60–1.

¹⁰⁶ Exec. Order No. 14,017, 86 C.F.R. § 11849 (2021).

¹⁰⁷ Hyunjoo Jin, *Automakers, Chip Firms Differ on When Semiconductor Shortage Will Abate*, REUTERS (Feb. 4, 2022), <https://www.reuters.com/business/autos-transportation/automakers-chip-firms-differ-when-semiconductor-shortage-will-abate-2022-02-04> [<https://perma.cc/53CW-RGHR>] (citing an estimate from AlixPartners, a consulting firm).

¹⁰⁸ White House 100-Day Review Report, *supra* note 12, at 73.

¹⁰⁹ *Id.* at 38–39.

¹¹⁰ *Id.* at 38, 41.

¹¹¹ *Id.* at 75.

On the same day that the White House published its supply chain report, the Senate passed the United States Innovation and Competition Act (“USICA”), which would appropriate \$52 billion to fund semiconductor manufacturing and R&D over a five-year period.¹¹² The House passed its own version of the bill, the America Competes Act, in February 2022.¹¹³ After a five-month impasse in the negotiations between the two Chambers, the bill was renamed the CHIPS and Science Act (“CHIPS Act”) and passed the Senate by a sixty-four to thirty-three vote in July 2022.¹¹⁴ President Biden welcomed the Senate’s progress and emphasized that the bill will “mean more resilient American supply chains, so we are never so reliant on foreign countries for the critical technologies that we need for American consumers and national security.”¹¹⁵ The next day, the CHIPS Act won bipartisan support in the House and passed by a 243–187 vote.¹¹⁶ The White House praised Congress and underscored that “[the bill] will strengthen our national security by making us less dependent on foreign sources of semiconductors.”¹¹⁷ The CHIPS Act was finally signed into law on August 9, 2022, and President Biden remarked at the signing ceremony that “America invented the semiconductor, . . . and this law brings it back home. It’s in our economic interest and it’s in our national security interest to do so.”¹¹⁸

¹¹² Thomas Franck, *Senate Passes \$250 Billion Bipartisan Tech and Manufacturing Bill Aimed at Countering China*, CNBC (June 9, 2021), <https://www.cnbc.com/2021/06/08/senate-passes-bipartisan-tech-and-manufacturing-bill-aimed-at-china.html> [<https://perma.cc/L68W-NTBV>].

¹¹³ Deirdre Walsh & Caitlyn Kim, *The House Passed a Bill Aimed at Boosting U.S. Competitiveness with China*, NPR (Feb. 4, 2022), <https://www.npr.org/2022/02/04/1078226282/u-s-house-passes-china-competition-bill> [<https://perma.cc/Y2D3-J9SU>].

¹¹⁴ David Shepardson & Patricia Zengerle, *U.S. Senate Passes Bill to Boost Chip Manufacturing, Compete with China*, REUTERS (July 28, 2022), <https://www.reuters.com/business/majority-us-senate-backs-bill-boosting-chipmakers-compete-with-china-2022-07-27> [<https://perma.cc/NYG8-U4KM>].

¹¹⁵ Press Release, White House, Statement by President Biden on Senate Passage of the CHIPS and Science Act to Lower Costs, Bolster Our Competitive Edge and National Security (July 27, 2022), <https://www.whitehouse.gov/briefing-room/statements-releases/2022/07/27/statement-by-president-biden-on-senate-passage-of-the-chips-and-science-act-to-lower-costs-bolster-our-competitive-edge-and-national-security> [<https://perma.cc/E3MB-JUBV>].

¹¹⁶ Amy B. Wang & Marianna Sotomayer, *House Passes Bill to Subsidize U.S.-Made Semiconductor Chips in Win for Biden*, WASH. POST (July 28, 2022), <https://www.washingtonpost.com/politics/2022/07/28/house-vote-semiconductor-chips-bill> [<https://perma.cc/DDK7-K2KJ>].

¹¹⁷ Press Release, White House, Statement from President Biden on House Passage of CHIPS and Science Act to Lower Costs, Create Good-Pay Jobs and Strengthen Our National Security (July 28, 2022), <https://www.whitehouse.gov/briefing-room/statements-releases/2022/07/28/statement-from-president-biden-on-house-passage-of-chips-and-science-act-to-lower-costs-create-good-pay-jobs-and-strengthen-our-national-security> [<https://perma.cc/AD5X-HDCS>] [hereinafter Statement from President Biden on House Passage of CHIPS].

¹¹⁸ Press Release, White House, Remarks by President Biden at Signing of H.R. 4346, “The CHIPS and Science Act of 2022,” (Aug. 9, 2022), <https://www.whitehouse.gov/briefing-room/speeches-remarks/2022/08/09/remarks-by-president-biden-at-signing-of-h-r-4346-the-chips-and-science-act-of-2022> [<https://perma.cc/7SZ9-JB5P>] [hereinafter Remarks by President Biden at Signing of H.R. 4346].

Framing the legislation as a national security measure bearing on competition with China played a crucial role in passing the CHIPS Act. In a rare display of agreement, both Houses in Congress and the President emphasized the bill's importance in deterring China. For example, President Biden emphasized that the bill will "help reduce costs and strengthen our economic and national security."¹¹⁹ President Biden also frankly acknowledged that the legislation was designed to outcompete Beijing, "the greatest competitor we have" and that, "if we don't step up, we're going to be out."¹²⁰ In a floor address, the Senate Majority Leader Chuck Schumer urged his colleagues to vote for the bill because, "if we didn't get there first, our rivals—chief among them the Chinese Communist party—would likely beat us to the punch and reshape the world in their authoritarian image. Frightening. A frightening prospect."¹²¹ The influence of the national security and China messaging was also evident in reactions from the twenty-four Republican representatives who broke party lines and defied the party leadership's pressure to oppose the bill.¹²² For instance, Representative Tom Cole, the Ranking Member of the Rules Committee, stated that the bill "is a step in the right direction toward keeping Communist China at bay and protecting our nation's economic and security interests."¹²³ Representative Michael McCaul, the Ranking Member of the Foreign Affairs Committee, similarly explained that "[semiconductors are] an integral part of our daily life – and the backbone of America's national security. This legislation is a strategic investment in the nation's economic and national security."¹²⁴ That senior Republicans echoed the White House and Schumer's positions to justify their "yes" votes with concerns about economic security, supply chain, and China—as opposed to other policy interests, such as economic boon or job creation in their districts—further evinces that the national security and China competition objectives reflect collective legislative intent.

¹¹⁹ President Joseph R. Biden, Jr., *Remarks at the United Performance Metals, LLC, Manufacturing Facility in Hamilton, Ohio*, AM. PRESIDENCY PROJECT (May 6, 2022), <https://www.presidency.ucsb.edu/documents/remarks-the-united-performance-metals-llc-manufacturing-facility-hamilton-ohio> [<https://perma.cc/K3PR-8JQ2>].

¹²⁰ *Id.*

¹²¹ Press Release, Senate Democrats, Majority Leader Schumer Floor Remarks on Final Senate Passage of Chips and Science Legislation (July 27, 2022), <https://www.democrats.senate.gov/newsroom/press-releases/majority-leader-schumer-floor-remarks-on-final-senate-passage-of-chips-and-science-legislation> [<https://perma.cc/3HNB-JLZA>].

¹²² *24 House Republicans Defy Leaders to Vote for Chips Bill*, AXIOS (July 28, 2022), <https://www.axios.com/2022/07/29/chips-house-republicans-votes> [<https://perma.cc/YU3M-26LF>].

¹²³ Press Release, Congressman Tom Cole, Cole Statement on House Passage of CHIPS-Plus (July 28, 2022), <https://cole.house.gov/media/press-releases/cole-statement-house-passage-chips-plus> [<https://perma.cc/8Z3J-M4A8>].

¹²⁴ Press Release, Congressman Michael McCaul, McCaul Pleaded CHIPS for America Act Signed into Law (Aug. 9, 2022), <https://mccaul.house.gov/media-center/press-releases/mccaul-pleaded-chips-for-america-act-signed-into-law> [<https://perma.cc/3CK7-MMBV>]; Press Release, Congresswoman Kay Granger, Small Chips, Big Impact: Securing Our Semiconductors (May 17, 2021), <https://kaygranger.house.gov/2021/5/small-chips-big-impact-securing-our-semiconductors> [<https://perma.cc/K7Y3-SA7X>].

To overcome the conference committee impasse, Senators Schumer and Maria Cantwell also organized classified briefings for the White House to inform the Senate about the geopolitical risks of the global technology race and the CHIPS Act's contribution to U.S. national security interests.¹²⁵ In an interview, Senator Kyrsten Sinema acknowledged that the national security briefings helped “create a greater sense of urgency . . . in both the House and the Senate” and get the message across that the CHIPS Act would achieve two goals: “one is to shore up your own economic security and independence, which we do need to do, and second is to ensure that we are no longer reliant on foreign sources that may not have the same interests that we do geopolitically.”¹²⁶ Senator Todd Young also highlighted that his colleagues “came to understand in recent weeks, because these classified briefings were held, that this is a national security imperative” and the discussions demonstrated “just how mission critical this is to our national security, to our weapons systems, to making sure that, you know, the Chinese government doesn't make a march on Taiwan or otherwise try and distort the free market in this sector as they have others so that they would put any chip makers located here in the U.S. out of business.”¹²⁷ Although the content of the discussion was classified, the briefings exemplify an important interbranch dialogue about the measure's national security and China competition objectives that in turn succeeded in cultivating a sense of urgency for swift, bipartisan congressional action.

In sum, the CHIPS Act was designed to reach multiple policy goals.¹²⁸ First, the law advances an industrial and economic policy agenda for “Bidenomics:” reshoring semiconductor manufacturing and expanding job opportunities in the semiconductor industry at home.¹²⁹ However, what separates the CHIPS Act from other federal subsidy programs is the explicit national security rationale underscored at every step of the policy deliberation process. Furthermore, there are consistent references to the economic security imperative in minimizing supply chain disruption risks and reducing dependence on chips produced abroad. Executive Order 14080 again underscored these supply chain security objectives, which set “meeting economic, sustainability, and national security needs, including by building domestic manufacturing capacity that reduces reliance on vulnerable or overly concentrated foreign production for both leading-edge and mature microelectronics” as policy priorities for agencies directed with implementing the law.¹³⁰

¹²⁵ See David Shepardson, *Schumer Plans Classified Briefing for U.S. Senators on Chips, Technology*, REUTERS (July 7, 2022), <https://www.reuters.com/world/us/schumer-plans-classified-briefing-us-senators-chips-technology-2022-07-08> [<https://perma.cc/MJ44-L7BJ>].

¹²⁶ *Transcript: Across the Aisle with Sens. Kyrsten Sinema (D-Ariz.) and Todd Young (R-Ind.)*, WASH. POST (July 27, 2022), <https://www.washingtonpost.com/washington-post-live/2022/07/27/transcript-across-aisle-with-sens-kyrsten-sinema-d-ariz-todd-young-r-ind> [<https://perma.cc/VU87-7AVQ>].

¹²⁷ *Id.*

¹²⁸ See generally White House Fact Sheet on CHIPS Act, *supra* note 3.

¹²⁹ See *id.*

¹³⁰ Exec. Order No. 14,080, 87 C.F.R. § 52847 (2022).

B. The CHIPS Act Statute and Funds

The vast majority of the CHIPS Act funding is allocated to general investment in R&D, STEM education, and workforce training programs.¹³¹ Fifty-two point seven billion dollars out of a total of \$278 billion in funding is specifically allocated to supporting semiconductors R&D, manufacturing, and workforce development.¹³² The semiconductor funding is distributed through several federal government channels. Most notably, the CHIPS Act allocates \$39 billion to the new CHIPS for America Fund for the Secretary of Commerce (“Secretary”) to provide “[f]ederal financial assistance to covered entities to incentivize investment in facilities and equipment in the United States for semiconductor fabrication, assembly, testing, advanced packaging, or research and development” for FY 2023–2027.¹³³ The law also creates other semiconductor R&D and workforce funds that dedicate over \$13 billion to strengthen economic security and supply chain resilience.¹³⁴ Across all of these programs, the CHIPS Act notably requires that the “Secretary should allocate funds in a manner that (1) strengthens the security and resilience of the semiconductor supply chain, including by mitigating gaps and vulnerabilities; (2) provides a supply of secure semiconductors relevant for national security; . . . (7) improves the resiliency of the semiconductor supply chains of critical manufacturing industries.”¹³⁵ This explicit reference to strengthening national security and supply chain resilience in administering the federal funding serves as additional evidence of the legislative intent to ensure that the law fulfills national security objectives as much as economic and industrial goals.

¹³¹ Justin Bedlam et al., *The CHIPS and Science Act: Here’s What’s in It*, MCKINSEY & CO. (Oct. 4, 2022), <https://www.mckinsey.com/industries/public-sector/our-insights/the-chips-and-science-act-heres-whats-in-it> [<https://perma.cc/N6XH-SX4W>]; Katie Lobosco, *Here’s What’s in the Bipartisan Semiconductor Chip Manufacturing Package*, CNN (Aug. 9, 2022), <https://www.cnn.com/2022/08/09/politics/chips-semiconductor-manufacturing-science-act/index.html> [<https://perma.cc/Y2XD-LMFD>].

¹³² White House Fact Sheet on CHIPS Act, *supra* note 3.

¹³³ *Id.*; The remaining \$11 billion is devoted to R&D funding, William M. (Mac) Thornberry, National Defense Authorization Act for Fiscal Year 2021, Pub. L. No. 116-283, §9902, 134 Stat. 4846 [hereinafter 2021 NDAA].

¹³⁴ White House Fact Sheet on CHIPS Act, *supra* note 3. The CHIPS Act appropriates \$11 billion to invest in semiconductor R&D and establish a National Semiconductor Technology Center (“NSTC”). See 2021 NDAA, §9902, 134 Stat. 4858. The CHIPS for American Defense Fund provides \$2 billion for the Department of Defense to “establish a national network for microelectronic research and development” while the America International Technology Security and Innovation Fund allocates \$500 million for the State Department to “provide for international information and communications technology security and semiconductor supply chain activities.” Chips and Science Act, Pub. L. No. 117-67, § 103, 136 Stat. 1471–72 (2022) [hereinafter CHIPS Act]. Lastly, the CHIPS for American Workforce and Education Fund invests \$200 million for the National Science Foundation to “develop a national strategy on microelectronics research, development, manufacturing, and supply chain security.” CHIPS Act, § 103, 136 Stat. 1375. See also 2021 NDAA, §9902, 134 Stat. 4852; 2021 NDAA, §9902, 134 Stat. 4857.

¹³⁵ CHIPS Act, § 103, 136 Stat. 1385.

Eligible chipmakers can benefit from the CHIPS for America Fund either via direct funding or the Advanced Manufacturing Investment Credit (“AMIC”).¹³⁶ Direct funding can be structured in many ways and is administered by the CHIPS Program Office (“CPO”), housed within the Commerce Department’s National Institute of Standards and Technology (“NIST”).¹³⁷ CHIPS direct funding will generally fund 5–15% of project expenditure costs and the total CHIPS Incentives awards, or the sum of all direct funding, loans, and loan guarantees, cannot fund more than 35% of each project.¹³⁸ Foreign entities of concern are ineligible for CHIP Incentives and NIST will reject applications “where a foreign entity of concern—through control, access to information, or other mechanisms—poses an undue risk to a project or U.S. national security interests.”¹³⁹ The definition and eligibility of a foreign entity of concern were finalized in the subsequent national security guardrails rule.¹⁴⁰ In contrast to direct funding, the AMIC program provides a 25% tax credit for the cost of construction and equipment for a facility producing semiconductors or semiconductor manufacturing equipment.¹⁴¹ The Congressional Budget Office estimates that the tax credit program would award \$25 billion to eligible applicants, a significant incentive compared to historic tax credit programs.¹⁴²

C. National Security Guardrails Rule

The statutory basis for the national security guardrails in the CHIPS Act is split between the CHIPS Act itself and the National Defense Authorization Act for Fiscal Year 2021 (“NDAA”), which each established a “clawback” for federal funding.¹⁴³ First, the CHIPS Act clawback requires that “during the 10-year period beginning on the date of the award . . . the covered entity may not engage in any significant transaction, as defined in the agreement, involving the *material expansion of semiconductor manufacturing capacity in the People’s Republic of China or any other foreign country of concern.*”¹⁴⁴ Separately, the CHIPS Act prohibits the use of federal funds to construct, modify, or improve a facility outside

¹³⁶ EMILY G. BLEVINS ET. AL, CONG. RSCH. SERV., R47523, FREQUENTLY ASKED QUESTIONS: CHIPS ACT OF 2022 PROVISIONS AND IMPLEMENTATION 14 (2023), <https://crsreports.congress.gov/product/pdf/R/R47523> [<https://perma.cc/B5TW-LUPL>].

¹³⁷ *Id.*

¹³⁸ *Id.*

¹³⁹ NATIONAL INST. OF STANDARDS AND TECH., 2023-NIST-CHIPS-CFF-01, NOTICE OF FUNDING OPPORTUNITY: CHIPS INCENTIVES PROGRAM – COMMERCIAL FABRICATION FACILITIES 29 (2024), <https://www.nist.gov/system/files/documents/2024/04/19/Amended%20CHIPS-Commercial%20Fabrication%20Facilities%20NOFO%20Amendment.pdf> [<https://perma.cc/2VH6-B645>].

¹⁴⁰ Preventing the Improper Use of CHIPS Act Funding Rule, 15 C.F.R. § 231.202 (2023) [hereinafter CHIPS Final Rule].

¹⁴¹ CHIPS Act § 103, *supra* note 134, at 1393–94, 1399.

¹⁴² CONG. BUDGET OFF., ESTIMATED BUDGETARY EFFECTS OF DIVISIONS A AND B OF H.R. 4346 4 (2022), https://www.cbo.gov/system/files/2022-07/hr4346_chip.pdf [<https://perma.cc/2D5C-XE99>].

¹⁴³ 2021 NDAA §9902, *supra* note 133, at 4848; CHIPS Act, § 103, *supra* note 134, at 1383.

¹⁴⁴ CHIPS Act § 103, *supra* note 134, at 1383 (emphasis added).

the United States.¹⁴⁵ Second, the NDAA clawback provides that the Secretary of Commerce can recover the full amount of federal award if “the covered entity knowingly engages in any *joint research or technology licensing effort (i) with a foreign entity of concern; and (ii) that relates to a technology or product that raises national security concerns.*”¹⁴⁶ By stipulating clawbacks for federal funding, the statutes pressure chipmakers both to reduce dependence on China and refrain from expanding production capacity in China, either directly or through Chinese counterparts.

In September 2023, the Commerce Department announced a final rule that defined key statutory terms and implemented the national security guardrails provisions.¹⁴⁷ The Commerce Department separately defined “material expansion” in the expansion clawback to mean an “*increase of the semiconductor manufacturing capacity of an existing facility by more than five percent of the capacity* memorialized in the required agreement.”¹⁴⁸ In addition, a “foreign country of concern” was interpreted to mean “a country that is a covered nation (as defined in 10 U.S.C. 4872(d)” — referring to Iran, North Korea, Russia, and China—as well as any country determined by the Secretary of Commerce to be engaged in conduct detrimental to U.S. national security or foreign policy.¹⁴⁹ The final rule also empowered the Secretary to recover funds or take mitigation actions when a covered entity breaches the expansion clawback terms.¹⁵⁰

For the technology clawback, the final rule does not make any change to the NDAA’s exhaustive definition of “foreign entity of concern,” which refers to all entities “owned by, controlled by, or subject to the jurisdiction or direction of a government of [Iran, North Korea, Russia, and China].”¹⁵¹ The NDAA also provides that a “foreign entity of concern” would include both entities on the Department of Treasury’s (“Treasury”) SDN and NS-CMIC List, BIS Entity List, and those alleged by the Attorney General to have been charged with illicit activities under the Arms Export Control Act, the Export Control Reform Act of 2018, or the International Economic Emergency Powers Act.¹⁵² The final rule sweeps broadly, covering any semiconductor critical to national security, any item

¹⁴⁵ *Id.* at 1388.

¹⁴⁶ 2021 NDAA §9902, *supra* note 133, at 4848 (emphasis added).

¹⁴⁷ Press Release, U.S. Dep’t of Com., Biden-Harris Administration Announces Final National Security Guardrails for CHIPS for America Incentives Program (Sept. 22, 2023), <https://www.commerce.gov/news/press-releases/2023/09/biden-harris-administration-announces-final-national-security> [<https://perma.cc/5HNK-MS5U>]; Press Release, U.S. Dep’t of Com., Commerce Department Outlines Proposed National Security Guardrails for CHIPS for America Incentives Program (Mar. 21, 2023), <https://www.commerce.gov/news/press-releases/2023/03/commerce-department-outlines-proposed-national-security-guardrails> [<https://perma.cc/AR8T-EHRN>].

¹⁴⁸ CHIPS Final Rule, *supra* note 140, at § 231.108 (emphasis added).

¹⁴⁹ *Id.* at § 231.102.

¹⁵⁰ *Id.* at § 231.306-308.

¹⁵¹ *Id.* at § 231.104.

¹⁵² *Id.*

included in Category 3 of the Commerce Control List controlled for National Security (“NS”) or Regional Stability (“RS”) reasons, and any other technology or product determined by the Secretary to raise national security concerns.¹⁵³ This statutory construction imports the BIS entity list and longstanding export controls regulations into the guardrails rule and also aligns the CHIPS Act eligibility requirements with the latest export controls on semiconductors.¹⁵⁴ Finally, the final rule also empowers the Commerce Department to take mitigation action, review research or technology licensing, and even recover the full amount of a federal award if a funding recipient violates the technology clawback.¹⁵⁵

In sum, the CHIPS Act, NDAA, and the final rule reflect a joint legislative and executive design to incorporate elements of longstanding national security policy and export controls regulations into the CHIPS Act. The two clawback provisions impose stringent eligibility criteria for the federal award and give the Secretary large discretionary power to mitigate, review, and recover funding when he or she determines a recipient’s transaction or research poses national security risks.¹⁵⁶ Although the statutes and rule do not restrict import or export of chips directly, the guardrails incentivize chipmakers to restructure or divest supply chain resources from China by prohibiting expansion of manufacturing facilities there or technological partnership with Chinese chipmakers throughout the ten-year award period.

In fact, the negotiating history again demonstrates that competition with China was the principal impulse behind the national security guardrails.¹⁵⁷ This is exemplified by a common critique of the CHIPS Act. Throughout legislative deliberation, members feared that the federal subsidy would be abused to fund manufacturing projects in China.¹⁵⁸ In response, President Biden and National

¹⁵³ *Id.* at § 231.121.

¹⁵⁴ William A. Reinsch & Thibault Denamiel, *The CHIPS and Science Act Guardrails’ Implications for the U.S. Trade Agenda*, CTR. FOR STRATEGIC & INT’L STUD. (Apr. 13, 2023), <https://www.csis.org/analysis/chips-and-science-act-guardrails-implications-us-trade-agenda> [<https://perma.cc/M43R-F28R>].

¹⁵⁵ CHIPS Final Rule, *supra* note 140, at § 231.306-307.

¹⁵⁶ *Id.* at § § 231.306-308.

¹⁵⁷ Remarks by President Biden at Signing of H.R. 4346, *supra* note 117 (“China is trying to move way ahead of us in manufacturing these sophisticated chips... The United States must lead the world in the production of these advanced chips. This law will do exactly that.”); Press Release, White House, Remarks by National Security Advisor Jake Sullivan at the Special Competitive Studies Project Global Emerging Technologies Summit (Sept. 16, 2022), <https://www.whitehouse.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/7KTF-Y4TP>].

¹⁵⁸ For example, the Republican Study Committee warned that the legislation would “hand out \$250 billion with little to no guardrails to prevent those funds from helping China” and “may easily end up funding semiconductor manufacturing in China.” See Republican Study Committee, *CHIPS for China* (July 21, 2022), https://s3.documentcloud.org/documents/22111271/chips_for_china_rsc_memo.pdf [<https://perma.cc/CU4M-RKCD>].

Security Advisor Jake Sullivan provided assurances that the CHIPS Act is conditioned on manufacturing investment within the United States and includes “important guardrails to ensure that companies receiving taxpayer dollars invest in America.”¹⁵⁹ After the Commerce Department released the proposed rule, Senator Schumer addressed the Senate floor, stating that “abusing CHIPS funding to expand projects in China-based markets would be self-defeating and it would endanger our national security.”¹⁶⁰ Schumer further warned that “President Xi and the Chinese Communist Party are in an all-out campaign to replace the US as the global force of the 21st century” and endorsed the final rule as one that fulfills the congressional intent to use the CHIPS Act as a strategic policy to outcompete China.¹⁶¹

III. IMPACT

A. Domestic Industrial Boon

Since the first CHIPS for America Grant award was announced in December 2023, the Commerce Department to date has entered into preliminary agreements allocating more than \$30 billion in direct funding and nearly \$29 billion in loans to fifteen chipmakers to complete semiconductor manufacturing projects in fifteen states.¹⁶² The largest recipients of federal grants are Intel with \$8.5 billion, TSMC with \$6.6 billion, Samsung with \$6.4 billion, and Micron with \$6.1 billion.¹⁶³ The Commerce Department expects to allocate all remaining funds by the end of 2024.¹⁶⁴

So far, the CHIPS Act has been remarkably successful in persuading domestic and global chipmakers to expand and develop chip manufacturing

¹⁵⁹ Sullivan, *supra* note 5; Statement from President Biden on House Passage of CHIPS, *supra* note 117.

¹⁶⁰ Press Release, Senate Democrats, Majority Leader Schumer Floor Remarks on Proposed Biden Administration Guidance to Support Chip Production (Mar. 31, 2023), <https://www.democrats.senate.gov/newsroom/press-releases/majority-leader-schumer-floor-remarks-on-proposed-biden-administration-guidance-to-support-chip-production> [https://perma.cc/D5JB-LJMW].

¹⁶¹ *Id.*

¹⁶² Press Release, White House, Fact Sheet: Two Years after the CHIPS and Science Act, Biden-Harris Administration Celebrates Historic Achievements in Bringing Semiconductor Supply Chains Home, Creating Jobs, Supporting Innovation, and Protecting National Security (Aug. 9, 2024), <https://www.whitehouse.gov/briefing-room/statements-releases/2024/08/09/fact-sheet-two-years-after-the-chips-and-science-act-biden-%E2%81%A0harris-administration-celebrates-historic-achievements-in-bringing-semiconductor-supply-chains-home-creating-jobs-supporting-inn/> [https://perma.cc/F4LB-YWEK].

¹⁶³ Press Release, Semiconductor Indus. Ass’n, Commerce Department Announces First CHIPS Grant Recipients (May 23, 2024), <https://www.semiconductors.org/chips-incentives-awards> [https://perma.cc/4LUK-HVE3].

¹⁶⁴ U.S. DEP’T OF COM., *Two Years Later: Funding from CHIPS and Science Act Creating Quality Jobs, Growing Local Economies, and Bringing Semiconductor Manufacturing Back to America* (Aug. 9, 2024), <https://www.commerce.gov/news/blog/2024/08/two-years-later-funding-chips-and-science-act-creating-quality-jobs-growing-local> [https://perma.cc/J73K-37C5].

capacity within the United States.¹⁶⁵ Since the bill was signed into law, chipmakers have announced ninety new semiconductor manufacturing projects in the United States, totaling \$447 billion in investment along with the anticipated creation of 118,000 new jobs.¹⁶⁶ The White House celebrated the CHIPS Act as a successful industrial policy that restored domestic chip manufacturing, boosted R&D investment, and strengthened supply chain resilience and national security.¹⁶⁷ According to the White House, the United States is now on track to produce 30% of the global supply of the most advanced chips—which previously could not be domestically produced—by 2032.¹⁶⁸ SIA projects that, as a result of the CHIPS Act, the U.S. share of the global semiconductor manufacturing capacity will grow for the first time in decades and increase from 10% in 2022 to 14% in 2032, representing a 203% increase.¹⁶⁹

B. Global Subsidy Race

Amid the existing tension over semiconductor export controls, China was enraged by the passage of the CHIPS Act. China vigorously protested the CHIPS Act at the WTO, accusing the United States of “interfere[ing] with the allocation of market resources,” adopting “double standards,” “severely disrupt[ing] the global semiconductor supply chain,” and displaying “Cold War mentality and hegemonic behaviors” that would harm China as well as the United States and its allies.¹⁷⁰ In addition to its WTO protests, China announced plans to raise \$41 billion for the China Integrated Circuit Industry Investment Fund.¹⁷¹ It launched the third phase of the “Big Fund” in May 2024 and channeled \$47.5 billion of state-backed funding.¹⁷² As both the United States and China race to subsidize chipmakers, the parallel implementations of the CHIPS Act and the Big Fund are poised to generate further trade tensions.

While the CHIPS Act rulemaking was under way, the Biden administration adopted additional semiconductor export restrictions on China-bound semiconductors. In October 2022, BIS announced an interim final rule that imposed new export controls on advanced computing chips and items used in high-performance computing chips, supercomputers, and manufacturing components.¹⁷³

¹⁶⁵ See Tracking the CHIPS Incentives Program Awards, *supra* note 4.

¹⁶⁶ *Id.*; Semiconductor Indus. Ass’n, *supra* note 163.

¹⁶⁷ White House, *supra* note 162.

¹⁶⁸ U.S. DEP’T OF COM., *supra* note 164.

¹⁶⁹ VARADARAJAN ET AL., *supra* note 9, at 4.

¹⁷⁰ Shen, *supra* note 17; Pan & Birmingham, *supra* note 8.

¹⁷¹ Vishnoi & Yu, *supra* note 8.

¹⁷² *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/L695-ASGR>].

¹⁷³ Press Release, Bureau of Indus. & Sec., Commerce Implements New Export Controls on Advanced Computing and Semiconductor Manufacturing Items to the People’s Republic of China (Oct. 7, 2022), <https://www.bis.doc.gov/index.php/documents/about-bis/newsroom/press->

Emphasizing China's use of the technologies to develop military items, WMD, artificial intelligence, and weapons systems, BIS justified the new controls as "protect[ing] U.S. national security and foreign policy interests by restricting the PRC's access to advanced computing."¹⁷⁴ In response, China condemned the interim final rule as evidence of the United States' "weaponization and politicization" of technology and alleged that, "out of the need to maintain its sci-tech hegemony, the U.S. abuses export control measures to maliciously block and suppress Chinese companies."¹⁷⁵ China then promptly retaliated with a WTO complaint challenging the October 2022 interim final rule and U.S. export restrictions on China-bound semiconductors.¹⁷⁶ The *US—Semiconductors* dispute is currently undergoing confidential consultation in the DSB. Undeterred by China's protest, BIS released updated rules that further tightened the export controls in October 2023.¹⁷⁷ The Biden administration also announced that the Section 301 tariffs on semiconductors imported from China would increase to 50% from 25% in September 2024.¹⁷⁸

The subsidy race between the United States and China has also spilled over to U.S. trading partners. The global semiconductor subsidy commitments now amount to \$380 billion and are likely to grow as more WTO members join the race to secure domestic semiconductor manufacturing capacity.¹⁷⁹ In April 2023, the EU adopted the "Chips Act" that provides €43 billion in public and private investments with the goal of increasing EU's global market share from 10% to 20% by 2023.¹⁸⁰ Of note, the EU Chips Act denotes "Ensuring Security of Supply" as one of three "pillars" of the measure and EU Commissioner for Internal Market Thierry Breton emphasized that the EU's public investment reflects the concern that "[semiconductors] are also at the centre of renewed industrial strategies in many of our countries and regions where strategic considerations for national security are reshaping—and rightly so—public support in this sector."¹⁸¹ South Korea passed

releases/3158-2022-10-07-bis-press-release-advanced-computing-and-semiconductor-manufacturing-controls-final/file [https://perma.cc/Z49W-8NE9].

¹⁷⁴ 15 C.F.R. § 734, 736, 740, 742, 744, 762, 772, 774 (2022).

¹⁷⁵ *China Lashes Out at Latest U.S. Export Controls on Chips*, AP NEWS (Oct. 8, 2022, 6:01 AM), <https://apnews.com/article/technology-business-china-global-trade-47eed4a9fa1c2f51027ed12cf929ff55> [https://perma.cc/FQA9-SLXU].

¹⁷⁶ Lin Feng & Liam Scott, *China Launches WTO Dispute Over US Chip Export Controls*, VOICE OF AM. (Dec. 30, 2022), <https://www.voanews.com/a/china-launches-wto-dispute-over-us-chip-export-controls/6885310.html> [https://perma.cc/SQ3D-A7FM].

¹⁷⁷ Press Release, Bureau of Indus. & Sec., Commerce Strengthens Restrictions on Advanced Computing Semiconductors (Oct. 17, 2023), <https://www.bis.gov/press-release/commerce-strengthens-restrictions-advanced-computing-semiconductors-semiconductor> [https://perma.cc/7Y5C-XVQL].

¹⁷⁸ Notice of Modification: China's Acts, Policies and Practices Related to Technology Transfer, Intellectual Property and Innovation, 89 Fed. Reg. 76583 (proposed Sep. 18, 2024).

¹⁷⁹ Hawkins et al., *supra* note 6.

¹⁸⁰ Council of Eur. Union, *supra* note **Error! Bookmark not defined.**

¹⁸¹ Thierry Breton, Eur. Union Comm'r for Internal Market, *How Europe is Strengthening its Semiconductor Ecosystem* (Nov. 29, 2023),

legislation nicknamed the “K-Chips Act” that provides \$55 billion in tax incentives to support a state-backed plan to steer \$422 billion private investment in domestic production.¹⁸² In addition, Taiwan pledged to invest \$16 billion in tax incentives while Japan plans to spend \$26 billion to support a TSMC factory and domestic chip venture.¹⁸³ India will invest \$25 billion while Saudi Arabia and UAE also announced that they will be entering the subsidy race.¹⁸⁴

IV. NON-DISCRIMINATION OBLIGATIONS

A. Appellate Body Crisis

Determining the legality of industrial subsidies under the WTO rules is complicated by the fact that the WTO DSB has not been fully functional since 2019.¹⁸⁵ The DSB was created as a two-tier system, consisting of an *ad hoc* Panel that makes first-instance legal and factual findings and the Appellate Body that hears appeals.¹⁸⁶ An appealed Panel report cannot have a legally binding effect unless the Appellate Body completes its review.¹⁸⁷ Citing longstanding grievances

https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_23_6216 [<https://perma.cc/YJ8F-4L43>].

¹⁸² Lee & Kim, *supra* note **Error! Bookmark not defined.**; Sohee Kim & Sam Kim, *Samsung Joins Korea's \$400 Billion Bid to Lead in Key Tech*, BLOOMBERG (Mar. 14, 2023), <https://news.bloomberglaw.com/tech-and-telecom-law/samsung-joins-koreas-400-billion-bid-to-lead-in-key-tech-2> [<https://perma.cc/KNG7-7QRU>]; Hawkins et al., *supra* note 6.

¹⁸³ VARADARAJAN ET AL., *supra* note 9, at 9; Kazuhiro Ogawa, *Japan Outspends U.S., Germany on Chip Subsidies as Share of GDP*, NIKKEI ASIA (Apr. 10, 2024), <https://asia.nikkei.com/Business/Tech/Semiconductors/Japan-outspends-U.S.-Germany-on-chip-subsidies-as-share-of-GDP> [<https://perma.cc/UMH2-FZS3>]; Yuki Hagiwara, *Japan Approves \$3.9 Billion in Aid to Chip Venture Rapidus*, BLOOMBERG (Apr. 1, 2024), <https://www.bloomberg.com/news/articles/2024-04-01/japan-okays-another-3-9-billion-in-aid-to-chip-venture-rapidus> [<https://perma.cc/ZE75-Q4AH>].

¹⁸⁴ Hawkins et al., *supra* note 6; Adveth Nair, *Saudi Arabia, UAE Bet on Semiconductor Chips to Power Post-Oil Future*, BLOOMBERG (July 1, 2024), <https://www.bloomberg.com/news/newsletters/2024-07-01/saudi-arabia-uae-race-for-semiconductor-chips-ai-dominance-mideast-money> [<https://perma.cc/CXJ2-H6Y5>]; Munsif Vengattil, *India Expects at Least \$25 Bln Investment Under Semiconductor Incentive Scheme*, REUTERS (Sept. 21, 2022), <https://www.reuters.com/markets/asia/india-offer-more-fiscal-support-under-its-chip-production-incentive-scheme-2022-09-21> [<https://perma.cc/T7KV-JF68>].

¹⁸⁵ See James McBride & Anshu Siripurapu, *What's Next for the WTO?*, COUNCIL ON FOREIGN REL. (June 10, 2022), <https://www.cfr.org/background/whats-next-wto> [<https://perma.cc/QMX6-T4Q5>].

¹⁸⁶ Understanding on Rules and Procedures Governing the Settlement of Disputes arts. 11, 17, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 2, 1869 U.N.T.S. 401 [hereinafter DSU]. See also Simon Lester, *Ending the WTO Dispute Settlement Crisis: Where to From Here?*, INT'L INST. FOR SUSTAINABLE DEV. (Mar. 2, 2022), <https://www.iisd.org/articles/united-states-must-propose-solutions-end-wto-dispute-settlement-crisis> [<https://perma.cc/A3L3-JJ22>].

¹⁸⁷ DSU, *supra* note 186, Annex 2; Peter Van den Bossche, *The Demise of the WTO Appellate Body: Lessons for Governance of International Adjudication?* 6 (World Trade Inst., Working Paper No. 2, 2021), https://www.wti.org/media/filer_public/c2/ef/c2efc2de-ce85-45c7-9512-9286e14fca47/wti_working_paper_02_2021.pdf [<https://perma.cc/9F94-KANH>].

about the Appellate Body, the United States has blocked appointment of Appellate Body members since 2019.¹⁸⁸ Although the DSB can still establish Panels, many Members have resorted to “appealing into the void,” a practice in which the losing party places the dispute in limbo by appealing an adverse Panel report that cannot be heard and adopted in absence of the Appellate Body.¹⁸⁹ The Biden administration has maintained that the United States will not support new appointments to the Appellate Body unless the WTO adopts a comprehensive dispute settlement system reform and concedes that national security actions cannot be subject to the DSB’s review.¹⁹⁰ Without new appointments to create a quorum, future WTO challenges will be likely decided by unadopted Panels’ reports that are not legally binding.¹⁹¹ This article considers all prior case law from the WTO Appellate Body and Panels relevant to a potential WTO complaint against industrial subsidies.

B. Most-Favoured Nations (“MFN”) Treatment

Non-discrimination is a fundamental WTO principle and is comprised of two core obligations: the Most Favoured Nations and the national treatment.¹⁹² This section demonstrates that an industrial subsidy measure is likely to be held inconsistent with the MFN treatment obligation under GATT Article I:1 that prohibits trade discrimination *between* other WTO Members.¹⁹³

The Appellate Body interpreted Article I:1 to require that, “if a Member grants any advantage to any product originating in the territory of any other country, such advantage must be accorded ‘immediately and unconditionally’ to the like product originating in the territories of all other Members.”¹⁹⁴ The decisive question in Article I:1 review is whether the imported products at issue are “like products”

¹⁸⁸ See McBride & Siripurapu, *supra* note 185. See also U.S. TRADE REPRESENTATIVE, REPORT ON THE APPELLATE BODY OF THE WORLD TRADE ORGANIZATION (2020),

https://ustr.gov/sites/default/files/Report_on_the_Appellate_Body_of_the_World_Trade_Organization.pdf [<https://perma.cc/9TXP-6TYF>] (discussing U.S. concerns with the WTO Appellate Body).

¹⁸⁹ Van den Bossche, *supra* note 187, at 6; Joost Pauwelyn, *WTO Dispute Settlement Post 2019: What to Expect?*, 22 J. INT’L ECON. L. 297, 304 (2019).

¹⁹⁰ See Maria Pagan, U.S. Deputy Trade Representative, Statements by the United States at the Meeting of the WTO Dispute Settlement Body (Jan. 23 2023), <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2023/january/statements-united-states-meeting-wto-dispute-settlement-body> [<https://perma.cc/T3VH-MFNH>] (expressing U.S. opposition to the appointments to the WTO Appellate Body).

¹⁹¹ See Legal Effect of Panel and Appellate Body Reports and DSB Recommendations and Rulings, WORLD TRADE ORG.,

https://www.wto.org/english/tratop_e/dispu_e/disp_settlement_cbt_e/c7s2p1_e.htm [<https://perma.cc/CEG2-UPCE>].

¹⁹² PETER VAN DEN BOSSCHE & WERNER ZDOUC, THE LAW AND POLICY OF THE WORLD TRADE ORGANIZATION 337 (5th ed. 2022).

¹⁹³ *Id.*

¹⁹⁴ Appellate Body Report, *European Communities—Measures Prohibiting the Importation and Marketing of Seal Products*, ¶ 5.86 WTO Doc. WT/DS400,401/AB/R (adopted June 18, 2014) [hereinafter *EC—Seal Products AB Report*].

to each other.¹⁹⁵ The likeness is established by observing whether the trade measure harms the equality of the competitive relationship between and among the imported products.¹⁹⁶ And in determining the nature and extent of a competitive relationship between the products, a Panel is required to consider four factors: (1) the products' "properties, nature, and quality," (2) "end-uses," (3) "consumers' tastes and habits," and (4) tariff classifications.¹⁹⁷

In a potential litigation over supply chain measures, the MFN rule will serve as a principal claim for the Complainant Members. For the CHIPS Act, a Panel can be expected to find that semiconductors originating from China and other countries are like products because there is no significant disparity in the imported products' physical characteristics, end uses, consumers' tastes and habits, and tariff classifications.¹⁹⁸ And all other foreign chipmakers can apply and benefit from the subsidy program as long as they do not use funds for projects in other countries, expand investment in manufacturing in China, or engage in joint research and licensing with Chinese entities.¹⁹⁹ So far, the Commerce Department has announced preliminary agreements to provide \$11.6 billion in grants and loans to TSMC, \$6.4 billion in direct funding to Samsung, \$450 million in grants and \$500 million in loans to SK Hynix, and \$400 million in grants to Global Wafers.²⁰⁰ China can therefore claim that the CHIPS Act discriminates between Chinese chipmakers and Taiwanese or South Korean chipmakers, such as TSMC, Samsung, SK Hynix, and Global Wafers; therefore, the United States has breached its MFN treatment obligation by discriminating *between* and *among* all other WTO Members.²⁰¹ An industrial subsidy that bars eligibility for manufacturers from certain countries is therefore susceptible to an Article I:1 challenge. A Member can argue under Article I:1 that its manufacturers were discriminated from the subsidies program, and this in turn hurt the equality of competitive opportunity between imported products from all WTO Members.

An important question for an Article I challenge is whether the MFN treatment obligation that has traditionally applied to discrimination between imported *products* can be extended to discrimination between *manufacturers*. For example, the United States may argue that the alleged discrimination within the CHIPS Act is not directly connected with exports and imports. Rather, so the argument goes, the statute and rule impose the same eligibility requirements that apply to all chipmakers—foreign or domestic. Can the clawbacks that do not explicitly restrict import or export of chips held to be inconsistent with the MFN rule?

¹⁹⁵ See Bethlehem *infra* note 230, at 441.

¹⁹⁶ EC—Seal Products AB Report, *supra* note 194, ¶ 5.82.

¹⁹⁷ See EC—Asbestos (AB), *infra* note 251, ¶ 85.

¹⁹⁸ *Id.*

¹⁹⁹ See *infra* Part II.

²⁰⁰ See Semiconductor Indus. Ass'n, *supra* note **Error! Bookmark not defined.**

²⁰¹ VAN DEN BOSSCHE & ZDOUC, *supra* note 192, at 337.

In *Canada—Autos*, the WTO Appellate Body addressed the issue of *de facto* discriminatory measures and held that an Article I obligation can be extended to preferences provided to manufacturers.²⁰² At issue was a Canadian import duty exemption for motor vehicles that did not facially discriminate on the basis of origin but, in practice, exempted vehicles originating in certain countries.²⁰³ Canada contended that the Article I:1 obligation does not apply to “origin-neutral terms and conditions on importation that apply to *importers* as opposed to the *products being imported*.”²⁰⁴ The Appellate Body squarely rejected Canada’s argument and held that the exemption breached the MFN obligation by failing to accord the same benefits to motor vehicles for all other Members.²⁰⁵ Although the duty exemption was origin-neutral and conditional on technical performance conditions, the measure resulted in *de facto* discrimination by providing import duty exemptions for vehicles originating in certain countries in which an auto exporter was affiliated with a Canadian manufacturer or importer.²⁰⁶ The Appellate Body’s finding that disparate treatment accorded to manufacturers from certain countries breached the MFN rule suggests that a Panel would find that the CHIPS Act, which restricts benefits to manufacturers on the basis of Chinese origin, is inconsistent with Article I.²⁰⁷

C. Non-Discrimination Claims in China’s IRA Challenge

To further shed light on potential non-discrimination claims against the CHIPS Act, this section briefly considers the IRA’s Clean Vehicles Credit, another core industrial subsidy measure signed into law just seven days after the CHIPS Act was enacted.²⁰⁸ Providing \$7.5 billion in federal incentives, as estimated by the Congressional Budget Office, the IRA’s electric vehicle program instituted domestic production and content requirements as conditions for \$7,500 tax credits, and was justified with familiar supply chain resilience and economic security objectives.²⁰⁹ Senator Manchin, the architect of the program, stressed that the “the

²⁰² See Appellate Body Report, *Canada—Certain Measures Affecting the Automotive Industry*, ¶78, WTO Doc. WT/DS139, 142/AB/R (adopted June 19, 2000) [hereinafter *Canada—Autos*] (“The words of Article I:1 do not restrict its scope only to cases in which the failure to accord an ‘advantage’ to like products of all other Members appears *on the face* of the measure, or can be demonstrated on the basis of the words of the measure . . . as several GATT panel reports confirmed, Article I:1 covers also “in fact,” or *de facto* discrimination.”).

²⁰³ *Id.*

²⁰⁴ *Id.* ¶ 10.39 (emphasis added).

²⁰⁵ *Id.* ¶ 85.

²⁰⁶ *Id.* ¶ 80.

²⁰⁷ *Id.* ¶ 85.

²⁰⁸ *Credits for New Clean Vehicles Purchased in 2023 or After*, INTERNAL REVENUE SERV., <https://www.irs.gov/credits-deductions/credits-for-new-clean-vehicles-purchased-in-2023-or-after> [<https://perma.cc/SL2V-W228>]; Emily Cochrane, *House Passes Sweeping Climate, Tax and Health Care Package*, N.Y. TIMES (Aug. 12, 2022), <https://www.nytimes.com/2022/08/12/us/politics/house-climate-tax-bill.html> [<https://perma.cc/69S9-NR86>].

²⁰⁹ Press Release, U.S. Senate Comm. on Energy & Nat. Res., Manchin: My Problem is not With Electric Vehicles. My Problem is This Administration Breaking the Law (Jan. 11, 2024),

intent of the Inflation Reduction Act was clear—bring our energy and manufacturing supply chains onshore to protect our national security, reduce our dependence on foreign adversaries and create jobs right here in the United States.”²¹⁰ Along with the CHIPS Act, the IRA’s EV tax credits represent a core component of President Biden’s industrial policy and also succeeded in leading to a large-scale investment that reshored EV and EV battery production.²¹¹ Since the IRA’s passage, automakers announced nearly \$100 billion investment in EV and EV battery manufacturing in the United States, which would create 80,000 jobs.²¹²

While the dispute is at an early consultation stage, *US—IRA* serves as an important preview of how China or other Members would argue non-discrimination obligation claims and challenge an industrial subsidy in the WTO. In March 2024, China launched a WTO challenge against the IRA’s North America final assembly, critical minerals, and battery requirements.²¹³ Titled the Clean Vehicle Credit, Section 13401(a) of the IRA amends 26 U.S.C. § 30D to provide up to \$7,500 federal tax credits with three conditions.²¹⁴ First, the final assembly provision provides that all qualifying EVs must be “finally assembled” within North America.²¹⁵ Second, the critical minerals requirement prescribes percentage values of critical minerals that must be “extracted or processed in the United States, or in any country with which the United States has a free trade agreement in effect, or recycled in North America.”²¹⁶ Third, the battery components requirement provides that a certain percentage value of components in an EV battery must be “manufactured or assembled in North America.”²¹⁷ The IRA’s EV tax credit provisions therefore impose significant domestic production and local content

<https://www.energy.senate.gov/2024/1/manchin-my-problem-is-not-with-electric-vehicles-my-problem-is-this-administration-breaking-the-law> [https://perma.cc/X3RK-FYGS]; CONG. BUDGET OFF., ESTIMATED BUDGETARY EFFECTS OF H.R. 5376, THE INFLATION REDUCTION ACT OF 2022, 11 https://www.cbo.gov/system/files/2022-08/hr5376_IR_Act_8-3-22.pdf [https://perma.cc/K7JW-E7Z3]; Marie Sapirie, *Putting Brakes On The EV Fast Car Tax Credits*, FORBES (Feb. 20, 2024), <https://www.forbes.com/sites/taxnotes/2024/02/20/putting-brakes-on-the-ev-fast-car/> [https://perma.cc/QH5T-4S38].

²¹⁰ Press Release, U.S. Senate Comm. on Energy & Nat. Res., Manchin Urges Treasury to Pause Implementation of EV Tax Credits (Dec. 29, 2022), <https://www.energy.senate.gov/2022/12/manchin-urges-treasury-to-pause-implementation-of-ev-tax-credits> [https://perma.cc/75GC-DTPT]; Press Release, U.S. Senate Comm. on Energy & Nat. Res., Manchin Legislation Halts EV Tax Credits Until Treasury Issues Guidance in Line with IRA (Jan. 25, 2023), <https://www.energy.senate.gov/2023/1/manchin-legislation-halts-ev-tax-credits-until-treasury-issues-guidance-in-line-with-ira> [https://perma.cc/R73H-MA8N].

²¹¹ See Sullivan, *supra* note **Error! Bookmark not defined.**; see generally ENVIRONMENTAL DEF. FUND, U.S. ELECTRIC VEHICLE MANUFACTURING INVESTMENTS AND JOBS: CHARACTERIZING THE IMPACTS OF THE INFLATION REDUCTION ACT AFTER 1 YEAR 7 (2023).

²¹² ENVIRONMENTAL DEF. FUND, *supra* note 211, at 5.

²¹³ See China’s *US—IRA* Consultation Request, *supra* note **Error! Bookmark not defined.**

²¹⁴ Inflation Reduction Act of 2022, Pub. L. No. 117-169, § 13401, 136 Stat. 1818, 1954–6 [hereinafter the Inflation Reduction Act].

²¹⁵ *Id.* at § 13401(b), 1954.

²¹⁶ *Id.* at § 13401(e)(1), 1956.

²¹⁷ *Id.*

requirements as conditions for \$7,500 tax credits that can be awarded to each qualifying EV.²¹⁸

Paralleling the CHIPS Act, the Section 30D tax credits, as amended by the IRA, explicitly exclude from eligibility all EVs and EV batteries produced by a foreign entity of concern (“FEOC”).²¹⁹ An EV cannot qualify for the tax credits if the critical minerals contained in its EV battery were “extracted, processed, or recycled” by an FEOC or battery components were manufactured or assembled by an FEOC.²²⁰ Furthermore, all EVs and EV batteries produced by manufacturers “owned by, controlled by, or subject to the jurisdiction or direction of” China, Russia, Iran, and North Korea are ineligible for the amended Section 30D Credit.²²¹ Of note, China’s current complaint in the *US—IRA* dispute does not reflect the finalized statutory interpretation that the Department of Energy released after China had initiated the complaint. Similar to the national security guardrails rule in the CHIPS Act, the Department of Energy’s final guidance exercises significant interpretive discretion and designates an entity to be an FEOC “if it is headquartered, incorporated or performing relevant activities in a covered nation, if 25% or more of its voting rights, board seats, or equity interest are held by the government of a covered nation, or if the entity is effectively controlled by a FEOC through a license or contract with that FEOC.”²²²

In *US—IRA*, China alleged that the IRA results in two MFN violations. First, the IRA violates Article I:1 by conditioning the Clean Vehicle Credit on North American assembly.²²³ China is likely to prevail with this MFN argument because the IRA’s final assembly requirement exclusively provides \$7,500 tax credit to EVs that are manufactured and assembled in the three North American countries—the United States, Canada, and Mexico—while denying the same benefit and eligibility to EVs that are produced elsewhere.²²⁴ Such discrimination *between* (1) Canada, Mexico, and the United States and (2) every other WTO country can therefore be expected to be held inconsistent with the Article I obligation. Second, China alleges that the MFN rule was breached because the IRA’s critical minerals and battery components requirements condition the tax

²¹⁸ *Id.* at § 13401, 1954–56.

²¹⁹ *Id.* at § 13401(e)(2), 1957.

²²⁰ *Id.*

²²¹ *See id.* (incorporating the definition of “foreign entity of concern” from 42 U.S.C. § 18741 which incorporates the definition of “covered nation” now found in 10 U.S.C. § 4873(c)(1)). Like the CHIPS Act, the IRA does not explicitly exclude Chinese manufacturers, EVs, and EV batteries from the subsidy eligibility, but references other statutes that designate China, Russia, Iran, and North Korea as “covered nations.”

²²² Press Release, Dep’t of Energy, DOE Releases Final Interpretive Guidance on the Definition of Foreign Entity of Concern (May 3, 2024), <https://www.energy.gov/articles/doe-releases-final-interpretive-guidance-definition-foreign-entity-concern> [<https://perma.cc/MJ6Q-RGEK>].

²²³ China’s *US—IRA* Consultation Request, *supra* note **Error! Bookmark not defined.**, at 4.

²²⁴ *See* “Mark” Min Seong Kim, *The Electric Vehicles Dilemma: The Inflation Reduction Act, International Trade Law, and U.S.-Korea Economic Diplomacy*, 25 N.Y.U. J. LEGIS. & PUB. POL’Y 875, 889–90 (2023).

credit on the FEOC eligibility and therefore “restrict[] eligibility for the Clean Vehicle Credit in the case of vehicles incorporating critical minerals and battery components produced by so-called ‘foreign entities of concern.’”²²⁵ China is also likely to prevail with this Article I:1 claim because the IRA accords discriminatory treatment between China, Russia, Iran, and North Korea—whose automakers would be deemed FEOCs prohibited from eligibility—and all other WTO Members—whose automakers can receive the \$7,500 EV tax credits.

In addition to the MFN argument, China raised a national treatment claim under Article III:4.²²⁶ Along with the MFN requirement, the national treatment obligation is a core GATT principle that requires non-discrimination between domestic and imported products.²²⁷ Under WTO case law, Article III shares the same like products test as Article I and asks whether the measure affected the competitive equality of opportunities between the domestic and imported like products.²²⁸ China is likely to prevail in the national treatment challenge because the IRA discriminates between the Chinese EV automakers and the U.S. automakers that can attain EV tax credits without being subjected to the same FEOC requirements. Furthermore, the North American final assembly requirement is a domestic production requirement that breaches the national treatment rule because most foreign automakers will not be able to develop the required manufacturing capability in North America until 2025, and therefore “creates material differences in competitive conditions by imposing discriminatory obligations that create a \$7,500 price disparity between the like and domestic products.”²²⁹

The *US—IRA* dispute remains at the consultation stage, and it is premature to make speculations about the Panel’s findings. However, the application of the case law to the IRA strongly suggests that an industrial subsidy may be inherently incompatible with WTO law. Specifically, the WTO prohibits any measure that accords unequal treatment that harms the competitive relationship between imported products (the MFN obligation) or between domestic and imported products (the national treatment obligation).²³⁰ As China’s arguments in the *US—IRA* dispute demonstrate, the complainants would have persuasive Article I and III claims against an industrial subsidy measure that excludes certain WTO Members and their manufacturers from eligibility. Of note, there would be a stronger claim for an MFN violation than a national treatment violation for the CHIPS Act because

²²⁵ China’s *US—IRA* Consultation Request, *supra* note **Error! Bookmark not defined.**, at 4.

²²⁶ See China’s *US—IRA* Consultation Request, *supra* note **Error! Bookmark not defined.**, at 4.

²²⁷ See VAN DEN BOSSCHE & ZDOUC, *supra* note 192, at 337.

²²⁸ See *EC—Seal Products* AB Report, *supra* note 194, ¶ 5.82 (like-product test for Article I is essentially identical to that of Article III); Report of the Panel, *Spain—Tariff Treatment of Unroasted Coffee* ¶¶ 4.7–4.8, L/5135 (June 11, 1981).

²²⁹ See *Kim*, *supra* note 224, at 889–90 (providing a detailed analysis of the National Treatment test).

²³⁰ See Nicolas Lockhart & Katherine Connolly, *An Introduction to Core Principles of International Trade Law*, in *THE OXFORD HANDBOOK OF INTERNATIONAL TRADE LAW* 441 (Daniel Bethlehem et al. eds., 2d ed. 2022).

the semiconductor subsidy is not conditioned on domestic production or local content requirements and foreign chipmakers, such as Samsung and TSMC, will receive federal funding under the same terms as the domestic chipmakers.²³¹

V. ARTICLE XX: GENERAL EXCEPTIONS

A. Subparagraphs

Assuming that a measure is found to be inconsistent with the MFN or national treatment rules, the Respondent Member can invoke the general exceptions under Article XX, which provides limited public policy grounds that can excuse a violation of a GATT obligation.²³² The general exception claim follows a two-tier test. First, the defending Member must show that the measure satisfies a subparagraph of Article XX.²³³ Second, the measure must satisfy the Article XX *chapeau* that observes whether the measure is applied in a manner that constitutes an arbitrary or unjustifiable discrimination.²³⁴

The analysis below demonstrates that, under the existing case law, it would be extremely challenging for a Member to successfully defend an industrial subsidy with Article XX. In practice, the general exceptions claim is extremely difficult to satisfy and there have only been two disputes in which WTO Members successfully defended GATT-inconsistent measures under Article XX of the GATT 1994.²³⁵

1. Article XX(j): Products in Short Supply

At a cursory glance, Article XX(j) for “acquisition or distribution of products in general or short supply” would appear to be the most convincing and natural general exception that can justify a GATT-inconsistent industrial subsidy.²³⁶ Under the WTO case law, however, Article XX(j) can only defend a temporary measure that addresses both domestic and international shortage.²³⁷

In *India—Solar Cells*, India defended its domestic content requirements for solar cells and modules with supply chain resilience rationales, and argued that the measures satisfy Article XX(j) because the lack of sufficient domestic manufacturing capacity hurts energy security and results in continued dependence on imported solar cells and modules.²³⁸ The Appellate Body rejected India’s argument and narrowed the use of Article XX(j) to a short-term measure that cannot

²³¹ See discussion *supra* Section IV. **Error! Reference source not found.**

²³² See VAN DEN BOSSCHE & ZDOUC, *supra* note 192, at 592.

²³³ See *id.* at 603.

²³⁴ See *id.* at 601–02; Lockhart & Connolly, *supra* note 230, at 441.

²³⁵ See VAN DEN BOSSCHE & ZDOUC, *supra* note **Error! Bookmark not defined.**, at 601–02.

²³⁶ GATT 1947, *supra* note **Error! Bookmark not defined.**, art. XX.

²³⁷ See Appellate Body Report, *India—Certain Measures Relating to Solar Cells and Solar Modules*, ¶¶ 5.69–5.70, WTO Doc. WT/DS456/AB/R (adopted Oct. 14, 2016) [hereinafter *India—Solar Cells*].

²³⁸ *Id.* ¶¶ 5.74–5.75, 5.78

last indefinitely, and instead responds to supply shortages from both domestic *and* international sources.²³⁹ The *EU—Energy Package* Panel further held that the products’ *risk* of being in short supply cannot satisfy Article XX(j); rather, the products must already *be* in short supply.²⁴⁰

Under this narrow interpretation, the Article XX(j) defense is only likely to succeed if the supply chain security measure is time-barred and addresses a short-term bottleneck. Although the United States may argue that the 2020 global semiconductor shortage satisfies Article XX(j) as a disruption for both domestic and international supplies, the chip supply for the global automotive industry largely recovered by 2023, and some subsectors even face oversupply challenges.²⁴¹ Because the mere risk of a supply chain disruption was held to be insufficient in *EU—Energy Package* and the global and domestic chip supply now largely meets the demand, a Panel is unlikely to be convinced that there is a current supply shortage required to justify Article XX(j).²⁴² Furthermore, a Panel may be unpersuaded that the CHIPS Act is not a temporary measure responding to “situations of ‘short supply’ . . . expected not to last indefinitely” because the law provides funding for five years.²⁴³ Lastly, the Appellate Body’s rejection of India’s arguments emphasizing the lack of domestic manufacturing capacity, reliance on foreign imports, and need for government support to strengthen energy security signals that a Panel would be equally unreceptive to the CHIPS Act’s economic security justifications.²⁴⁴

2. Article XX(b): Human, Animal, or Plant Life or Health

Article XX(b) can be invoked for a measure “necessary to protect human, animal or plant life or health” and requires the respondent Member to show that the measure was (1) “designed to” protect human, animal, or plant life or health and (2) “necessary” to achieve the asserted policy objectives.²⁴⁵ The stringent necessity

²³⁹ The Appellate Body held that Article XX(j) only applies to “situations of ‘short supply’ that may continue over time but are nonetheless expected not to last indefinitely” and the invoking Member must show that “‘available’ supply from both domestic and international sources in the relevant geographical market is insufficient to meet demand.” *Id.* ¶¶ 5.69–5.70.

²⁴⁰ See Panel Report, *European Union and its Member States—Certain Measures Relating to the Energy Sector*, ¶¶ 7.1350–7.1351, WTO Doc. WT/DS476/R (circulated Aug. 10, 2018) [hereinafter *EU—Certain Measures*].

²⁴¹ See Stephanie Brinley, *The Semiconductor Shortage Is – Mostly – Over for The Auto Industry*, S&P GLOBAL (July 12, 2023), <https://www.spglobal.com/mobility/en/research-analysis/the-semiconductor-shortage-is-mostly-over-for-the-auto-industry.html> [https://perma.cc/GWT7-P3J5]; Arjun Kharpal, *How the World Went from a Semiconductor Shortage to a Major Glut*, CNBC (July 27, 2023), <https://www.cnbc.com/2023/07/28/how-the-world-went-from-a-semiconductor-shortage-to-a-major-glut.html> [https://perma.cc/95ZL-7KAY]; *India—Solar Cells*, *supra* note 237, ¶¶ 5.76–5.77, 5.79.

²⁴² See *EU—Certain Measures*, *supra* note 240, ¶¶ 7.1350–7.1351.

²⁴³ *India—Solar Cells*, *supra* note 237, ¶¶ 5.69–5.70; see CHIPS Act, §102(a)(2), 1372 (appropriating funds for the Chips for America Fund for five fiscal years).

²⁴⁴ *India—Solar Cells*, *supra* note 237, ¶¶ 5.74–5.75.

²⁴⁵ VAN DEN BOSSCHE & ZDOUC, *supra* note **Error! Bookmark not defined.**, at 605.

test and stark similarities between the amended Section 30D tax credits and Brazil's auto tax preferences challenged in the *Brazil—Taxation* dispute suggest that even the IRA—the largest and most ambitious climate change investment in U.S. history—cannot be defended with Article XX(b).²⁴⁶

First, the design test is a deferential prong and can be satisfied if the measure “is not incapable” of contributing to an Article XX(b) objective.²⁴⁷ The IRA's EV tax credit program likely fulfills the Article XX(b) design test because it is not “incapable of” fulfilling environmental objectives—namely, responding to climate change and incentivizing consumers to purchase environmentally friendly EVs. However, the necessity test under Article XX(b) is difficult to satisfy and holistically considers three factors.²⁴⁸ A Panel must first balance the measure's trade restrictiveness against the interests and values that the asserted Article XX(b) policy objective advances.²⁴⁹ Second, the measure must make a “material contribution” to the achievement of the Article XX(b) objectives.²⁵⁰ Third, the Member must show that there was no reasonably available and less trade restrictive alternative measure that could have achieved the same ends as the measure in question.²⁵¹

In *Brazil—Taxation*, the Panel reviewed Brazil's automobile tax benefits conditioned on domestic production and domestically sourced inputs.²⁵² The IRA is likely to be deemed highly trade-restrictive, as the *Brazil—Taxation* Panel held that a tax reduction that “prioritize[s] domestic vehicles over imported vehicles . . . is particularly trade-restrictive because it incentivizes the purchase of domestically manufactured vehicles, which has a material impact on imports of like motor vehicles.”²⁵³ In addition, the Panel reasoned that discrimination against imported products makes no contribution to the Article XX(b) objectives of CO2 emissions reduction because non-discrimination of imported vehicles would have resulted in an increase in the number of safe and energy-efficient vehicles.²⁵⁴ A future Panel may similarly find that the IRA contradicts the Article XX(b) objective of

²⁴⁶ See Panel Report, *Brazil—Certain Measures Concerning Taxation and Charges*, WTO Doc. WT/DS472/497/R (adopted Jan. 11, 2019) [hereinafter *Brazil—Taxation* Panel Report]; see also Emma Newburger, *The U.S. Passed a Historic Climate Deal This Year — Here's a Recap of What's in the Bill*, CNBC (Dec. 30, 2022), <https://www.cnbc.com/2022/12/30/2022-climate-recap-whats-in-the-historic-inflation-reduction-act.html> [<https://perma.cc/XTN6-6B2C>].

²⁴⁷ *Brazil—Taxation* Panel Report, *supra* note 246, ¶ 7.905.

²⁴⁸ See *id.* ¶ 7.907.

²⁴⁹ See Appellate Body Report, *Brazil—Measures Affecting Imports of Retreaded Tyres* ¶ 210, WTO Doc. WT/DS332/AB/R (adopted Dec. 17, 2007) [hereinafter *Brazil—Retreaded Tyres*].

²⁵⁰ *Id.*

²⁵¹ See Appellate Body Report, *European Communities—Measures Affecting Asbestos and Asbestos-Containing Products* ¶ 172, WTO Doc. WT/DS135/AB/R (adopted Apr. 5, 2001) [hereinafter *EC—Asbestos* (AB)].

²⁵² See Emanuel Ornelas & Laura Puccio, *Reopening Pandora's Box in Search of a WTO-Compatible Industrial Policy? The Brazil–Taxation Dispute*, 19 *WORLD TRADE REV.* 249, 252 (2020).

²⁵³ *Brazil—Taxation* Panel Report, *supra* note 246, ¶ 7.928.

²⁵⁴ See *id.* ¶ 7.920.

incentivizing purchases of environmentally-friendly EVs by adding domestic production and content requirements that restrict EVs eligible for the tax credits, and can in turn decrease the number of EVs used and sold in the United States.²⁵⁵ Lastly, the counterfactual least-restrictive alternative test would be difficult to satisfy. The *Brazil—Taxation* Panel found that there were multiple reasonably available alternatives without origin or domestic production requirements that could have achieved the same contribution to the Article XX(b) objective as the tax benefits at issue.²⁵⁶

3. Article XX(a): Public Morals

Article XX(a) can be invoked for a measure “necessary to protect public morals.”²⁵⁷ Article XX(a) analysis also follows a two-tier design and necessity test and applies to a measure that must relate to a “standard[] of right and wrong conduct maintained by or on behalf of a community or nation.”²⁵⁸ The design test simply assesses whether the measure “contributed to *a certain extent*” or “is making and does make some contribution” to the asserted public morals objective.²⁵⁹ Like Article XX(b), this prong is satisfied as long as the measure “is not incapable of” meeting the asserted Article XX(a) objective—and the measure’s contribution can be determined even before its impact is measured or realized.²⁶⁰ The necessity test for Article XX(a) parallels Article XX(b) case law and balances the importance of the articulated Article XX(a) objective, the measure’s contribution to that objective, trade-restrictiveness, and less restrictive alternatives.²⁶¹

Of course, the challenge will lie in making a credible claim that the undisrupted supply of products, such as EVs or semiconductors, is an Article XX(a) measure that advances a “standard[] of right and wrong conduct maintained by or on behalf of a community or nation.”²⁶² Previously, the Appellate Body and Panels adopted a deferential approach to the design test and found that combatting money laundering, reducing the digital divide and promoting social inclusion, protecting of halal requirements, and protection of animal welfare were valid Article XX(a) objectives.²⁶³ The United States could therefore argue that the undisrupted supply of these products have become so engrained in state operation, cultural ethos, and public welfare that the CHIPS Act and IRA are necessary to protect public morals. For the same reasons discussed in the Article XX(b) section, however, the Panel

²⁵⁵ *See id.*

²⁵⁶ *See id.* ¶ 7.960.

²⁵⁷ GATT 1947, *supra* note **Error! Bookmark not defined.**, art. XX(a).

²⁵⁸ *EC—Seal Products* AB Report, *supra* note 194, ¶ 5.199; *see* Appellate Body Report, *Colombia—Measures Relating to the Importation of Textiles, Apparel and Footwear*, ¶ 5.67, WTO Doc. WT/DS461/AB (adopted June 22, 2016) [hereinafter *Colombia—Textiles*].

²⁵⁹ *EC—Seal Products* AB Report, *supra* note 194, ¶ 5.226.

²⁶⁰ *Colombia—Textiles*, *supra* note 258, ¶ 5.89; *see EC—Seal Products* AB Report, *supra* note 194, ¶ 5.224.

²⁶¹ *EC—Seal Products* AB Report, *supra* note 194, ¶ 5.169.

²⁶² *Id.* ¶ 5.199.

²⁶³ *See VAN DEN BOSSCHE & ZDOUC*, *supra* note **Error! Bookmark not defined.**, at 631–33.

may find that the CHIPS Act or IRA is trade restrictive and undercuts the asserted Article XX(a) goal by imposing discriminatory conditions that can decrease the number of semiconductors and EVs supply and uses.²⁶⁴

B. Discerning the Principal Objective

A separate issue is whether Article XX can be used to justify a complex regulation that pursues multiple objectives at once.²⁶⁵ In *Brazil—Retreaded Tyres*, the Appellate Body held that Brazil’s imported tire ban cannot serve two policy justifications at once.²⁶⁶ In *EC—Seal Products*, the Appellate Body expanded the holding in *Brazil—Retreaded Tyres* and decided that a Panel is required to discern the measure’s principal purpose for Article XX review.²⁶⁷ The dispute originated from the EU’s seal products regime that largely comprised of two policies: (1) a seal products ban that responded to the public concerns about the cruelty of seal hunting and (2) an “IC exception” for products using seals that were traditionally hunted by the Inuit or other indigenous communities. The Appellate Body upheld the Panel’s finding that the measure’s non-principal objective must be distinguished from the main objective, and determined that the principal objective of the EU seal regime is to address EU public moral concerns about seal welfare, not accommodating IC interests.²⁶⁸ The implication of the *EC—Seal Products* report is that Article XX review will only be based on the measure’s principal objective, and, by extension, other policy objectives are secondary and irrelevant.²⁶⁹

The Appellate Body’s interpretive approach was recently replicated in the *Turkey—Pharmaceutical Products* dispute, in which the Arbitrators and Panel held that Turkey’s drug localization measure primarily served an industrial policy objective and could not simultaneously advance an Article XX(b) objective. Turkey alleged that the measure was “designed to” advance both supply chain and public health policy objectives: reducing dependence on imported pharmaceutical products and preventing the shortage in the supply of safe, effective, and affordable

²⁶⁴ See *Brazil—Taxation* Panel Report, *supra* note 246, ¶ 7.928.

²⁶⁵ See Robert Howse, Joanna Langille & Katie Sykes, *Pluralism in Practice: Moral Legislation and the Law of the WTO after Seal Products*, 48 GEO. WASH. INT’L L. REV. 81 (2015); Donald H. Regan, *Measures with Multiple Purposes: Puzzles from EC-Seal Products*, 108 AJIL UNBOUND 315 (2015).

²⁶⁶ See *Brazil—Retreaded Tyres*, *supra* note 249, ¶ 228 (holding that Brazil’s tire ban is inconsistent with *chapeau* because there was no “rational connection” between the two objectives: (1) protecting human health from mosquito-borne diseases and tire fire emissions and (2) exemption for MERCOSUR countries in compliance with an MERCOSUR arbitral tribunal ruling).

²⁶⁷ See *EC—Seal Products* AB Report, *supra* note 194, ¶¶ 5.179, 5.218–5.230.

²⁶⁸ *EC—Seal Products* AB Report, *supra* note 228, ¶ 5.146.

²⁶⁹ *Id.* ¶¶ 5.145–5.146; Gracia Marín Durán, *Measures with Multiple Competing Purposes after EC—Seal Products: Avoiding a Conflict between GATT Article XX-Chapeau and Article 2.1 TBT Agreement*, 19 J. INT’L ECON. L. 467, 475 (2016).

pharmaceutical products.²⁷⁰ The Arbitrators and Panel found that Turkey’s identified risk of shortages was “theoretical, abstract, and hypothetical” and determined that the localization measure “appeared to pursue an industrial policy objective rather than specific public health concerns.”²⁷¹ Furthermore, Turkey’s claim was undercut by the fact that the main legal instruments make “few contemporaneous references to public health concerns” while “the premises and objectives of the localization requirement appear in the context of industrial policy objectives.”²⁷² In fact, the Panel and Arbitrators’ reports suggested that industrial and public health objectives were fundamentally incompatible and concluded that “the localisation requirement’s stated objective of meeting 60% of domestic demand through domestic production has *no rational relationship* to Turkey’s declared objective of ensuring access to safe, effective and affordable pharmaceutical products.”²⁷³ The *Turkey—Pharmaceutical Products* findings demonstrate that Article XX is unlikely to apply to a subsidy that advances industrial policy objectives of developing domestic production and reducing supply chain dependence on imported products.

A number of scholars have criticized the Appellate Body rulings for undermining the state’s regulatory authority to create measures that serve multiple, and even conflicting, purposes.²⁷⁴ In his “pluralist” critique of *EC—Seal Products*, Professor Howse warns that the decision offers no clarity about “how laws can be designed to reflect compromise between competing or countervailing objectives (as they inevitably must be in pluralist societies where moral beliefs are diverse and where policymaking involves trade-offs).”²⁷⁵ The CHIPS Act and IRA are cases in points to Professor Howse’s critique. A multimillion-dollar industrial subsidy must cater to a variety of economic, industrial, health, environmental, and even national security interests—all of which may be equally important and genuine objectives—

²⁷⁰ Panel Report, *Turkey—Certain Measures Concerning the Production, Importation and Marketing of Pharmaceutical Products*, ¶ 7.172, WTO Doc. WT/DS583/12 (issued Nov. 11, 2021) [hereinafter *Turkey—Pharmaceutical Products* Panel Report].

²⁷¹ Arbitrators’ Report, *Turkey—Certain Measures Concerning the Production, Importation and Marketing of Pharmaceutical Products*, ¶ 6.101, WTO Doc. WT/DS583/ARB25 (July 25, 2022) [hereinafter *Turkey—Pharmaceutical Products* Article 25 Report].

²⁷² *Turkey—Pharmaceutical Products* Panel Report, *supra* note 270, ¶ 7.191.

²⁷³ *Id.* ¶ 7.207 (emphasis added).

²⁷⁴ See, e.g., Howse, Langille & Sykes, *supra* note 265, at 97, 98 (explaining that “all sorts of recognizably moral reasons should be permissive grounds for domestic regulatory action under WTO law” and “the WTO should not seek to prohibit such moral rules that instantiate complex reasoning—it should recognize that moral reasons can be manifold”); Durán, *supra* note 269, at 471, 481–82; Petros C. Mavroidis, *Sealed with a Doubt: EU, Seals, and the WTO*, 6 EUR. J. RISK REG. 388, 391 (2015) (explaining that “protection of animal welfare and protection of cultural minority rights are two distinct measures” because “the fact that two measures share the same generic objective does not necessarily make them ‘one measure’”); Timothy Meyer, *The Political Economy of WTO Exceptions*, 99 WASH. U. L. REV. 1299, 1345 (2022).

²⁷⁵ Rob Howse, Joanna Langille & Katie Sykes, *Animal Welfare, Public Morals and Trade: the WTO Panel Report in EC – Seal Products*, AM. SOC’Y INT’L L. (Jan. 29, 2014), <https://www.asil.org/insights/volume/18/issue/2/animal-welfare-public-morals-and-trade-wto-panel-report-ec-%E2%80%93-seal> [https://perma.cc/GR62-ZSHE].

to secure legislative and executive approval. For example, by no means is the CHIPS Act an exclusively national security policy; the \$250 billion law fulfills a wide spectrum of economic, industrial, societal, and political objectives, such as domestic job production, industrial development, onshoring, technical education, R&D investment, STEM education, social and geographic equity, and funding for Historically Black Colleges and Universities.²⁷⁶ In fact, less than 20% of the total funding (\$39 billion) is allocated to semiconductor production and the remaining federal funds are allocated to other purposes, such as R&D, workforce development, and STEM education.²⁷⁷

For industrial subsidies enacted in a sweeping spending package, it would therefore be extremely difficult to determine which, among many policy objectives that have little “rational connection” to each other, can be deemed as the singular “principal objective” that would serve as the basis for a Panel’s Article XX review. Even if the measure is narrowed to a chip manufacturing subsidy, the CHIPS Incentives program also independently advances multiple equally important purposes, namely job creation, supporting domestic manufacturing, regional development, economic and workforce development, supply chain resilience, China competition, and national security.²⁷⁸ Discerning the main objective appears to be an impossible task for the IRA, a \$430 billion spending bill enacted to reduce inflation, reform taxes and increase government revenue, invest in energy security and climate change transitions, bolster domestic manufacturing, and lower healthcare and drug costs all at once.²⁷⁹

In sum, Article XX is unlikely to serve as a reliable defense for a supply chain measure given the narrow interpretation of each Article XX subparagraph and uncertainty about which objective would be deemed principal among many policy goals. And assuming that the Article XX claim is unsuccessful, the Respondent Member would be forced to turn to the security exceptions under GATT Article XXI to show that the measure is consistent with the WTO law.

VI. ARTICLE XXI: SECURITY EXCEPTION

²⁷⁶ See Fact Sheet: CHIPS and Science Act Will Lower Costs, *supra* note **Error! Bookmark not defined.**

²⁷⁷ See *id.*

²⁷⁸ See Press Release, White House, Fact Sheet: Two Years after the CHIPS and Science Act, Biden-Harris Administration Celebrates Historic Achievements in Bringing Semiconductor Supply Chains Home, Creating Jobs, Supporting Innovation, and Protecting National Security (Aug. 9, 2024), <https://www.whitehouse.gov/briefing-room/statements-releases/2024/08/09/fact-sheet-two-years-after-the-chips-and-science-act-biden-%E2%81%A0harris-administration-celebrates-historic-achievements-in-bringing-semiconductor-supply-chains-home-creating-jobs-supporting-inn/> [<https://perma.cc/F3AV-TS7H>].

²⁷⁹ STAFF OF SENATE DEMOCRATIC MAJORITY, 116TH CONG., SUMMARY: THE INFLATION REDUCTION ACT OF 2022

https://www.democrats.senate.gov/imo/media/doc/inflation_reduction_act_one_page_summary.pdf [<https://perma.cc/R37S-NDUE>].

A. Jurisdiction

Titled the “Security Exceptions,” Article XXI of the GATT provides that:

Nothing in this Agreement shall be construed . . .

(b) to prevent any contracting party from taking any action which it considers necessary for the protection of its essential security interests

(i) relating to fissionable materials or the materials from which they are derived;

(ii) relating to the traffic in arms, ammunition and implements of war and to such traffic in other goods and materials as is carried on directly or indirectly for the purpose of supplying a military establishment;

(iii) taken in time of war or other emergency in international relations²⁸⁰

Like Article XX, Article XXI can excuse a measure’s GATT violation. For most of GATT and WTO history, Members exercised self-restraint when it came to invoking Article XXI in WTO disputes.²⁸¹ This decades-long silence was finally broken in 2019 with the *Russia—Traffic in Transit* dispute that reviewed Ukraine’s complaint challenging Russia’s restrictions on transit cargo bound for Kazakhstan or Kyrgyzstan, and determined that it had full jurisdiction to review a Member’s invocation of the security exception for the first time.²⁸²

The most salient contention in the security exception is whether Article XXI is self-judging, meaning that only the invoking Member, not another state or the WTO Panel, can decide whether the security exception applies.²⁸³ This threshold question hinges on whether the phrase “which it considers necessary” is confined to the *chapeau* or extends to the subparagraphs (i), (ii), and (iii) that provide the types of permissible security measures.²⁸⁴ The latter reading supports the self-judging interpretation, meaning that that Article XXI is non-justiciable and the WTO would lack jurisdiction to review the Member’s invocation of Article XXI. In *Russia—Traffic in Transit*, Russia and the United States, which participated

²⁸⁰ Lockhart & Connolly, *supra* note 230, at 441.

²⁸¹ See Warren Maruyama & Alan Wm. Wolff, *Saving the WTO from the National Security Exception 5* (Peterson Inst. Int’l Econ., Working Paper, 2023); Isabelle Van Damme, *National Security*, in THE OXFORD HANDBOOK OF INTERNATIONAL TRADE LAW, *supra* note **Error! Bookmark not defined.**, at 713; Mona Pinchis-Paulsen, *Trade Multilateralism and U.S. National Security: The Making of the GATT Security Exceptions*, 41 MICH. J. INT’L L. 109, 114 (2020).

²⁸² VAN DEN BOSSCHE & ZDOUC, *supra* note **Error! Bookmark not defined.**, at 675–76.

²⁸³ Heath, *supra* note 83, at 1052.

²⁸⁴ Van Damme, *supra* note 281, at 723–25.

as a third party, had argued that Article XXI is non-justiciable and therefore the Panel lacked jurisdiction to review the measure at issue.²⁸⁵ After considering the negotiating history of Article XXI, object and purpose of the GATT, and relevant WTO agreements, the Panel squarely rejected the self-judging argument and affirmed that it had jurisdiction to review Russia's measure.²⁸⁶ The Panel reasoned that "there is no basis for treating the invocation of Article XXI(b)(iii) of the GATT 1994 as an incantation that shields a challenged measure from all scrutiny" and this interpretation "vest[s] in panels the power to review whether the requirements of the enumerated subparagraphs are met, rather than leaving it to the unfettered decision of the invoking Member."²⁸⁷ In the subsequent *Saudi Arabia—IPRs* dispute, the Panel again affirmed the jurisdictional finding in *Russia—Traffic in Transit* and proceeded to review an Article XXI claim based on "objective facts that are amenable to objective determination."²⁸⁸

The United States has vigorously opposed the WTO Panels' jurisdictional findings and has argued that the security exception is a self-judging provision because Article XXI(b) is a single relative clause and therefore "which it considers necessary" applies to the subparagraph, not just the "action" language in the *chapeau*.²⁸⁹ However, all Panels to date have rejected the argument that Article XXI is self-judging.²⁹⁰ The *US—Steel and Aluminium Products (China)* Panel dismissed the U.S. interpretive argument as one that "reflect[s] the potential limitations of a purely grammatical analysis" and explicitly held that Article XXI(b) is neither self-judging nor non-justiciable.²⁹¹ Additionally, the *US—Origin Marking* Panel concluded that the verb "consider" in the "which it considers necessary" language only applies to "necessary" and, by extension, "consider" cannot serve a "double duty" of relating to both the word "necessary" and the subparagraph (iii).²⁹² The Panel also opined that the "WTO should not become a forum to discuss security issues generally," and its review of the security exception was consistent with the object and purpose of the DSB—protecting the security and predictability of the multilateral trading system.²⁹³

Assuming that it determines that the security exception is justiciable, a Panel would apply a two-tier test to review a Member's invocation of Article

²⁸⁵ *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶¶ 7.51, 7.28.

²⁸⁶ Van Damme, *supra* note 281, at 725.

²⁸⁷ *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶¶ 7.100, 7.102.

²⁸⁸ *Saudi Arabia—IPRs*, *supra* note **Error! Bookmark not defined.**, ¶ 7.71.

²⁸⁹ U.S. TRADE REPRESENTATIVE, UNITED STATES – CERTAIN MEASURES ON STEEL AND ALUMINUM PRODUCTS (DS544): INTEGRATED EXECUTIVE SUMMARY OF THE UNITED STATES OF AMERICA, 19 (2021).

²⁹⁰ See, e.g., *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶ 7.101; *Saudi Arabia—IPRs*, *supra* note **Error! Bookmark not defined.**, ¶ 7.71; *US—Steel and Aluminium*, *supra* note **Error! Bookmark not defined.**, ¶¶ 7.121, 7.128; *US—Origin Marking*, *supra* note **Error! Bookmark not defined.**, ¶¶ 7.67, 7.88.

²⁹¹ *US—Steel and Aluminium*, *supra* note **Error! Bookmark not defined.**, ¶¶ 7.121, 7.128.

²⁹² See *US—Origin Marking*, *supra* note **Error! Bookmark not defined.**, ¶¶ 7.67, 7.88.

²⁹³ *Id.* ¶¶ 7.149, 7.150, 7.171.

XXI(b)(iii). First, a measure must satisfy subparagraph (b)(iii) and be “taken in time of war or other emergency in international relations.”²⁹⁴ Second, the Member must show that the measure satisfies the *chapeau* and is “consider[ed] necessary for the protection of its essential security interests.”²⁹⁵

B. Substantive Test

After outlining the Panels’ substantive interpretation, this section then applies the legal test to the CHIPS Act. The analysis focuses on Article XXI(b)(iii) because there is no WTO case law for Article XXI(b)(i) and (ii) to date. Potential use of subparagraph (ii) to defend dual-use products is outlined in the legal critique section. Notably, the United States already signaled that it would invoke Article XXI to defend semiconductor export controls in *US—Semiconductors*, and responded that national security issues cannot be subject to the DSB’s review, and each WTO Member retains sovereign authority to enact measures that it considers necessary to protect essential security interests.²⁹⁶

1. Subparagraph (iii)

In its review of subparagraph (iii) of Article XXI(b), a Panel would assess two elements: “(a) there must be a ‘war or other emergency in international relations’; and (b) the action must be ‘taken in time of’ that ‘war or other emergency in international relations.’”²⁹⁷ The strength of an Article XXI(b)(iii) defense hinges on the Panel’s interpretation of an “emergency” because “taken in time of” involves a simplistic temporal analysis that asks whether the action was “taken *during* the war or other emergency in international relations.”²⁹⁸ To date, all Panels have adopted different definitions for “emergency in international relations,” and there is a considerable interpretive inconsistency in each of their definitions.

When read together, the WTO case law provides that an emergency can only be established for a war, complete cessation of diplomatic or economic relations, or severance of trade and policy partnership. The *Russia—Traffic in Transit* Panel found that an emergency refers “*generally to a situation of armed conflict, or of latent armed conflict, or of heightened tension or crisis, or of general instability engulfing or surrounding a state.*”²⁹⁹ The Panel also highlighted that “political or economic differences between Members are not sufficient, of themselves, to constitute an emergency in international relations” and emergency

²⁹⁴ *Id.* ¶ 7.25.

²⁹⁵ *Id.*

²⁹⁶ See Panel Report, *United States—Measures on Certain Semiconductor and Other Products and Related Services and Technologies*, WT/DS615/7 (adopted Mar. 3, 2023).

²⁹⁷ *US—Origin Marking*, *supra* note **Error! Bookmark not defined.**, ¶ 7.267.

²⁹⁸ *Saudi Arabia—IPRs*, *supra* note **Error! Bookmark not defined.**, ¶ 7.248 (emphasis added) (determining that “taken in time” requires a showing of a “temporal relation” between “qualifying emergencies and related ‘actions’”); *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶ 7.70.

²⁹⁹ *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶ 7.76 (emphasis added).

must ordinarily implicate “defence and military interests, or maintenance of law and public order interests.”³⁰⁰ However, the *Saudi Arabia—IPRs* Panel found that Saudi Arabia’s severance of diplomatic, consular, and economic ties with Qatar represented an “*exceptional and serious crisis in the relations between two or more States,*” and therefore satisfied the meaning of an emergency even if the alleged emergency was a political or economic conflict that did not rise to a war or armed conflict.³⁰¹ The *US—Steel and Aluminium Products (China)* Panel interpreted Article XXI(b)(iii) to mean “*situations of a certain gravity or severity and international relations that are of a critical or serious nature in terms of their impact on the conduct of international relations.*”³⁰² Based on this definition, the Panel found that global excess capacity of steel and aluminum did not rise to an emergency and rejected the United States’ Article XXI defense.

In *US—Origin Marking*, the Panel attempted to return to a stringent interpretation of an emergency as a war while reconciling the interpretive inconsistencies between *Russia—Traffic in Transit* and *Saudi Arabia—IPRs*.³⁰³ At issue was the Trump administration’s amended origin marking requirement that marked imported goods produced in Hong Kong to be of Chinese origin.³⁰⁴ The Panel first redefined an emergency as “a state of affairs, of the utmost gravity, in effect a situation representing a *breakdown or near-breakdown in the relations between states* or other participants in international relations.”³⁰⁵ Echoing the *Russia—Traffic in Transit* finding that Article XXI(b)(iii) must implicate defense and military interests, the *US—Origin Marking* Panel qualified that “most political tensions and differences among countries, even those that may appear to be of a quite serious nature . . . would therefore not necessarily constitute an emergency.”³⁰⁶ For this reason, the burden of proof for establishing that an economic, political, or social situation constitutes an emergency must be higher than a situation invoking military or defense interests.³⁰⁷ The Panel also conceded that the previous Panel reports for *Russia—Traffic in Transit* and *Saudi Arabia—IPRs* “relied on a slightly different definition of emergency,” but reasoned that the severance of diplomatic, economic, and consular ties in the latter satisfied its redefined interpretation of emergency as “a breakdown or near breakdown” of bilateral relations.³⁰⁸ The Panel then determined that an emergency could not be found because the measure targeted only certain parts of U.S.-Hong Kong relations;

³⁰⁰ *Id.* ¶¶ 7.75, 7.76.

³⁰¹ *Saudi Arabia—IPRs*, *supra* note **Error! Bookmark not defined.**, ¶ 7.262 (emphasis added).

³⁰² *US—Steel and Aluminium*, *supra* note **Error! Bookmark not defined.**, ¶¶ 7.147, 7.148 (emphasis added).

³⁰³ *See US—Origin Marking*, *supra* note **Error! Bookmark not defined.**, ¶¶ 7.313–7.315 (emphasis added).

³⁰⁴ *US—Origin Marking*, *supra* note **Error! Bookmark not defined.**, ¶ 7.1.

³⁰⁵ *Id.* ¶ 7.306 (emphasis added).

³⁰⁶ *Id.* ¶ 7.311.

³⁰⁷ *See id.*

³⁰⁸ *Id.* ¶ 7.315.

trade between Hong Kong and the United States was not sufficiently affected; and the two Members maintained relations.³⁰⁹

2. Chapeau

The satisfaction of the *chapeau* requires (1) the Member's articulation of the essential security interests and (2) the connection between the measure and the asserted essential security interests.³¹⁰

First, the invoking Member has the burden of articulating the essential security interests.³¹¹ The *Russia—Traffic in Transit* Panel adopted a deferential interpretation of this prong and held that “it is left, in general, to every Member to define what it considers to be its essential security interests” to reflect the diversity of interests, external or internal situations, and considerations that can lead states to respond to essential security risks.³¹² But not every concern can rise to an essential security interest, which must have a narrower meaning than mere “security interests” and refer to “interests relating to the *quintessential functions of the state*, namely, the protection of its territory and its population from external threats, and the maintenance of law and public order internally.”³¹³ To prevent the abuse of Article XXI to circumvent WTO obligations, the Panel held that Members' discretion to identify essential security interests are bound by an “obligation to interpret and apply Article XXI(b)(iii) of the GATT 1994 in *good faith*.”³¹⁴ In *Saudi Arabia—IPRs*, the Panel reiterated that the identification of the essential security interests is a “minimally satisfactory” standard and this prong “is not a particularly onerous [requirement], and is appropriately subject to a limited review by a panel.”³¹⁵

Finally, the Member must establish a sufficient relationship between the measure and the declared essential security interests.³¹⁶ The *Russia—Traffic in Transit* Panel clarified that this burden can be satisfied by meeting “a minimum requirement of plausibility in relation to the proffered essential security interests” and demonstrating that the measure is not “so remote from, or unrelated to” the identified essential security interests.³¹⁷ In *Saudi Arabia—IPRs*, the Panel rejected Saudi Arabia's Article XXI(b)(iii) defense because the non-application of the criminal procedures or penalties to beoutQ, a Qatari broadcasting entity responsible

³⁰⁹ See *id.* ¶¶ 7.53–7.54.

³¹⁰ VAN DEN BOSSCHE & ZDOUC, *supra* note **Error! Bookmark not defined.**, at 677.

³¹¹ See *Saudi Arabia—IPRs*, *supra* note **Error! Bookmark not defined.**, ¶ 7.242.

³¹² See *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶ 7.131.

³¹³ *Id.* ¶ 7.130 (emphasis added).

³¹⁴ *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶¶ 7.132–7.133 (emphasis added).

³¹⁵ *Saudi Arabia—IPRs*, *supra* note **Error! Bookmark not defined.**, ¶ 7.281.

³¹⁶ See *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶¶ 7.132, 7.138 (explaining how this requirement arises out of the “obligation of good faith,” which “is a general principle of law and a principle of general international law which underlies all treaties”).

³¹⁷ *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶¶ 7.138–7.139.

for content piracy, “does not have any relationship to Saudi Arabia’s policy of ending or preventing any form of interaction with Qatari nationals.”³¹⁸ After also considering the measures’ adverse impact on the third-party rights holders, the Panel concluded that the non-application of criminal procedures and penalties is “so remote from, or unrelated” to the emergency that it was implausible that Saudi Arabia implemented the measures to safeguard its essential security interests.³¹⁹ Although a WTO Panel affords significant deference to the Member’s construction of the essential security interests, the Member is therefore still obligated to show that there is a minimal link between its essential security interests and the challenged measure.

C. Application

The scholarly and legal discourse on Article XXI(b) to date has centered on the jurisdictional question about whether the security exception is self-judging.³²⁰ Based on the previous WTO Panels’ unanimous repudiation of the self-judging and non-justiciable interpretation, this article will instead assume that the provision is justiciable and critique the Panels’ substantive construction of Article XXI(b)(iii). To summarize the analysis above, the *chapeau* test has been construed to be a minimally satisfactory and deferential standard. Because the “taken in time of” simply requires proof that the measure was “*during* the war or other emergency,” the success of an Article XXI(b)(iii) claim will depend on whether a Panel is persuaded that the CHIPS Act responds to an “emergency in international relations.”³²¹

The CHIPS Act is unlikely to satisfy the previous WTO Panels’ finding that Article XXI(b)(iii) essentially applies to only circumstances that arise to war

³¹⁸ *Saudi Arabia—IPRs*, *supra* note **Error! Bookmark not defined.**, ¶ 7.293.

³¹⁹ *Id.*

³²⁰ See, e.g., Roger P. Alford, *The Self-Judging WTO Security Exception*, 2011 UTAH L. REV. 697, 758 (2011) (“Member States understand the exception to be self-judging, and presume that it will be exercised with wisdom and in good faith”); Pinchis-Paulsen, *supra* note 281, at 114–17 (“[E]xploring the internal U.S. materials adds plausibility to the notion that the U.S. negotiators did not believe the security exceptions were purely self-judging in nature and non-justiciable”); Stephen Kho et al., *The Conundrum of the Essential Security Exception: Can the WTO Resolve the GATT Article XXI Crisis and Save the Dispute Settlement Mechanism?* (Nov. 2023) (unpublished paper) (on file with the Geneva Graduate Institute, Centre for Trade and Economic Integration) (“[T]he U.S. interpretation of GATT Article XXI as wholly self-judging is unsupported by the text, context, object and purpose, and negotiating history of Article XXI, as well as state practice.”); Warren Maruyama & Alan W. Wolff, *Saving the WTO from the National Security Exception* 18 (The Peterson Inst. for Int’l. Econ., Working Paper No.23-2, 2023) (“The negotiating history of Article XXI demonstrates that the drafters were concerned that the exception to the rules might go too far and be used to upset the balance of concessions achieved through the entirety of their negotiations. At the same time, they understood that sovereigns could not be constrained to act as their essential security interests required.”).

³²¹ *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶ 7.70.

or armed conflict.³²² The *Russia—Traffic in Transit* Panel squarely found that “political or economic differences between Members are not sufficient, of themselves, to constitute an emergency in international relations” unless they trigger “defence and military interests, or maintenance of law and public order interests.”³²³ The Panel further qualified that political seriousness and urgency are not relevant to finding an emergency unless they give rise to defense and military interests.³²⁴ The *U.S.—Steel and Aluminium Products* Panel equated a war with an emergency and held that an emergency “must be, if not equally grave or severe, at least in comparable in its gravity or severity to a ‘war’ in terms of its impact on international relations.”³²⁵ In *US—Origin Marking*, the Panel qualified that “most political tensions and differences among countries, even those that may appear to be of a quite serious nature, . . . would therefore not necessarily constitute an emergency.”³²⁶ Although it did not entirely foreclose the possibility that non-military, political circumstances can rise to an emergency, the Panel explained that the “further removed that a situation is from war or comparable threat to international peace and security, the more explanation a respondent would usually need to provide as to why a given situation is close to the breakdown in relations.”³²⁷

Based on the previous Panels’ interpretation, economic security justifications are thus extremely unlikely to demonstrate the existence of an essential security emergency under the meaning of Article XXI(b)(iii). In short, it can be expected that the United States’ invocation of Article XXI(b)(iii) in defense of the CHIPS Act will fail as long as (1) there is no armed or latent armed conflict with China that implicates defense and military interests; (2) there is an ongoing trade relationship and policy cooperation between the two countries; and (3) they do not entirely sever bilateral diplomatic, consular, and economic relations. Despite the escalating political, military, and economic tensions, the United States is not at war with China.³²⁸ Although they have large implications for national defense and security, the global chip shortage, risks of shortage, and defense applications of semiconductors are largely political and economic emergencies that did not escalate into an actual war or armed conflict, as *Russia—Traffic in Transit* and *US—Steel and Aluminium Products* required.³²⁹ Satisfying the test articulated by the *US—Origin Marking* Panel would also be difficult, because the CHIPS Act only affects a specific segment of U.S.-China relations; the two countries did not sever

³²² See *id.* ¶ 7.75; *US—Steel and Aluminium*, *supra* note **Error! Bookmark not defined.**, ¶ 7.138–7.139; *US—Origin Marking*, *supra* note **Error! Bookmark not defined.**, ¶ 7.306.

³²³ *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶ 7.75.

³²⁴ *Id.*

³²⁵ *US—Steel and Aluminium*, *supra* note **Error! Bookmark not defined.**, ¶ 7.138.

³²⁶ *US—Origin Marking*, *supra* note **Error! Bookmark not defined.**, ¶ 7.311.

³²⁷ *Id.* ¶ 7.312.

³²⁸ See, e.g., Robert S. Ross, *It’s not a cold war: competition and cooperation in US–China relations*, 2 CHINA INT’L STRATEGY REV. 63 (2023).

³²⁹ See *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶ 7.75; *US—Steel and Aluminium*, *supra* note **Error! Bookmark not defined.**, ¶ 7.138.

diplomatic, consular, or economic relations; and they maintain a continuing bilateral trade relationship.³³⁰

Compared to the subparagraph (iii), the United States has a stronger case in showing that the CHIPS Act satisfies the *chapeau*. In *US—Origin Marking*, the Panel even determined that the *chapeau* is an entirely self-judging provision excluded from its review and ended the analysis after reviewing the subparagraph (iii).³³¹ The previous Panels have also emphasized that articulation of the essential security interests is highly deferential to the invoking Member's determination and subject to limited review.³³² The second prong that requires a good faith application and interpretation of Article XXI(b)(iii) may also be fulfilled because the national security objectives within the CHIPS Act are not post hoc justifications.³³³ Instead, the identified national security risks and imperatives have been underscored as critical policy goals that have sustained the measure throughout lawmaking and rulemaking.³³⁴ However, a Complainant Member may also argue that, just like subparagraph (iii), the *chapeau* cannot be satisfied in absence of a war by referring to the *Russia—Traffic in Transit* Panel's holding that essential security interests mean "interests relating to quintessential functions of the state, namely protection of its territory and its population from external threats."³³⁵ This likely rebuttal is also supported by the Panel's finding that the invoking Member has a greater burden of proof for articulating the essential security interests when the presented emergency is not an armed conflict.³³⁶

VII. CRITIQUE AND IMPLICATIONS

Despite the many references to national security risks and interests reflected in its negotiating history, statute, and administration, the CHIPS Act is therefore unlikely to satisfy the stringent interpretation of Article XXI. This section critiques prior WTO Panel reports and explores the significance of this potential but likely outcome.

A. Lack of Original, Fact-Specific Analysis

Suppose that China challenges the CHIPS Act. The United States would argue that the global chip shortage and supply chain risks constitute an emergency, and that the CHIPS Act was necessary to address its essential security interests. Yet, determining the existence of an emergency between the United States and China would be an extremely elusive and daunting task given the complexity of the

³³⁰ See *US—Origin Marking*, *supra* note **Error! Bookmark not defined.**, ¶ 7.354–7.358.

³³¹ *Id.* ¶ 7.160.

³³² See *Saudi Arabia—IPRs*, *supra* note **Error! Bookmark not defined.**, ¶ 7.281.

³³³ See discussion *supra* Part **Error! Reference source not found.**

³³⁴ See *Saudi Arabia—IPRs*, *supra* note **Error! Bookmark not defined.**, ¶ 7.281.

³³⁵ *Id.* ¶ 7.130.

³³⁶ *Id.* ¶ 7.135.

bilateral relations between the two superpowers.³³⁷ There are palpable diplomatic and political conflicts that seem to amount to “exceptional and serious crisis in the relations between two or more States”³³⁸—for example, when Taiwan’s President Tsai Ing-wen visited the United States and held a summit with the former House Speaker Kevin McCarthy despite threats of retaliation from China.³³⁹ At a minimum, there is a “latent armed conflict” or “near breakdown of relations between the two countries” between China and the United States, which have repeatedly exchanged threats of armed retaliation and conducted hostile military exercises.³⁴⁰ In 2023 alone, for example, a Chinese spy balloon entered U.S. territory and gathered intelligence from military sites; President Xi stated that China is preparing for a war and promised to retake Taiwan; President Biden responded that U.S. forces would defend Taiwan from a potential Chinese invasion; and the Secretary and General of the U.S. Air Force shared predictions that the United States may go to war with China as early as 2025.³⁴¹ The U.S. National Security Strategies, National Defense Strategies, and NDAA also explicitly labelled China as a competitor and the “most comprehensive and serious challenge to U.S. national security.”³⁴²

So, how would a Panel review the existence of an emergency for the CHIPS Act? The case law suggests that a Panel would significantly narrow the scope of emergency and refrain from addressing the broader context of U.S.-China relations that underlies the CHIPS Act. *Russia—Traffic in Transit* and *US—Origin Marking* further suggest that a Panel would evade independent or fact-specific evaluation of the emergencies and instead refer to external documents and international agreements that describe the emergency.³⁴³

³³⁷ See generally Ross, *supra* note 328.

³³⁸ *Saudi Arabia—IPRs*, *supra* note **Error! Bookmark not defined.**, ¶ 7.262.

³³⁹ See Rose Horowitz, *McCarthy to Meet with Taiwanese President in Visit China Calls a ‘Provocation,’* NBC NEWS (Apr. 3, 2023), <https://www.nbcnews.com/politics/congress/mccarthy-meet-taiwanese-president-visit-china-calls-provocation-rcna77903> [<https://perma.cc/CPW4-T2D7>].

³⁴⁰ *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶ 7.76; *US—Origin Marking*, *supra* note **Error! Bookmark not defined.**, ¶ 7.315; *America and China Are Preparing for a War over Taiwan*, ECONOMIST (Mar. 9, 2023), <https://www.economist.com/briefing/2023/03/09/america-and-china-are-preparing-for-a-war-over-taiwan> [<https://perma.cc/L4FD-C2N9>].

³⁴¹ See John Pomfret & Matt Pottinger, *Xi Jinping Says He Is Preparing China for War*, FOREIGN AFF. (Mar. 29, 2023), <https://www.foreignaffairs.com/united-states/xi-jinping-says-he-preparing-china-war> [<https://perma.cc/D6SQ-3VZ6>]; Brad Dress, *China Preparing for War with US, Air Force Secretary Says*, THE HILL (Sept. 12, 2023), <https://thehill.com/policy/defense/4199367-china-preparing-for-war-with-us-air-force-secretary-says> [<https://perma.cc/XFA5-KH9Z>]; David Brunnstorm & Trevor Hunnicutt, *Biden Says U.S. Forces Would Defend Taiwan in the Event of a Chinese Invasion*, REUTERS (Sept. 19, 2022), <https://www.reuters.com/world/biden-says-us-forces-would-defend-taiwan-event-chinese-invasion-2022-09-18/> [<https://perma.cc/DYE5-T4UR>].

³⁴² U.S. DEP’T OF DEF., THE NATIONAL DEFENSE STRATEGY OF THE UNITED STATES OF AMERICA 4 (2022); WHITE HOUSE, THE NATIONAL SECURITY STRATEGY OF THE UNITED STATES OF AMERICA 23 (2022); John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. 115-232, § 1261(a), 132 Stat. 1636, 2060 (2018).

³⁴³ See *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶ 7.122.

To date, all WTO Panel reports avoided providing a comprehensive and fact-intensive analysis of the emergency in question and its impact on the Members' relations. After providing a lengthy analysis establishing its jurisdiction and elements of Article XXI(b)(iii), the Panel in *Russia—Traffic in Transit* devoted a single paragraph to apply the legal test to the facts and find that there was an emergency. The Panel provided no original analysis of the situation at issue, and the sole bases for establishing the existence of emergency were references to two UN General Assembly resolutions and other WTO Members' sanctions against Russia.³⁴⁴

Replicating the simplistic analysis, the *US—Origin Marking* Panel rejected the United States' argument that the alleged human rights crackdown in Hong Kong was an emergency in international relations that it considered necessary to address. To argue that there existed an emergency under Article XXI(b)(iii), the United States had presented government reports, statements, and press articles demonstrating the importance it accorded to human rights and democracy concerns in Hong Kong.³⁴⁵ Given the highly sensitive nature of the alleged emergency and contentious relations between the two states, one would expect that the Panel fully wrestled with the complex series of events and human rights crackdown in Hong Kong and thoroughly analyzed its impact on the relations between United States, China, and Hong Kong. Instead, the Panel found that the presented documents did not demonstrate the requisite level of gravity and ended the analysis of the emergency in a single sentence: “[E]vents in Hong Kong, China, as pointed to by the United States, are, and remain, the subject of tensions and expressions of concern at the international level.”³⁴⁶

This restrained approach to emergency analysis would be fatal to an industrial subsidy that relies on economic security justifications and requires significant political and economic context to demonstrate the existence of supply chain risks and its relation to national security interests. It is also significant that the *US—Origin Marking* Panel reviewed the presented evidence about the U.S. domestic instruments, statements from U.S. officials, statements of other countries, and press articles describing the human rights situation in Hong Kong, but did not find that this evidence could guide its analysis or change the conclusion that there was no emergency. Based on this approach, a future Panel would find internal documents and records identifying the supply chain risks and the CHIPS Act's contribution to national security interests to have no probative value other than proving that the presented security emergency is “the subject of tensions and expressions of concern at the international level” and “the United States has taken certain actions in response to this situation.”³⁴⁷ Lastly, the *US—Origin Marking* Panel's holding that the measures must be strictly *vis-à-vis* Hong Kong (not *vis-à-*

³⁴⁴ *Id.*

³⁴⁵ See *US—Origin Marking*, *supra* note **Error! Bookmark not defined.**, ¶ 7.5.4.2.1.

³⁴⁶ *Id.* ¶ 7.353.

³⁴⁷ *Id.*

vis China) suggests that emergencies, geopolitical tensions, and risks of war in third-party countries, such as Taiwan or the Indo-Pacific region, cannot establish the existence of an essential security emergency under the meaning of Article XXI.³⁴⁸

B. Static Interpretation of National Security

To date, all Panel reports have established a strong presumption that political or economic conflicts, however serious, cannot amount to emergencies.³⁴⁹ Critics have argued that this interpretation does not appreciate the evolution of national security emergency from an interstate military conflict in the post-war era to an umbrella term for nonmilitary and nonhuman risks.³⁵⁰ In fact, the *Russia—Traffic in Transit* Panel created the requirement of “defence or military interests, or maintenance of law and public order interests” solely based on a reference to Article 11 of the 1919 Covenant of the League of Nations as an “understanding . . . well-entrenched historically in diplomatic practice.”³⁵¹

Scholars have critiqued the WTO Panels’ interpretation of the “taken in time of” element as a static interpretation that does not appreciate that contemporary national security conflicts, such as the U.S.-China technology race, are indefinite emergencies without an endpoint.³⁵² The *Russia—Traffic in Transit* Panel’s reading equated “taken in time of” with “during the war or other emergency in international relations” while *Saudi Arabia—IPRs* simply required demonstration of a “temporal relation” between emergencies and security actions.³⁵³ The *US—Origin Marking* Panel narrowed this test and held that subparagraph (iii) can only be invoked if a “situation has escalated to a point of breakdown or near-breakdown in the relations between states.”³⁵⁴ The implication of the Panels’ interpretation of the “taken in time of” language is that a Member cannot protect its essential security interests until the war or emergency occurs or, to quote USTR, “irreparable damage is done.”³⁵⁵ Does this mean that Article XXI(b)(iii) can only be invoked for reactive security actions? At the WTO DSB meeting, the United States criticized the Panels’ interpretation of the “taken in time of” element for assuming that “deterrence or preparedness were not critical to national security” and “disregard[ing] the reality of sovereign nations, who must

³⁴⁸ *Id.* ¶ 7.354.

³⁴⁹ See discussion *supra* Part VI.

³⁵⁰ See, e.g., Pinchis-Paulsen, *supra* note **Error! Bookmark not defined.**, at 533–34; Heath, *supra* note 83, at 1024.

³⁵¹ *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶ 7.76.

³⁵² Pinchis-Paulsen, *supra* note **Error! Bookmark not defined.**, at 533–34; Heath, *supra* note 83, at 1046.

³⁵³ *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶ 7.70.

³⁵⁴ *US—Origin Marking*, *supra* note **Error! Bookmark not defined.**, ¶ 7.354.

³⁵⁵ Press Release, Off. of the U.S. Trade Representative, Statement by the U.S. at the Meeting of the WTO Dispute Settlement Body (Jan. 27, 2023), <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2023/january/statements-united-states-meeting-wto-dispute-settlement-body> [<https://perma.cc/3MGW-8BJC>].

anticipate – not react to – issues of national security.”³⁵⁶ The Panels’ reasoning therefore raises questions about state sovereignty and can lead to the conclusion that economic security measures, such as export controls, investment screening, and industrial subsidy, cannot be consistent with Article XXI because they appear to be preparatory and preventative measures in the absence of a present war or breakdown of relations.

The 2020 global semiconductor shortage, which would be cited as a security emergency in a potential CHIPS Act challenge, demonstrates the practical limitations of the WTO Panels’ interpretation. Determining the endpoint of the shortage can be a highly ambiguous and subjective exercise. For example, it is true that the chip supply for the global automotive industry has recovered significantly and that there is an oversupply for certain subindustries.³⁵⁷ However, it also remains true that the semiconductor shortage still exists and caused an estimated shortage of 524,000 vehicles in the first half of 2023.³⁵⁸ The glut is also limited to memory chips that power laptops, servers, and data centers.³⁵⁹ The temporal analysis would be further compounded by the fact that the semiconductor industry has traditionally operated under a unique cyclicity of overcapacity and undersupply.³⁶⁰ So, did the emergency exist when the CHIPS Act was enacted? And does it continue to exist? The Panel’s simplistic finding that “taken in time of” means *during* an emergency offers little practical guidance for determining whether a protracted situation is ongoing or has concluded.³⁶¹ In future disputes concerning economic emergencies or supply shortages, a Panel may therefore be forced to wrestle with such industry-specific and fact-intensive questions that were not addressed in previous disputes.

In addition, the WTO case law does not consider whether an emergency can be found for external events that are unpredictable and outside the control of an individual Member. Professor Heath argues that the Panel reports fail to consider the rise of “actorless” security risks, such as a pandemic or climate change, that “threaten security even without manifesting any ill intent toward the state or its

³⁵⁶ *Id.*

³⁵⁷ See Stephanie Brinely, *The Semiconductor Shortage Is – Mostly – Over for the Auto Industry*, S&P GLOBAL MOBILITY (July 12, 2023), <https://www.spglobal.com/mobility/en/research-analysis/the-semiconductor-shortage-is-mostly-over-for-the-auto-industry.html> [<https://perma.cc/Z45M-JJPS>]; Arjan Kharpal, *How the World Went from a Semiconductor Shortage to a Major Glut*, CNBC (July 27, 2023), <https://www.cnbc.com/2023/07/28/how-the-world-went-from-a-semiconductor-shortage-to-a-major-glut.html> [<https://perma.cc/E7NY-AXTE>].

³⁵⁸ See Brinely, *supra* note 357; Alexa St. John, *It’s Official: The Battery Crunch is the New Chip Storage*, BUSINESS INSIDER (Jul. 31, 2023), <https://www.businessinsider.com/electric-vehicle-battery-crunch-new-chip-shortage-2023-7> [<https://perma.cc/8R52-QTZ8>].

³⁵⁹ See Kharpal, *supra* note 357.

³⁶⁰ See David Crawford, Peter Hanbury, Anne Hoecker & Michael Schallehn, *After a Chip Shortage, Fears of a Capacity Glut Are Overblown*, BAIN & COMPANY (Sep. 18, 2023), <https://www.bain.com/insights/after-the-chip-storage-fears-of-a-capacity-gut-are-overblown-tech-report-2023/> [<https://perma.cc/5QBK-7CE6>].

³⁶¹ *US—Origin Marking*, *supra* note **Error! Bookmark not defined.**, ¶ 7.70.

population.”³⁶² The global chip shortage well corroborates this critique because no state intentionally caused the bottleneck; instead, it was a product of not only the Russia-Ukraine War but also non-military causes, such as natural disasters, the pandemic, trade disputes, a surge in demand, and the underlying issue of a specialized supply chain concentrated in certain geographic regions.³⁶³ In other words, states no longer have exclusive control over such emergencies, as national security threats are increasingly defined by private actors and complex economic systems.³⁶⁴ The Panels’ previous construction of an emergency to date may thus be ill-equipped to review a complex situation in which state attribution and responsibility are unclear and “hard” national security and economic considerations overlap.

C. Dual-Use Products and Article XXI(b)(ii)

The unique qualities of semiconductors would further challenge the previous WTO Panels’ interpretation of Article XXI. Semiconductors play a critical role in national security because they power virtually all military systems.³⁶⁵ In fact, the first integrated semiconductors were assembled and contracted for NASA’s Apollo program.³⁶⁶ The U.S. government was the sole purchaser of semiconductors until 1962, and defense contracts fueled early technological breakthroughs until the chipmakers expanded into the commercial market.³⁶⁷ Can Article XXI(b)(ii) be invoked to defend measures governing such dual-use products? In contrast to Article XXI(b)(iii), there is no case law for Article XXI(b)(ii) providing for essential security interests “relating to the traffic in arms, ammunition and implements of war and to such traffic in other goods and materials as is carried on directly or indirectly for the purpose of supplying a military establishment.”³⁶⁸

So far, the WTO Panels have foregone any product-specific analysis and its trade implications in Article XXI disputes. For this reason, it is unclear if the interpretation of Article XXI(b)(iii) would change for dual-use products that have both commercial and defense applications. This question will likely be explored in the *US—Semiconductors* dispute because the challenged BIS interim final rule

³⁶² See Pinchis-Paulsen, *supra* note **Error! Bookmark not defined.**, at 532–33; Heath, *supra* note **Error! Bookmark not defined.**, at 1034.

³⁶³ White House 100-Day Review Report, *supra* note **Error! Bookmark not defined.**, at 26; AKHIL THADANI & GREGORY C. ALLEN, CTR. FOR STRATEGIC & INT’L STUD., MAPPING THE SEMICONDUCTOR SUPPLY CHAIN: THE CRITICAL ROLE OF THE INDO-PACIFIC REGION 1–2 (2023), https://csis-website-prod.s3.amazonaws.com/s3fs-public/2023-05/230530_Thadani_MappingSemiconductor_SupplyChain.pdf?VersionId=SK1wKUNf_qSF3kzMF.aG8dwd.fFTURH [<https://perma.cc/RSC8-GDJ9>].

³⁶⁴ See Heath, *supra* note 83, at 1154.

³⁶⁵ White House 100-Day Review Report, *supra* note **Error! Bookmark not defined.**, at 25.

³⁶⁶ *Id.* at 21.

³⁶⁷ See *id.* at 289; MICHAELA D. PLATZER ET AL., CONG. RSCH. SERV., R46581, SEMICONDUCTORS: U.S. INDUSTRY, GLOBAL COMPETITION, AND FEDERAL POLICY 47 (Oct. 26, 2020) <https://crsreports.congress.gov/product/pdf/R/R46581> [<https://perma.cc/V3FJ-MGLU>].

³⁶⁸ GATT 1947, *supra* note **Error! Bookmark not defined.**, Art. XXI.

justified chip export controls with defense and military interests.³⁶⁹ The cited national security risks include allegations that China uses advanced semiconductors and equipment for military modernization; autonomous military systems; advanced AI surveillance tools; and weapon design and testing for WMD, including nuclear weapons, hypersonic, and advanced missile systems.³⁷⁰ China's use of semiconductors for defense systems could lead the United States to claim that the measures in *US—Semiconductors* satisfy the *Russia—Traffic in Transit* Panel's holding that emergency must implicate "defence and military interests" and respond "generally to a situation of armed conflict, or of latent armed conflict, or of heightened tension or crisis."³⁷¹ Since semiconductors are dual-use products, answering whether chip export controls and subsidies implicate essential security interests will be far more challenging than the previous Article XXI(b)(iii) disputes that concerned commercial products or did not present questions about the product's military applications.

Because the provision includes a broad description of arms and military equipment, Article XXI(b)(ii) will also become a contested legal issue in *US—Semiconductors* and potential WTO disputes concerning dual-use products. Article XXI(b)(ii) does not include a carve-out for dual-use products.³⁷² However, the plain text suggests that Article XXI(b)(ii) applies to products other than "arms, ammunition, and implements of war" if the goods directly or indirectly supply a military establishment.³⁷³ The "directly or indirectly" language and GATT negotiating history support a broad reading that subparagraph (ii) applies to "any commodity, provided that the Member exporting a commodity is satisfied purpose of the export transaction is to supply a military establishment, immediately or ultimately, directly or indirectly."³⁷⁴ The GATT negotiating history further suggests that the drafters intended that Article XXI(b)(ii) accord deference for Members imposing export controls to decide whether the goods supply a military establishment.³⁷⁵ It remains to be seen how a future Panel will interpret the relationship between Article XXI(b)(ii) and dual-use products.

D. Inconsistent Standards of Review and Evidentiary Ambiguities

Potential WTO disputes concerning industrial subsidies will inevitably raise new questions about the standard of review and certain evidentiary ambiguities. To date, the case law for Article XXI has produced inconsistent

³⁶⁹ See Implementation of Additional Export Controls: Certain Advanced Computing and Semiconductor Manufacturing Items; Supercomputer and Semiconductor End Use; Entity List Modification, 87 Fed. Reg. 62186, 62186–88 (Oct. 13, 2022) (promulgating interim final rules to be codified at 15 C.F.R. pts. 734, 736, 740, 742, 744, 762, 772, and 774).

³⁷⁰ *Id.* at 62187.

³⁷¹ *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶¶ 7.75–7.76.

³⁷² See Pinchis-Paulsen, *supra* note 85 (manuscript at 83).

³⁷³ *Id.*

³⁷⁴ Van Damme, *supra* note **Error! Bookmark not defined.**, at 731.

³⁷⁵ See *id.*; Pinchis-Paulsen, *supra* note 85 (manuscript at 83).

standards for burden of proof and procedural requirements.³⁷⁶ For example, the *Russia—Traffic in Transit* Panel held that, under the *chapeau*, the invoking Member has the burden to articulate its security interests “sufficiently enough to demonstrate their veracity” and meet “a minimum requirement of plausibility.”³⁷⁷ In contrast, the *US—Steel and Aluminium Products (China)* and *US—Origin Marking* Panels did not review the *chapeau* requirements and ended the analysis after reviewing the satisfaction of subparagraph (iii). The *US—Origin Marking* Panel even held that the *chapeau* is self-judging, raising new questions about inconsistency within the WTO Panel reports.³⁷⁸ If a Panel must completely defer to the Member’s “self-judged” interpretation for the *chapeau*, what precludes it from according the same level of deference to the subparagraph (iii) and thereby concluding that the security exception is self-judging?

Assuming that the presented essential security emergency did not amount to a war or breakdown of relations, can the national security objectives and risks identified within domestic law carry probative weight in an Article XX(b)(iii) claim? Can the Panel be required to follow the Article XX standard of review, which requires a Panel to consider all evidence, including the statute at issue, legislative history, and all other evidence about the structure and operation of the measure?³⁷⁹ Such evidentiary questions would have critical consequences for the CHIPS Act because national security interests and risks were consistently referenced throughout its legislative history, interbranch deliberation, and administration.³⁸⁰

The *US—Steel and Aluminium Products (China)* and *China—Additional Duties* Panels’ antithetical findings for the same measures—the U.S. Section 232 tariffs on aluminum and steel imports—demonstrate that the WTO Panels have produced irreconcilable burdens of proof and exemplify a direct tension between a domestic statute and WTO case law. Section 232 of the Trade Expansion Act of 1962 empowers the President to impose trade restrictions when the import of articles threatens to impair national security.³⁸¹ An interesting legal issue is that the 1962 statute requires consideration of economic security and directly contradicts with the WTO case law that essentially narrowed the essential security emergency to a military activity and armed conflict.³⁸² Section 232 requires the Commerce Department investigation and presidential tariff action to consider not only

³⁷⁶ See Heath, *supra* note **Error! Bookmark not defined.**, at 1075; Van Damme, *supra* note **Error! Bookmark not defined.**, at 716.

³⁷⁷ *Russia—Traffic in Transit*, *supra* note **Error! Bookmark not defined.**, ¶¶ 7.138–7.139.

³⁷⁸ *Id.* ¶ 7.160.

³⁷⁹ *EC—Seal Products* AB Report, *supra* note 194, ¶ 5.144.

³⁸⁰ See discussion *supra* Part II.

³⁸¹ See Kathleen Claussen, *Trade’s Security Exceptionalism*, 72 STAN. L. REV. 1097, 1117 (2020) (referring to Section 232 as a “hard security exception” which empowers the President to impose trade restrictions if he identifies a threat to U.S. national security); Trade Expansion Act of 1962, Pub. L. 87-194, § 232, 76 Stat. 872, 877 [hereinafter Section 232] (codified as amended at 19 U.S.C. § 1862).

³⁸² See discussion *supra* Part **Error! Reference source not found.**

“domestic production needed for projected national defense requirements” but also “the close relation of the economic welfare of the Nation to our national security.”³⁸³ The statute and regulations thus require assessment of economic circumstances in determining the effect of imports on U.S. national security and also spell out the factors that the Commerce Department must consider: economic standing of the industry essential to national security, substantial unemployment, government revenue, loss of skills or investment, loss of investment or specialized skills, and other factors that can weaken national economy.³⁸⁴ Based on the Commerce Department’s affirmative determination that the steels and aluminum imports threatened to impair U.S. national security, President Trump imposed 25% and 10% tariffs on steel and aluminum imports in 2018.³⁸⁵ In approving the tariffs, Trump cited familiar supply chain justifications: almost complete reliance on foreign producers, risk of dependence on industries essential for military and commercial systems, and incapacity to meet production requirements in a national security emergency.³⁸⁶

In rejecting the United States’ Article XXI defense for the Section 232 tariffs, the *US—Steel and Aluminium Products (China)* Panel altogether dismissed the importance of the domestic legislative basis, statute, and investigation—namely, the Commerce Department’s Section 232 investigation report that determined that the economic loss for the domestic steel and aluminum industry constituted a threat to U.S. national security.³⁸⁷ The Commerce Department report had recommended that the President impose Section 232 tariffs based on three findings: (1) displacement of domestic steel and aluminum industries by imports, (2) adverse impact on economic welfare of the domestic industries, and (3) global excess capacity in steel and aluminum.³⁸⁸ The Panel distinguished the first two findings as those that predominantly relate to domestic steel and aluminum industries from the third, which pertains to a global situation.³⁸⁹ The Commerce Department’s findings for the first sections could not establish the existence of an emergency because “the determinations of US domestic authorities under Section 232 relate to a different legal standard and basis under US municipal law.”³⁹⁰ Instead, the Panel held that the Commerce Department’s analysis and conclusions “may not be regarded as having commensurate relevance or weight in the Panel’s objective assessment,” and limited its Article XXI(b)(iii) analysis to reviewing whether the global excess capacity in steel and aluminum amounted to an

³⁸³ Section 232, *supra* note 381, subsec. d.

³⁸⁴ *See id.*

³⁸⁵ *See* Adjusting Imports of Steel Into the United States, 83 Fed. Reg. 11625, 11626 (Mar. 8, 2018); Adjusting Imports of Aluminum Into the United States, 83 Fed. Reg. 11619, 11620 (Mar. 8, 2018).

³⁸⁶ *See* Adjusting Imports of Steel Into the United States, 83 Fed. Reg. at 11626–27; Adjusting Imports of Aluminum Into the United States, 83 Fed. Reg. at 11620.

³⁸⁷ *See US—Steel and Aluminium*, *supra* note **Error! Bookmark not defined.**, ¶ 7.142.

³⁸⁸ *Id.*

³⁸⁹ *Id.*

³⁹⁰ *Id.* ¶ 7.143.

emergency.³⁹¹ The implication of the *US—Steel and Aluminium Products* report is that only domestic findings about a “global situation” can carry probative weight, while findings that “focus predominantly on developments relating to the domestic situation” cannot be considered in a Panel’s Article XXI review.³⁹²

In contrast, the *China—Additional Duties* Panel reached an antithetical conclusion after reviewing the national security objectives reflected in the U.S. statute, Section 232 investigation report, and administrative actions that the *US—Steel and Aluminium Products* Panel did not consider.³⁹³ The Panel first observed that, in the Commerce Department’s Section 232 Investigation report, the Secretary made a determination that “the risk to the financial viability of the United States’ domestic aluminium and steel industries, and their competitiveness in commercial markets, placed at risk the United States’ capability to meet its defence and critical infrastructure needs.”³⁹⁴ The Panel also observed Proclamations 9704 and 9705 as evidence that the Section 232 tariffs reflect the United States’ finding that the tariffs further national security by reducing dependence on foreign producers to meet national security interests.³⁹⁵ The Panel also observed that the national security objectives were reflected in the tariffs’ implementation, including exclusion provided to certain Members, agency administration, exclusions, procedures, consultations with the Secretary of Defense, and notifications about the Section 232 measures to the WTO councils and committees.³⁹⁶ Because the national security objectives were embedded into the text, application, non-application, and procedures, the Panel determined that the Section 232 tariffs were designed and were expected to address the threat to national security that the United States had identified from an increase in aluminum and steel imports.³⁹⁷

China—Additional Duties may have large implications for the CHIPS Act and like-measures because the Panel found that domestic economic considerations can inform satisfaction of the security exception. In the dispute, China alleged that the tariffs fall under Articles 2 and 4 of the Agreement on Safeguards, not GATT Article XXI, because the Section 232 measure, reports, and Proclamations referred to the adverse economic impact of aluminum and steel imports on the U.S. domestic industry. After reviewing the statutory requirements for the investigation and presidential action, the Panel held that the domestic industries’ economic welfare can serve as a basis to determine the impairment of U.S. national security interests.³⁹⁸ The Panel thus rejected China’s argument and concluded that “[the economic welfare] aspect of the Section 232 measures cannot be divorced from its background and context, which reflect the measures’ national security objectives

³⁹¹ *Id.* ¶ 7.147.

³⁹² *Id.* ¶ 7.142.

³⁹³ *See China—Additional Duties*, *supra* note **Error! Bookmark not defined.**, ¶¶ 7.105–7.111.

³⁹⁴ *Id.* ¶ 7.105.

³⁹⁵ *See id.* ¶ 7.107.

³⁹⁶ *See id.* ¶ 7.108–7.112.

³⁹⁷ *Id.* ¶ 7.111.

³⁹⁸ *Id.* ¶ 7.115.

and confirms that they were sought, taken, or maintained pursuant to Article XXI of the GATT 1994.”³⁹⁹ Departing from the previous Panels’ insistence that Article XXI cannot generally be invoked to respond to economic emergencies, the *China—Additional Duties* Panel concluded that “the references to the economic welfare of the United States’ domestic industries in the instruments considered above thus constitute one aspect of the United States’ determination that there exists a threat to its national security.”⁴⁰⁰

The competing conclusions about the Section 232 tariffs actions exemplify the WTO Panels’ inability to provide a consistent and cogent standard of review—particularly for how much, if any, deference should be accorded to the national security objectives reflected in a Member’s domestic legal authority, the statutory text itself, negotiating history, and administration. The *US—Steel and Aluminium Products* Panel held that only findings about a “global situation” is relevant, while the *China—Additional Duties* Panel provided a complete analysis of the national security objectives and threats identified in the “domestic legal basis for these measures, the reports in the investigations leading to their adoption, and the legal instruments providing for the measures.”⁴⁰¹ The latter also reflected a deferential understanding of the United States’ internal identification of national security threats and consideration for the economic welfare on the U.S. domestic industries, as required by the Section 232 statute.⁴⁰²

One important caveat is that the *China—Additional Duties* holding is limited to reviewing whether the Section 232 tariffs were sought, taken, or maintained “pursuant to” a GATT provision other than Article XIX.⁴⁰³ The dispute therefore did not review the measures’ consistency with Article XXI(b)(iii), and it would be premature to conclude that the DSB’s substantive interpretation of the essential security exception changed.⁴⁰⁴ Even so, *China—Additional Duties* lends persuasiveness to the argument that a Member’s internal national security risk identification, negotiating history, and regulations must carry at least some, if not material, probative weight in determining whether the national security measure is consistent with the GATT security exception. Such unanswered questions about the burden of proof will have important implications for the CHIPS Act, IRA, and similar industrial subsidies that are justified with rife references to national security interests throughout lawmaking and rulemaking.

CONCLUSION

³⁹⁹ *Id.* ¶ 7.116.

⁴⁰⁰ *Id.* ¶ 7.115.

⁴⁰¹ *Id.* ¶ 7.102.

⁴⁰² *See id.*

⁴⁰³ *Id.* ¶ 7.119.

⁴⁰⁴ *See* Emilie Kerstens & William A. Reinsch, *The WTO Panel Report on Chinese Tariffs: Consequences of a Broken Appellate Body*, CENTER FOR STRATEGIC & INTERNATIONAL STUDIES (August 25, 2023), <https://www.csis.org/analysis/wto-panel-report-chinese-tariffs-consequences-broken-appellate-body> [<https://perma.cc/RB3B-7KTB>].

This article outlines how the United States came to view semiconductor production as a matter of national security. The CHIPS Act is both reactive and preventative. The recent global chip shortage exposed the fragility of the global supply chain and demonstrated the need to strengthen resilience against unforeseeable disruptions, such as the pandemic, natural disasters, surge in global demand, and the Russia-Ukraine War.⁴⁰⁵ Additionally, the United States became increasingly concerned about geopolitical risks, including the concentration of chip manufacturing in East Asia, China's \$380 billion subsidy, and the lack of domestic manufacturing capacity that China could exploit as economic and security leverage.⁴⁰⁶ Instead of pursuing WTO disputes to challenge China's semiconductor subsidies, the United States enacted an unprecedented \$53 billion industrial subsidy to incentivize semiconductor manufacturing at home.⁴⁰⁷ Throughout the White House deliberation, negotiations in Congress, and agency rulemaking for the national security guardrails, Congress and the Biden administration have underscored that the dependence on semiconductors produced elsewhere hurts U.S. strategic and economic interests.⁴⁰⁸ The negotiating history further shows that the CHIPS Act blurs the line between economics and security policy, and is designed to reduce reliance on geopolitical rivals, reshore outsourced manufacturing jobs, and outrace China in the technology competition.⁴⁰⁹ The national security guardrails rule also added stringent eligibility requirements that exclude Chinese chipmakers from federal assistance and prohibit funding recipients from expanding production in China. In sum, the CHIPS Act is grounded on the United States' "self-judged" determination that the semiconductor investment was necessary to safeguard its essential security interests.

Despite the strength and frequency of national security justifications, industrial subsidies are likely to violate core WTO rules and are inconsistent with general and security exceptions. A subsidy that discriminates against manufacturers from certain countries is vulnerable to non-discrimination challenges under GATT Article I and III. Furthermore, general exceptions under Article XX accord little deference to a measure that advances multiple public policy objectives at once. For this reason, the national security exception would be the last resort by which a Member can argue that the subsidy can be excused from GATT violations. Yet, the WTO Panels to date constrained the invocation of Article XXI(b)(iii) to a situation of a war or complete severance of diplomatic, economic, or trade relations. For this reason, economic security justifications that underpin industrial subsidies are unlikely to be consistent with the WTO case law that established a strong presumption that an only a war or defense-related emergencies can amount to an

⁴⁰⁵ See White House 100-Day Review Report, *supra* note **Error! Bookmark not defined.**, at 25–26.

⁴⁰⁶ See Hawkins et al., *supra* note **Error! Bookmark not defined.**

⁴⁰⁷ See Fact Sheet: CHIPS and Science Act Will Lower Costs, *supra* note **Error! Bookmark not defined.**

⁴⁰⁸ See *supra* Part II.

⁴⁰⁹ See *supra* Part II.

“emergency in international relations.” By observing the CHIPS Act and semiconductors’ unique global supply chain and dual-use properties, this article previews why the previous Panels’ interpretation of Article XXI(b)(iii) will be seriously tested in future WTO disputes concerning measures that serve both industrial and national security objectives.

China’s WTO complaints against the IRA and U.S. semiconductor controls also signal that industrial subsidies and semiconductor policies can be expected to escalate to full-scale trade disputes. By observing *US—IRA* and *US—Semiconductors*, this article also argues that future WTO disputes concerning semiconductor subsidies would be forced to grapple with questions that the previous Panels have yet to answer. Assuming that a Panel has jurisdiction, how would it line-draw and review a complex and fact-specific emergency and its impact on relations between Members? Can a product’s unique supply chain patterns, geopolitical vulnerabilities, and dual-use application modify the WTO Panels’ interpretation of “emergency”? What is the evidentiary burden for the invoking Member? And how much deference should be accorded to a state’s domestic measure, legal authority, administration, and investigation that determined the existence of essential security interests? Perhaps most importantly, even if a Member’s industrial subsidy is deemed GATT-inconsistent, would that Member accept the non-binding WTO Panel report?

Contrary to the WTO Panels’ insistence that the “WTO should not become a forum to discuss security issues generally,” the securitization of trade may be inevitable as the Members raise trade barriers and enact economic security measures that are likely to contravene WTO rules.⁴¹⁰ For better or worse, the global chip subsidy race is already a political reality.⁴¹¹ The CHIPS Act delivered tangible economic outcomes for the United States and succeeded in steering an unprecedented \$400 billion private investment in domestic production.⁴¹² Inspired by the U.S. precedent, the technological race between China and the United States has spilled over to a global competition, in which WTO Members have committed \$380 billion in public investment to entice domestic manufacturing opportunities and strengthen resilience against foreign competitors.⁴¹³ In contrast to subsidies that catalyzed private investment, job creation, and economic development, there may be little incentive for Members to accept adverse WTO Panel rulings that cannot be

⁴¹⁰ *US—Origin Marking*, *supra* note **Error! Bookmark not defined.**, ¶ 7.149.

⁴¹¹ *See supra* Part I.

⁴¹² *See* Press Release, White House, Fact Sheet: Two Years after the CHIPS and Science Act, Biden-Harris Administration Celebrates Historic Achievements in Bringing Semiconductor Supply Chains Home, Creating Jobs, Supporting Innovation, and Protecting National Security, WHITE HOUSE (Aug. 9, 2024), <https://www.whitehouse.gov/briefing-room/statements-releases/2024/08/09/fact-sheet-two-years-after-the-chips-and-science-act-biden-%E2%81%A0harris-administration-celebrates-historic-achievements-in-bringing-semiconductor-supply-chains-home-creating-jobs-supporting-inn/> [https://perma.cc/A9V8-58WB].

⁴¹³ *See* Hawkins et al., *supra* note **Error! Bookmark not defined.**

legally binding in the absence of a functional Appellate Body.⁴¹⁴ In fact, the United States “appealed into the void” the *US—Origin Marking* and *US—Steel and Aluminium Products (China)* Panel rulings, citing its traditional position that national security cannot be reviewed or resolved by the DSB.⁴¹⁵ Such precedents may portend that the DSB could be mired in future Article XXI disputes, with Members challenging industrial subsidies at the Panel level, and the Respondents invoking the security exception as a shield and simply “appealing into the void” should they lose.

As the global subsidy race and technological competition intensify, WTO Members may thus increasingly find themselves at a crossroads between international trade rules and industrial subsidies that merge security, trade, and economic interests.⁴¹⁶ This likely conflict between GATT and industrial subsidies exemplifies a fundamental conflict in determining *who* and *what* define national security interests. According to the WTO Panels, a state’s national security interest is defined by the circumstance—or the “emergency in international relations,” itself subject to the DSB’s objective judicial review.⁴¹⁷ In contrast, the United States contends that only a state has the discretion to determine what constitutes essential security interests and views Article XXI case law as an encroachment on its sovereign powers.⁴¹⁸ For now, a conflict between what national security means for the WTO and its Members is unlikely to be resolved within the WTO’s judicial arm.

⁴¹⁴ See discussion *supra* Part IV.A.

⁴¹⁵ See Notification of an Appeal, *United States—Certain Measures on Steel and Aluminum*, WTO Doc. WT/DS544/14 (Jan. 30, 2023); Notification of an Appeal, *United States—Origin Marking Requirements*, WTO Doc. WT/DS597/9 (Jan. 30, 2023).

⁴¹⁶ See Pinchis-Paulsen, *supra* note 85 (manuscript at 3).

⁴¹⁷ See discussion *supra* Part VI.

⁴¹⁸ See Press Release, U.S. Trade Representative, Statement from USTR Spokesperson Sam Michel on Today’s WTO Panel Ruling (Aug. 16, 2023), <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2023/august/statement-ustr-spokesperson-sam-michel-todays-wto-panel-ruling> [<https://perma.cc/3AXX-MQBW>].