

January 2025

ADAPTING TRADE POLICY FOR SUPPLY CHAIN RESILIENCE:

RESPONDING TO TODAY'S GLOBAL ECONOMIC CHALLENGES

Table of Contents

Foreword.....	ii
Reshaping the Global Trade Paradigm.....	1
Sustaining Resilient Textile and Apparel Supply Chains.....	10
Harnessing Rules of Origin for Resilience.....	25
Countering Non-Market Policies and Practices to Strengthen Supply Chain Resilience.....	33
Improving Data and Analytical Tools to Promote Supply Chain Resilience.....	41
Strengthening Supply Chain Resilience through Sectoral Trade Agreements	48
Acknowledgements.....	53

Foreword

Four years ago, the Covid-19 pandemic and attendant disruptions to global trade revealed the terrifying and destructive effects of fragility in our supply chains. These networks of workers and businesses both at home and abroad supplied the U.S. market with goods ranging from semiconductors and medical supplies to many other consumer and industrial goods. Before the pandemic, “just in time” sourcing from “global value chains” was the governing principle, and concern over how or where goods were made and whether their manufacture harbored latent risks and vulnerabilities was not widespread. But faced with sudden shortages, production delays, and price spikes – taking the hardest toll on those with the least – “just in time” has given way to “just in case.”

The architecture of many supply chains, however, had been taking shape for decades. Their fragility had in part been enabled by a trade and investment policy that prioritized short-term cost-efficiency, profit maximization, and shareholder returns. This approach helped shape investors’ and producers’ decision-making processes that, in many cases, fostered geographical concentration, operational complexity, and bottlenecks, which in turn heightened the risk of volatility, harms to competition, and inflationary dynamics – all of which have been felt in the United States and around the world.

The Biden-Harris Administration has forged new approaches to advancing supply chain resilience across the government. Here at the Office of the United States Trade Representative (USTR), this work has been carried out through trade negotiations, enforcement actions, and other policy initiatives. As we have understood existing trade incentives, rules, and biases to form a fundamental part of what led the world to the brink with brittle supply chain networks, we are confident that new and different trade policies and approaches can and must be a part of the solution.

As we navigate new territory, we have sought to use a “building blocks” approach as we craft, in real time, a version of globalization that is organized according to a new set of principles – ones that are more responsive to the needs of people and planet and to the painful lessons we have learned these past few years. Over time, it became clear that in support of this approach, we needed to provide our stakeholders and partners with a dedicated process to share their input and learnings derived from navigating recent unprecedented supply chain disruptions. As it turns out, no one can do trade, much less change the way trade is done, alone.

Accordingly, early last year, my team and I initiated a stakeholder engagement process to formulate and articulate a more holistic approach to promoting supply chain resilience using trade tools and policies. In March 2024, USTR requested public comment through a *Federal Register* notice. In outlining a new trade policy vision, the notice explained that resilient supply chains provide a range of sourcing options; adapt, rebound, and recover with agility following shocks; uphold labor rights and environmental protections; strengthen the U.S. manufacturing base and workforce; and mitigate risks of price spikes and volatility that contribute to inflationary dynamics. USTR staff heard testimony at four public hearings from 84 witnesses and received nearly 300 written submissions from a wide range of stakeholders, including labor unions and labor rights non-governmental organizations (NGOs), think tanks, environmental NGOs, companies small, medium, and large, and trade associations, as well as foreign governments.

The enclosed policy paper series “Adapting Trade Policy for Supply Chain Resilience: Responding to Today’s Global Economic Challenges” marks the culmination of this public engagement effort by distilling our progress in strengthening supply chains and outlining new approaches and strategies covering the following topics:

- **“Reshaping the Global Trade Paradigm”** (Policy Paper No. 1) explores four distinct but complementary dimensions of resilience—sustainability, security, diversity, and transparency—by synthesizing stakeholder views and relevant literature, reviews USTR actions that have advanced supply chain resilience, and builds a conceptual foundation for exploring new tools and approaches.
- **“Sustaining Resilient Textile and Apparel Supply Chains”** (Policy Paper No. 2) provides an overview of the domestic textile and apparel industries and related U.S. trade agreement provisions, examines the challenges confronting the sector, identifies areas for further discussion and analysis, and presents trade policy approaches to support more resilient textile and apparel supply chains.
- **“Harnessing Rules of Origin for Resilience”** (Policy Paper No. 3) examines both preferential and non-preferential rules of origin, discusses emerging stakeholder concerns about their vulnerabilities, and outlines new policy approaches and areas for further analysis.
- **“Countering Non-Market Policies and Practices to Strengthen Supply Chain Resilience”** (Policy Paper No. 4) describes the challenges that non-market policies and practices (NMPPs) present to healthy markets and competition, explains how certain actors use NMPPs to undermine supply chain resilience, and outlines approaches to addressing NMPPs and their effects on supply chains.
- **“Improving Data and Analytical Tools to Promote Supply Chain Resilience”** (Policy Paper No. 5) highlights recent studies and analyses of supply chain sustainability, security, diversity, and transparency; examines data and analytical challenges in measuring and assessing supply chain resilience; reviews U.S. government supply chain-related data gathering efforts; and outlines new approaches and implications for harnessing existing and new data and analytics resources to address limitations.
- **“Strengthening Supply Chain Resilience through Sectoral Trade Agreements”** (Policy Paper No. 6) discusses how a new model of formal trade agreements targeting specific sectors or industries, establishing enforceable disciplines, and encompassing like-minded partners across the supply chain could provide a broad and meaningful framework for achieving the principles and objectives of supply chain resilience.

Of course, much more remains to be done to realize the goal of improving supply chain resilience. Each policy paper outlines new policy tools and approaches that merit further study and collaboration between USTR and interagency partners, stakeholders, Congress, and like-minded trading partners. Beyond the issues taken up in the policy papers, there are opportunities to explore in greater depth how resilience objectives in these next years should inform new trade policy approaches to topics ranging from services and agriculture, to technology and regulation of the digital economy. And finally, new ideas must translate into impact; the hard work of meeting new supply chain challenges with concrete, innovative policy actions and tools will continue.

To advance supply chain resilience, we must and we will traverse new ground in trade and investment policy. The policy papers that follow remind us of where we have traveled, acknowledge the challenges that shape our journey today, and light our path ahead to better serving all Americans for generations to come.

A handwritten signature in blue ink, appearing to read 'K. Tai', is positioned above the printed name.

Ambassador Katherine Tai
United States Trade Representative
January 2025



Reshaping the Global Trade Paradigm

January 2025

- *U.S. trade and investment policy must promote resilient supply chains—those that are sustainable, secure, diverse, and transparent—to protect against future shocks and disruptions, as well as potential negative impacts on trade and the economy from bottlenecks and dependencies.*
- *Under the Biden-Harris Administration, trade negotiations, enforcement, and other initiatives have produced notable progress toward advancing supply chain resilience, but more remains to be done.*
- *New approaches will build on this progress by drawing on lessons from a past focus on short-term cost-efficiency and tariff liberalization, fostering closer collaboration with like-minded trading partners and allies, and deepening the integration of trade policy and domestic economic policy.*

Disruptions wrought by a pandemic, war, and geopolitical tensions have revealed both the centrality and fragility of global supply chains. Across industry and policy discourse, there is now broad recognition that many supply chains harbor vulnerabilities and risk, and that a focus on short-term cost-efficiency must be balanced by a new, heightened attention to resilience. As democracies respond to the needs of their people, USTR must ensure that our trade policies address the flaws exposed by recent shocks. In March 2024, USTR outlined a framework for conceptualizing supply chain resilience and invited stakeholder input on developing sector-specific policy tools, strengthening domestic manufacturing and services, collaborating with like-minded trading partners and allies, and measuring resilience, among other topics.¹ This policy paper builds on that framework by synthesizing stakeholder views and relevant literature, and lays a foundation for exploring in subsequent papers new tools and approaches to address supply chain risks and vulnerabilities.

Dimensions of Supply Chain Resilience

Resilient supply chains provide a range of sources for critical inputs and are better able to adapt, rebound, and recover with agility when faced with economic and other shocks.² Respect for labor rights and environmental protections both upholds our core values and facilitates resilience by

¹ USTR, *Request for Comments on Promoting Supply Chain Resilience*, 89 Fed. Reg. 16,608 (Mar. 7, 2024).

² The economics literature has not yet converged on a definition of supply chain resiliency. In general, a resilient supply chain is perceived as one that can bend but not break in response to shocks. See “[Issues in Brief: Supply Chain Resilience](#),” *Issue Briefs*, The White House, Nov. 30, 2023; Richard Baldwin, Rebecca Freeman, and Angelos Theodorakopoulos, “[Hidden Exposure: Measuring US Supply Chain Resilience](#),” NBER working paper no. 31820 (2023).

countering the “race to the bottom” that has contributed to the unfair over-concentration of global supply chains.³ The process of building resilient supply chains creates new opportunities for developing countries to participate in trade, while also strengthening the domestic manufacturing base and workforce that drive economic growth and world-class American innovation. While the ability to move goods and avert disruptions is important,⁴ resilience must take into account other considerations as well. From the standpoint of U.S. trade and investment policy, four distinct but complementary dimensions of resilience are sustainability, security, diversity, and transparency.

Sustainability

Sustainability is an essential dimension of resilience for two reasons. First, supply chains must reflect our core values to protect and promote labor rights and environmental protections in order to support strong, enduring global partnerships informed by our domestic economic objectives. Second, fair competition, grounded in respect for labor rights and environmental protections, contributes to resilience by eroding a model that has incentivized the creation of artificial cost advantages that drive supply chain concentration and harm workers and the environment.⁵ For instance, strong labor commitments in trade agreements increase alignment with U.S. labor laws, and support democratic movements in supplier countries.⁶ Likewise, bolstering environmental protections through trade agreements levels the playing field, leading to more sustainable and geographically diverse supplier networks.⁷ Sustainable supply chains can help create a “race to the top” through stronger coordination and alignment with trading partners on labor and environmental protections, and can help U.S. consumers and businesses avoid unwittingly supporting labor rights violations or negative environmental impacts.⁸

Security

Secure supply chains are forged by trusted networks of workers, businesses, and trading partners. National security, including economic security, may be advanced by relocating operations domestically (re-shoring) and by growing existing domestic capacity, and by securing trusted supply chains through strategic arrangements with trusted partners (friend-shoring) and with regional partners (near-shoring). These approaches can reduce exposure to risks in regions that engage in

³ Economic analysis of supply chain resilience is in an early stage; some studies conclude that supply chains in certain industries and for specific strategic products are over-concentrated. See Richard Baldwin, Rebecca Freeman, and Angelos Theodorakopoulos, “[Horses for Courses](#),” NBER working paper no. 30525 (2022).

⁴ These priorities are top of mind for global firms seeking to bolster supply chain resilience. See, e.g., McKinsey Global Institute, [Risk, Resilience, and Rebalancing in Global Value Chains](#), Aug. 2020; PwC, [Global Supply Chains: the Race to Rebalance](#), Nov. 2023; KPMG, [The Future of Supply Chain](#), Sept. 2023.

⁵ Washington, D.C. Hearing, May 2, 2024, Transcript at 46:13-46:21 (Tucker).

⁶ Kevin Kolben, “How Labor Standards Improve Supply Chain Resilience: The Case of the USMCA,” in *USMCA Forward 2023: Building More Integrated, Resilient, and Secure Supply Chains in North America*, ed. Joshua P. Meltzer & Brahim S. Coulibaly (The Brookings Institute), 105. This study explains that democratic economies can be more reliable partners than authoritarian economies. See also Washington, D.C. Hearing, May 2, 2024, Transcript at 353:3-17 (Pinkert).

⁷ Mancheri et al. argues that China’s weak environmental standards allowed Chinese mining companies to corner the market on rare earth elements through lower production costs. See Nabeel A. Mancheri et al., “[Effect of Chinese Policies on Rare Earth Supply Chain Resilience](#),” *Resources, Conservation and Recycling* 142 (Mar. 2019): 101-112.

⁸ Environmental Investigation Agency, Comment, Docket No. USTR-2024-0002-0299, at 5. Weak labor standards can also make supply chains more vulnerable to the effects of climate change. See Jason Judd et al., “[Higher Ground? Fashion’s Climate Breakdown and its Effect for Workers](#),” *ILR Global Labor Institute, Schrodgers* (2023), 50 (studying impacts on work productivity of inadequate cooling systems).

non-market policies and practices, economic coercion, and other unfair trade practices at the expense of U.S. workers and businesses.⁹ Secure supply chains must also be agile—able to pivot quickly to alternative products, sources, or processes when confronted with disruption.¹⁰

Diversity

A variety of reliable suppliers contributes to resilience on three levels. First, within individual product supply chains, diversifying supply chain participants, including through re-shoring and growing existing domestic capacity where feasible, can mitigate risks presented by over-concentration and dependencies.¹¹ Second, at an economy-wide level, sectoral diversification domestically can ensure that the U.S. industrial base remains broad and robust.¹² Lastly, in international collaboration, diversity of trade arrangements and inclusion of developing country partners can enable supply chains to evolve from an extractive, neo-colonial approach to inclusive supply chain co-ownership by creating new opportunities for developing countries to increase trade in value-added products. The COVID-19 pandemic revealed decades of unequal progress on poverty, healthcare, and education.¹³ Against this backdrop, trade policy should unlock new economic opportunities, better jobs, and better pay for more inclusive and equitable economic growth in the United States and abroad.¹⁴

Transparency

Transparent supply chains enable visibility into raw materials and intermediate products and enhance awareness of the risks of shortages, bottlenecks, and other vulnerabilities. At present, many supply chains are obscured by structural complexity and geographical dispersion—even from the vantage point of participants in those supply chains. Traditional forms of trade data, including tariff classification and origin, were not designed to enable traceability and granular analyses of supply chain risks and vulnerabilities that may have emerged long before a good's importation.¹⁵ Promoting resilience necessitates a deeper understanding of how, where, and by whom goods are made.¹⁶ In certain sectors, new standards may help drive greater transparency, and vice versa.¹⁷ Digitization of supply chain information might also enable more precise predictions of and responses to potential disruptions.¹⁸

⁹ SAFE Center for Critical Minerals Strategy, Comment, Docket No. USTR-2024-0002-0196, at 4; Washington, D.C. Hearing, May 2, 2024, Transcript at 16:12-17:7 (Ferry); St. Paul, MN Hearing, May 14, 2024, Transcript at 11:16-11:24 (Malan).

¹⁰ Helper, Comment, Docket No. USTR-2024-0002-0219, at 3; Washington, D.C. Hearing, May 2, 2024, Transcript at 118:11-118:18 (Thornton).

¹¹ Helper, Comment, Docket No. USTR-2024-0002-0219, at 1-2; Progressive Policy Institute, Comment, Docket No. USTR-2024-0002-0137, at 4.

¹² Certain stakeholders advocated this broader approach to supporting U.S. manufacturing and services. *See, e.g.*, Coalition for a Prosperous America, Comment, Docket No. USTR-2024-0002-0120, at 4 (noting linkages between sectors). By contrast, other stakeholders suggested focusing more narrowly on high value-added jobs. *See, e.g.*, National Retail Federation, Comment, Docket No. USTR-2024-0002-0207, at 4.

¹³ United Nations, *The Sustainable Development Goals Report 2020*, 2020, at 3.

¹⁴ Ministry of Foreign Trade of Costa Rica, Comment, Docket No. USTR-2024-0002-0264.

¹⁵ Progressive Policy Institute, Comment, Docket No. USTR-2024-0002-0137, at 8-10.

¹⁶ Washington, D.C. Hearing, May 2, 2024, Transcript at 83:9-84:1 (Lynn).

¹⁷ SAFE Center for Critical Minerals Strategy, Comment, Docket No. USTR-2024-0002-0196, at 10.

¹⁸ MIT Technology Review Insights and AT Kearney, *Building Resilient Supply Chains*, 2020, at 3.

USTR Actions in Support of Supply Chain Resilience

USTR has undertaken a range of efforts to advance resilience along the dimensions above. Individually and collectively, these efforts lay the groundwork for a new focus on supply chain resilience across trade negotiations, enforcement, and other initiatives going forward.

U.S.-Mexico-Canada Agreement (USMCA)

The USMCA established the **Rapid Response Labor Mechanism (RRM)**, a mechanism that allows USTR to bring cases against specific facilities that fail to respect workers' freedom of association and collective bargaining rights. Since 2021, the United States has invoked the RRM 31 times across a wide range of industries, including automotive, garments, mining, and services. By achieving salary increases and backpay, worker reinstatement, representation by independent unions, and other relief, these cases advance supply chain transparency and sustainability and empower U.S. workers by reducing unfair incentives to offshore jobs. Also under the USMCA, the United States, Mexico, and Canada established a trilateral **Sub-Committee on Emergency Response** and developed procedures to coordinate North American efforts to maintain regional trade flows during emergency situations, fostering more secure supply chains. To facilitate this coordination, the Sub-Committee's Working Group is finalizing its report describing shared North American critical infrastructure priorities.

USTR continues to identify and pursue opportunities to harness the USMCA to support more resilient supply chains. This could include, for example, continuing use of the RRM, further work with the Sub-Committee on Emergency Response, and further efforts to apply and enforce those USMCA rules of origin that are intended to be stricter. These and other provisions could also be revisited during the upcoming USMCA six-year review process to optimize their impact on supply chain resiliency. For example, the USMCA rules of origin, while intended to be strengthened in some sectors, nevertheless have a high tolerance for inputs from countries where supply chains are already concentrated. In addition, stakeholders have expressed concern over fraud in USMCA-origin claims in the textile and apparel sectors. Similarly, the *de minimis* exemption, which is included in the agreement, can be used to avoid duties and to undermine efforts to promote supply chain diversification. Finally, the RRM itself could be evaluated to examine whether to expand the scope of rights that can be the subject of a petition.

Combatting Forced Labor

Promoting supply chain resilience through respect for labor rights involves eliminating forced labor, the most egregious form of labor abuse, from U.S. and global supply chains. The forced labor import prohibition under Section 307 of the Tariff Act of 1930 allows the United States to block at the border any goods made in whole or in part by forced labor, to prevent them from entering U.S. commerce. The Uyghur Forced Labor Prevention Act (UFLPA) further enhances the enforcement of Section 307 through a rebuttable presumption that goods from Xinjiang are subject to the forced labor import prohibition. These laws are incredibly effective tools for compelling companies to ensure that their supply chains are not tainted with forced labor.

As a member of the Forced Labor Enforcement Task Force (FLETF), USTR works closely with interagency partners on the implementation of our forced labor import prohibition. For instance,

the UFLPA requires the FLETF to maintain a list of entities that are subject to the UFLPA rebuttable presumption. Since the UFLPA was signed into law in December 2021, the FLETF has added 107 entities to the UFLPA Entities List. Since the start of enforcement of the UFLPA in June 2022, the United States has reviewed over 11,000 shipments valued at more than \$3.65 billion.

USTR is also focused on collaborating with like-minded trading partners to work together to eliminate forced labor in supply chains globally. Under USMCA Article 23.6, Canada and Mexico committed to establish their own forced labor import prohibitions. USTR, in coordination with the Departments of Homeland Security and Labor, regularly facilitates trilateral dialogues among the USMCA partners on enforcement approaches and best practices related to addressing forced labor risks in supply chains. USTR continues to seek commitments in trade agreements to address forced labor in supply chains.

Section 301 Tariffs Related to China Forced Technology Transfer

In 2024, USTR completed its statutory review of the tariff action related to the People's Republic of China's (PRC) harmful technology transfer-related policies and practices under Section 301 of the Trade Act of 1974 and announced strategic tariff increases that will further encourage the PRC to change its harmful acts, policies, and practices and that will also foster more secure and diverse supply chains. The review found that those acts, policies, and practices have continued to impose a burden or restriction on U.S. Commerce. Instead of pursuing fundamental reform, the PRC has persisted, and in some cases become more aggressive, including through cyber intrusions and cybertheft, in its attempts to acquire and absorb foreign technology, further burdening or restricting U.S. commerce.

USTR's review noted that the U.S. International Trade Commission had found that the tariffs had reduced imports of PRC goods, and for the ten-most affected sectors, contributed to increased domestic production and sourcing from alternative suppliers. To further encourage the PRC to eliminate the acts, policies, and practices, and consistent with the direction of the President, USTR substantially strengthened the action through tariff increases in strategic sectors, including certain critical minerals, semiconductors, electric vehicles, batteries, solar products (including polysilicon and wafers), face masks, syringes, medical gloves, and steel and aluminum. These modifications complement significant investments made by the United States, including through such initiatives as the Inflation Reduction Act, the Bipartisan Infrastructure Law, and CHIPS and Science Act, to rebuild American manufacturing and strengthen supply chain resilience, including for products critical for pandemic response. Additionally, pursuant to the review, USTR adopted temporary exclusions covering solar manufacturing equipment and opened a process by which interested persons may request that particular machinery used in domestic manufacturing be temporarily excluded from the tariff action.

We continue to assess approaches to shifting supply chains away from the PRC and enhancing the supply chain impacts of the tariffs in order to reduce the exposure of U.S. persons, companies, and technologies to the PRC's technology transfer-related acts, policies, and practices and to strengthen the resilience of America's supply chains.¹⁹ Our assessment draws on engagement with stakeholders

¹⁹ See USTR, [*Four-Year Review of Actions Taken in the Section 301 Investigation: China's Acts, Policies, And Practices Related to Technology Transfer, Intellectual Property, and Innovation*](#), May 2024, at 87.

regarding the impacts of the tariff actions, as well as an understanding of how rules of origin shape incentives, among other factors.

Sector-Specific Trade Approaches

Recognizing that innovative, tailored approaches can yield solutions more responsive to specific supply chain challenges, since 2021, the Biden-Harris Administration has pursued several sectoral trade agreements and other initiatives covering a range of industries and issue areas:

- **Section 301 Sectoral Investigations on Ships and Semiconductors:** In 2024, USTR launched new sectoral investigations under Section 301 related to the PRC's targeting of sectors for dominance.²⁰ Pursuant to a petition filed by five national labor unions, USTR initiated an investigation of the PRC's acts, policies, and practices targeting the shipbuilding, maritime, and logistics sector for dominance. USTR also initiated an investigation of the PRC's targeting of the semiconductor industry for dominance. If USTR makes affirmative findings that the PRC's policies are unreasonable or discriminatory and burden or restrict U.S. commerce, we will then consider what responsive action may contribute to withdrawal of the acts, policies, and practices, including defending U.S. workers and businesses from harm. Besides action by USTR under the 301 statute, responsive action could also include actions under other Executive Branch authority, new legislation by the Congress, and coordinated actions or agreements with like-minded partners.
- **Steel and Aluminum:** The United States has strengthened the national security actions on steel and aluminum goods taken pursuant to Section 232 of the Trade Expansion Act of 1962, which support our workers and businesses in the vital, market-oriented steel and aluminum industries, and has supplemented those tariffs through additional Section 301 tariffs. The United States has granted preferential market access to certain partners and allies taking action to address the PRC's non-market excess capacity, like Mexico, Japan, and the United Kingdom, while requiring those imports not to utilize Chinese substrate. Additionally, the United States and the European Union (EU) launched negotiations of the Global Arrangement on Sustainable Steel and Aluminum, the world's first emissions-based sectoral arrangement on steel and aluminum trade. The United States and EU are seeking an innovative model that addresses non-market policies and practices and that incentivizes emissions reductions, thereby promoting more sustainable, secure, and transparent supply chains.
- **Large Civil Aircraft:** The United States reached understandings on Large Civil Aircraft Cooperative Frameworks with the United Kingdom and the EU, seeking to collaborate on jointly addressing the PRC's non-market policies and practices. After years of bitter litigation and extensive negotiation, the Frameworks represent a joint effort to address the PRC's non-market policies and practices in a sector in which our respective industries remain the leaders and before the PRC's non-market excess capacity harms our companies and workers.
- **Timber:** The United States and Vietnam entered into the Agreement on Illegal Logging and Timber Trade, which helps keep illegally harvested or traded timber out of supply chains and

²⁰ In addition to these sectoral investigations, USTR initiated a Section 301 investigation of Nicaragua's acts, policies, and practices related to labor rights violations, human rights violations, and dismantling of rule of law. Where policies and practices span multiple economic and industrial sectors, USTR can also utilize Section 301 to investigate those policies and practices.

protect the environment and natural resources. In furtherance of sustainability and transparency in timber supply chains, Vietnam committed, among other things, to improve its Timber Legality Assurance System; to keep confiscated timber out of the supply chain, whether for export or domestic consumption; and to work with high-risk source countries to improve customs enforcement and law enforcement collaboration.

- **Critical Minerals:** The conclusion of the Agreement Between the Government of Japan and the Government of the United States of America on Strengthening Critical Minerals Supply Chains will help to strengthen and diversify supply chains for certain critical minerals used in electric vehicle battery technologies.
- **Economic Security:** For the United States, economic security includes economic security for working people, which is foundational to democracy. The United States works with various groups of like-minded trading partners to address a range of threats to our economic security. These efforts include working together to address, identify, prevent, and deter trade-related economic coercion and non-market policies and practices. In 2023, USTR worked with a group of these close partners to develop a *Joint Declaration Against Trade-Related Economic Coercion and Non-Market Policies and Practices*. The group continues to share information, data, and analysis concerning these policies and practices and to explore the development of new diplomatic and economic tools to respond to these challenges. The United States envisions further cooperation and efforts to address threats in strategic sectors.

USTR continues to assess opportunities to develop sectoral trade agreements and initiatives that deepen collaboration with like-minded trading partners, and that promote our mutual prosperity and economic security.

Engagement with Diverse Trading Partners

USTR recognizes that supply chain resilience is an important area for collaboration with both advanced and developing economies; continued efforts can help forge alignment on ambitious standards and core values, including on protecting and promoting labor rights and environmental protections. The U.S.-Taiwan Initiative on 21st Century Trade, for instance, has enabled the United States to engage with a partner with whom we have a high degree of trust, and to reach a first agreement on trade facilitation and good regulatory practices, among other issue areas. The negotiations also include labor and environmental issues, as well as non-market policies and practices. Opportunities to pursue collaboration with other partners are afforded by the Americas Partnership for Economic Prosperity (APEP), Indo-Pacific Economic Framework for Prosperity (IPEF), U.S.-Kenya Strategic Trade and Investment Partnership, and several Trade & Investment Framework Agreements (TIFAs), among other initiatives.

USTR is also exploring ways to use existing trade agreements and U.S. trade preference programs to promote development and the security and diversity of supply chains. For example, Congress may consider bolstering trade preference programs by adding facility-specific labor eligibility criteria, allowing for partial or sectoral removal of preferences to encourage targeted improvements of labor rights, or requiring country-level preferences to be phased-in incrementally when certain labor eligibility criteria are met.

Lessons from the Past

Over the last several decades, U.S. trade and investment policy, including the pursuit of traditional comprehensive free trade agreements, was designed to drive tariff liberalization and incentivize short-term cost-efficiency, profit maximization, and shareholder returns.²¹ This approach helped shape producers' decision-making that, in many cases, fostered geographically concentrated and operationally complex supply chains.²² It also helped enable supply chain bottlenecks that heighten the risk of volatility, harms to competition,²³ and inflationary dynamics.²⁴

Seeking to eliminate all tariffs as a matter of policy foreclosed an empirical, pragmatic approach that would have included cultivating a deep, mutual understanding of supply chain resilience for individual sectors and products, and crafting trade rules accordingly.²⁵ Additionally, traditional free trade agreements did not sufficiently incentivize production in and among the parties, and instead were often overly permissive of supply chain concentration in non-parties, including non-parties that artificially lowered costs by suppressing labor rights and environmental protections. Targeted tariff reductions for like-minded partners (or increases for non-like-minded economies) in some contexts may enhance resilience and strengthen collaboration with partners sharing values, including support for labor rights, the environment, and rule of law. However, aligning any tariff changes with domestic policy priorities and developing ambitious and appropriately nuanced rules of origin are crucial prerequisites to ensuring long-term resilience.

New Directions

Because the promotion of supply chain resilience has not historically been an express objective of U.S. trade policy, it is now necessary to navigate this inflection point with deliberate care and thoughtful policy innovation. While elements of the existing trade policy initiatives outlined above can point the way forward, additional, complementary solutions can help accelerate supply chain recalibration, guided by stakeholder input and engagement with trading partners.

At the same time, USTR's work is only one element of a whole-of-government effort to analyze and catalyze supply chain resilience. The imperative of promoting greater supply chain sustainability, security, diversity, and transparency extends well beyond the domain of trade policy alone.²⁶

²¹ Preamble of the WTO Agreement (referring to WTO Members' goal of "entering into reciprocal and mutually advantageous arrangements directed to the substantial reduction of tariffs and other barriers to trade and to the elimination of discriminatory treatment in international trade relations"); *accord* Panel Report, *United States – Tariff Measures on Certain Goods from China*, ¶ 7.160, WT/DS543/R (Sept. 15, 2020) (quoting Preamble recital and explaining that "the object and purpose of the covered agreements are focused on the principle of liberalization of trade flows between WTO Members").

²² Peter Goodman, *How the World Ran Out of Everything: Inside the Global Supply Chain* (Mariner Books, 2024), 12-13.

²³ Antitrust Division of the U.S. Department of Justice, Comment, Docket No. USTR-2024-0002-0152, at 2; *see also* The Open Markets Institute, Comment, Docket No. USTR-2024-0002-0198, at 2-4.

²⁴ *Issues in Brief: Supply Chain Resilience*, Issue Briefs, *The White House*, Nov. 30, 2023; The Open Markets Institute, Comment, Docket No. USTR-2024-0002-0152, at 6.

²⁵ Certain stakeholders support a return to negotiating comprehensive, tariff-eliminating free trade agreements. *See, e.g.*, U.S. Chamber of Commerce, Comment, Docket No. USTR-2024-0002-0156, at 5-7; PhRMA, Comment, Docket No. USTR-2024-0002-0126, at 13-14; Retail Industry Leaders Association, Post-Hearing Comment, Docket No. USTR-2024-0002-0279, at 2-3.

²⁶ *See, e.g.*, Aerospace Industries Association, Comment, Docket No. USTR-2024-0002-0162, at 3 (domestic incentives); American Trucking Associations, Comment, Docket No. USTR-2024-0002-0138, at 5-6 (new border technologies); VDMA America, Comment, Docket No. USTR-2024-0002-0257, at 1-2 (workforce development).

Accordingly, we have been coordinating across the Biden-Harris Administration, including through the Council on Supply Chain Resilience launched in November 2023,²⁷ to ensure that trade policy remains closely integrated with other domestic policy initiatives.

Through supporting holistic policy approaches that advance supply chain resilience, USTR will craft new trade strategies that empower workers, protect the environment, deepen collaboration with like-minded partners and allies, and enable inclusive prosperity for all Americans.

²⁷ *White House Council on Supply Chain Resilience*, Exec. Order No. 14,123, 89 Fed. Reg. 51,949 (June 21, 2024). Pursuant to this Executive Order, the Quadrennial Supply Chain Review was published in December 2024. *See* National Economic Council and National Security Council, [*2021-2024 Quadrennial Supply Chain Review*](#) (Dec. 2024).



Sustaining Resilient Textile and Apparel Supply Chains

January 2025

- *Strong sourcing rules in trade agreements, enforcement of U.S. trade laws, and complementary trade policy initiatives promote more resilient textile and apparel supply chains.*
- *USTR can continue to support supply chain resilience in the textile and apparel sector by maximizing the benefits of strategic arrangements with trusted allies and partners and exploring new ways to mitigate supply chain vulnerabilities and to bolster domestic manufacturing.*
- *Modern trade tools and approaches must reflect domestic economic policy priorities and create meaningful incentives to foster more sustainable, secure, diverse, and transparent supply chains that drive inclusive prosperity.*

The U.S. textile and apparel sector has experienced evolving challenges, including unfair competition that have made it harder for domestic manufacturers to compete in the global economy. Despite these challenges, U.S. manufacturers of textiles and apparel remain vital to U.S. national security as evidenced by the industries' willingness to step up during the COVID-19 pandemic to produce critically needed personal protective equipment. This paper provides an overview of the domestic textile and apparel industries and related U.S. trade agreement provisions, examines some of the challenges confronting the sector, identifies areas for further discussion and analysis, and presents trade policy approaches to support more resilient textile and apparel supply chains.

The State of U.S. Textile and Apparel Industries

Historically, the United States boasted large and robust textile and apparel industries. As with many U.S. manufacturing sectors, trade liberalization and offshoring have contributed to declines in domestic production and employment. The termination of the Multifiber Arrangement and the elimination of global quotas on textiles and apparel under the Uruguay Round Agreement on Textiles and Clothing resulted in an influx of imports of cheaper apparel from countries with lower labor costs, namely the People's Republic of China (PRC).¹ The gradual shift away from domestic

¹ The United States, along with representatives from 50 nations, negotiated the Multifiber Arrangement Regarding International Trade in Textiles (MFA) to help the domestic textile and apparel industries as they began to face import competition. Established in 1974, the MFA provided a framework for regulating international trade in textiles and apparel with the objectives of achieving "orderly marketing" of such products and of avoiding "market disruption" in importing countries. It provided a basis on which countries could negotiate bilateral agreements or, if necessary, impose unilateral restraints on disruptive imports. The Uruguay Round Agreement on Textiles and Clothing replaced the MFA in 1994 and resulted in less diversified sourcing of textile and apparel products.

production and increasing reliance on imports to meet growing U.S. demand has led to factory closures, losses of manufacturing jobs, and consolidation and contraction in these industries.²

In 2024, the domestic textile industry reported it had lost 18 plants in less than a year and faces severe economic harm due to various factors, including unfair trade practices of the PRC and other countries.³ U.S. textile manufacturers continue to adapt to maintain and to build their competitiveness by investing in new technologies, innovating, and diversifying to enter new markets despite increasing imports of finished textile and apparel products. “Made in the USA” textiles and apparel have grown in advanced product categories such as medical textiles, protective clothing, specialty and industrial fabrics, and nonwoven fabrics.⁴

U.S. apparel manufacturing has declined steadily over the past few decades. However, interest in increasing domestic manufacturing and locating production capacity closer to buyers and new corporate sustainability commitments, among other factors, have convinced some U.S. apparel companies to make their products in the United States.⁵

Recent investments in U.S. textile and apparel manufacturing have allowed firms to upgrade and to modernize their production processes or to focus operations on different products, if not expanding capacity. Investment in the textile industry in the United States comes with advantages such as local and state incentives and trade agreement rules that encourage the sourcing of U.S.-produced inputs in the manufacturing of downstream textile and apparel products. Additionally, the United States offers access to reliable and relatively low-cost energy and high-quality, competitively priced cotton. Foreign firms dominated the majority of new investments in the U.S. textile and apparel sector over the 2018 to 2024 period. However, some domestic manufacturers recently announced notable new investments in areas such as nonwovens.⁶

The textile and apparel industries remain particularly sensitive to import competition. U.S. imports of textiles and apparel from non-trade agreement or preference program partner countries have some of the highest most favored nation (MFN) tariff rates among all imported goods, ranging from approximately 7 to 17 percent. Apparel imports from non-trade agreement countries can result in less demand for upstream textile inputs made in the United States. Conversely, increased apparel production in the United States may prompt more localized sourcing of textile inputs. The reduction or elimination of tariffs through trade agreements or preference programs provides an incentive for traders to meet content and other labor and environment requirements and encourages production of textiles and apparel in and among parties to the agreements.

² USITC, [*Textiles and Apparel: Made In USA . . . Again?*](#), Sept. 2018; Washington, D.C. Hearing, May 2, 2024, Transcript at 197:11-198:12 (Voit).

³ “[NCTO Praises DHS Textile and Apparel Enforcement Plan as a Critical Next Step to Combatting Pervasive Customs Fraud and Predatory Trade Practices](#),” NCTO, Apr. 5, 2024; “[NCTO Releases Statement Welcoming New Bipartisan Legislation Aimed At Combatting International Trade Crimes And Fraud](#),” *Textile World*, July 26, 2024.

⁴ Sheng Lu, “[State of U.S. Textile and Apparel Manufacturing: Output, Employment, and Trade](#),” *FASH455 Global Apparel & Textile Trade and Sourcing*, May 2022.

⁵ Matt Hickman, “[American-Made: Insiders Dissect ‘Newshoring’ and US Manufacturing Revival](#),” *Sourcing Journal*, Jan. 12, 2023; Shelly E. Kohan, “[Walmart Partners With American Giant Bringing U.S.-Made Apparel To Millions](#),” *Forbes*, June 24, 2024.

⁶ “[Carolina Nonwovens Invests \\$4 million in Ohio Plant](#),” *Nonwovens Industry*, May 21, 2024; “[Shaw’s Aiken, SC Plant Expansion Nears Completion](#),” *Floor Daily*, Apr. 8, 2024.

Textile and Apparel Provisions in U.S. Trade Agreements

Textile and apparel provisions in traditional U.S. trade agreements exemplify how strong rules of origin can be structured to promote resilient, rather than concentrated and vulnerable supply chains. Trade agreements with robust rules and enforcement mechanisms that reflect U.S. values can help create a more equitable marketplace and protect American manufacturers and workers from unfair trade practices.⁷ These agreements provide products from trading partners preferential duty treatment (either duty-free or reduced duties) to foster trade with those countries. The **rules of origin** in U.S. trade agreements, or the criteria used to determine the country of origin of an imported product, govern eligibility for duty preferences for textile and apparel products imported from trade agreement partner countries and influence investment, production, and sourcing decisions by companies in the sector.⁸

Traditional U.S. trade agreements beginning with the North American Free Trade Agreement (NAFTA) have included a **“yarn-forward”** rule of origin for textile and apparel products. Considered a particularly strong rule of origin, yarn-forward provides that yarn and fabric used to produce textiles or apparel in a trade agreement country must come from either the United States or other parties to the agreement to qualify for preferential duty treatment, with some limited exceptions. These rules—when effectively implemented and enforced—in conjunction with higher MFN tariff rates on textile and apparel products, support U.S. textile manufacturing by encouraging the production of yarns, fabrics, and apparel in the United States and among the parties to the agreement and by reducing free riding by non-parties.⁹

Nearshoring Supply Chains

The United States has trade agreements with a number of countries in the Western Hemisphere, including Canada and Mexico (the United States-Mexico-Canada Agreement or USMCA); the Dominican Republic and the Central American countries of Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua (the United States-Central America-Dominican Republic Free Trade Agreement or CAFTA-DR); Chile; Colombia; Panama; and Peru.¹⁰

⁷ Alliance for American Manufacturing, Comment, Docket No. USTR-2024-0002-0222, at 10.

⁸ Rules of origin in U.S. trade preference programs may also aim to preserve the benefits of duty-free trade for beneficiary countries. Washington, D.C. Hearing, May 2, 2024, Transcript at 179:3-179:18 (Herman).

⁹ In contrast, rules of origin for industrial goods in U.S. free trade agreements may have reinforced other existing, more fragile supply chains in some instances.

¹⁰ The United States also has regional trade preference programs with Caribbean countries and Haiti, which permit eligible countries to receive duty-free treatment for U.S. imports of eligible apparel products. For more information about the Caribbean Basin Initiative and the Haitian Hemispheric Opportunity through Partnership Encouragement Act, see [“Caribbean Basin Initiative \(CBI\),” USTR](#).

The United States serves as a leading textile supplier to Western Hemisphere countries. The United States also exports more textile and apparel products to the Western Hemisphere than to any other region in the world. An estimated 70 percent of the total value of U.S. textile and apparel exports went to countries in the region in 2023.¹¹ Manufacturers in North, Central, and South America assemble imported textiles from the United States and elsewhere into apparel. Companies in these countries eventually export the majority of clothing produced in the region to the United States or Canada. The proximity of this regional textiles and apparel supply chain network may contribute to reduced greenhouse gas emissions given the shorter distance over which some goods must travel.

U.S. Textile and Apparel Exports (\$)
2023



Textile and apparel trade under the **CAFTA-DR** demonstrates the benefits of yarn-forward rules of origin for the textile and apparel industries in the United States and in Central America. The agreement provides an example regarding how the United States may leverage and strengthen existing trade agreements to boost supply chain resilience. Textile manufacturers in the United States and in the region have noted their strong support for the yarn-forward rules of origin in the CAFTA-DR.¹² Under the agreement, these manufacturers have generated nearly \$11 billion in two-way annual textile and apparel trade.¹³ The trade agreement has spurred the development of durable textile and apparel production supply chains, where fiber, yarn, and fabric producers in the United States have partnered with firms in Central America and the Dominican Republic to compete successfully with producers from all over the world. Nearly 80 percent of U.S. spun yarns are exported to the region.¹⁴

These deeply intertwined regional textile and apparel production supply chains support over a million jobs in the United States and the CAFTA-DR region and promote economic development and investment in the sector at home and abroad.¹⁵ The jobs in the sector sustain rural communities in many U.S. states, including the southeastern states of North Carolina, South Carolina, Georgia, and Alabama and in the CAFTA-DR region.

¹¹ [“U.S. Textiles & Apparel Exports by Country,”](#) *Western Hemisphere Countries*, Data Visualization, ITA.

¹² Washington, D.C. Hearing, May 2, 2024, Transcript at 168:16-168:19 (Glas).

¹³ [“U.S. Textile & Apparel Imports by Category or Country,”](#) Data Visualization, ITA; [“U.S. Textile & Apparel Exports by Group or Country,”](#) Data Visualization, ITA.

¹⁴ [“U.S. Textiles & Apparel Exports by Product Group,”](#) *Spun Yarns & Thread*, Data Visualization, ITA.

¹⁵ [Joint Letter from NCTO and CECATEC to Vice President Harris](#), May 31, 2022. The CAFTA-DR textiles and apparel production chain also promotes intraregional trade and investment and economic benefits for other U.S. trading partners in the region. Caribbean Basin Trade Partnership Act (CBTPA) countries, for example, may source inputs from the six CAFTA-DR partner countries and use them in goods that qualify for CBTPA trade preference benefits. Textile and apparel imports from CBI beneficiary countries to the U.S. totaled over \$774 million in 2023.

Lessons Learned and Ongoing Challenges

The domestic textile and apparel industries face economic headwinds exacerbated by recent events that have caused supply chain disruptions and by longer-term trends, some of which stem from certain trade policies. The COVID-19 pandemic, increasing trade enforcement challenges, including spiking e-commerce imports from the PRC under the *de minimis* exemption, the sourcing of apparel from countries with weaker labor standards and environmental protections, and environmentally unfriendly practices pose threats to the competitiveness and sustainability of these industries in the United States and in the Western Hemisphere.

Supply Chain Disruptions

Supply chain disruptions caused by the COVID-19 pandemic have heightened recognition of the risks of concentration and overreliance on other markets during times of crisis and made clear the need for greater transparency and visibility in global supply chains.¹⁶ At the height of the COVID-19 crisis, hospitals and medical providers nationwide experienced devastating shortages of textile-based personal protective equipment (PPE). Those shortages stemmed from a dependence on suppliers of PPE in other countries that dominate global production of these products.¹⁷

U.S. textile and apparel manufacturers demonstrated resilience during the COVID-19 pandemic and responded during this time of crisis by retooling production lines and retraining workers to provide U.S.-made PPE, including hundreds of millions of urgently needed items such as face masks, isolation gowns, and their textile components. The federal government distributed over \$125 million in grants to support the domestic production of PPE in response to the crisis, using funds authorized and appropriated by the CARES Act. However, despite these investments made by domestic manufacturers, a more sustained resilience strategy supported by longer term contracts and a commitment to reshoring is required. In March 2024, President Biden announced additional actions as part of an effort to reduce federal government reliance on essential foreign goods, including PPE, as U.S. production capabilities for PPE struggle to compete and hospitals and medical providers have returned to purchasing cheaper PPE from overseas, including from the PRC—a non-market economy that engages in predatory policies and practices to capture whole supply chains, create dependencies, and distort trade.¹⁸

Trade Enforcement

Enforcement of U.S. trade laws protects domestic industries and workers from unfairly traded imports. U.S. trade agreements contain measures to address fraud in the trade of textile and apparel goods. These provisions authorize cooperation between parties to an agreement to ensure the accuracy of claims regarding the origin of a textile and apparel product and permit the parties to deny preferential tariff treatment if an import does not comply with the rules of origin of the agreement. Verification and enforcement of the rules of origin for textile and apparel products play

¹⁶ Washington, D.C. Hearing, May 2, 2024, Transcript at 173:1-173:17 (Gold).

¹⁷ USITC, *COVID-19 Related Goods: The U.S. Industry, Market, Trade, and Supply Chain Challenges*, Dec. 2020, at 18.

¹⁸ “[Biden Administration Publishes Notice to Industry About Demand Forecast for PPE in Support of the Make PPE in America Act](#),” *Press Releases, The White House*, Mar. 13, 2024; Richard Vanderford, “[U.S. Blocks Imports From 26 More Chinese Companies Over Forced Labor Concerns](#),” *Wall Street Journal*, May 16, 2024.

an important part in ensuring trade agreements benefit legitimate manufacturers, investors, and other businesses by guarding against fraudulent claims from illicit players.

The domestic textile industry has identified customs fraud and predatory trade practices by the PRC and other countries as factors exacerbating economic harm and precipitating recent plant closures.¹⁹ Domestic industry contends that yarn sourced from outside the United States and CAFTA-DR countries enters the U.S. through imports of downstream apparel. These imports involve illegal claims that the apparel qualifies for duty-free treatment under the trade agreement. According to industry, these false origin claims have increased, taking market share from manufacturers within the trade agreement signatory countries and breaking the foundation of trade agreement-based U.S. trade policy. Additionally, domestic industry reports that U.S. Customs and Border Protection (CBP) has detained apparel shipments from Nicaragua for suspected violations of the Uyghur Forced Labor Prevention Act (UFLPA).²⁰

De minimis

Section 321 of the Tariff Act of 1930 (19 U.S.C. § 1321), known as the *de minimis* exemption, allows the duty- and tax-free import of articles valued up to \$800 by one person on one day. The number of shipments that enter the United States through the *de minimis* import channel has surged since the increase of the *de minimis* threshold from \$200 to \$800 in 2016 though the average declared value of a *de minimis* package remains about \$50. In fiscal year 2023, the United States received over a billion *de minimis* packages, worth \$54.5 billion.²¹ In fiscal year 2024, the number of *de minimis* shipments swelled to 1.36 billion.

The volume of packages entering the United States under the *de minimis* exemption—approximately 4 million packages per day—in addition to the diversity of shipments coming into the United States across channels and modes (air, land, ocean, and mail) pose major challenges to CBP’s capacity to enforce U.S. trade laws.²² CBP generally receives little information about e-commerce *de minimis* shipments, and such shipments may include high-risk, unlawful imports containing narcotics (or fentanyl precursors or pill presses), intellectual property rights infringing goods, products made with forced labor, and goods that pose health and safety concerns.²³

Apparel products make up a significant proportion of *de minimis* shipments, according to CBP.²⁴ During the COVID-19 pandemic, U.S. consumers’ purchasing of apparel goods shifted heavily from

¹⁹ “NCTO Praises DHS Textile and Apparel Enforcement Plan as a Critical Next Step to Combatting Pervasive Customs Fraud and Predatory Trade Practices,” *Textile World*, Apr. 5, 2024.

²⁰ *Testimony of Kimberly Glas*, President and CEO, National Council of Textile Organizations, *Hearing on Exploitation and Enforcement: Evaluating the Department of Homeland Security’s Efforts to Counter Uyghur Forced Labor*, House Committee on Homeland Security, Subcommittee on Oversight, Investigations, and Accountability, Oct. 19, 2023.

²¹ “E-Commerce,” CBP, June 27, 2024.

²² “DeMinimis 101,” *CBP Trade Webinars*, DHS Media Library, Apr. 5, 2023.

²³ CBP has noted that illicit actors take advantage of the volume of e-commerce shipments to hide illegal practices that threaten U.S. economic interests and often pose health and safety risks due to poor quality or failure to comply with safety standards and regulations. In fiscal year 2022, 89 percent of IPR seizures occurred in express and international mail shipments. See CBP, *CBP Trade and Travel Report: Fiscal Year 2022*, June 2023, at 13-14.

²⁴ CBP collected additional data on approximately 60 percent of all *de minimis* shipments through the voluntary Entry Type 86 pilot program in fiscal year 2023. CBP estimates textiles and apparel products comprised 44 percent of Entry Type 86 pilot *de minimis* imports.

brick-and-mortar retail to e-commerce, accelerating the rise of a new business model in the apparel industry, oriented around direct shipment of finished apparel from factories in the PRC to consumers in the United States, allowing them to take advantage of the duty-free treatment afforded under the Section 321 *de minimis* import channel.²⁵

The majority of *de minimis* packages enter the United States duty-free from the PRC. U.S. textile and apparel producers and retailers have pointed out they face significant economic challenges in part due to the growth in *de minimis* imports from the PRC.²⁶ *De minimis* shipments from the PRC of textile and apparel products enter the United States duty-free and avoid tariffs imposed as a result of trade actions under Section 301 of the Trade Act of 1974, which aim to address unreasonable or discriminatory policies or practices that burden or restrict U.S. commerce. Most apparel shipments from the PRC would be subject to higher duties and Section 301 tariffs if they did not enter the United States under the *de minimis* exemption.

The *de minimis* administrative exemption erodes the efficacy of tariff protections and trade agreement rules and undermines the effectiveness of trade actions taken. Further, the use of *de minimis* to evade the Section 301 tariffs, which have resulted in increased domestic production in cut and sew apparel manufacturing and greater sourcing from other countries erodes the benefits of the tariffs for domestic producers.²⁷ The current *de minimis* eligibility for imports from the PRC, including products subject to trade action has raised concerns among a wide range of stakeholders, including U.S. manufacturers and retailers, civil society organizations, and Members of Congress.

Sourcing of Apparel from Countries with Weaker Labor Standards and Environmental Protections

The top apparel suppliers to the United States include countries in Asia with relatively weaker labor standards and environmental protections and countries currently utilizing forced labor and child labor. In 2023, U.S. imports of apparel from the PRC totaled an estimated \$16.9 billion, excluding *de minimis* shipments, or 21 percent of total U.S. imports of apparel.²⁸ U.S. apparel imports from Vietnam and Bangladesh totaled \$14.1 billion and \$7.1 billion, respectively.²⁹

²⁵ Andrew R. Chow, “[The Tax Loophole That Helps Temu and Shein Keep Prices So Low](#),” *TIME*, Feb. 16, 2024.

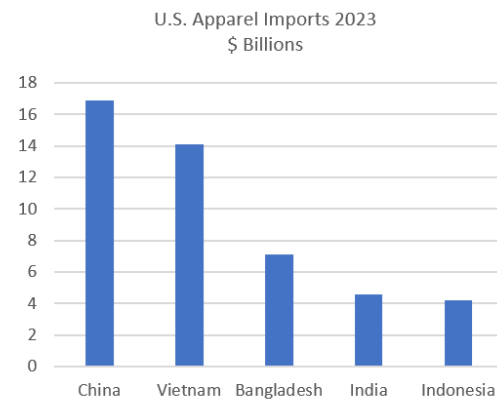
²⁶ Washington, D.C. Hearing, May 2, 2024, Transcript at 165:11-166:9 (Glas); Retail Industry Leaders Association, Post-Hearing Comment, Docket No. USTR-2024-0002-0279, at 10.

²⁷ USTR, *Four-Year Review of Actions Taken in the Section 301 Investigation: China’s Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, May 2024, at 72.

²⁸ USITC, *Apparel: Export Competitiveness of Certain Foreign Suppliers to the United States*, Aug. 2024, at 33.

²⁹ USITC, *Apparel: Export Competitiveness of Certain Foreign Suppliers to the United States*, Aug. 2024, at 33.

Weaker labor standards and environmental protections in these countries and lower prices of imports from these countries relative to goods manufactured by U.S. and global firms undercut the ability of U.S. workers and industries to compete fairly.³⁰ Nonexistent, weak, or ineffective labor and environmental protections or violations of labor rights contribute to artificially low production costs and constitute unfair and anti-competitive non-market policies and practices. Violations of social and environmental sustainability measures also pose serious reputational risk to companies operating in the textile and apparel sector.



Concerning safety hazards in factories in these countries have resulted in the deaths of workers. For example, in 2013 the Rana Plaza building in Dhaka, Bangladesh collapsed and killed over 1,000 workers. Further, women, who make up an estimated 80 percent of garment workers globally often face gender discrimination, physical abuse, and sexual harassment due to a lack of respect for basic labor rights in garment factories in these countries.³¹

Unsustainable Textile and Apparel Practices

The textile and apparel industries account for an estimated 10 percent of global greenhouse gas (GHG) emissions. These industries contribute substantially to water pollution, primarily due to agrochemical runoff from natural fiber crop production, effluent discharge from manufacturing facilities, and limited-use “fast fashion” synthetic fabrics that shed microplastics with each wash.³²

The proliferation of fast fashion has precipitated a rapid expansion in garment production, which has doubled globally since 2000. Consumer behavior patterns indicate that approximately half of all fast fashion items are discarded within a year, with approximately 85 percent of unwanted apparel in the United States ending up in landfills or incinerated. This linear “take, make, use, waste” paradigm significantly worsens the industry’s environmental footprint, with only about 15 percent of discarded textiles in the United States collected for reuse or recycling annually.³³ Other challenges confronting the industry include climate change, technological and structural barriers to recycling, traceability for recycled materials, and the emergence of varying sustainability and circularity standards in the sector across countries and governments.³⁴

³⁰ Washington, D.C., May 2, 2024, 194:15-195:19 (Stochl).

³¹ Megan Robertson, “[It Takes Exploitation to Look This Good: Garment Workers, Modern Fashion, and the Oppression of Women](#),” *The Georgetown Journal of Gender and the Law* 25, no. 2 (2024): 1.

³² Department of Commerce, [Facilitating a Circular Economy for Textiles Workshop Report](#), May 2022, at 17.

³³ Department of Commerce, [Facilitating a Circular Economy for Textiles Workshop Report](#), May 2022, at 14.

³⁴ Jason Judd et al., “[Higher Ground? Fashion’s Climate Breakdown and its Effect for Workers](#),” *ILR Global Labor Institute, Schrodgers* (2023), 3; Department of Commerce, [Facilitating a Circular Economy for Textiles Workshop Report](#), May 2022, at 38; Jasmin Chua, “[Does the UFLPA Cover Recycled Cotton?](#)” *Sourcing Journal*, Aug. 18, 2023; “[Easy Being Green? EU Sustainability Policies and the Textile & Apparel Industry](#),” *Executive Briefings on Trade, USITC*, Mar. 2024.

Additionally, the rising number of e-commerce *de minimis* shipments of apparel items from the PRC raises environmental sustainability and climate-related concerns. The quantity of packaging required for the individual shipment of over a billion items adds to waste given the use of cardboard boxes and single-use plastic packaging. The massive expansion of the use of e-commerce platforms has resulted in greater use of delivery vehicles and associated emissions, with the World Economic Forum estimating a 36 percent rise in associated vehicle use and a 6 million ton increase in GHG emissions between 2019 and 2030.³⁵

Future Approaches

U.S. trade policy plays a pivotal role in sustaining resilient textile and apparel supply chains. Going forward, implementation and enforcement of existing U.S. trade agreements and trade laws should remain a key priority for USTR to strengthen the resilience of textile and apparel supply chains. USTR should continue to seek opportunities to bolster existing trade agreements to maximize the benefits of those agreements for U.S. workers and industries—and those of U.S. trading partners—while developing novel ways to advance supply chain resilience and to uphold labor standards and environmental protections. A successful trade policy must defend U.S. investments in critical domestic industries such as personal protective equipment and textiles that supply the U.S. military and first responders and also counter the negative effects of non-market policies and practices.

Maximizing the Benefits of Existing Trade Agreements: CAFTA-DR

Robust U.S.-CAFTA-DR textile and apparel supply chains and the renewed focus of U.S. textile and apparel companies interested in greater sourcing from the CAFTA-DR region can support greater resilience in these sectors.³⁶ Mechanisms and dedicated workstreams will remain important to buttress U.S.-CAFTA-DR textile and apparel supply chains. For example, the CAFTA-DR Textiles and Apparel Supply Chain Directory facilitates sourcing of textiles and apparel products from companies in the region and a joint project with CBP aims to build trade and customs capacity for secure textile and apparel traders.³⁷ These types of initiatives enable the existing textile and apparel provisions in the CAFTA-DR to improve the sector's global competitiveness and to fortify regional supply chains.

CAFTA-DR's yarn-forward rules of origin have contributed to the success of the United States' trade partnership with the region, supported U.S. textile industry investments, and kept domestic manufacturers in business.³⁸ Investment and business decisions depend on the existing rules of origin remaining stable and secure. Stakeholders hold a valuable role in the process of identifying issues and developing policy approaches that build resilient and sustainable textile and apparel supply chains. Dialogue among stakeholders, including U.S. and Central American textile and apparel producers, U.S. brands and retailers that source from the region, civil society stakeholders, and federal agencies, can reveal ways to grow bilateral trade and to make the most of the opportunities provided by the CAFTA-DR and other trade agreements with Western Hemisphere

³⁵ [“Online shopping is polluting the planet - but it's not too late,”](#) *World Economic Forum*, Jan. 10, 2020.

³⁶ In a 2024 survey, 52 percent of fashion industry executives indicated they plan to expand apparel sourcing from CAFTA-DR countries. See U.S. Fashion Industry Association, [2024 Fashion Industry Benchmarking Study](#), July 2024.

³⁷ [“Fact Sheet: Vice President Harris Announces New Initiatives to Strengthen the U.S.-Guatemala Relationship and Address the Root Causes of Migration from Guatemala,”](#) *Statements and Releases, The White House*, Mar. 25, 2024.

³⁸ Washington, D.C. Hearing, May 2, 2024, Transcript at 168:8-168:22 (Glas).

countries. Approaches like the Vice President’s Call to Action initiative have galvanized investments by the domestic industry at home and in Central America to shore up CAFTA-DR co-production supply chains.³⁹

Enhancing Trade Enforcement

Close partnership and coordination between USTR and interagency partners, including U.S. Customs and Border Protection, is required to ensure imports meet rules of origin and content requirements and to address fraudulent claims made under U.S. trade agreements. These efforts will remain crucial for textile and apparel products which often have opaque supply chains and limited traceability. Additional transparency and traceability requirements for imports and increased supply chain information could provide a basis for more effectively uncovering transshipment and developing appropriate trade policy responses specific to the textile and apparel sector.

USTR enforces the provisions in existing U.S. trade agreements to protect domestic workers and industries and to ensure trading partners live up to the commitments they have made in these agreements. USTR also coordinates with federal government agencies and stakeholders to address unfair trade practices affecting the U.S. textiles and apparel industries through strong enforcement of U.S. trade laws. Enforcement of U.S. trade laws, including the Section 307 forced labor import ban, the UFLPA, the Section 321 *de minimis* exemption, and Section 301 will remain an indispensable tool for establishing and maintaining a level playing field for U.S. textile and apparel workers and manufacturers.

USTR has worked closely with CBP and interagency partners to step up enforcement of U.S. trade agreements and trade laws. These activities include addressing illegal transshipment to evade U.S. textile quotas and customs duties. In April 2024, the U.S. Department of Homeland Security (DHS) announced an enhanced strategy to combat illicit trade in the textile and apparel sector and to level the playing field for the American textile industry, which accounts for over 500,000 U.S. jobs and remains imperative for U.S. national security.⁴⁰ This enforcement plan involves a risk-based approach to customs audits and origin verifications to ensure that textiles traded under the CAFTA-DR and the USMCA qualify for preferential treatment under these agreements.

During fiscal year 2024, CBP dedicated resources to conduct a wide range of textile enforcement activities to verify compliance on more than \$24 billion high-risk imported textile products (see Box 1). CBP’s ability to conduct more textile production verification visits and to share additional information regarding verification findings with stakeholders will be critical to effective enforcement and the advancement of resilience for textile and apparel supply chains.

³⁹ [“Vice President Kamala Harris Announces New Commitments as Part of the Call to Action for the Private Sector to Deepen Investment in Central America, Now Totaling Over \\$1.2 Billion,”](#) *Statements and Releases, The White House*, Dec. 13, 2021; [“Fact Sheet: Vice President Harris Announces More Than \\$1.9 Billion in New Private Sector Commitments as Part of Call to Action for Northern Central America,”](#) *Statements and Releases, The White House*, June 7, 2022.

⁴⁰ [“New DHS Textile Enforcement Actions Crack Down on Illicit Trade to Support 500,000 American Textile Jobs,”](#) *Press Release, U.S. Department of Homeland Security*, Apr. 5, 2024.

Box 1. CBP Textile Enforcement Activities in FY 2024

- Launched 20 trade special operations (TSOs) focused on small shipment and formal cargo inspections as well as post-release reviews to determine eligibility for preferential treatment under free trade agreements, and to verify classification, valuation, right to make entry (RTME), and compliance with forced labor laws.
- Completed more than 1,500 cargo inspections/supply chain verifications covering more than \$180 million in textile and wearing apparel shipments, including more than 900 physical inspections of shipments at *de minimis* and formal cargo entry and approximately 600 post-release verifications. More than 70 percent of targeted reviews have identified some form of violation and a total of \$16.1 million in lost revenue to date.
- Initiated an additional 1,100 post-release verifications that are currently ongoing and awaiting final compliance determinations.
- Conducted Textile Production Verification Team (TPVT) visits to 136 factories and/or raw material suppliers in seven Western Hemisphere countries to verify free trade agreement compliance covering more than \$2 billion in imported textile products. TPVTs visited Mexico, Honduras, Guatemala, El Salvador, Nicaragua, Dominican Republic, and Costa Rica.
- Initiated trade audits on \$22.6 billion in textile import shipments, which have resulted in the identification of \$38.2 million in lost revenue to date.

USTR also participates in the Forced Labor Enforcement Task Force (FLETF), chaired by DHS, which has developed a strategy for supporting enforcement of Section 307 of the Tariff Act of 1930, as amended (19 U.S.C. § 1307), to prevent the importation into the United States of goods mined, produced, or manufactured wholly or in part with forced labor in the PRC. In May 2024, DHS and the FLETF announced the addition to the UFLPA Entity List of 26 PRC-based companies that trade and warehouse cotton.⁴¹ USTR remains highly committed to working with the FLETF to develop the Entity List further to assist CBP with Section 307 and UFLPA enforcement.

Additionally, USTR has engaged with CBP and other agencies to develop strategies to prevent illicit goods that violate trade laws from entering the U.S. market under the Section 321 *de minimis* exemption. In September 2024, the Biden-Harris Administration announced executive action on *de minimis* to protect American consumers and to level the playing field for American workers and manufacturers.

- The Administration announced a Notice of Proposed Rulemaking by CBP that would exclude from the *de minimis* exemption all shipments containing products covered by Section 301, Section 201, or Section 232 trade or national security actions. Section 301 tariffs currently cover approximately 70 percent of textile and apparel imports from the PRC.
- The Administration also announced a Notice of Proposed Rulemaking by CBP to require specific, additional data for *de minimis* shipments—including the 10-digit tariff classification

⁴¹ “[DHS Announces 26 Additional PRC-Based Textile Companies to the UFLPA Entity List](#),” DHS, May 16, 2024.

and the person claiming the *de minimis* exemption—to improve targeting of *de minimis* shipments and to facilitate expedited clearance of true *de minimis* shipments.

- A final rule from the Consumer Product Safety Commission requires importers of consumer products to file Certificates of Compliance electronically with CBP and CPSC at the time of entry, including for *de minimis* shipments.

The Administration also called on Congress to pass *de minimis* reforms that would exclude import-sensitive products, including textile and apparel products, from the *de minimis* exemption.

Other recent legislative proposals introduced in Congress include eliminating *de minimis* for imports from certain non-market economies or eliminating the *de minimis* exemption completely. *De minimis* is a statutory creation. Its unintended consequences in eroding supply chain resilience—including for the textile and apparel industry; facilitating the increase in illegal, unsafe, and unfairly traded goods entering the U.S. marketplace; and exposing American workers, consumers, and businesses to harm, will be most effectively and comprehensively addressed through a clear-eyed revisitation by Congress.

Strengthening and Upholding Worker Rights

U.S. trade policy must uphold worker rights, such as fair wages and safe working conditions and protect critical industries like PPE and textiles from unfair competition and the distortive effects of non-market policies and practices, including nonexistent, weak, or ineffective labor protections or violations of labor rights that contribute to anti-competitive, artificially low production costs. Additionally, U.S. trade policy should incentivize the adoption of higher labor standards in trading partner countries through trade agreement and trade preference program rules.

The United States has been at the forefront of using trade agreements to promote and to protect internationally recognized labor rights. Labor provisions in trade agreements have advanced significantly in recent years, reflecting evolving negotiating objectives and a shift toward more comprehensive labor commitments. The USMCA, the most recent comprehensive U.S. trade agreement to enter into force, includes the strongest labor-related provisions of any free trade agreement and sets a new precedent with its facility-specific Rapid Response Labor Mechanism. Current and ongoing negotiating initiatives have reflected the Biden-Harris Administration's steadfast commitment to put workers' interests at the center of all trade engagements.

USTR works in close coordination with other U.S. government agencies, stakeholders, and trading partners to ensure enforcement of trade agreement labor provisions in the textile and apparel sector and to provide best practices for protecting workers' rights in the industry. For example, U.S. government officials, including from USTR and the Department of Labor, engage with Honduran Government officials and stakeholders to discuss outstanding commitments of Honduras under the United States–Honduras Labor Rights Monitoring and Action Plan (MAP), with a particular emphasis on improving the ability of Honduras to collect fines and to protect workers' right to freedom of association. Much of the work under the MAP addresses worker rights in the textile and apparel sector. The U.S. government also works across other CAFTA-DR countries, such as Guatemala and the Dominican Republic to promote labor rights in the sector.

In December 2024, USTR initiated for the first time an investigation under Section 301 to investigate acts, policies, and practices that may violate labor rights, human rights, and dismantle the rule of law that may burden U.S. commerce in response to credible reports that suggest the Government of Nicaragua engages in repressive acts that harm Nicaragua's workers and people.⁴² Textiles and apparel comprise one of Nicaragua's top exports to the United States. The sector employs an estimated 77,000 workers in Nicaragua directly and hundreds of thousands of additional workers indirectly. Garments produced in Nicaragua use fiber, yarn, fabric, and trims produced in the United States and the region. Other CAFTA-DR countries rely on Nicaragua as a key part of their textile and apparel production chain. USTR has requested consultations with Nicaragua in connection with the investigation.

The United States works closely with trading partners through other trade arrangements to advance worker rights as well. For example, through the United States–Bangladesh Trade and Investment Cooperation and Facilitation Agreement (TICFA), USTR regularly engages with the Government of Bangladesh on worker rights in Bangladesh's garment sector. Despite the progress on worker safety standards in the last decade, the United States continues to urge Bangladesh to align its domestic labor laws with international labor standards. USTR and interagency partners have regularly engaged with the Government of Bangladesh on the need to address concerns in the areas of violence against and harassment of workers, unfair labor practices, freedom of association, collective bargaining, and the need for a fair and transparent minimum wage process for garment workers. The United States called for Bangladesh to reform its labor laws to extend the rights of freedom of association and collective bargaining to the export processing zones and special economic zones and to ease the trade union registration requirements for workers. In addition, USTR engages with stakeholders such as trade associations, NGOs, apparel brands, trade union leaders, and workers to increase support for improvements in worker rights in Bangladesh.

The United States has programs focused on strengthening labor rights in the textile and apparel sector in other countries as well. The United States funds Better Work, a joint program of the International Labor Organization and the International Finance Corporation in Vietnam, Haiti, and Ethiopia, in addition to the program in Bangladesh. Better Work works with the apparel industry to improve working conditions and respect for labor rights, while boosting the competitiveness of apparel businesses. Beyond Better Work, the U.S. government has supported programs to strengthen labor rights in the apparel sectors in countries like Jordan and Lesotho.

Existing U.S. trade preference programs can be useful in incentivizing trading partners and companies to strengthen worker rights in textile and apparel supply chains. In the future, Congress could bolster country eligibility requirements for preference programs that provide tariff benefits for apparel imports, such as the Haitian Hemispheric Opportunity through Partnership Encouragement Act of 2008 (HOPE II). Preference programs could include expanded worker rights criteria that phase in, so that benefits ratchet up as countries make progress toward meeting certain benchmarks on labor standards. Trade preference programs could also expressly allow for the partial removal of

⁴² [“USTR Initiates Section 301 Investigation on Nicaragua’s Acts, Policies, and Practices Related to Labor Rights, Human Rights, and the Rule of Law,” Press Release, USTR, Dec. 10, 2024.](#)

eligibility, which would permit USTR to incentivize improvements in labor conditions in specific sectors, without penalizing the country with full removal of benefits.

Further, Congress could consider including facility-specific mechanisms that allow USTR to review individual producers' compliance with labor standards and to remove preferential treatment for specific producers if they fail to come into compliance. Such a mechanism currently exists in the HOPE II program and could be replicated in the other trade preference programs that provide benefits for textile and apparel imports. Finally, Congress could also consider including rules of origin restrictions in preference programs to ensure that apparel products made with inputs with known labor violations do not benefit from the programs.

Advancing Environmental Protections and Circular Economy Practices

U.S. trade policy should incentivize the adoption of stronger environmental protections in trading partner countries through trade agreement and trade preference program rules. Trade rules can prompt more sustainable production, encourage the reuse of materials, and foster circular economy approaches within supply chains. Companies play a fundamental role in the management of sustainable textile and apparel supply chains. Nearshoring and regional sourcing may allow companies to have more oversight over environmental standards in production facilities and thereby encourage stronger compliance with environmental regulations.

Policy frameworks that safeguard environmental protections can support the industry's sustainable development and promote circular economy approaches that emphasize product life extension through reuse, repair, and recycling.⁴³ In the United States, some textile companies already have expanded their utilization of recycled and renewable fibers.⁴⁴ The high demand for environmental sustainability and social compliance-related professionals in the fashion industry indicates the growing importance and relevance of sustainable practices and social compliance in the sector.⁴⁵

Agencies across the federal government have taken steps to advance environmental sustainability in the textile industry.⁴⁶ The Group of Seven (G7) Alliance on Resource Efficiency concurrently has embarked on the development of a set of voluntary but concrete actions that promote sustainability and circularity within the textiles and fashion industry. USTR participated in the deliberations related to the development of a common voluntary Agenda on Circular Textiles and Fashion, agreed to by participating countries at the end of 2024.⁴⁷

Additional trade policy approaches to promote circularity in the textile and apparel sector will be needed to further advance supply chain resilience. Such approaches may begin with raising the topic

⁴³ Department of Commerce, [Facilitating a Circular Economy for Textiles Workshop Report](#), May 2022, at 9.

⁴⁴ “[Sustainability Core to Resurgence of America's Textile Industry](#),” *Textures Magazine*, National Council of Textile Organizations, 2017, at 7. See UNIFI's production of recycled performance fiber made from plastic and textile waste, Celanese's elastane alternative, and Genomatica and Qore's development of bio-derived spandex precursor chemicals as examples.

⁴⁵ Fashion Industry Association, [2024 Fashion Industry Benchmarking Study](#), July 2024, at 7.

⁴⁶ See U.S. Cotton Trust Protocol, [U.S. Climate Smart Cotton Program Narrative](#), May 2023; Environmental Protection Agency, [Building a Circular Economy for All: Progress Toward Transformative Change](#), Sept. 2022; “[Circular Economy Workshops](#),” National Institute of Standards and Technology.

⁴⁷ G7 Italia, Ministerial Meeting on Climate, Energy and Environment, [G7 Climate, Energy and Environment Ministers Joint Declaration](#), Apr. 2024, at 22.

of sustainability and circularity in engagements with trading partners through existing trade agreements and Trade and Investment Framework Agreements (TIFAs), where appropriate. Other steps include exploring the potential inclusion of new provisions related to circular economy principles in future trade agreement negotiations, elevating this topic at the WTO, and engaging in relevant ongoing discussions in the G7 and G20, and at the OECD.⁴⁸ Sustainable textile and apparel trade-related areas for further exploration by USTR and other U.S. government agencies may include the following topics:

- International harmonization of terminology and improved tools for transparency and traceability to enhance the competitiveness of recycled materials in the global market.⁴⁹
- Preferential tariff treatment for textile and apparel products that meet certain verifiable environmental criteria and labor standards to incentivize the production and trade of more sustainable goods.
- Transparency and traceability throughout textile and apparel supply chains to deter “greenwashing” and “bluewashing” and to ensure the accuracy of sustainability claims.
- Development of trade capacity building programs focused on promoting more sustainable textile production in partner countries to spread best practices globally.
- Promotion of trade in recycling technologies and equipment, which could help countries upgrade textile recycling capabilities more rapidly.

Further consultations with industry stakeholders, as always, would strengthen USTR’s ability to gather and analyze diverse perspectives on textile and apparel circularity and potential policy solutions.

Conclusion

U.S. trade policy can demonstrably foster more sustainable, secure, diverse, and transparent supply chains in the textile and apparel sector. Future trade policy approaches, developed in consultation with key stakeholders, must strategically protect American workers and businesses and domestic investments while avoiding overreliance and vulnerabilities to cultivate and preserve supply chain resilience.

⁴⁸ “[Responsible Garment and Footwear Supply Chains](#),” OECD.

⁴⁹ “[Textile Recycling: Closing the Loop on a Greener Apparel Industry](#),” *Executive Briefings on Trade*, USITC, Oct. 2023.



Harnessing Rules of Origin for Resilience

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- *Rules of origin, both preferential and non-preferential, determine the origin of imported goods; in so doing, they operationalize many trade policy tools that help shape supply chains.*
- *To support domestic economic policy priorities and forge more resilient supply chains, any new preferential rules of origin in trade arrangements must create meaningful incentives to locate substantial production activities in the covered territories, and non-preferential rules of origin must inform the design of enforcement actions.*

Rules of origin, which determine the origin of imported goods, have been described as the “plumbing” of international trade policy. Although sometimes perceived as technical and mundane, they play a critical role in operationalizing many trade policy tools that help shape supply chains. Accordingly, the design of new trade policies that advance supply chain resilience must take into account the legacy, flexibilities, and limitations of rules of origin.¹ This paper examines both preferential and non-preferential rules of origin, discusses emerging stakeholder concerns about their vulnerabilities, and outlines new policy approaches and areas for further consideration and analysis.

An Origin Overview

In importing any good, the importer reports to customs authorities its origin, as determined by the application of “rules of origin.” These rules fall into two broad categories—preferential and non-preferential. Preferential rules of origin govern origin where the importer claims duty reductions or exemptions, and non-preferential rules govern origin for all other purposes, including the assessment of certain special duties. Both types of rules inform the operation of existing U.S. trade policy tools.²

Preferential Rules of Origin

Goods that comply with preferential rules of origin may be eligible for special duty rates, which are typically reductions to or exemptions from general duties. General duties—also known as most-favored nation or “MFN” duties—are those that apply to all imports into the United States, regardless of origin, as provided in the Harmonized Tariff Schedule of the United States (HTSUS).³

¹ See USTR, “Reshaping the Global Trade Paradigm,” Policy Paper No. 1, Jan. 2025 (defining supply chain resilience).

² For a more detailed primer, see U.S. Customs and Border Protection (CBP), [U.S. Rules of Origin: Preferential and Non-Preferential Rules of Origin](#), May 2004. This paper uses the terms “duty” and “tariff” interchangeably.

³ General duties do not apply to goods originating from a limited set of countries lacking normal trade relations (NTR) with the United States. Goods of these countries are subject to “column 2” duties. As of this writing, these countries are

Preferential rules of origin are established through a range of instruments, but primarily in comprehensive free trade agreements (FTAs) that provide tariff benefits to FTA partners.⁴ Preferential rules are also provided under U.S. unilateral preference programs, such as the Generalized System of Preferences (GSP), the African Growth and Opportunity Act (AGOA), and the Caribbean Basin Economic Recovery Act (CBERA).

Non-Preferential Rules of Origin

Non-preferential rules apply for all purposes *other than* the determination of a duty preference. These purposes currently include marking,⁵ eligibility for U.S. federal government procurement, and the assessment of certain special duties, including tariffs imposed under Section 301 of the Trade Act of 1974 (Section 301).

Importantly, non-preferential and preferential rules applied to a single good may lead to different origin determinations. For instance, for the purposes of Section 301, a given good may originate from the People's Republic of China (PRC) and therefore be subject to the China Section 301 tariff actions, and yet also comply with an FTA preferential rule of origin due to final manufacturing in an FTA partner country, thereby enjoying an exemption from MFN duties.⁶ The inverse result is also possible: a good that undergoes final manufacturing in an FTA partner may avoid Section 301 tariffs, yet be subject to MFN duties due to non-compliance with the FTA preferential rule of origin.⁷ These outcomes follow from the fact that a good's origin is determined separately under preferential and non-preferential rules by applying their substantively distinct standards.

Preferential Rules of Origin in U.S. Free Trade Agreements

Although FTAs are often seen as a means of incentivizing enhanced trade and commercial ties between like-minded trading partners, the extent to which an FTA promotes those ties and supports supply chain resilience is in part a function of each agreement's preferential rules of origin. According to stakeholders, many such rules have not sufficiently advanced supply chain resilience in some sectors, prompting interest in new approaches and strategies.

Structure

Goods that are wholly the growth, product, or manufacture of an FTA partner naturally qualify as originating from the FTA territory and are therefore eligible for the FTA duty preference. However, as a practical matter, this “wholly obtained” rule cannot determine origin for many goods whose

the Republic of Belarus, Cuba, North Korea, and the Russian Federation. *See* Harmonized Tariff Schedule of the United States (HTSUS), General Note 3(b).

⁴ The United States has twenty comprehensive FTA partners and pursued many of these agreements in the 2000s under a strategy of “competitive liberalization.” *See* C. Fred Bergsten, “[A Competitive Approach to Free Trade](#),” *Financial Times*, Dec. 4, 2002.

⁵ “Marking” refers to the determination of the country of origin that must be marked on a good to inform the ultimate purchaser of its origin. *See* 19 U.S.C. § 1304; 19 C.F.R. Parts 102, 134.

⁶ *See, e.g.*, Customs Ruling H316545 (Mar. 18, 2021) (finding radiology injection machine battery packs eligible for USMCA duty preference based on processing in Mexico meeting RVC requirement, but subject to Section 301 tariffs based on use of lithium-ion cells made in the PRC).

⁷ *See, e.g.*, Customs Ruling H332638 (May 13, 2024) (finding aluminum billets produced under certain manufacturing scenarios to be ineligible for USMCA duty preference, but also not subject to Section 301 tariffs based on a substantial transformation occurring in Mexico).

supply chains span multiple countries, including those outside the FTA territory. Accordingly, FTAs also prescribe specific rules of origin for determining eligibility for FTA duty preferences; a single FTA's rules of origin can cover upwards of 5,000 tariff lines.⁸

In many cases, FTA preferential rules of origin take the form of so-called “tariff-shift” rules. Tariff-shift rules generally provide that the duty preference is available if a good's manufacture in the FTA territory changes the tariff classification in the manner prescribed in the rule, comparing the non-originating inputs used in production with the finished good as imported. Tariff-shift rules, in their simplest form, do not impose explicit requirements on where the non-originating inputs are sourced or the total value of those inputs.⁹ For instance, the U.S.-Peru Trade Promotion Agreement's product-specific rule of origin for spark plugs classified at the six-digit subheading 8511.10 requires a change in classification “from any other subheading.” Under this rule, if the finished spark plug is classified at 8511.10, and all non-originating inputs¹⁰ used to make that spark plug were classified at any six-digit subheading other than 8511.10, then the spark plug is originating and entitled to the duty preference.¹¹

In contrast to tariff-shift rules, other FTA preferential rules of origin require that goods contain a specified minimum percentage amount of content sourced from the FTA territory (or a maximum amount of content from non-parties to the FTA) in order to qualify for the duty preference. These requirements are generally known as regional value content (RVC) rules. For example, the RVC approach is used in the U.S.-Morocco Free Trade Agreement, which imposes a 35 percent originating content requirement on many goods.¹²

Going beyond the percentage thresholds of RVC rules, other rules of origin impose sourcing requirements on specified inputs. For example, textiles and apparel rules of origin in most U.S. FTAs include a “yarn-forward” rule that conditions duty preference eligibility on the use of yarns and fabrics from the FTA territory in the manufacturing of finished textile and apparel products, with some limited exceptions.¹³ Automotive rules of origin under the United States-Mexico-Canada Agreement (USMCA) have incorporated regional-value and labor-value content (LVC) rules, and

⁸ William Powers and Ricky Ubee, “[A Comprehensive Comparison of Rules of Origin in U.S. Trade Agreements](#),” U.S. International Trade Commission Office of Economics Working Paper no. 2020-05-D (2020) at Table 4 (finding 5,222 tariff lines covered in U.S. free trade agreements with Colombia and Peru).

⁹ See, e.g., Customs Ruling N329812 (Dec. 14, 2022) (finding insulation coating solution eligible for U.S.-Korea FTA duty preference on tariff shift grounds, notwithstanding that over 93 percent of the inputs originated from outside Korea); Customs Ruling H310045 (June 16, 2021) (finding ultra-low sulfur diesel eligible for U.S.-Colombia Trade Promotion Agreement duty preference on tariff shift grounds, notwithstanding non-originating crude oil input); Customs Ruling HQ H004685 (Feb. 23, 2007) (finding home sewing machine furniture eligible for U.S.-Australia FTA duty preference on tariff shift grounds, notwithstanding use of foreign fiberboards and hardware).

¹⁰ Tariff-shift requirements generally apply only to non-originating inputs.

¹¹ Other rules require tariff shifts from different chapters or headings; such rules in principle require more work to effect the required change because the tariff schedule is hierarchical, such that goods with classification differing at the chapter (two-digit) level are generally more dissimilar than goods with classification differing at the heading (four-digit) level, which in turn are more dissimilar than goods with classification differing at the subheading (six-digit) level.

¹² U.S.-Morocco FTA, Art. 5.1. See also USMCA, Ch. 4, Annex 4-B (providing that in order for certain alcoholic beverage goods classified at 2208.30-2208.70, to be eligible for duty preference eligibility, the good's alcoholic ingredients that do not originate from the FTA territory must constitute no more than 10 percent of the alcoholic content of the good by volume).

¹³ See USTR, “Sustaining Resilient Textile and Apparel Supply Chains,” Policy Paper No. 2, Jan. 2025.

requirements on the location of manufacturing of key parts and components.¹⁴ The LVC rule requires that a certain percentage of each producer's qualifying vehicles be produced by employees making an average base wage of at least \$16 per hour. The requirements on sourcing key parts and components evolved conceptually out of the North American Free Trade Agreement (NAFTA) "tracing list," which required manufacturers to determine the origin of listed components, and those components retained their origin regardless of the amount of subsequent transformation. The "yarn-forward" rules, the USMCA automotive rules, and the earlier NAFTA tracing list collectively demonstrate the ability of rules of origin to incentivize the production of specific inputs in defined locations and under conditions that enable a level playing field for U.S. workers and producers.

Additionally, FTA preferential rules of origin can encompass multiple approaches above. For example, certain "combination" preferential rules of origin provide an option of satisfying either a tariff-shift rule or an alternative RVC rule. For example, under the U.S.-Korea Free Trade Agreement, certain parts of gas turbines must either undergo a specified tariff shift, or alternatively contain a minimum RVC of 35 percent or 45 percent, depending on the calculation method chosen.¹⁵ In more limited cases, certain rules of origin take a hybrid approach, requiring that a good satisfy both a specified tariff-shift and an RVC element. For instance, the USMCA rule of origin for certain cocoa products provides that the good undergo a specified tariff shift, and that the non-originating sugar and non-originating cocoa powder contained therein do not exceed specified percentage thresholds.¹⁶

"Free Rider" Problem

There are concerns that because goods containing considerable non-originating content can often comply with FTA preferential rules of origin, these rules open opportunities for goods produced in non-parties. Firms located in those non-parties could supply significant inputs or intermediate goods to an FTA partner and then benefit indirectly from the duty preference granted upon importation of the finished good to the United States.¹⁷ At the same time, non-parties are not required to comply with the rules in the FTA, such as labor or environmental rules. The ability to take advantage of tariff preferences in this way creates a free-rider problem. Although not limited to tariff-shift rules,¹⁸

¹⁴ See USTR, [*Report to Congress on the Operation of the United States-Mexico Canada Agreement with Respect to Trade in Automotive Goods*](#), July 2024, at 4-8.

¹⁵ See, e.g., U.S.-Korea Free Trade Agreement, Ch. 6, Annex 6-A (rule of origin for parts of certain gas turbines, classified at 8411.99, requiring a change to subheading 8411.99 from any other heading, or alternatively, at least 35 percent RVC under the build-up method, or at least 45 percent RVC under the build-down method).

¹⁶ See, e.g., USMCA, Ch. 4, Annex 4-B (rule of origin for cocoa products classified at 1806.10). One study compares rules of origin across U.S. FTAs and proposes a classification framework that includes the approaches discussed above, as well as others. See William Powers and Rick Ubee, "[A Comprehensive Comparison of Rules of Origin in U.S. Trade Agreements](#)," U.S. International Trade Commission Office of Economics Working Paper no. 2020-05-D, 2020, at 8.

¹⁷ See Washington, DC Hearing, May 2, 2024, Transcript at 33:14-34:1 (Paul); Labor Advisory Committee, Comment, Docket No. USTR-2024-0002-0148, at 7; The Select Committee on the Strategic Competition between the United States and the Chinese Communist Party, [*Reset, Prevent, Build: A Strategy to Win America's Economic Competition with the Chinese Communist Party*](#), 2023, at 15 (referencing backdoor concern).

¹⁸ See St. Paul, MN Hearing, May 14, 2024, Transcript at 30:2-32:23 (Weber) (advocating inclusion of smelt and cast provision for aluminum in USMCA automotive rules of origin).

these concerns are most salient in the context of those rules, which generally enable goods made with non-originating inputs to enjoy FTA duty preferences.¹⁹

New Approaches

One of the principal lessons of the pandemic is that supply chains are so fragile that supply shocks can have devastating economic consequences – and, in the case of personal protective equipment, cost lives. Trade policy should adapt to incorporate lessons learned in order to be responsive to the needs of our people. Therefore, in the first instance, any effort to liberalize tariffs should begin with a careful evaluation of rules of origin to ensure that they promote resilience, rather than exacerbate supply chain fragility, including by increasing concentration.

The first-order task would be to assess which specific sector and product spaces present concrete opportunities for domestic economic policy objectives to be complemented—and not undermined—by trade arrangements inclusive of tariff reductions. This assessment would require developing a deep, granular understanding of supply chains at the sector or product level, where the United States and our like-minded trading partners can collaborate as co-owners of those supply chains, and the nature and extent of any non-party content or control. In this regard, a certain degree of supply chain transparency is foundational to the design of rules of origin.²⁰

Informed by this understanding, rules of origin that prioritize supply chain resilience would need to reduce reliance on non-parties, especially those that seek to benefit from labor and environmental arbitrage or non-market policies and practices. These rules would also need to create meaningful incentives to locate substantial, value-added production activities in the covered territories, consistent with the aim of existing FTA preferential rules of origin, though this objective must be pursued with greater sensitivity to the risk of fostering dependency on non-parties and other supply chain risks. Put differently, to promote genuine resilience, rules of origin cannot be developed with focus solely on downstream, final production; the existence of chokepoints further upstream can negate any resilience that has developed downstream.

Areas for further study include the ability of preferential rules of origin to:

- Ensure that the benefits of trade are widely shared, including through strengthening labor rights and environmental protections²¹ and leveling the playing field for workers and businesses across supply chains;

¹⁹ Cf. Richard Baldwin, Rebecca Freeman, and Angelos Theodorakopoulos, “[Hidden Exposure: Measuring US Supply Chain Resilience](#),” NBER working paper no. 31820 (2023) (explaining that the manufacturing of intermediate goods has become concentrated in the PRC over the past three decades).

²⁰ See USTR, “Reshaping the Global Trade Paradigm,” Policy Paper No. 1, Jan. 2025 (discussing supply chain transparency).

²¹ Labor Advisory Committee, Comment, Docket No. USTR-2024-0002-0148, at 7.

- Incentivize firms based in the covered territories to exercise greater control and/or ownership of the means of production, and to reduce dependencies on foreign entities of concern²² and entities linked to non-market policies and practices;²³ and
- Promote supply chain transparency by creating incentives for ongoing due diligence.²⁴

Limitations

Certain limitations complicate the approaches outlined above. First, preferential rules of origin in any trade arrangement naturally must be agreed to by the parties to that trade arrangement. Accordingly, our trading partner must share our vision for rules of origin and be willing to apply those rules reciprocally to its imports; the United States, in turn, must select trading partners carefully in this context.²⁵ Second, the fact that the United States maintains relatively low MFN duties²⁶ may limit the efficacy of novel preferential rules of origin. As a practical matter, importers balance the costs of satisfying a preferential rule of origin against the alternative of not meeting the rule and simply paying the MFN duty;²⁷ accordingly, the lower the MFN duty, the weaker the ability of any preferential rule to create meaningful incentives to alter existing supply chains.²⁸ Indeed, preferential rules have no practical effect on supply chains where MFN duties are zero, as in the case of many strategically important goods ranging from critical minerals²⁹ to semiconductors³⁰ to pharmaceuticals.³¹ Lastly, rules of origin would need to preserve sufficient flexibility to enable supply chains to evolve with changing technologies, regulatory requirements, and market demand and dynamics; the sensitivities we have today may dissipate in the future, or we may develop new sensitivities.³²

²² Although outside of the rules of origin context, certain tax credit requirements for electric vehicles have deployed an analogous approach: automakers seeking to qualify cars for the clean vehicle tax credit under Section 30D of the Internal Revenue Code must demonstrate to the Internal Revenue Service that critical minerals and components in their battery supply chains are sourced from countries provided in the Inflation Reduction Act and related Treasury Department guidance, and not sourced from foreign entities of concern.

²³ See St. Paul, MN Hearing, May 14, 2024, Transcript at 20:21-20:23 (Greenberg) (advocating that rules of origin focus on “beneficial ownership of production facilities, not just location”); Alliance for American Manufacturing, Post-Hearing Comment, Docket No. USTR-2024-0002-0271, at 2 (supporting strengthening of USMCA rules of origin to address PRC firms’ investment in Mexico); Global Advanced Metals, Comment, Docket No. USTR-2024-0002-0122, at 4 (rules of origin should consider not only manufacturing jurisdiction, but also ownership).

²⁴ Washington, D.C. Hearing, May 2, 2024, Transcript at 130:3-131:18 (Gresser).

²⁵ In this regard, the interests of U.S. exporters are relevant, as preferential rules of origin govern our trading partner’s determination of whether goods that it imports from the United States qualify for duty preferences.

²⁶ For 2023 U.S. MFN applied tariff rates, the simple average was 3.3 percent, and the trade weighted average was 2.2 percent. See [Tariff Profile: United States of America](#), *World Trade Organization*.

²⁷ U.S. Chamber of Commerce, Comment, Docket No. USTR-2024-0002-0156, at 23 (citing “diminishing returns” to enhancing rules of origin given compliance burdens).

²⁸ In addition to general duty preferences, complying with FTA preferential rules of origin can eliminate other charges for importers, namely the Merchandise Processing Fee (MPF). But given that the MPF is just 0.3464 percent *ad valorem*, and subject to a cap, the benefit of an MPF exemption is often outweighed by compliance costs.

²⁹ See, e.g., 7502, HTSUS (unwrought nickel); 2825.80 (antimony oxides); 2602.00 (manganese ores and concentrates).

³⁰ See, e.g., 8541, HTSUS (various semiconductor devices); 8542 (electronic integrated circuits).

³¹ See, e.g., 3004, HTSUS (various medicaments).

³² See Business Roundtable, Comment, Docket No. USTR-2024-0002-0158, at 17.

Non-Preferential Rules of Origin

Non-preferential rules intersect with trade actions undertaken by USTR to support U.S. supply chain resilience.

Structure

The general non-preferential rule of origin is the “substantial transformation” test.³³ Under this analysis, U.S. Customs and Border Protection (CBP) considers where a good undergoes its final “substantial transformation”—that is, a change in name, character, or use.³⁴ Additionally, when undertaking the substantial transformation analysis for certain products, CBP has looked to the “essence” of the imported good, whereby the origin of the good is the origin of the component CBP deems to be its “essence.”³⁵

Section 301 Tariffs

As particularly relevant to USTR’s formulation of trade policy, non-preferential rules of origin, as noted above, govern the determination of which goods are subject to tariffs under Section 301.³⁶ Currently, such tariffs include those imposed on many goods of the PRC.³⁷ If the tariff classification of a good is covered by the China Section 301 tariff actions, and the good originates from the PRC under the fact-specific substantial transformation test, then the good is subject to the Section 301 tariffs. On the other hand, if the good (or its “essence”) undergoes a final substantial transformation outside the PRC, then no Section 301 tariffs are imposed.

New Approaches

There may be opportunities within the China Section 301 tariff actions to optimize incentives that would further encourage the PRC to change its harmful technology-related acts, policies, and practices, while also fostering more diverse and secure U.S. supply chains. Some stakeholders have noted that firms based in the PRC or controlled by PRC-based entities are actively relocating supply chains to effect a substantial transformation outside the PRC, with the goal of avoiding Section 301 tariff liability – and even where the final product is substantially or even wholly comprised of PRC content.³⁸ Relatedly, other stakeholders have advocated imposing Section 301 tariffs on downstream

³³ For imports from Mexico and Canada, CBP applies special marking rules that generally follow a tariff-shift approach. Pursuant to 19 C.F.R. section 102.0, interim regulations, related to the marking rules, tariff-rate quotas, and other USMCA provisions, published in the Federal Register on July 6, 2021 (86 Fed. Reg. 35566), the rules set forth in §§ 102.1 through 102.18 and 102.20 determine the country of origin for marking purposes with respect to goods imported from Canada and Mexico.

³⁴ See *Anheuser-Busch Brewing Ass’n, v. United States*, 207 U.S. 556, 562 (1908).

³⁵ See, e.g., Customs Ruling H309485 (Aug. 12, 2020) (battery rack system originates from the PRC, where battery cells were made) (citing *Energizer Battery, Inc. v. United States*, 190 F. Supp. 3d 1308, 1318 (Ct. Int’l Trade 2016)).

³⁶ Additionally, the substantial transformation test governs the origin of goods for purposes of additional tariffs assessed under Section 201 of Trade Act of 1974 and Section 232 of the Trade Expansion Act of 1962. See Customs Ruling HQ H301619 (Nov. 6, 2018).

³⁷ USTR recently completed a statutory review of these tariff actions. See USTR, *Notice of Modification: China’s Acts, Policies and Practices Related to Technology Transfer, Intellectual Property and Innovation*, 89 Fed. Reg. 76,581 (Sept. 18, 2024).

³⁸ Steel Manufacturers Association, Comment, Docket No. USTR-2024-0002-0119, at 6. Additionally, there are reports that certain PRC-based suppliers are seeking to evade Section 301 tariffs without even attempting to comply with the substantial transformation test, by falsifying customs documentation. See Virtual Hearing, May 23, 2024, Transcript at 135:15-137:12 (Conis), 140:17-141:17 (Gibian); Olin Corporation, Comment, Docket No. USTR-2024-0002-0269, at 3.

goods that are substantially transformed outside the PRC but that contain specific, critical PRC-origin inputs.³⁹ Opportunities to enhance the China Section 301 tariff actions may lie in new approaches calibrated to non-preferential rules. For instance, goods that undergo a final substantial transformation within the PRC are subject to Section 301 tariffs in full, even if key supply chain elements might be located outside the PRC; one area to explore is whether the China Section 301 tariff actions could be made more effective and strategic by creating incentives to diversify supply chains away from the PRC, through graduated reductions in the Section 301 tariff rate commensurate with a reduction in the amount of key PRC-sourced inputs.⁴⁰ Any such approaches, as with the design of preferential rules of origin, must build on a baseline degree of supply chain transparency, supported by collaboration and data-sharing between policymakers and stakeholders.

Limitations

Non-preferential rules of origin, as noted above, have broad applicability beyond the implementation of tariff actions, so any new possible adjustments must be tailored appropriately and carefully. In certain cases, it may suffice for new measures to build on or utilize the framework of existing non-preferential rules, rather than establish or alter such rules.

Conclusion

Rules of origin inform the design and implementation of a range of duty preferences and tariffs applicable to imports into the United States. They create incentives that, in concert with other factors, have affected the evolution of supply chains over the last several decades. It is important for approaches to these rules to adapt to promote resilience, including where they present new opportunities to strengthen collaboration with like-minded trading partners and to support domestic manufacturing. By harnessing rules of origin effectively, the United States and our trading partners can together forge more sustainable, secure, diverse, and transparent supply chains.

³⁹ [Letter from Rep. Gallagher and Rep. Krishnamoorthi to Sec. Raimondo and Amb. Tai](#), Jan. 5, 2024 (discussing legacy semiconductors).

⁴⁰ In the Section 232 context, for instance, steel articles and derivative steel articles that are products of Mexico must be melted and poured in Mexico, the United States, or Canada to be exempted from Section 232 tariffs. This additional melt and pour requirement creates more specific supply chain incentives for North-American produced steel. *See* Proclamation No. 10783, 89 Fed. Reg. 57,347 (July 15, 2024).



Countering Non-Market Policies and Practices to Strengthen Supply Chain Resilience

January 2025

- *The systematic and targeted deployment of non-market policies and practices (NMPPs) poses a direct threat to key U.S. domestic economic sectors and the efforts of the United States and its allies and partners to strengthen supply chain resilience.*
- *Certain foreign governments employ a broad array of NMPPs that are distorting global markets, undermining our supply chains, and harming U.S. workers, consumers, and businesses in key economic sectors.*
- *These NMPPs disadvantage market-based democracies and economic actors, whether through non-market excess capacity, non-market excess production, or overconcentration of production.*
- *They crowd out other producers in the global market, create dependencies on a supplier country in critical economic sectors, increase the risk of supply chain chokepoints and disruption, and weaken supply chain resilience.*
- *The United States must continue taking effective actions to confront NMPPs and to strengthen our supply chain resilience, including through a combined strategy of domestic action (such as investments in critical sectors, up and down the supply chain, and tariffs or other border measures to defend those investments) and working with willing allies and partners to promote their own responses (such as through coordinated tariffs, standards, or investments).*

U.S. workers and businesses thrive when they compete in a fair and transparent global market. However, when foreign governments use state power to systematically deploy NMPPs to dominate industrial sectors and monopolize investment, production, and technological innovation, they deprive our workers and businesses of this opportunity to compete and innovate. This paper describes the challenges that NMPPs present, explains how certain actors use NMPPs to undermine supply chain resilience, and outlines new and more effective approaches to addressing NMPPs and their effects on supply chains, such as domestic investments in key industries, new Section 301 investigations of NMPPs in critical sectors, and enhanced cooperation with like-minded partners.

Non-Market Policies and Practices

NMPPs involve state-directed interventions, failures to act, or policy directives that undermine fair, competitive, and market-oriented economic conditions. Foreign governments may deploy an array of systemic NMPPs to intentionally distort, disrupt, or destabilize market-oriented competition in order to dominate key industrial sectors through their national enterprises, both in the domestic

market and globally. Where state enterprises achieve dominance,¹ they eliminate competition and create unsustainable dependencies. Even without market dominance, NMPPs can distort investment, production, and prices, displace foreign competitors domestically and in foreign markets, and influence the composition of supply chains. By eliminating competition and dictating the conditions of competition, they can also slow innovation and reduce consumer choice, while in the process harming workers and the environment. By contrast, fair competition rewards innovation and market-oriented production in light of supply and demand principles, while maintaining labor and environmental standards consistent with our values.

In practice, NMPPs may take many forms, reflecting mandatory state directives to achieve non-market policy goals at all cost. NMPPs include industrial plans that target specific industries for domination by domestic enterprises; industrial policies and practices that promote excess capacity; labor rights violations; lax enforcement of environmental laws and regulations; pervasive subsidization; discriminatory and anti-competitive activities of state enterprises; the arbitrary or unjustifiable application of regulations; forced technology transfer; state-sponsored theft of trade secrets; government interference with or direction of commercial decision-making; and insufficient regulatory and market transparency. NMPPs have also been used as tools for economic coercion.

The People's Republic of China (PRC), in particular, uses a wide range of constantly evolving NMPPs in combination as it seeks to dominate key industries as part of its detailed and extensive industrial targeting.² In addition to the immediate harm suffered by U.S. and other foreign industries, companies, and workers, NMPPs also can result in harm through the creation, maintenance, and exploitation of non-market excess capacity, non-market excess production, and highly concentrated production. Furthermore, NMPPs are often implemented without public disclosure, making it challenging not only to comprehensively detect, measure, and monitor their effects on global markets and supply chains but also to take enforcement actions against them under trade remedies and traditional dispute settlement.

Because market economies generally do not employ NMPPs as described above, trade remedies and traditional dispute settlement were not designed to address the intentional distortion of market-oriented competition in order to dominate key industrial sectors. Even where individual NMPPs in some circumstances may breach trade agreement obligations, this could only be shown if voluntarily disclosed or if identified and proven despite deliberate obfuscation. But many individual NMPPs – such as industrial targeting, forced technology transfer, some unfair labor practices, or others – are not currently subject to traditional trade agreements or their tools. Traditional approaches did not envision the pervasive NMPPs that are systematically deployed with the scale, scope, and effects now observed.³

¹ *Promoting Competition in the American Economy*, Exec. Order No. 14,036, 86 Fed. Reg. 36,987, 36,988 (July 14, 2021) (citing “unfair competitive pressures from . . . firms that are state-owned or state-sponsored, or whose market power is directly supported by foreign governments”).

² SAFE Center for Critical Minerals Strategy, Comment, Docket No. USTR-2024-0002-0196, at 4.

³ *See, e.g.*, Marrakesh Declaration of Apr. 15, 1994 (referring to a trading system “based upon . . . market-oriented policies”).

The market distortions and other impacts of NMPPs can cause direct harm to U.S. and foreign industries, companies, and workers, and threaten the diversity, security, reliability, and sustainability of our global supply chains, as is elaborated below.

NMPP Threat to Supply Chain Resilience

Stifling Supply Chain Diversity

The systematic use of NMPPs targeting certain sectors can undermine and inhibit the growth of industries in the United States and its allies and partners across the development spectrum and, as a result, impede supply chain diversity. When the conditions of competition are dictated by one dominant actor, our businesses, workers, and communities lose out. By destroying the level playing field, including through the creation, maintenance, or exploitation of non-market excess capacity or non-market production or pricing, NMPPs discourage market-based investment in targeted industries and instead allow the countries that use NMPPs to acquire and entrench control over the supply chain in these industries.⁴ For example, NMPPs are also foreclosing new market entrants in the United States and elsewhere from the supply chains for lithium-iron-phosphate cathodes⁵ and neodymium-iron-boron magnets,⁶ which have applications in electric vehicle batteries and aircraft.⁷ As a result of coordinated actions of a sole supplier or group of suppliers acting like a cartel, businesses and consumers are deprived of choice⁸ and must depend on dominant non-market suppliers. Similar dynamics are evident in numerous sectors, such as in the non-market excess capacity and investment in the steel sector,⁹ the domination of the solar supply chain (and recent announcement of the PRC's industry-wide "OPEC"-style arrangement),¹⁰ and the consolidation of rare earths firms' market power,¹¹ all of which NMPPs are impeding new investments and new market entrants and negatively impacting existing market-oriented participants.

Supply Chain Market Concentration and Chokepoints

Where NMPPs succeed in creating market concentration in the supply chain, the next risk is the creation of chokepoints, which in turn heighten the potential for exploitation, volatility, harms to competition and innovation,¹² and inflationary dynamics when the supply chain is manipulated or disrupted.¹³ Even when market-oriented actors invest in strategic industries, such as semiconductors

⁴ SAFE Center for Critical Minerals Strategy, Comment, Docket No. USTR-2024-0002-0196, at 3. *See also* Polysilicon Coalition, Comment, Docket No. USTR-2024-0002-0187, at 2-3 (commenting on industrial targeting objectives pursued through NMPPs with respect to polysilicon).

⁵ Liz Najam, "Why We're Excited about LFP Batteries for Electric Cars," *Recurrent*, May 31, 2024.

⁶ "What are the Uses of Neodymium Iron Boron Magnets?," *Bunting-Dubois*.

⁷ SAFE Center for Critical Minerals Strategy, Comment, Docket No. USTR-2024-0002-0196, at 3-4.

⁸ See additional discussion of adverse impacts on consumer choice below.

⁹ See Specialty Steel Industry of North America (SSINA), Comment, Docket No. USTR-2024-0002-0129, at 2-3.

¹⁰ See "China's Solar Industry Looks to OPEC Guide to Survival," *Bloomberg*, Dec. 9, 2024.

¹¹ See MP Materials, Comment, Docket No. USTR-2024-0002-0115, at 3-4.

¹² Antitrust Division of the U.S. Department of Justice, Comment, Docket No. USTR-2024-0002-0152, at 2; *see also* The Open Markets Institute, Comment, Docket No. USTR-2024-0002-0198, at 2-4.

¹³ "Issues in Brief: Supply Chain Resilience," *Issues in Brief, The White House*, Nov. 30, 2023; The Open Markets Institute, Comment, Docket No. USTR-2024-0002-0152, at 6.

or critical minerals, NMPPs may nonetheless lead to the accumulation of market share by national champions benefitting from those NMPPs.¹⁴

Dependence on one or a small number of non-market suppliers, particularly if those suppliers are subject to the direction or control of a foreign government that deploys NMPPs in a systematic manner, exposes the supply chain to volatility and disruption compared to a more diverse supply chain.¹⁵ Moreover, because those non-market suppliers achieve their dominant role in the supply chain through NMPPs rather than through market mechanisms, they are likely to be allocating resources less efficiently than their market share would otherwise suggest because they are shielded from competitive pressures. By contrast, robust competition and supplier diversity tends to enhance supply chain resilience, which in turn reduces risks of disruption and cultivates lower prices, and more consumer choice.¹⁶

The risk of undue market concentration or chokepoints in a supply chain is also heightened when dominant non-market companies benefit from vertical integration achieved through the systematic and targeted use of NMPPs, particularly for companies treated as national champions.¹⁷

Supply chain market concentration is particularly dangerous when possessed by state enterprises, rather than firms that are market-oriented and respond to market signals. For example, in 2023, four of the world's top ten largest steel producers were PRC state-owned enterprises and two others were headquartered in the PRC. The PRC's control of its steel industry has provided it with unprecedented capacity that has come at the expense of market-oriented producers.¹⁸ In turn, the PRC uses the market power that comes from its dominance over investment, production, and pricing with anti-competitive effects on global steel markets, as well as setting terms throughout the non-PRC steel supply chain, thus using its scale and vast capacity to further entrench its position. The wide-ranging effects of PRC control over firms – both state-owned and non-state-owned – in key supply chains are also evident in the solar and critical minerals sectors, where PRC firms' dominance and price-making ability have dampened investment outside the PRC.¹⁹

Less Innovation and Consumer Choice

High levels of market concentration in the hands of few suppliers means less innovation, decreased diversity, greater barriers to entry, and ultimately less consumer choice. When state enterprises achieve dominance, they are under less competitive pressure to innovate, and competitors and

¹⁴ SAFE Center for Critical Minerals Strategy, Comment, Docket No. USTR-2024-0002-0196, at 4-5.

¹⁵ AMG Vanadium LLC, Comment, Docket No. USTR-2024-0002-0165, at 8.

¹⁶ Antitrust Division of the Department of Justice, Comment, Docket No. USTR-2024-0002-0152, at 2.

¹⁷ SAFE Center for Critical Minerals Strategy, Comment, Docket No. USTR-2024-0002-0196, at 4 (describing the challenge of competing at every supply chain node with Chinese enterprises, including the biggest producers and buyers, who are “backed by the Chinese Communist Party and its state apparatus.”)

¹⁸ Wiley Rein, *Unsustainable: Government Intervention and Overcapacity in the Global Steel Industry*, Apr. 2016; American Institute of Steel Construction, Comment, Docket No. USTR-2024-0002-0099, at 5; “[Top Steel-Producing Companies 2023/2022](#),” *Worldsteel Association*. See also Uranium Producers of America, Comment, Docket No. USTR-2024-0002-0134, at 1, 3-4 (expressing concerns that reliance upon “the Russian State Atomic Energy Company . . . which is an extension of the Kremlin and Russian military,” could jeopardize “the current U.S. reactor fleet and supply chain [and] the promise and potential of advanced nuclear reactors”).

¹⁹ See Solar Energy Manufacturers for America (SEMA) Coalition, Comment, Docket No. USTR-2024-0002-0216, at 3-4, 6; SAFE Center for Critical Minerals Strategy, Comment, Docket No. USTR-2024-0002-0196, at 4.

consumers become susceptible to market abuses by the dominant player. For example, the PRC's entrenchment as the dominant photovoltaic manufacturer has corresponded with plummeting R&D-intensity, patents, and new market entry in the United States and other countries where some of the first solar technology was originally developed.²⁰ Furthermore, due to NMPPs, such as the state's targeting of a sector for dominance, technology that becomes entrenched may differ from what would have prevailed under competitive market conditions.²¹ As the U.S. Department of Justice has commented, robust competition and supplier diversity cultivates greater innovation, lower prices, and more consumer choice.²²

Lost Opportunities for Developing Countries and Small and Medium-Sized Enterprises

The market distortions wrought by NMPPs on global supply chains are particularly harmful to developing countries and small and medium-sized enterprises. First, they lose opportunities to attract foreign investment and develop their own industries. Second, they are forced to compete with dominant players that prevent new market entrants from succeeding. These distortions and resulting challenges are especially difficult to overcome for lower-resourced small businesses and developing country market entrants.²³ Non-market excess capacity has also in some cases crowded out manufacturing in developing countries while generating high-risk dependence on the same dominant source of that excess capacity.²⁴ As a result, investment and growth are inhibited and supply chain diversity further suffers. In these ways, NMPPs not only reduce supply chain diversity but also opportunities for more inclusive and sustainable trade and development.

Coercion

High levels of market concentration in a segment of the supply chain, particularly at a chokepoint, can invite the weaponization of that market power to compel compliance with political objectives, including through the use of economic coercion. Indeed, command of a supply chain chokepoint may itself be a primary goal of the foreign government deploying the NMPPs. For example, the PRC has developed a near-complete monopoly on the processing of certain critical minerals, well beyond any market-oriented need. More recently, the PRC has been selectively denying the export to certain trading partners of certain minerals necessary for semiconductor products, such as gallium and germanium, ostensibly on national security grounds, but more likely to impose economic costs in service of political ends.²⁵

Driving a Race to the Bottom

Finally, NMPPs threaten the sustainability of our supply chains by creating artificial cost incentives for companies to produce in countries that do not share the commitments to labor rights,

²⁰ Information Technology & Innovation Foundation, [*The Impact of China's Production Surge on Innovation in the Global Solar Photovoltaics Industry*](#), Oct. 2020, at 18.

²¹ Information Technology & Innovation Foundation, [*The Impact of China's Production Surge on Innovation in the Global Solar Photovoltaics Industry*](#), Oct. 2020, at 4, 10, 23.

²² Antitrust Division of the Department of Justice, Comment, Docket No. USTR-2024-0002-0152, at 2, 5.

²³ SAFE Center for Critical Minerals Strategy, Comment, Docket No. USTR-2024-0002-0196, at 4.

²⁴ Rhodium Group, [*How China's Overcapacity Holds Back Emerging Economies*](#), June 2024, at 1-2.

²⁵ Harry Dempsey and Edward White, "China's export curbs on semiconductor materials stoke chip output fears," *Financial Times*, Aug. 26, 2024 (noting that the imposition has coincided with significantly increased costs for these products, particularly outside of China).

environmental protections, or rule of law upheld by the United States and other liberal, market-oriented democracies.²⁶ Over time, and without corrective action, market-oriented economies risk deepening integration with and dependencies upon NMPP-wielding governments that have not made those same commitments.²⁷ This dynamic undermines efforts to create a “race to the top” that incentivizes high standards, and causes U.S. businesses, workers, and consumers to unwittingly or unwillingly reward labor rights violations or environmental harms.

Countering the Impact of NMPPs on Supply Chains

The Biden-Harris Administration has taken steps to address the threat to U.S. supply chains posed by the systematic deployment of NMPPs by the PRC. At home, these steps include *historic investments* under the CHIPS Act of 2022, the Bipartisan Infrastructure Law, and the Inflation Reduction Act to grow and support sectors that are critical for our supply chain resilience and security. At our borders, these steps include *trade actions and investigations under Section 301* of the Trade Act of 1974 to defend against unfair PRC policies that burden U.S. commerce. And on the international stage, these steps include *more effective action* from our allies and partners to combat NMPPs together and promote fair, market-oriented conditions for our workers and businesses.

USTR has undertaken a range of efforts to advance supply chain resilience along the dimensions above. Individually and collectively, these efforts represent a new focus on resilience and economic security across trade negotiations, enforcement, and other initiatives. USTR’s decision in the statutory four-year review of the tariff actions on PRC-origin goods under Section 301 is meant to encourage the PRC to change its harmful intellectual property- and technology-related unfair trade practices²⁸ while defending new U.S. investments in critical supply chains. USTR has worked with a group of like-minded trade partners to address a range of threats to our economic security, including issuing a Joint Declaration Against Trade-Related Economic Coercion and Non-Market Policies and Practices,²⁹ as well as allies and partners in the critical minerals sector to foster the kinds of supply chains we want to see for clean energy products, including by addressing NMPPs.³⁰ In addition, President Biden has joined G7 Leaders in emphasizing work to address the PRC’s NMPPs, and that work continues apace. USTR continues to collaborate with the European Union (EU) and the United Kingdom under respective cooperative frameworks to counter and address the PRC’s use of

²⁶ Silverado Policy Accelerator, Comment, Docket No. USTR-2024-0002-0140, at 4-5; National Mining Association, Comment, Docket No. USTR-2024-0002-0161, at 4-5; USTR, *The President’s 2024 Trade Policy Agenda*, Mar. 2024, at 8.

²⁷ For instance, stakeholders have noted the adverse impact of PRC firms on labor rights and environmental protections in minerals-rich countries. *See, e.g.*, Critical Minerals Accountability Alliance, Comment, Docket No. USTR-2024-0002-0210, at 3 (discussing harms resulting from PRC firm operating in Democratic Republic of the Congo); Platform of Civil Society Organizations Involved in the Mining Sector (POM), Post-Hearing Comment, Docket No. USTR-2024-0002-0274, at 2 (same).

²⁸ USTR, *Notice of Modification: China’s Acts, Policies and Practices Related to Technology Transfer, Intellectual Property and Innovation*, 89 Fed. Reg. 76,581 (Sept. 18, 2024).

²⁹ Governments of Australia, Canada, Japan, New Zealand, United Kingdom, United States of America, *Joint Declaration Against Trade-Related Economic Coercion and Non-Market Policies and Practices*, June 9, 2023.

³⁰ “[Agreement Between the Government of the United States of America and the Government of Japan on Strengthening Electric Vehicle Battery Critical Minerals Supply Chains](#),” *Fact Sheets*, USTR, Mar. 2023.

NMPPs in the large civil aircraft sector,³¹ and USTR also is working with the EU in the context of the U.S.-EU Trade and Technology Council to respond to the PRC's use of NMPPs in other sectors.

To ensure U.S. economic security and further address NMPPs and their pernicious effects on supply chains and our domestic investments, U.S. trade policy must advance a range of objectives, whether through developing new trade policy tools or taking new and aggressive actions using existing tools:

- First, U.S. trade policy tools and approaches should defend U.S. workers, businesses, and investments from the distortive effects of NMPPs, particularly in targeted sectors facing the challenge of non-market excess capacity, non-market production or pricing, and undue concentration of production.
 - Section 301 can be used as a tool to investigate and take action on sectors targeted for dominance, or where the use of NMPPs by a trading partner is pervasive, and the range of necessary and appropriate responses may include but go beyond the enumerated trade restrictions expressly set out in the statute.
 - We should also strengthen, expand, and design new defensive tools, potentially including tariff- and non-tariff actions, that can proactively prevent harm, such as the loss of U.S. jobs or the development of supply chain dependences on high-risk sources.
 - U.S. workers and businesses can also benefit from high-standard environmental and labor commitments in border measures (e.g., prohibitions or restrictions on goods produced with forced labor or under unfair labor conditions) and trade agreements (e.g., agreed standards or border charges on traded products) to help sustain our values and to drive a race to the top.
- Second, a successful response would defend U.S. investments critical to supply chain resilience, such as the CHIPS Act and Inflation Reduction Act, by providing confidence that sectors targeted by NMPPs will not be wiped out, whether at home or in global markets.³² In particular, U.S. trade policy and trade enforcement actions should counter the impact of NMPPs in order to enable the recipients of funds under these programs to produce and innovate as they would under fair market-oriented conditions, in the absence of NMPPs. As part of a trade policy response, further domestic investments may be necessary to restore fairness and market-oriented incentives, given the proven capacity of the PRC's NMPPs to undermine competition and markets globally.
- Third, U.S. trade policy should prioritize working with allies and partners across the development spectrum to alleviate dependencies, deter coercion, and prevent or mitigate PRC retaliation against those who take steps to diversify and build resilience. The ability and willingness of our allies and partners to address and deter the systematic and targeted deployment of NMPPs by foreign governments in key industries is necessary in order to promote and increase supply chain resilience. Our collaboration should expand beyond the fora referenced above and should enable agile and coordinated policy actions.

³¹ “[USTR Announces Joint U.S.-E.U. Cooperative Framework for Large Civil Aircraft](#),” *Press Releases*, USTR, June 15, 2021; “[Fact Sheet: U.S. - UK Understanding on a Cooperative Framework for Large Civil Aircrafts](#),” *Fact Sheets*, USTR, June 2021.

³² Silverado Policy Accelerator, Comment, Docket No. USTR-2024-0002-0140, at 3.

- Fourth, a successful U.S. trade policy response would also provide opportunities for mutually beneficial supply chain diversification, both in the United States and in ally and partner countries, before the NMPPs exploit or produce a chokepoint in the supply chain, or to remove a chokepoint that currently exists. For example, the CHIPS Act, through the International Technology Security and Innovation Fund, promotes a more secure, diverse global semiconductor supply chain, including by incentivizing investment outside the PRC. Section 301 tariffs have resulted in significant supply chain diversification, as discussed in USTR's report in the statutory four-year review of the investigation into the PRC's technology transfer and other IP-related unfair practices.³³ Other like-minded partners should also take more effective action to contribute to supply chain diversification, which would provide benefits to workers and companies of the United States and of those partners.
- Fifth, where the use of NMPPs succeeds in creating a supply chain chokepoint, U.S. trade policy should intervene to deter the PRC from using the chokepoint to coerce other countries. An effective U.S. response would impose reputational or direct costs on the economic coercer. The United States and like-minded partners could also explore ways to mitigate harms to their companies and workers. In this way, the response would minimize the disruption caused by the attempted economic coercion, whether against the United States or an ally or partner, and deter future economic coercion.

These objectives will guide USTR's efforts, in partnership with allies and partners, to help ensure that our shared supply chains are resilient against NMPPs. U.S. workers and businesses deserve the opportunity to compete on equal footing, without also having to fend off the systematic and targeted deployment of NMPPs. Through these efforts, USTR will do our part to counter the anticompetitive effects of NMPPs and to promote and defend fair trade for U.S. workers, businesses, and communities.

³³ See USTR, *Four-Year Review of Actions Taken in the Section 301 Investigation: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, May 2024, at 69 (noting, for example, that a 2023 U.S. International Trade Commission Report estimated that Section 301 duties led to decreased imports in selected sectors ranging from 6.0 percent (computer equipment) to 35.4 percent (audio and visual equipment)).



Improving Data and Analytical Tools to Promote Supply Chain Resilience

January 2025

- *To advance supply chain resilience, policymakers must overcome certain data and analytical challenges.*
- *In the context of U.S. trade and investment policy, these challenges include the prevalence of data sources that are insufficiently granular, time-lagged, or limited in other ways.*
- *U.S. government agencies have developed new data sharing and aggregation tools, and going forward, these and other tools will continue to inform the development of U.S. trade policy.*
- *New policy approaches can further advance resilience objectives through better utilization of existing and new data and analytics resources.*

The complexity of modern supply chains not only introduces risks for U.S. workers and businesses, but also presents data gaps and analytical challenges for policymakers. While recent analyses across a range of disciplines are increasingly focused on supply chain resilience, these analyses must often contend with the limitations of traditional trade data and statistics, which obscure a significant portion of supply chain activity. Nor do supply chain participants necessarily enjoy significant visibility into complex supply chains, absent concerted due diligence. This policy paper highlights recent studies and analyses of supply chain sustainability, security, diversity, and transparency; examines the analytical challenges of insufficient data granularity, lagging data, inadequate data sharing, and domestic visibility; reviews U.S. government supply chain-related data gathering efforts; and outlines new approaches and implications for how U.S. trade policymakers can harness existing and new data and analytics resources, in partnership with Congress, stakeholders, and like-minded trading partners.

Data and Analyses of Supply Chain Resilience

Studies and analyses of supply chain resilience are emerging across academia, civil society, industry, and beyond. Below, we highlight notable examples relevant to the four dimensions of supply chain resilience informing U.S. trade and investment policy—sustainability, security, diversity, and transparency.¹

¹ See USTR, “Reshaping the Global Trade Paradigm,” Policy Paper No. 1, Jan. 2025 (discussing each dimension of resilience in more detail).

Sustainability

Sustainability is increasingly central to the durability and competitiveness of supply chains, but the extent to which a supply chain reflects strong labor standards and environmental protections can be difficult to analyze or measure, in part due to unique transparency challenges. Nonetheless, innovative approaches, both quantitative and qualitative, are emerging. Trade-related climate measures such as carbon border adjustment mechanisms are prompting companies to quantify embodied emissions in internationally traded goods, including their inputs, and to decarbonize emissions-intensive sectors in order to remain competitive. The International Sustainability Standards Board, formed in 2021, is developing global standards for sustainability disclosures, demonstrating interest from investors and financial markets in assessing supply chains for sustainability-related risks and opportunities.² Researchers have developed new quantitative metrics that measure supply chain due diligence, with a focus on labor outcomes.³ Environmental stakeholders are investigating the illicit sourcing of natural resource products.⁴ Standard-setting bodies have developed new approaches to gauging supply chain sustainability across a range of sectors, including by establishing environmental and social requirements and seeking to verify compliance through independent, third-party audits at the site level.⁵

Security

New studies are grappling with risks and vulnerabilities in supply chains. Some studies have explored vulnerability in select industries and product categories due to heavy geographic concentration of production and high reliance on suppliers from “unfriendly” countries.⁶ Others have grappled with more conceptual challenges—for instance, how to define supply chain security and implications for national security.⁷ Still others have gauged shifting industry sentiment: according to a recent survey of 1,000 executives of large U.S. companies, 94 percent of companies are planning direct investment in onshoring or nearshoring, while 54% think manufacturing closer to home is key to survival.⁸

Diversity

Research is beginning to demonstrate that more optionality can enhance supply chain resilience. One study finds that supplier diversification and technology innovation that reduces foreign dependence can shield domestic production against upstream shocks from trade with foreign

² “[About the International Sustainability Standards Board](#),” *International Sustainability Standards Board*, IFRS.

³ Sarosh Kuruvilla and Jason Judd, “[Measuring Supply Chain Due Diligence: Labor Outcomes Metrics](#),” *ILR Global Labor Institute* (2024).

⁴ Environmental Investigation Agency, Comment, Docket No. USTR-2024-0002-0299.

⁵ For instance, for the mining sector, the Initiative for Responsible Mining Assurance (IRMA) shared information about their standard and auditing process. *See* Virtual Hearing, May 23, 2024, Transcript at 67:7-69:11 (Bruckner). The National Mining Association (NMA) shared information regarding the Copper Mark and Toward Sustainable Mining (TSM) standards. *See* NMA, Post-Hearing Comment, Docket No. USTR-2024-0002-0289.

⁶ Pinelopi Goldberg and Tristan Reed, “[Is the Global Economy Deglobalizing? And If So, Why? And What is Next?](#),” NBER working paper no. 31115 (2023).

⁷ William Norris, et al., “[A Market-Oriented Approach to Supply Chain Security](#),” *Security Challenges* 16, no. 4 (2020).

⁸ Renato Scaff, “[The Global Supply Chain Isn't Over. It's Reinventing Itself](#),” *Accenture*, Sept. 22, 2022.

countries.⁹ Surveys show that in recent years, many companies have made structural changes to their supply networks by implementing dual- or multiple-sourcing strategies for critical materials and moving from global to regional networks, and that diversification is the primary supply chain reconfiguration strategy overall.¹⁰ In economics literature, various studies assess diversity using metrics such as import concentration, elasticities of substitution between imports, and the entry and exit rate of suppliers.¹¹

Transparency

Transparency is foundational to enabling supply chain analytics. Driven in part by the imperative of maintaining business continuity during disruptions, companies have drawn upon a range of metrics to assess supply chain resilience, including financial metrics (e.g., inventory levels, cash reserves) and performance indicators (e.g., throughput, post-disruption recovery time).¹² Researchers have also sought better macro-level visibility into supply chain disruptions.¹³ These metrics, however, generally do not enable visibility into relationships between firms or the structure or vulnerabilities of supply chains. Some firms are seeking to remedy these shortcomings by developing technology solutions that enable mapping and risk identification.¹⁴

Data Limitations and Challenges for Trade Policymakers

From the standpoint of trade policy development, efforts to understand and analyze supply chain resilience must confront several challenges to enable visibility into relationships between firms or the structure or vulnerabilities of supply chains. All of these challenges emanate to some degree from the limitations inherent in conventional trade and economic data.

Data Granularity

Traditional trade statistics used for macro-level analyses mainly focus on the flow of goods and services across national borders; however, such statistics generally offer little insight into the complex cross-border trade and production networks that may produce any single good or service. For example, the typical semiconductor production process can take up to 100 days, of which 12 days are for transit between supply chain steps, as products cross borders approximately 70 times before reaching their final destinations.¹⁵ Furthermore, other traditional economics statistics, such as production data and input-output tables, are often aggregated by country or industry, and are

⁹ OECD, [“Global Value Chain Dependencies Under the Magnifying Glass,”](#) OECD Science, Technology and Industry Policy Papers, No. 142 (2023); OECD, [“Policies to Strengthen the Resilience of Global Value Chains,”](#) OECD Science, Technology and Industry Policy Papers, No. 141 (2023).

¹⁰ Knut Alicke et al., [“Taking the Pulse of Shifting Supply Chains,”](#) McKinsey & Company, Aug. 26, 2022; Economist Impact, [Trade in Transition: Navigating the Tides of Uncertainty](#), 2024.

¹¹ Pinelopi Goldberg and Tristan Reed, [“Is the Global Economy Deglobalizing? And If So, Why? And What is Next?”](#) NBER working paper no. 31115 (2023); Richard Baldwin, Rebecca Freeman, and Angelos Theodorakopoulos, [“Hidden Exposure: Measuring US Supply Chain Resilience,”](#) NBER working paper no. 31820 (2023).

¹² Business Roundtable, Comment, Docket No. USTR 2024-0002-0158; *see also* Beyond Engineering, Comment, Docket No. USTR-2024-0002-0127.

¹³ Gianluca Benigno, et al., [“A New Barometer of Global Supply Chain Pressures,”](#) Liberty Street Economics (discussing Global Supply Chain Pressure Index).

¹⁴ *See, e.g.,* Altana, Comment, Docket No. USTR-2024-0002-0188; Exiger, Comment, Docket No. USTR-2024-0002-0167.

¹⁵ The White House, [Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-Based Growth](#), June 2021, at 27.

therefore not suitable for identifying unique risks and vulnerabilities inherent to product-specific supply chains.¹⁶

Lagging Data

Governments ordinarily publish and aggregate data at regular intervals. But supply chain dynamics can change more rapidly than such data are released. Accordingly, supply chain resilience analyses that predominantly depend on conventional, retrospective economic data can become outdated quickly,¹⁷ thereby impeding policymaker efforts to develop proactive risk assessment and incentive measures.

Insufficient Data Sharing

Data sharing among different supply chain participants and between the public and private sectors could improve supply chain analytics and the design of policy tools; however, such data sharing is impeded by the absence of clear guidelines and frameworks. Stakeholders along the supply chain, including shippers, carriers, and logistics providers, often use inconsistent definitions and metrics, and employ different technologies and tools for collecting data.¹⁸ Furthermore, businesses may be reluctant to share proprietary or business confidential data (e.g., data identifying customers or suppliers) with policymakers.¹⁹ Insufficient data sharing could impede the ability of policymakers to assess whether firm-level efforts to enhance resilience—for instance, by diversifying suppliers—are in fact boosting resilience at a sector- or economy-wide level, and to minimize the risk that independent private sector decisions could inadvertently foster new dependencies.

Domestic Visibility

Global supply chains have important domestic elements, and there is currently a gap in policymakers' ability to assess how imported materials and components are integrated into domestic production processes at a granular level. This gap limits our understanding of how disruptions to production in foreign countries can create unexpected ripple effects through the domestic economy.²⁰ Relatedly, some stakeholders have noted that foreign ownership of domestic port and supply chain infrastructure merits closer attention from policymakers.²¹

Data Gathering and U.S. Trade Policy Tools

Conventional trade and economic data are not the only means by which U.S. government agencies obtain supply chain visibility; agencies are deploying a range of tools for gathering supply chain information with wide-ranging policy objectives.

¹⁶ Progressive Policy Institute, Comment, Docket No. USTR-2024-0002-0137, at 8-10.

¹⁷ William Janeway, "[The Rise of Mesoeconomics](#)," *Project Syndicate*, May 17, 2024.

¹⁸ Eleftherios Iakovou and Chelsea White, "[A Data-sharing Approach for Greater Supply Chain Visibility](#)," *Brookings Commentary*, Sept. 14, 2022; Carnegie Mellon University, Comment, Docket No. USTR-2024-0002-0154, at 8 (noting that standards governing data gathering and sharing could enhance data interoperability).

¹⁹ Progressive Policy Institute, Comment, Docket No. USTR-2024-0002-0137, at 9; Carnegie Mellon University, Comment, Docket No. USTR-2024-0002-0154, at 8; International Dairy Foods Association, Comment, Docket No. USTR-2024-0002-0211, at 11-12.

²⁰ Michael Mandel, "[The Complexity of the Supply Chain](#)," *International Economy* (2022) at 25.

²¹ National Customs Brokers and Freight Forwarders Association of America, Comment, Docket No. USTR-2024-0002-0223, at 2.

The Biden-Harris Administration has launched new platforms and mechanisms that enable new methods of data sharing and aggregation for analyzing and promoting supply chain resilience. These include:

- **Freight Logistics Optimization Works (FLOW):** The U.S. Department of Transportation (USDOT) developed FLOW, which is a public-private partnership among industry and government to build a forward-looking, integrated view of supply chain conditions in the United States. FLOW data helps forecast how current capacity and throughput will fare against future demand, helping participating companies anticipate changes in supply chain throughput and take proactive step to mitigate previously unanticipated delays. USDOT anonymizes, regionally segments, and aggregates the data collected, which includes purchase order information and logistics supply, demand, and throughput data.²² FLOW members now include the nation's busiest container ports, major ocean carriers, and some of the largest retail importers.²³
- **SCALE:** SCALE, a supply chain diagnostic tool developed by the Department of Commerce's Industry and Analysis unit, significantly upgrades the U.S. Government's ability to conduct analysis. The tool employs a comprehensive set of over 40 indicators to assess current or prospective supply chain risk across the U.S. goods economy—431 industries in total. These indicators encompass geopolitical, logistical, technological, and environmental risks, as well as indicators of resilience, such as substitutability and projected recovery times. Using industry-specific thresholds and weights determined by industry and economic experts, SCALE allows the U.S. Government to look across the goods economy at a heat map of risk and assess industries from highest to lowest risk. Beyond identifying economy-wide risks, it ranks the most at-risk industries and products. SCALE also provides a detailed, diagnostic assessment of those risks within specific industries and products, applying an analytical framework across numerous indicators simultaneously.
- **Semiconductor Alert Mechanism:** The U.S. Department of Commerce established the Semiconductor Alert Mechanism to enable early detection of potential disruptions to the semiconductor supply chain and to support faster problem solving through coordination with our trading partners and the private sector. Companies, manufacturers, or other interested parties with relevant information regarding any ongoing or potential semiconductor supply chain disruption can submit updates using the mechanism.

Beyond these new analytical tools, U.S. agencies regularly collect supply chain data pursuant to U.S. laws and regulations, thereby incentivizing traders to undertake due diligence to better understand the structure and risks of the supply chains in which they operate, and to enhance supply chain resilience. For instance:

- Automakers seeking to qualify cars for the clean vehicle tax credit under Section 30D of the Internal Revenue Code must demonstrate to the Internal Revenue Service that critical minerals and components in their battery supply chains are sourced from countries provided

²² See "[FLOW](#)," USDOT.

²³ "[Biden-Harris Administration Expands FLOW Initiative to Largest West Coast Container Ports, Strengthening Our National Supply Chains](#)," USDOT, Aug. 13, 2024.

in the Inflation Reduction Act and related Treasury Department guidance, and not sourced from foreign entities of concern.

- The U.S. Department of Commerce administers the Steel Import Monitoring and Analysis (SIMA) System and Aluminum Import Monitoring and Analysis (AIM) System, which collect certain supply chain data from import licensees, and publish those data on interactive public monitors.
- When U.S. Customs and Border Protection (CBP) detains a good pursuant to the prohibition under Section 307 of the Tariff Act of 1930 on the import of goods made with forced labor, importers seeking to obtain the release of the good must submit documentation demonstrating that their supply chain is free of prohibited forced labor.
- CBP also requires periodic supply chain risk assessments from traders participating in the Customs-Trade Partnership Against Terrorism (CTPAT).

New Approaches

Going forward, U.S. trade policy initiatives to promote supply chain resilience should draw on available data and analytics, and, in turn, policymakers should consider how new tools can shape data and analytics. More concerted and sustained collaboration with supply chain participants committed to due diligence and risk detection may remedy data shortcomings, especially in the case of multi-tier supply chains where suppliers merely one or two steps removed are often unknown even to participant firms.

Deepen stakeholder collaboration and input

Before tackling any particular analytical challenge, policymakers should at the outset determine key data gaps and limitations and what analysis can meaningfully assess supply chain risk and inform trade policy initiatives. Because workers, businesses, and civil society are on the front lines of building supply chains both domestically and abroad, they are often the first to detect emerging risks to resilience that merit scrutiny and analysis. In this respect, policymakers should seek broad stakeholder input to inform the design of solutions.²⁴

Leverage existing data sources

Existing data sources, including those reviewed above, could create opportunities for new analyses to inform trade policy development. Product-specific or firm-level data sources could complement traditional, less granular economic data and statistics and deepen policymakers' understanding of the structure and operation of supply chains. To maximize the utility of data provided by stakeholders, U.S. government agencies should continue to seek innovative options that can effectively balance the need for productive cross-agency data sharing and collaboration, with the imperative of protecting confidential business information.

²⁴ OECD, "[Risks and opportunities of reshaping global value chains](#)," *Economic Policy Reforms 2023: Going for Growth* (2023) at 75 (discussing collaboration on stress tests and efforts to improve "timeliness and granularity of data needed for monitoring vulnerabilities").

Design new tools with data dimensions

Finally, the design of any new policy measures should account for how supply chain data can further those measures' objectives. Data and information about supply chains are increasingly valuable assets, but they are often unstructured and dispersed, and therefore difficult to analyze, even for supply chain participants. New trade policy measures can create frameworks under which supply chain participants are incentivized to learn more about their own supply chains and, in turn, to share that information with policymakers. Such a framework could be realized, for instance, through amending U.S. trade laws to require greater supply chain tracing and disclosure for all imported goods in key sectors, not limited to the specific context of forced labor enforcement. Under existing statutory authorities, agencies could solicit stakeholder input on areas where data shortfalls are most acute and amenable to solutions that incentivize due diligence and disclosure, and institute periodic data collection and analytical efforts. There may also be opportunities to undertake new approaches with like-minded trading partners; by way of one example, the rules of origin in past trade agreements have not required comprehensive supply chain tracing and disclosure, and such enhancements could improve visibility into the supply chain impacts of future agreements.²⁵ These enhanced rules could be deployed in new sectoral trade agreements that contain additional disciplines that foster transparency and traceability.²⁶ In this way, new trade policy tools can further embed into the design and operation of supply chains the objective of advancing resiliency, and guard against disruptions and inflationary effects.

²⁵ Opportunities and challenges relating to the design of preferential rules of origin are discussed at USTR, "Harnessing Rules of Origin for Resilience," Policy Paper No. 3, Jan. 2025.

²⁶ Sectoral trade agreements are discussed at USTR, "Strengthening Supply Chain Resilience through Sectoral Trade Agreements," Policy Paper No. 6, Jan. 2025.



Strengthening Supply Chain Resilience through Sectoral Trade Agreements

January 2025

- *In order for the United States to achieve sustained supply chain strength and resilience, we need to work with like-minded trading partners to broaden critical supply chain networks.*
- *Those networks must maintain high standards for core values such as labor rights, environmental protection, and market orientation and support market-based development in the United States and other partners that share the same priorities.*
- *A new model of sectoral trade agreements can provide a framework for trade cooperation that promotes supply chain resilience.*

Cooperation with partners and allies that share our values as liberal democracies is essential if we are to make supply chains more resilient – that is, more sustainable, secure, diverse, and transparent. The United States has never been, and does not seek to be, autarkic, but rather has developed through investments in our people and in the well-being of our allies. Since 2021, the Biden-Harris Administration has pursued several sectoral initiatives impacting supply chains with trading partners covering a range of industries, including steel, aluminum, large civil aircraft, critical minerals, and timber.¹ The sectoral efforts to date have focused on individual trading partners, product groups, or trade measures. A new model of formal trade agreement could provide a broad and meaningful framework for achieving supply chain resilience.² Such agreements could target specific sectors, establish enforceable standards and disciplines, and cover trade and activities across the supply chain. This paper outlines a sectoral agreement’s potential objectives, elements, and challenges, and underscores the need for close coordination with Congress and stakeholders.

Rationale

Why take a sectoral approach to trade agreements when seeking to enhance supply chain resilience? Traditional, comprehensive free trade agreements cover nearly all trade between the parties to those agreements with the primary purpose of liberalizing that trade – either through tariff elimination and reduction or the disciplining of regulatory discretion and processes in favor of market participants’

¹ See USTR, “Reshaping the Global Trade Paradigm,” Policy Paper No. 1, Jan. 2025, which discusses these USTR efforts in greater detail.

² Several stakeholders recommended that USTR pursue sectoral agreement negotiations. See, e.g., SAFE Center for Critical Minerals Strategy, Comment, Docket No. USTR-2024-0002-0196, at 8; American Chemistry Council, Comment, Docket No. USTR-2024-0002-0153, at 2; Trade Alliance for Health, Comment, Docket No. USTR-2024-0002-0153, at 5; National Foreign Trade Council, Comment, Docket No. USTR-2024-0002-0203, at 3.

decision-making and confidence. Because of their scope and approach, however, these traditional comprehensive trade agreements are less well suited to addressing resilience-related challenges in specific sectors and can be considered a fundamental part of the trade-related incentive structure that prioritizes cost-reducing efficiency over resiliency.

With respect to scope, when negotiating larger agreements, it is challenging as a practical matter for the parties to develop a deep, mutual understanding of key products' supply chains to inform solutions in the agreement; a more targeted agreement can enable greater precision in crafting disciplines and incentives addressed to resilience.

In addition, broader agreements cover a wider range of disciplines and sectors and can complicate attempts to develop more novel solutions. By contrast, a sectoral agreement affords more latitude to test innovative, new approaches and gauge their suitability for other sectors, including approaches to overcome market failures precipitated by traditional trade paradigms.³

Lastly, larger trade agreements can take many years to negotiate, with no guarantee of entry into force after those years of negotiations conclude, whereas opportunities—and risks—that shape supply chains can emerge and evolve much more quickly, and therefore call for instruments that can be negotiated and implemented on shorter timelines.

Objectives

To establish strong and resilient supply chains, sectoral trade agreements could aim to:

- Facilitate fair, market-oriented trade between partners sharing values through collaboration to jointly enforce high standards for products and trade practices;
- Promote investment in U.S. and allied supply chains by incentivizing secure sources of supply and demand for fairly produced and traded products;
- Promote respect for and protection of labor rights, establish tools for corporate accountability for labor violations, and support the creation of high-quality jobs;
- Support environmental protection and sustainability by prioritizing trade in products produced under fair and sustainable environmental conditions, such as low-embodied-emissions goods;
- Reduce global trade distortions, dependence on single sources, and price volatility resulting from non-market policies and practices, such as non-market excess capacity and over-concentration of capacity;⁴ and
- Enhance supply chain visibility by sharing information regarding shortages, stockpiles, price volatility, and other supply chain disruptions with participating countries.⁵

³ See Amb. Katherine Tai, "[Remarks at the National Press Club on Supply Chain Resilience](#)," June 2023 (discussing vulnerabilities enabled by comprehensive free trade agreements).

⁴ See USTR, "Countering Non-Market Policies and Practices to Strengthen Supply Chain Resilience," Policy Paper No. 4, Jan. 2025, for more on non-market policies and practices.

⁵ See USTR, "Improving Data and Analytical Tools to Promote Supply Chain Resilience," Policy Paper No. 5, Jan. 2025, for more on supply chain data and transparency.

Sector-specific and partner-specific considerations may shape the specific objectives that any particular agreement would seek to address.

Elements

Informed by any agreement's objectives, USTR would approach a sector-specific initiative by developing tailored approaches to the following elements:

Participation

Choice of partner would be based on the state of existing supply chains in the covered sectors or products and the potential for future supply chain development. While a sectoral agreement could be plurilateral, the quantity of partners is secondary to the importance of including those partners with shared values and vision for supply chain resilience, including labor rights and environmental protections. The initial partners should be adequate, given the sector involved, to drive meaningful outcomes enhancing the resiliency of the supply chain – for example, by creating a sufficiently important market for covered products.

Including too many partners, or partners with fundamentally different priorities, would risk lowering the ambition of any agreement and diminish the ability to achieve the ultimate goal – undesirable outcomes especially at a time when innovation is required in adapting new trade arrangements to correct for the obvious shortcomings of traditional arrangements.

Within this context, it is particularly important to include like-minded developing economies in supply chain resilience efforts, especially developing economies that share our values and vision of supply chain resilience. Too often, like-minded developing countries are not able to participate in certain supply chains under the current lowest-perceived-cost model without sacrificing important values.

Product coverage

A sectoral agreement would cover a specified product or products within a critical sector. The extent to which the agreement extends to upstream inputs and downstream goods would be informed by an assessment of, among other things, existing trade flows, the objectives of the agreement, and the risk that the agreement might be circumvented or otherwise undermined if the incentives provided under the agreement do not reach those inputs and downstream goods. The agreement could allow for the addition of covered products over time; alternatively, product-specific agreements could be added over time such that product coverage is achieved through a combination of agreements.

Commitments

Participants' commitments under any sectoral agreement would vary based on aspects of the identified sector and its supply chains, but a baseline of disciplines would be necessary to ensure that fair market practices and trade are maintained. For instance, if participants produce a covered product, the agreement could promote alignment in participants' values for resilience, including through labor and environmental laws and regulations relevant to production. If participants are primarily consumers of the covered product, the agreement could accord incentives, such as duty or market access preferences, to imported goods that meet agreed-upon product standards, including those that strengthen environmental protections and labor rights throughout the supply chain.

Participants could also agree to collaborate to counter non-market policies and practices,⁶ such as through incentives for covered products with supply chains free of participation by foreign entities of concern and entities that benefit from or engage in non-market policies and practices. Such incentives would encourage traders to enhance supply chain transparency and better understand latent risks and vulnerabilities.

To the extent an agreement provides for incentives based on the origin of covered products within the participants' territory, the participants would need to agree to apply rules of origin that ensure sufficient production within their territory and minimize the risk of free-riding.⁷

Challenges

Pursuing any sectoral agreement with elements as outlined above presents certain challenges.

First, the narrower scope of a sectoral agreement would require a careful alignment of trading partners' interests and commitment to promoting supply chain resilience. Selecting a sector of mutual strategic importance, or one that supports other critical sectors in the participants' economies, would be important.

Second, to the extent that any sectoral agreement seeks to create tariff-related incentives, participants might confront the limiting factor of low most-favored nation (MFN) duties. Low MFN duties may dampen incentives to comply with product-specific obligations, including but not limited to rules of origin.⁸ If existing duty leverage is insufficient, participants may consider enhancing that leverage or creating other incentive measures in lieu of, or in addition to, duty preferences.

Lastly, supply chains in many critical sectors are constantly evolving, including to reflect changes in technology. Accordingly, a sectoral agreement with detailed requirements specific to certain supply chains may risk being rendered obsolete quickly. This risk could be mitigated by establishing an active monitoring and review mechanism that enables participants and stakeholders to periodically assess the operation of the agreement and consider whether and how it should be adapted.

Stakeholders and Congress

In light of the challenges above, to develop this approach and in the course of any sectoral agreement negotiation, USTR would need to undertake focused engagement with the Congress and stakeholders.

Stakeholder engagement can help ensure that negotiating objectives are aligned with the interests of the workers, environmental groups, businesses, consumers, and civil society groups that are most proximate to the supply chains whose resilience the agreement would seek to support. Stakeholders can also provide guidance on anticipated changes in supply chains that should inform the scope of negotiated obligations and approaches to updating those obligations, as needed.

⁶ Non-market policies and practices drive supply chain vulnerability. *See* USTR, "Countering Non-Market Policies and Practices to Strengthen Supply Chain Resilience," Policy Paper No. 4, Jan. 2025, for more on non-market policies and practices.

⁷ *See* USTR, "Harnessing Rules of Origin for Resilience," Policy Paper No. 3, Jan. 2025, for discussion of rules of origin.

⁸ *See* USTR, "Harnessing Rules of Origin for Resilience," Policy Paper No. 3, Jan. 2025, for discussion of the impact of low MFN duties on incentives for preferential rule of origin compliance.

Close coordination and partnership between USTR and Congress would be essential. Members of Congress and Congressional Committees have in recent years increased their attention and focus on the need for tools and mechanisms to promote supply chain resilience, especially in sectors where vulnerability has been identified to critical national economic and security interests.⁹ In addition, certain agreement-linked incentives would be most effective if enabled through legislative action. These incentives might include those provided directly under the agreement, such as duty preferences. Other incentives might take the form of domestic measures, such as tax credits or other forms of financial support, that condition a product's preference eligibility on sourcing from firms located in sectoral agreement participants' economies. Finally and importantly, a unity of purpose and agreement on scope and procedures between the Congressional and Executive branches would be important to the success of any supply chain resilience sectoral approach undertaken by the United States with its trading partners.

Conclusion

During the current period of global trade and economic relations marked by high levels of supply chain vulnerabilities and their concomitant shocks, sectoral trade agreements present an opportunity to address and remedy the lack of resilience. Sectoral agreements can provide a robust framework for the United States and like-minded partners to strengthen their industrial bases and reinforce shared values, to collaborate and coordinate on trade policies that support critical sectors, to more closely align trade initiatives and actions that facilitate developing countries' participation in global supply chains, and to develop a market-oriented global marketplace that promotes the principles of supply chain resilience. Elements of any such agreement should be calibrated to its specific objectives, and account for challenges presented by a narrower, sector-specific approach. In this way, a new model of sectoral agreements can lay the groundwork for deeper international collaboration to bolster supply chain resilience.

⁹ See, e.g., United States Pharmaceutical Supply Chain Review Act, S. 5206, 118th Cong. (2024); The Select Committee on the Strategic Competition between the United States and the Chinese Communist Party, *Reset, Prevent, Build: A Strategy to Win America's Economic Competition with the Chinese Communist Party*, 2023, at 3, 34-53 (discussing supply chain dependencies and need for diversification); "Trade Subcommittee Hearing on Reforming the Generalized System of Preferences to Safeguard U.S. Supply Chains and Combat China," U.S. House Committee on Ways & Means, Sept. 20, 2023.

Acknowledgements

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On the cover are, clockwise from top left: welder at CS Wind America Inc. in Pueblo, Colorado (Official White House Photo by Adam Schultz); Port of Ponce, Puerto Rico (Official White House Photo by Adam Schultz); Corvette at the General Motors' Factory ZERO Facility in Detroit, Michigan (Official White House Photo by Adam Schultz); New Flyer Manufacturing Facility in St. Cloud, Minnesota (Official White House Photo by Lawrence Jackson); helmet at LiUNA Training Center in DeForest, Wisconsin (Official White House Photo by Adam Schultz); Shuford Yarns Dudley Shoals Plant in Granite Falls, North Carolina (photo by Khalid Sarsour).