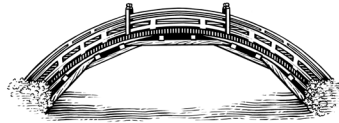


ESSAY SERIES ≈ TRADE AND SUPPLY CHAINS IN ASIA

De-risking Global Supply Chains: Looking Beyond Material Flows

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EXECUTIVE SUMMARY

This essay examines supply chain de-risking driven by two forces: (1) the renewed concerns of the U.S. and its allies about supply chain resilience and (2) China's long-standing strategy to redefine the global order.

MAIN ARGUMENT

A defining feature of global supply chains is they are powered by material, information, financial, and human flows. By examining these multiple flows in the evolution of global supply chains, our analysis goes beyond the singular focus on material flows that is common in recent economic and foreign policy discourse. Another defining feature of global supply chains is the strategic interaction between different actors. Following this line of thinking, we argue that de-risking is not a unilateral option for the West and its developed economy partners but rather an interactive and fluid development taking place around the globe. This can be seen in the U.S.'s growing emphasis on improving supply chain resilience through reshoring, nearshoring, and friendshoring, as well as in China's diversification into markets such as Russia and the global South, with broader implications for major economies. Looking beyond material flows to information, financial, and human flows is important to monitor these indicators of the ongoing transitions in global supply chains.

POLICY IMPLICATIONS

- Policymakers must recognize that de-risking is not a unilateral process but involves strategic interactions among multiple global actors.
- It is imperative to consider the implications of information, financial, and human flows, in addition to material flows, to develop effective de-risking strategies.
- Ensuring political stability and policy continuity is essential to effective de-risking, particularly in the context of changing administrations and economic policies.
- In implementing de-risking, efforts should ensure coordination across the four types of flows while addressing the challenges of increased complexity and potential lack of visibility into operations.
- The role of emerging economies in de-risking is critical, as they stand to benefit significantly but also play a key role in achieving diversified and resilient supply chains.

A supply chain is a complex network of organizations, people, activities, information, and resources that move a product or service from supplier to customer.¹ Four types of flows enable this network to function. The first is *material flows*, which refer to the movement of raw materials, intermediate products, and finished products from suppliers to manufacturers, distributors, retailers, and, finally, to customers. The second is *information flows*, which refer to the exchange of data and information between supply chain partners to improve coordination and optimization. The third category is *financial flows*, which refer to the movement of funds and financial transactions that enable the production and delivery of goods and services. Finally, *human flows* refer to the movement of personnel and talent throughout the supply chain to ensure efficient operations and facilitate innovation.

Much of the recent economic and policy discourse on global supply chains has focused on the movement of materials, from raw resources to finished products. Material flows are similar to a person's physical appearance, providing a tangible, measurable indicator of health and activity. But just as a person can appear healthy while harboring hidden ailments, supply chains can appear stable and efficient based on material flows while undergoing significant, less visible changes in information, financial, and human flows. This analysis seeks to examine all four types of flows in the context of global supply chain de-risking.

The growing emphasis on supply chain resilience has been evident in the Biden administration's supply chain review and subsequent policy changes.² A precursor to the de-risking approach was "decoupling," which was proposed by the Trump administration as a way to reduce dependence on China, close the trade deficit, and revitalize U.S. manufacturing.³ However, decoupling from China proved infeasible due to China's centrality in global supply chains. As a result, the U.S. narrative has subsequently shifted to "de-risking," which recognizes the reality that cutting material flows from China is not feasible, but managing the risks is.⁴

¹ Albert Y. Ha and Christopher S. Tang, eds., *Handbook of Information Exchange in Supply Chain Management* (Berlin: Springer, 2017).

² Richard Baldwin and Rebecca Freeman, "Risks and Global Supply Chains: What We Know and What We Need to Know," National Bureau of Economic Research, NBER Working Paper, no. 29444, 2021 ∞ <https://www.nber.org/papers/w29444>; and Ken Roberts, "U.S. Imports from China Plunging; Mexico, Near-Shoring, Not Big Winner," *Forbes*, June 25, 2024 ∞ <https://www.forbes.com/sites/kenroberts/2024/06/25/us-imports-from-china-plunging-mexico-near-shoring-not-big-winner>.

³ "Trump Again Raises Idea of Decoupling Economy from China," Reuters, September 7, 2020 ∞ <https://www.reuters.com/article/world/asia-pacific/trump-again-raises-idea-of-decoupling-economy-from-china-idUSKBN25Z08T>.

⁴ Stewart Black and Allen J. Morrison, "The Strategic Challenges of Decoupling," *Harvard Business Review*, May–June 2021 ∞ <https://hbr.org/2021/05/the-strategic-challenges-of-decoupling>.

The interpretation of de-risking has generally been from a Western perspective. What is less well known in the West, however, is that in recent decades, even as China has become deeply integrated into the U.S.-led economic order that gave rise to its economic boom, it has at the same time sought to de-risk from the West as part of its broader, consistent, and long-standing strategy to redefine the global order.⁵ China's de-risking strategy began in earnest with the rollout of its National Medium- and Long-Term Plan for Science and Technology Development (2006–2020) in 2005, which aimed to increase domestic content in eleven key sectors to 30% by 2020—a goal that was met on schedule.⁶ This strategy was significantly expanded with the launch of the Made in China 2025 plan in 2015, with most targets achieved by 2024.⁷ The new initiative set ambitious targets, including reaching 40% domestic content by 2020 and 70% by 2025 in critical industries such as information technology, robotics and artificial intelligence (AI), aerospace, shipping, railway, energy, materials, pharmaceuticals and medical equipment, agriculture, and power equipment. The plan also aimed for Chinese companies to dominate markets in sectors such as electric vehicles (EVs) and power equipment.⁸ The U.S. Congress has expressed concern about China's methods for achieving these goals, which include forced joint ventures, government subsidies, foreign technology licensing, and the repatriation of Chinese expatriates.⁹

In Western countries, the prolonged product shortages in the wake of the Covid-19 pandemic and China's significant advances in high-tech and information and communication technology (ICT) industries, coupled with Beijing's determination to achieve self-sufficiency through de-risking from the United States and Europe, have solidified the trend of moving away from China in supply chain de-risking efforts. However, de-risking from China—one of the largest trade partners for most major economies—may counterintuitively pose risks to both the advanced economies and China after

⁵ Michael Pillsbury, *The Hundred-Year Marathon: China's Secret Strategy to Replace America as the Global Superpower* (New York: Henry Holt and Company, 2015).

⁶ Yutao Sun and Cong Cao, "Planning for Science: China's 'Grand Experiment' and Global Implications," *Humanities and Social Sciences Communications* 8 (2021) ~ <https://doi.org/10.1057/s41599-021-00895-7>.

⁷ Zhang Tong and Dannie Peng, "Made in China 2025: China Meets Most Targets in Manufacturing Plan, Proving U.S. Tariffs and Sanctions Ineffective," *South China Morning Post*, April 30, 2024 ~ <https://www.scmp.com/news/china/science/article/3260307/made-china-2025-china-meets-most-targets-manufacturing-plan-proving-us-tariffs-and-sanctions>.

⁸ State Council (People's Republic of China), "Notice of the State Council on the Publication of 'Made in China 2025,'" May 8, 2015, trans. Etcetera Language Group, Inc., Center for Security and Emerging Technology, March 8, 2022 ~ https://cset.georgetown.edu/wp-content/uploads/t0432_made_in_china_2025_EN.pdf.

⁹ Karen Sutter, "Made in China 2025" Industrial Policies: Issues for Congress," Congressional Research Service, In Focus, August 11, 2020 ~ <https://crsreports.congress.gov/product/pdf/IF/IF10964/6>.

decades of co-building global supply chains to ensure continuous flows of materials, information, finance, and human resources.¹⁰

The purpose of this essay is to examine the implications of de-risking of global supply chains through changes in the four primary flows: material, financial, information, and human. By analyzing these flows, the essay aims to explore how changes in geopolitical tensions and the dynamics of global trade are reshaping supply chains. It also looks at how de-risking tactics could affect larger economies, particularly those in the Indo-Pacific region. The essay is organized as follows:

- ∞ pp. 157–61 examine how material flows are being affected by de-risking.
- ∞ pp. 161–64 assess de-risking in information flows.
- ∞ pp. 164–68 examine the state of de-risking in financial flows.
- ∞ pp. 168–70 analyze shifts in labor and talent migration between the United States and China.
- ∞ pp. 170–175 evaluate the implications involved in de-risking and what to watch for.
- ∞ pp. 176 concludes with a summary of and outlook for the big picture emerging from changes in these four flows for global supply chains.

MATERIAL FLOWS IN DE-RISKING

Context

The history of material flows in the context of today's global supply chains began with China's economic reforms in 1978, followed by former U.S. president Ronald Reagan's free trade policies in the early 1980s. Before these historic changes, global trade was in its infancy. The World Trade Organization (WTO) estimated global trade in goods and services stood at \$1.3 trillion in 1978, with a negligible trade deficit between the United States and China.¹¹

The new world order that emerged in the 1990s, marked by the collapse of the Soviet bloc and fueled by the rise of global trade and supply chains, brought a new sense of optimism and integration to the geopolitical landscape. In this era of post-Cold War globalization, traditional enemy lines were

¹⁰ Christopher Tang, "Why China 'De-Risking' Brings Its Own Business Risks," *Financial Times*, October 10, 2023 ∞ <https://www.ft.com/content/64a7169a-dc52-4709-9b11-52eb24f1dab6>.

¹¹ General Agreement on Tariffs and Trade, "International Trade: 1978/79," 1979, 3 ∞ https://www.wto.org/english/res_e/booksp_e/international_trade_1978_79.pdf.

abandoned in favor of efficiency and increased profits.¹² Driven by low labor costs and vast untapped markets, the shift of manufacturing to Asia spurred nearly every major company worldwide to participate in various aspects of global supply chain activities. Offshoring and outsourcing have fueled Asia's economic development, especially since China joined the WTO in 2001. The global middle class expanded rapidly, from one billion in 1985 to two billion in 2006 and three billion in 2015; global supply chains, perpetually seeking cost-effective labor, likely played a significant role in this growth.¹³ By 2018 the volume of global trade had risen to \$19.7 trillion, with the trade deficit between the United States and China reaching \$419.2 billion.¹⁴ By 2020, China had established itself as the world's factory, accounting for 35% of global output, more than the combined output of the United States (12%), Japan (6%), Germany (4%), India (3%), and South Korea (3%).¹⁵

However, despite a record trade volume, trade relations between the West and China took a sharp turn in 2018. The outbreak of the U.S.-China trade war, compounded by prolonged product shortages during the subsequent Covid-19 pandemic and uncertainties surrounding the closure of Chinese factories due to the country's "zero-Covid" policy, exposed global supply chain vulnerabilities.¹⁶ In response, the U.S. government, businesses, and academics began to support the concept of de-risking from China to ensure that critical products are less dependent on Chinese operations. By 2023, the concept of de-risking had firmly taken hold among the United States and its partners.¹⁷ Indeed, during the G-7 meeting in May 2023, all seven of the world's wealthiest countries discussed strategies for managing their supply chains in this new era of de-risking.¹⁸

¹² For further discussion, see Thomas L. Friedman, *The World Is Flat: A Brief History of the Twenty-First Century* (New York: Farrar, Straus and Giroux, 2005).

¹³ Homi Kharas, "The Unprecedented Expansion of the Global Middle Class: An Update," Brookings Institution, Working Paper, no. 100, February 2017 ≈ <https://www.brookings.edu/articles/the-unprecedented-expansion-of-the-global-middle-class-2>.

¹⁴ WTO, *World Trade Statistical Review 2019* (Geneva: WTO, 2019) ≈ https://www.wto.org/english/res_e/statis_e/wts2019_e/wts19_toc_e.htm.

¹⁵ Organisation for Economic Co-operation and Development (OECD), TIVA Database, 2023 ≈ <https://www.oecd.org/en/topics/sub-issues/trade-in-value-added.html>.

¹⁶ Tinglong Dai and Christopher S. Tang, "It's the End of the Global Supply Chain as We Know It," *Newsweek*, April 19, 2022 ≈ <https://www.newsweek.com/its-end-global-supply-chain-we-know-it-opinion-1698591>.

¹⁷ Ursula von der Leyen, "Speech by President von der Leyen on EU-China Relations to the Mercator Institute for China Studies and the European Policy Centre," European Commission, April 2023 ≈ https://ec.europa.eu/commission/presscorner/detail/en/speech_23_2063.

¹⁸ "G7 Hiroshima Leaders' Communiqué," White House, May 20, 2023 ≈ <https://www.whitehouse.gov/briefing-room/statements-releases/2023/05/20/g7-hiroshima-leaders-communicue>.

Trends

Recent trends in the movement of goods and raw materials reveal significant but measured shifts in sourcing and manufacturing locations. U.S. companies are increasingly shifting production from China to other countries to reduce risk. This includes “friendshoring” production to countries such as India, Thailand, and Vietnam. For example, Dell has shifted a significant percentage of its laptop production to Vietnam and plans to phase out China-made chips, while Apple intends to shift 25% of its global iPhone production to India.¹⁹ At the same time, U.S. companies are increasing their sourcing from “nearshoring” countries such as Mexico and Canada to take advantage of the United States–Mexico–Canada (USMCA) free trade agreement (FTA). HP, for example, signaled in 2023 that it would move production of millions of laptops to Mexico, while Mattel in 2022 announced plans to expand its existing toy plant in Mexico.²⁰ In a telling example, the U.S. Food and Drug Administration recently recommended that healthcare providers avoid Chinese-made plastic syringes in response to systemic quality issues.²¹ This move highlighted the challenges of quality control when essential supplies, such as needles and syringes, come from global supply chains that are beyond the capabilities of national regulatory systems.²²

Meanwhile, tensions between the United States and China have increased during Joe Biden’s presidency. While maintaining the tariffs on Chinese goods imposed by former president Donald Trump, the Biden administration imposed new restrictions on Chinese companies, including notably a ban on the purchase of advanced chips and chip-making equipment. In 2022, the U.S. Department of Commerce restricted the export of advanced chips with military or AI applications, such as Nvidia’s A800, as well as restricting

¹⁹ Cheng Ting-Fang, “Dell Looks to Phase Out ‘Made in China’ Chips by 2024,” *Nikkei Asia*, January 5, 2023 ~ <https://asia.nikkei.com/Spotlight/Supply-Chain/Dell-looks-to-phase-out-made-in-China-chips-by-2024>; and Rajesh Roy, “Apple Aims to Make a Quarter of the World’s iPhones in India,” *Wall Street Journal*, December 8, 2023 ~ <https://www.wsj.com/tech/apple-aims-to-make-a-quarter-of-the-worlds-iphones-in-india-ab7f6342>.

²⁰ Cheng Ting-Fang and Laily Li, “HP to Move Production of Millions of PCs to Thailand, Mexico,” *Nikkei Asia*, July 18, 2023 ~ <https://asia.nikkei.com/Spotlight/Supply-Chain/HP-to-move-production-of-millions-of-PCs-to-Thailand-Mexico>; and Clark Schultz, “Mattel Moves Some Key Manufacturing to Mexico from Asia,” *Seeking Alpha*, April 4, 2022 ~ <https://seekingalpha.com/news/3820307-mattel-moves-some-key-manufacturing-to-mexico-from-asia>.

²¹ “Update: Evaluating Plastic Syringes Made in China for Potential Device Failures,” U.S. Food and Drug Administration, FDA Safety Communication, June 20, 2024 ~ <https://www.fda.gov/medical-devices/safety-communications/update-evaluating-plastic-syringes-made-china-potential-device-failures-fda-safety-communication>.

²² Tinglong Dai, “U.S. Needs to Shore Up Medical Device Manufacture or Risk Vulnerability in Times of Crisis,” *Baltimore Sun*, December 26, 2023 ~ <https://www.baltimoresun.com/2023/12/26/medical-device-manufacture>.

the sale of manufacturing equipment used to produce advanced logic or memory chips in China. Section 301 tariffs on China from the Trump and Biden administrations currently account for a combined \$77 billion in tariffs, based on initial import values.²³ This de-risking trend in the semiconductor sector extends to the personal electronics industry. To mitigate the risks of geopolitical tensions and supply chain disruptions, U.S. companies are diversifying their production locations.²⁴

China has responded with several rounds of tariffs on more than \$106 billion worth of U.S. goods.²⁵ As the trade war has become increasingly focused on semiconductors, the country in 2023 banned the export of germanium and gallium, both of which are needed to make chips. At the same time, China has made significant investments in its domestic semiconductor industry to increase self-sufficiency, having invested more than \$150 billion in semiconductor development since 2014, including direct funding, grants, equity investments, and low-interest loans to companies such as Huawei and SMIC.²⁶

Beyond the U.S.-China trade war, other recent geopolitical tensions, as well as the Covid-19 pandemic, have also contributed to fundamentally altering global supply chains and material flows. For example, the conflict between Russia and Ukraine has severely disrupted global commodity supplies, reducing the availability of wheat, corn, neon, and argon. In 2021, the European Union imported 40% of its natural gas and more than 25% of its crude oil from Russia, while the United States imported only 7% of its oil.²⁷ Ukraine produces 70% of the world's neon and argon, which are essential for semiconductor manufacturing, while Russia supplies 35% of the

²³ Erica York, "Tariff Tracker: Tracking the Economic Impact of the Trump-Biden Tariffs," Tax Foundation, June 26, 2024 ~ <https://taxfoundation.org/research/all/federal/trump-tariffs-biden-tariffs>.

²⁴ Baldwin and Freeman, "Risks and Global Supply Chains"; Assaf Razin, "De-globalization: Driven by Global Crises?" National Bureau of Economic Research, NBER Working Paper, no. 27929, October 2020 ~ <https://www.nber.org/papers/w27929>; and Anthea Roberts, "From Risk to Resilience: How Economies Can Thrive in a World of Threats," *Foreign Affairs*, November/December 2023 ~ <https://www.foreignaffairs.com/world/risk-resilience-economics>.

²⁵ York, "Tariff Tracker."

²⁶ "China Boosts State-Led Chip Investment," Economist Intelligence Unit, March 13, 2024 ~ <https://www.eiu.com/n/china-boosts-state-led-chip-investment>.

²⁷ Tinglong Dai, "Russia's War with Ukraine Could Permanently Reshape the Global Supply Chain," *Fast Company*, March 15, 2022 ~ <https://www.fastcompany.com/90731234/>; Razin, "De-globalization"; National Academies of Sciences, Engineering, and Medicine, *Personal Protective Equipment and Personal Protective Technology Product Standardization for a Resilient Public Health Supply Chain: Proceedings of a Workshop* (Washington, D.C.: National Academies Press, 2023) ~ <https://doi.org/10.17226/27094>; and Peter Zeihan, *The End of the World Is Just the Beginning: Mapping the Collapse of Globalization* (New York: Harper Business, 2022).

United States' palladium.²⁸ The invasion disrupted these supplies, affecting global semiconductor production.²⁹ These material supply disruptions have been cited as a leading contributor to global inflation, especially in Europe, where the inflation rate rose from 0.3% in 2020 to 8.4% in 2022.³⁰ The combination of reduced food supplies, energy shortages, and semiconductor disruptions underscores the impact of geopolitical tensions on supply chain material flows.

INFORMATION FLOWS IN DE-RISKING

Context

Reliable, smooth, and unrestricted information flows play a vital role in driving supply chain efficiency and resilience. They enable companies to develop data analytics and AI tools that can predict or detect anomalies, enabling proactive measures to avoid disruptions or mitigate their impact.³¹

However, while these information flows offer economic value, they also pose cybersecurity risks. The rising geopolitical and technology-driven tensions between the United States and China have exacerbated these concerns. Beginning in the Trump era, the U.S. government, the public, and academics have expressed growing apprehensions that sensitive American consumer information—such as usage and location data—could be exploited by the Chinese government for intelligence purposes. These concerns were behind then U.S. secretary of state Mike Pompeo's Clean Network program in 2020 aimed at protecting human rights, data privacy, and security from tyrannical actors, namely the Chinese Communist Party,³² and culminated in legislation in 2024 that would potentially lead to the ban of TikTok, a social media platform owned by the Chinese company ByteDance, from operating in the United States unless it is sold to a government-approved buyer.³³

²⁸ Christopher S. Tang, "Expect a New Wave of Supply Chain Headaches with Ukraine Crisis, Bevy of Other Issues," *Industry Week*, February 28, 2022 <https://www.industryweek.com/supply-chain/article/21234730/expect-a-new-wave-of-supply-chain-headaches-with-ukraine-crisis-bevy-of-other-issues>.

²⁹ *Ibid.*

³⁰ Oscar Arce, Gerrit Koester, and Christiane Nickel, "One Year Since Russia's Invasion of Ukraine—the Effects on Euro Area Inflation," European Central Bank, ECB Blog, February 24, 2023 <https://www.ecb.europa.eu/press/blog/date/2023/html/ecb.blog20230224~3b75362af3.en.html>.

³¹ Thorsten Wuest et al., "Impact of Covid-19 on Manufacturing and Supply Networks—the Case for AI-Inspired Digital Transformation," SSRN, May 5, 2020 <http://dx.doi.org/10.2139/ssrn.359354>.

³² U.S. Department of State, "The Clean Network" <https://2017-2021.state.gov/the-clean-network>.

³³ Sapna Maheshwari and Amanda Holpuch, "Why the U.S. Is Forcing TikTok to Be Sold or Banned," *New York Times*, June 29, 2024 <https://www.nytimes.com/article/tiktok-ban.html>.

Similarly, data privacy concerns were raised in 2023 by the U.S.-China Economic and Security Review Commission regarding Chinese online shopping apps such as Temu and Shein.

In parallel, China launched the Global Initiative on Data Security as a response to the U.S. Clean Network program in September 2020, and then enacted the Data Security Law on September 1, 2021. The law aims to protect national data security, limit cross-border data transfers, and prevent foreign judicial or law-enforcement authorities from accessing data stored in China without permission. Citing fears about the potential leakage of sensitive data to the United States, Chinese authorities used the law to pressure the ride-sharing company Didi to delist from the New York Stock Exchange less than six months after its initial public offering.³⁴

These developments highlight the decoupling of information flows taking place between the United States and China, creating significant operational challenges for companies involved in global supply chain operations. Companies must navigate and comply with different data protection regulations under different laws in the United States and China, as well as the EU's General Data Protection Regulation, complicating their ability to maintain seamless and secure information exchange.

The need for secure, real-time information exchange in global supply chains remains critical; however, balancing this with the need to protect sensitive data from geopolitical adversaries has become a complex issue affecting how businesses operate across borders. The increased emphasis on cybersecurity and data sovereignty reflects broader trends of risk mitigation and decoupling that will shape the future landscape of global supply chains and international business operations.

Trends

As geopolitical tensions and data security concerns rise, supply chain derisking means that U.S. companies are increasingly decoupling their Chinese operations or establishing separate entities to comply with China's Data Security Law. For example, Dentons, one of the world's largest law firms, divested itself of its Chinese affiliate due to strict cybersecurity regulations. The decision came after business groups warned that global companies were shifting investments away from China in response to new anti-espionage

³⁴ Nicola Daniel, "Under Pressure from China's Authorities, Didi Is Delisting from the New York Stock Exchange," *Diplomat*, December 7, 2021 ≈ <https://thediplomat.com/2021/12/under-pressure-from-chinas-authorities-didi-is-delisting-from-the-new-york-stock-exchange>.

laws, tighter corporate controls, a crackdown on data security, and raids on international consulting firms.³⁵ These regulatory changes have created a challenging environment for information sharing. Similarly, Chinese IT and digital companies are moving away from the United States and Western markets due to increasing restrictions such as market access barriers, export controls, and investment scrutiny, coupled with reciprocal actions by China and a shift in focus toward domestic and alternative markets.³⁶

To improve data security, the U.S. Federal Communications Commission banned new telecom equipment from Huawei and ZTE and the sale or import of new equipment from various Chinese surveillance equipment manufacturers, tightening existing blacklisting regulations. In 2024, German telecom operators agreed to remove Huawei and ZTE components from their networks by the end of 2026.³⁷ China likewise took two steps in 2024 to support domestically produced chips and telecom equipment: the government introduced guidelines to phase out U.S. chips from Intel and AMD in government personal computers and servers; and it expanded this plan by asking Chinese telecom operators to phase out foreign-made network chips by 2027.³⁸

More broadly, companies are investing in tools and capabilities to improve supply chain visibility, predict disruptions, and optimize mitigation strategies. For example, AI tools can analyze massive amounts of data to identify potential risks and optimize supply chain operations. Cloud computing and distributed data storage options are also increasing. These technologies provide greater flexibility, reducing the risks associated with centralized data repositories. Distributed storage systems can spread data across multiple locations, making them more resilient to cyberattacks and geopolitical disruptions. In addition, companies are investing in cybersecurity to protect their data flows. Enhanced encryption, multi-factor authentication, and regular security audits are standard and critical practices to reduce the risk of data breaches and prevent unauthorized access that affects supply chains across national borders. The shift toward more resilient and secure information exchange

³⁵ Michelle Toh, “The World’s Biggest Law Firm Is Splitting Off Its Business in China,” CNN, August 9, 2023 [~ https://www.cnn.com/2023/08/09/business/dentons-dacheng-china-business-split-intl-hnk/index.html](https://www.cnn.com/2023/08/09/business/dentons-dacheng-china-business-split-intl-hnk/index.html).

³⁶ Laurens Cerulus and Sarah Wheaton, “How Washington Chased Huawei out of Europe,” *Politico*, November 23, 2022 [~ https://www.politico.eu/article/us-china-huawei-europe-market](https://www.politico.eu/article/us-china-huawei-europe-market).

³⁷ Bertrand Benoit, “Germany to Remove Huawei from Mobile Networks,” *Wall Street Journal*, July 10, 2024 [~ https://www.wsj.com/tech/germany-to-remove-huawei-from-mobile-networks-f96ddf81](https://www.wsj.com/tech/germany-to-remove-huawei-from-mobile-networks-f96ddf81).

³⁸ “China Tells Telecom Firms to Phase Out Foreign Chips in Blow to Intel, AMD,” Reuters, April 12, 2024 [~ https://www.reuters.com/technology/china-tells-telecom-carriers-phase-out-foreign-chips-blow-intel-amd-wsj-2024-04-12](https://www.reuters.com/technology/china-tells-telecom-carriers-phase-out-foreign-chips-blow-intel-amd-wsj-2024-04-12).

systems extends beyond large enterprises; small and medium-sized businesses are also embracing these technologies to remain competitive and protect their supply chains. Government initiatives and industry collaborations are fueling this transition by providing resources and guidance to help these enterprises improve their cybersecurity and data management capabilities.

In summary, the role of technological advances in facilitating more secure and efficient information flows is critical. Without the free flow of information across borders, it would be difficult to develop information technologies that incorporate cloud computing, data analytics, and AI to improve global supply chain operations. But the growing challenge of complying with differing data security regulations across borders makes the free flow of information difficult, if not impossible. In July 2024, for example, Microsoft ordered employees in China to use only Apple iPhones due to security threats, particularly because certain security applications such as Microsoft Authenticator and the Identity Pass app were not available on other operating systems in China.³⁹

FINANCIAL FLOWS IN DE-RISKING

Context

Foreign direct investment patterns in global supply chains have rapidly evolved in recent decades. Since the inception of today's global supply chains in the 1980s, FDI inflows have shifted geographically, with emerging markets attracting greater levels of investment. China, India, and Southeast Asia have become major recipients; in 2019, China attracted \$141 billion; India, \$50 billion; and ASEAN, \$182 billion in FDI.⁴⁰ These investments spurred economic development in Asia, prompting new infrastructure (such as roads, railways, ports, and airports) and manufacturing and transportation equipment to support material flows of goods.

As with infrastructure and equipment, there was a need to develop the banking system and expand financial services to emerging markets to facilitate financial flows across countries. The Society for Worldwide Interbank Financial Telecommunications (SWIFT) system, begun in 1973, is

³⁹ Paolo Confino, "Microsoft Ordered Employees in China to Only Use iPhones due to Security Threats," *Fortune*, July 8, 2024 ~ <https://fortune.com/2024/07/09/microsoft-orders-chinese-employees-use-iphone-apple-android-google-smartphone>.

⁴⁰ UN Conference on Trade and Development, "World Investment Report 2024," June 20, 2024 ~ <https://unctad.org/topic/investment/world-investment-report>; and Kee Hwee Wee and Amelia Santos Paulino, *ASEAN Investment Report 2020–2021: Investing in Industry 4.0* (Jakarta: ASEAN Secretariat, 2021) ~ <https://asean.org/wp-content/uploads/2021/09/AIR-2020-2021.pdf>.

the de facto digital system for supporting global trade finance transactions, enabling payments to flow smoothly between global supply chain partners in different countries and allowing efficient and secure financial transactions and communications between banks and businesses.

Trends

Supply chain de-risking has affected FDI and challenged the dominant role of the SWIFT system in recent years. In 2021, President Biden issued executive orders prohibiting investment in certain Chinese companies and requiring the divestment of their securities. These measures were intended to reduce the flow of U.S. capital into sectors critical to China's technological advancement.⁴¹ On August 9, 2023, Biden issued Executive Order 14105 to further address U.S. investments in national security technologies in "countries of concern," with a focus on China. This order directs the U.S. Treasury Department to prohibit certain categories of U.S. outbound investments and requires notification of other investments involving China, targeting advanced technology areas such as semiconductors, quantum information technologies, and certain AI systems.⁴² These measures have had a significant impact on FDI in China. In 2023, FDI in China fell to \$33 billion on a net basis, down 80.0% from 2022 and the lowest level in three decades.⁴³ This trend continued in 2024, with FDI falling 28.8% between January and May compared with the same period in 2023.⁴⁴ This sharp decline signals the geopolitical tensions between the great powers and the economic uncertainties that are shaking investor confidence. Notably, there have been shifts in the sources of FDI to China, with countries such as the United Arab Emirates, Malaysia, and Samoa emerging as new major investors, while investment

⁴¹ Joseph R. Biden Jr., "Executive Order on Addressing the Threat from Securities Investments that Finance Certain Companies of the People's Republic of China," Executive Order, no. 14032, June 3, 2021 \approx <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/06/03/executive-order-on-addressing-the-threat-from-securities-investments-that-finance-certain-companies-of-the-peoples-republic-of-china>.

⁴² Evelyn Cheng, "What Biden's Executive Order Means for U.S. Investors in China," CNBC, August 11, 2023 \approx <https://www.cnbc.com/2023/08/11/what-bidens-executive-order-means-for-us-investors-in-china-.html>.

⁴³ Iori Kawate and Shunsuke Tabeta, "Foreign Direct Investment in China Falls to 30-Year Low," *Nikkei Asia*, February 19, 2024 \approx <https://asia.nikkei.com/Economy/Foreign-direct-investment-in-China-falls-to-30-year-low>.

⁴⁴ "China's Foreign Direct Investment Falls Further in May," *Wall Street Journal*, June 23, 2024 \approx <https://www.wsj.com/world/china/chinas-foreign-direct-investment-falls-further-in-may-c09419c8>.

has declined from traditional sources such as the United States and some European countries.⁴⁵

In contrast, countries such as Vietnam and Mexico have seen significant increases in foreign investment. Vietnam's foreign investment rose to \$9.27 billion in early 2024, up 4.5% year-on-year, with \$6.28 billion in FDI from January to April alone, the highest level in five years.⁴⁶ This surge has been driven by companies seeking to diversify their manufacturing bases away from China. This friendshoring has not precluded Chinese outbound FDI into Vietnam, which has also risen. Companies, including Chinese firms, are relocating to Vietnam to take advantage of its favorable conditions and enhance supply chain resilience. Similarly, Mexico has benefited from its proximity to the United States and advantageous trade agreements, including with the EU, Japan, Israel, ten countries in Latin America, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), and the Pacific Alliance (with Chile, Columbia, and Peru), in addition to the USMCA. According to data from UN Trade and Development, FDI inflows to Mexico increased by 11.9% in 2023, reaching \$35.3 billion.⁴⁷ This growth reflects the strategic shift in nearshoring, driven by rising shipping costs and security concerns, where companies move parts of their supply chain closer to the United States to mitigate the risks associated with long distances and geopolitical tensions.

Perhaps surprisingly, India's FDI has declined significantly. According to the Reserve Bank of India, net FDI fell 62% to \$10.6 billion in fiscal year 2024.⁴⁸ This decline points at the continued importance of the receptiveness of the host environment to FDI. India's regulatory hurdles and economic instability have hampered its ability to attract foreign investment despite its large market and growing economy, illustrating the complexity and variability of global investment flows.

These changes in financial flows underscore a trend of risk reduction and reallocation in response to geopolitical tensions and strategic economic policies. Businesses are becoming more cautious about investing in high-risk

⁴⁵ Giulia Interesse, "China's FDI Trends: Sources, Destinations, and Key Sectors," China Briefing, January 31, 2024 ~ <https://www.china-briefing.com/news/chinas-fdi-trends-sources-destinations-and-key-sectors>.

⁴⁶ "Vietnam's Total Foreign Investment Climbs to US\$9.27 Billion in Four Months: GSO," Vietnam Briefing, May 2, 2024 ~ <https://www.vietnam-briefing.com/news/vietnams-foreign-investment-climbs-to-us9-27-billion-january-april-2024-gso.html>.

⁴⁷ "Mexico: Investing in Mexico," Lloyds Bank, June 2024 ~ <https://www.lloydsbanktrade.com/en/market-potential/mexico/investment>.

⁴⁸ Shabeeh Azeem, "India's Net FDI Nosedives 62% to \$10.6 Bn in FY24: RBI," Fortune India, May 22, 2024 ~ <https://www.fortuneindia.com/macro/indias-net-fdi-nosedives-62-to-106-bn-in-fy24-rbi/116879>.

or geopolitically unstable regions, resulting in a redistribution of financial flows to more stable and strategically advantageous areas. As companies navigate this new landscape, understanding the implications of these changes is critical to maintaining resilient and efficient supply chain operations.

In addition to the shift in FDI, there is a notable trend among the BRICS countries to dethrone the U.S. dollar as the world's reserve currency.⁴⁹ The expansion of the bloc in 2024 to include five new members—Egypt, Ethiopia, Iran, Saudi Arabia, and the United Arab Emirates, forming “BRICS+”—reflects in part a strategic move to challenge the dollar's dominant role in financial flows. By relying on an alternative currency, or even eventually creating their own, as the medium of transaction, countries in the BRICS bloc hope to reduce their dependence on fluctuations in the dollar exchange rate, especially during uncertain economic times or geopolitical tensions. However, the commitment to this goal varies among the member countries. Russia, Iran, and China are pursuing aggressive de-dollarization, while India and the United Arab Emirates are less interested in de-dollarization and favor using their own currencies in trade. China used the renminbi for about half of its cross-border trade and investment transactions in 2023, particularly with Russia, to promote financial stability and reduce reliance on the dollar. Notably, Brazil and South Africa have begun to settle trade with China in renminbi, which may facilitate future trade and investment among BRICS+ members without the need for the U.S. dollar.⁵⁰

Additionally, BRICS+ is developing an alternative payment system to SWIFT that will not use the U.S. dollar. This initiative aims to create a more resilient and independent financial network, reducing the influence of Western financial systems and sanctions on the BRICS+ economies. Such a system is designed to improve financial security and stability among member countries, allowing them to navigate global financial markets more independently.⁵¹

In summary, the ongoing changes in financial strategies and investment patterns reflect a broader trend of risk mitigation and diversification in response to geopolitical and economic pressures. By exploring alternative financial systems and reducing reliance on the U.S. dollar, BRICS+ countries are better positioned to withstand global financial fluctuations and strengthen their economic sovereignty. Given the U.S.-led financial system's continued dominance, the success—and the supply chain impact—of a new economic

⁴⁹ The original BRICS countries were Brazil, Russia, India, China, and South Africa.

⁵⁰ Vinod Dsouza, “BRICS Alternative to SWIFT Can Dethrone U.S. Dollar,” Watcher Guru, April 9, 2024. <https://watcher.guru/news/brics-alternative-to-swift-can-dethrone-us-dollar>.

⁵¹ *Ibid.*

order remains highly uncertain. The potential consequences of these moves for the fragile economies of the BRICS+ countries, their companies, and their global supply chain partners remain unclear.

HUMAN FLOWS IN DE-RISKING

Context

For centuries, labor and talent migration have been key drivers of global trade. The movement of human capital across borders has spurred innovation, knowledge transfer, and economic growth. In the early days of global trade, merchants and artisans traveled long distances, bringing new skills and technologies. The Industrial Revolution accelerated this trend as countries and companies sought skilled workers to fuel their factories and industries.

The creation of multinational corporations and the rise of globalization led to complex networks of talent mobility in the postwar period.⁵² Countries with abundant labor resources became manufacturing hubs, while advanced economies focused on R&D and high-tech industries. According to a study conducted by McKinsey, human flows through exchanges of knowledge have fueled the growth in global trade since the early 2010s.⁵³ This study suggested that flows of international students and intellectual property grew about twice as fast as the flows of goods in 2010–19, which is consistent with the growth in global trade volume during the same period.⁵⁴

Trends

As global supply chains become more fragmented, recent trends show significant changes in human flows, with the movement of human capital constrained by the Covid-19 pandemic, geopolitical tensions, and economic uncertainty. Student exchange programs, which have traditionally fostered goodwill and broadened cultural horizons, have been particularly affected. According to Nicholas Burns, the U.S. ambassador to Beijing, the number of American students in China has plummeted from 11,000 in 2019 to

⁵² Friedman, *The World Is Flat*.

⁵³ Jeongmin Seong et al., “Global Flows: The Ties That Bind in an Interconnected World,” McKinsey and Company, McKinsey Global Institute, Discussion Paper, November 15, 2022
 ~ <https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/global-flows-the-ties-that-bind-in-an-interconnected-world>.

⁵⁴ “Global Trade Growth Loses Momentum as Trade Tensions Persist,” WTO, Press Release, April 2, 2019 ~ https://www.wto.org/english/news_e/pres19_e/pr837_e.htm.

about 800 in 2024.⁵⁵ Similarly, the proportion of Chinese students enrolled in U.S. universities fell from 370,000 in 2019 to about 290,000 in 2024.⁵⁶ Concerns on both sides about personal safety, stricter visa requirements, and escalating geopolitical tensions are contributing factors to this decline in student exchanges.

Expatriate movements have also changed, with many foreigners leaving China since the pandemic for personal, professional, and political reasons. Despite its efforts to attract top talent, China faces challenges in attracting individuals without existing ties to the country, even as its scientific expertise and higher education systems improve.⁵⁷ China granted 711,000 residency permits to foreigners in 2024, a 15% decrease from the pre-pandemic year of 2019. Business and other short-term visitors saw an even steeper decline, with the number of short-term visitors dropping by two-thirds over the same period.⁵⁸ The number of skilled professionals willing to relocate to foreign countries has also declined due to the political climate and strict visa regulations. A survey by the American Chamber of Commerce in China found that 51% of U.S. companies said their top expatriates were unwilling to relocate to China because of these factors.⁵⁹ The National Immigration Bureau reports that the number of foreigners living in China has recovered to only 85% of its 2019 level.⁶⁰

These shifts in human flows in supply chains have a significant impact on labor dynamics in key industries and regions. Industries reliant on skilled foreign workers may face talent shortages due to declining numbers of expatriates and international students in their workforces. Companies must adapt talent management and recruitment strategies to address this challenge

⁵⁵ Jazper Lu, "China Reopened to Foreign Students. Americans Are Staying Away," *Wall Street Journal*, July 4, 2024 ~ <https://www.wsj.com/world/china/american-student-enrollment-china-schools-91fe69d6>.

⁵⁶ Cynthia Liao, "Number of Chinese Students at U.S. Universities Drops," JacksonLewis, Immigration Blog, April 2, 2024 ~ <https://www.globalimmigrationblog.com/2024/04/number-of-chinese-students-at-u-s-universities-drops>.

⁵⁷ Jeroen Groenewegen-Lau and Antonia Hmadi, "China in the Global Race for STEM Talent," Hinrich Foundation and the Mercator Institute for China Studies, April 23, 2024 ~ <https://www.hinrichfoundation.com/research/wp/us-china/china-global-race-for-stem-talent>.

⁵⁸ Liza Lin and Yoko Kubota, "China Turns On the Charm for Foreigners but Its Allure Has Faded," *Wall Street Journal*, March 18, 2024 ~ <https://www.wsj.com/articles/china-turns-on-the-charm-for-foreigners-but-its-allure-has-faded>.

⁵⁹ Joyce Huang, "Survey: U.S. Companies in China No Longer See It as Primary Investment Destination," *Voice of America*, March 3, 2023 ~ <https://www.voanews.com/a/survey-us-companies-in-china-no-longer-see-it-as-primary-investment-destination-/6987999.html>.

⁶⁰ Orange Wang, "Foreign Visitor Numbers Yet to Reach China's Pre-Pandemic Levels, Data Shows," *South China Morning Post*, January 18, 2024 ~ <https://www.scmp.com/news/china/diplomacy/article/3248893/foreign-visitor-numbers-yet-reach-chinas-pre-pandemic-levels-data-shows>.

and maintain competitiveness.⁶¹ Hong Kong, a poster child for global supply chains, exemplifies this. Since the pandemic, many professionals have left for other destinations. In response, Hong Kong launched a program in 2023 with financial incentives to attract top international talent.⁶²

At the same time, multinational corporations are increasingly focused on developing local talent. This includes investing in training programs, partnering with nearby educational institutions, and building in-house expertise. In addition, digital collaboration tools and remote work have become essential to maintaining the continuity and productivity of global operations.⁶³

IMPLICATIONS FOR MAJOR ECONOMIES: WHO WINS, WHO LOSES, AND WHAT TO WATCH FOR

China's Market Diversification

China is strategically expanding its influence beyond the West and other advanced economies to diversify its markets and strengthen its economic and political ties. These efforts include securing oil supplies by bolstering ties with Russia and Middle Eastern countries. An example is the invitation by China and the other BRICS members to Iran and the United Arab Emirates to join BRICS+. By 2022, more than half of China's oil imports came from the Gulf region. China's Belt and Road Initiative (BRI) has led to the country's increased investment in Arab countries in sectors such as oil and gas, renewable energy, digital connectivity, and logistics.⁶⁴ China's economic engagement with Africa has also increased. Through the Forum on China-Africa Cooperation, China has pledged billions of dollars in infrastructure projects, loans, and investments to improve transportation networks, digital infrastructure, and energy resources, thereby expanding its economic footprint on the continent. China's economic engagement with Southeast Asia has also intensified. Through BRI and the China-ASEAN Free Trade Area, China has

⁶¹ Baldwin and Freeman, "Risks and Global Supply Chains."

⁶² Christopher Tang, "Hong Kong Needs to Attract a Global Talent Pool, Not Just More Chinese," *South China Morning Post*, March 29, 2023 ~ <https://www.scmp.com/comment/opinion/article/3215025/hong-kong-needs-attract-global-talent-pool-not-just-more-chinese>.

⁶³ Wuest et al., "Impact of Covid-19 on Manufacturing and Supply Networks."

⁶⁴ Hasan Alhasan, "Contesting the West: China's Middle East Strategy," International Institute for Strategic Studies, Online Analysis, June 25, 2024 ~ <https://www.iiss.org/online-analysis/online-analysis/2024/06/contesting-the-west-chinas-middle-east-strategy>.


invested heavily in infrastructure projects, trade partnerships, and economic cooperation across Southeast Asia.⁶⁵

To diversify trade partners, China took a leading role in establishing the long-in-development Regional Comprehensive Economic Partnership (RCEP) in 2020—an FTA among fifteen Asia-Pacific countries that was signed in 2020 and went into effect in 2022.⁶⁶ RCEP is the world’s largest FTA measured by combined GDP (\$26 trillion), population (2.27 billion), and total export value (\$5.2 trillion).⁶⁷

Beyond promoting trade partnerships, China is actively pursuing an expansion of its manufacturing dominance in virtually all sectors, across entire supply chains, and at all levels of sophistication. This includes a determined effort to increase exports to stimulate economic growth following a downturn in foreign investment and a slowdown in domestic consumption. According to a Bloomberg survey of economists, China’s exports are expected to grow 4.3% in 2024, potentially boosting GDP despite persistently low consumer spending.⁶⁸ However, this export-driven strategy has raised serious concerns among the United States and its allies, particularly about the possibility of competitive imbalances and market distortions.⁶⁹


The United States’ Supply Diversification and Protectionism


As China seeks to become less dependent on the advanced economies, U.S. firms, as seen above, are de-risking their supply chains through nearshoring, friendshoring, and reshoring strategies.⁷⁰ U.S. de-risking of global supply chains from China has led to a significant decline in China’s share of U.S. trade. The estimated drop in 2024 is more than 10% of U.S. trade for the first time in over two decades. In addition to diversifying supply lines, the Trump-Biden tariffs


⁶⁵ Hong Yu, “China-ASEAN Cooperation Under the BRI,” in *Understanding China’s Belt and Road Initiative*, Asia in Transition 26 (Singapore: Springer, 2024)  https://doi.org/10.1007/978-981-99-9633-9_3.

⁶⁶ RCEP includes Australia, Brunei, Cambodia, China, Indonesia, Japan, South Korea, Laos, Malaysia, Myanmar, New Zealand, the Philippines, Singapore, Thailand, and Vietnam.

⁶⁷ PwC, “Regional Comprehensive Economic Partnership (RCEP)”  <https://customs.pwc.com/en/publications/what-rcep-means-for-international-trade.html>.

⁶⁸ “Economists Raise China Growth Forecasts as Exports Improve,” Bloomberg, June 25, 2024  <https://www.bloomberg.com/news/articles/2024-06-25/economists-raise-china-growth-forecasts-as-exports-improve>.

⁶⁹ Jay Shambaugh, “Remarks by Under Secretary for International Affairs Jay Shambaugh on Chinese Overcapacity and the Global Economy,” U.S. Department of the Treasury, Press Release, July 10, 2024  <https://home.treasury.gov/news/press-releases/jy2455>.

⁷⁰ Tinglong Dai and Christopher S. Tang, “Everybody Talks about Made in America. But It Isn’t That Simple,” *Wall Street Journal*, October 23, 2022  <https://www.wsj.com/articles/manufacturing-returning-united-states-11666275864>.

were focused on reducing risk from China and creating U.S. manufacturing jobs. This strategy has proved to be costly for U.S. companies, however, by raising production costs for U.S. manufacturers, especially when more than half of U.S. imports are raw materials or intermediate goods used as inputs in production. In addition, while some specific industries, such as steel, have seen moderate job growth, the overall impact on manufacturing employment has been negligible. U.S. manufacturing employment only increased by a modest 3.4% between 2018 and 2023.⁷¹

According to U.S. Census data, the nearshoring strategy has increased imports from Mexico by 8%. However, the friendshoring strategy is generating the biggest increases for countries such as India and Vietnam.⁷² The United States has significantly increased its imports of mobile phones from India. China's market share of total U.S. mobile phone imports has fallen from 64% to 42% in 2024, but this decline is largely offset by the increase in imports from India. The market share of mobile phone imports from India increased from 0.15% in 2015 to 10.0% in 2024. This shift is a result of de-risking strategies as Samsung and Apple shift some production from China to India.⁷³ U.S. computer imports from China have fallen 27% between 2018 and 2024, while they have increased from the rest of the world by 39%. While laptop computer imports continue to be dominated by China, Vietnam has gained a significant market share since 2018, rising from 1.7% in 2018 to 28.0% in 2024.⁷⁴

To counterbalance measures such as RCEP and the growing influence of the BRICS+ by adding its own initiative to the mix, the United States launched the Indo-Pacific Economic Framework for Prosperity in 2022 with thirteen member countries across the Indo-Pacific.⁷⁵ Although not an FTA, these diplomatic ties can enable the United States to work with its allies to strengthen supply chain resiliency and achieve "free but secure trade."⁷⁶ Yet, the prospects for the framework are uncertain. Without market access provisions, and with uncertainty about its future after the 2024 U.S. elections, the bloc does not seem to promise much effectiveness.

⁷¹ Christopher S. Tang, "Two Wrongs on China Tariffs Certainly Don't Make a Right," *Barron's*, January 31, 2024 ~ <https://www.barrons.com/articles/tariffs-china-economy-trump-biden-trade-aab363f5>.

⁷² Roberts, "U.S. Imports from China Plunging."

⁷³ *Ibid.*

⁷⁴ *Ibid.*

⁷⁵ This initiative includes Australia, Brunei, Fiji, India, Indonesia, Japan, Malaysia, New Zealand, Philippines, Singapore, South Korea, Thailand, and Vietnam.

⁷⁶ "A Road Map to Achieving Free but Secure Trade with Resilient Supply Chains," Conference Board, July 18, 2022 ~ <https://www.conference-board.org/research/solutions-briefs/achieving-free-trade-resilient-supply-chains>.

The United States and other advanced economies remain troubled about massive exports of Chinese products in emerging sectors, especially Chinese-made EVs. In March 2024, U.S. treasury secretary Janet Yellen expressed concern about China's excess manufacturing capacity, particularly in sectors such as solar panels, EVs, and lithium-ion batteries. She criticized China's "unfair" treatment of U.S. and other foreign companies that distorts global markets and affects jobs.⁷⁷ To prevent China from undercutting U.S. companies and threatening manufacturing jobs, President Biden announced in May 2024 that the tariff rate on EVs under Section 301 would increase from 25% to 100% in 2024.⁷⁸ The tariff increase is seen as a measure to discourage Chinese-made EVs from dominating the U.S. market and potentially create space for domestic EV manufacturers to grow and adapt.⁷⁹ The EU, to protect the bloc's automotive industry, has raised tariffs on Chinese EVs to a range of 17% to 38%, which is on top of a 10% duty that was already in place for electric cars imported from China. In response, China is investigating whether the new tariffs constitute an illegal barrier to free trade.⁸⁰ Chinese manufacturers are also attempting to circumvent these tariffs; for instance, automaker BYD has invested in Turkey and other countries to create transshipment routes and potentially avoid the higher tariffs imposed by the United States and EU.⁸¹

Global Dynamics

Since the 1980s, when global supply chains were born, countries and companies have used four main flows—materials, information, finance, and human—to manage their supply chain networks. Over the past four decades, these cost-driven global supply chains have shaped the global economy. However, geopolitical and trade tensions have prompted both the

⁷⁷ Hung Tran, "Breaking Down Janet Yellen's Comments on Chinese Overcapacity," Atlantic Council, Sinographs, April 9, 2024 [~ https://www.atlanticcouncil.org/blogs/econographics/sinographs/breaking-down-janet-yellens-comments-on-chinese-overcapacity](https://www.atlanticcouncil.org/blogs/econographics/sinographs/breaking-down-janet-yellens-comments-on-chinese-overcapacity).

⁷⁸ "Fact Sheet: President Biden Takes Action to Protect American Workers and Businesses from China's Unfair Trade Practices," White House, May 14, 2024 [~ https://www.whitehouse.gov/briefing-room/statements-releases/2024/05/14/fact-sheet-president-biden-takes-action-to-protect-american-workers-and-businesses-from-chinas-unfair-trade-practices](https://www.whitehouse.gov/briefing-room/statements-releases/2024/05/14/fact-sheet-president-biden-takes-action-to-protect-american-workers-and-businesses-from-chinas-unfair-trade-practices).

⁷⁹ Tinglong Dai, "History Says Tariffs Rarely Work, but Biden's 100% Tariffs on Chinese EVs Could Defy the Trend," Conversation, May 17, 2024 [~ https://theconversation.com/history-says-tariffs-rarely-work-but-bidens-100-tariffs-on-chinese-evs-could-defy-the-trend-230087](https://theconversation.com/history-says-tariffs-rarely-work-but-bidens-100-tariffs-on-chinese-evs-could-defy-the-trend-230087).

⁸⁰ "China Opens Tit-for-Tat Investigation into EU Trade Barriers," Bloomberg, July 10, 2024 [~ https://www.bloomberg.com/news/articles/2024-07-10/china-launches-tit-for-tat-investigation-into-eu-trade-barriers](https://www.bloomberg.com/news/articles/2024-07-10/china-launches-tit-for-tat-investigation-into-eu-trade-barriers).

⁸¹ Sinan Tavsan, "China's BYD to Invest \$1bn in Turkey for EV Plant," *Nikkei Asia*, July 9, 2024 [~ https://asia.nikkei.com/Business/Automobiles/China-s-BYD-to-invest-1bn-in-Turkey-for-EV-plant](https://asia.nikkei.com/Business/Automobiles/China-s-BYD-to-invest-1bn-in-Turkey-for-EV-plant).

United States and China to reduce their economic dependence by de-risking global supply chains. While economists and governments in the United States and its allies have focused on reshoring, friendshoring, and nearshoring as de-risking strategies, decoupling material flows between the advanced economies and China remains virtually impossible in the foreseeable future due to China's comprehensive end-to-end supply chain ecosystem, which no other country can replicate in the medium term. Instead, the United States has sought to diversify its supply base in Southeast Asia, India, and Mexico without cutting ties with China. At the same time, China has strengthened its trade partnerships with various emerging countries in the global South.

Material trade flows are highly trackable, while less visible information and financial flows are essential to support material flows, without which all supply chain transactions would cease to exist. Currently, regulators in various countries are restricting cross-border information flows, making supply chains less efficient. At the same time, several BRICS+ countries are developing alternative systems to the U.S. dollar as the global reserve currency. While this movement may threaten the dominance of the U.S. dollar, having an alternative reserve currency transacted on a system other than SWIFT can provide flexibility in the settlement of trade transactions. Despite the decline in material, information, and financial flows between the advanced economies and China, these flows are becoming more concentrated within new trading blocs. In essence, global supply chain de-risking is reshaping trade patterns. The number of direct links between the West and China is decreasing, while new links are forming between China and the global South, on the one hand, and between the West and the global South, on the other. A new economic order is emerging.⁸²

While material, information, and financial flows are essential, the role of human flows in global supply chains cannot be overlooked. Supply chain de-risking has reduced human flows between the advanced economies and China. The impact of this reduction may not be visible in the short term. However, human interactions have been critical in stimulating innovative ideas. Nobel Laureate economist Edmund Phelps emphasizes that intangible ideas, not just material flows, drive modern economies.⁸³ The long-term impact of reduced human flows remains to be seen, but it


⁸² Zeihan, *The End of the World Is Just the Beginning*.

⁸³ Edmund S. Phelps, *Mass Flourishing: How Grassroots Innovation Created Jobs, Challenge, and Change* (Princeton: Princeton University Press, 2013).

has the potential to hinder the collaborative innovation that has fueled human and economic development.

De-risking by diversifying suppliers across multiple countries is a double-edged sword. On the one hand, it is not just a political agenda but a business reality. It can improve economic resilience by alleviating disruptions in one location. On the other hand, it can increase operational risks by increasing the complexity and lack of transparency in global supply chain operations. According to a 2021 McKinsey survey, only 2% of companies reported visibility beyond their second-tier suppliers—those that provide materials and parts to their direct suppliers.⁸⁴ This lack of supply chain visibility exacerbates the challenges of communicating and coordinating with geographically dispersed suppliers, creating barriers for companies striving to maintain consistent product quality and on-time delivery. To mitigate new risks introduced by de-risking, improving supply chain visibility is essential.

The changing dynamics of the global supply chain have created both winners and losers. As global companies seek to diversify their supply chains beyond China, emerging and growing economies such as Vietnam, Mexico, and India are reaping the benefits. As manufacturers relocate some of their operations, these countries are seeing increased investment and job creation. China continues to benefit from its strong and comprehensive supply chain, even as its de-risking policies pose challenges. China's growing trade ties with countries in the global South also help offset some of the effects of Western de-risking. The United States, Europe, and U.S. allies are trying to reduce their dependence on China, but the country's developed infrastructure and manufacturing capacity make complete decoupling a nonstarter. By emphasizing reshoring and diversifying its supply base, the United States is attempting to increase the resilience of its supply chain. However, this approach comes with difficulties, including higher costs and the challenge of managing more geographically dispersed suppliers. Furthermore, the efficacy of these strategies is contingent upon political stability and policy continuity, which are inherently uncertain, especially with changing administrations and economic policies. While de-risking seeks to improve resilience, its success is contingent upon regional and industrial factors. As the United States and China negotiate the challenges of maintaining strong supply chains amid geopolitical concerns, emerging markets stand to gain the most.

⁸⁴ Knut Alicke, Ed Barriball, and Vera Trautwein, "How Covid-19 Is Reshaping Supply Chains," McKinsey and Company, November 23, 2021  <https://www.mckinsey.com/capabilities/operations/our-insights/how-covid-19-is-reshaping-supply-chains>.

THE OUTLOOK FOR GLOBAL SUPPLY CHAINS

As companies and governments continue their de-risking efforts, they must consider the interconnectedness of the four types of supply chain flows and the broader implications for global trade and economic stability. In the coming years, we can expect more efforts to improve supply chain resilience through technological advances in data analytics and real-time monitoring, which can improve transparency and coordination throughout supply chains. In addition, the trend toward diversification of the supply base is expected to continue, with a growing focus on regionalization and local sourcing. This shift is driven by the need to mitigate the impact of global disruptions and the erosion of the U.S.-led postwar international order.⁸⁵ The evolving geopolitical landscape will continue to shape future supply chain strategies. The emergence of new trade agreements and alliances presents both opportunities and challenges for companies and governments.

Global supply chains are undergoing an irrevocable shift. While material flows remain critical, they are only the most visible aspect of this transition. Beneath the surface, changes in information exchanges, financial reconfigurations, and human capital movements are rewriting the rules of the game. This represents a fundamental reorganization, not just a logistical tweak, of the global supply chain landscape, one that will reshape the terrain for generations to come. The challenge for the United States, China, and the rest of the world is to handle these changes with care and perspective. ◆

⁸⁵ Dai, "Russia's War with Ukraine Could Permanently Reshape the Global Supply Chain"; and Zeihan, *The End of the World Is Just the Beginning*.