The Future of Foreign Trade*

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Abstract

Foreign trade has significantly contributed to global improvements in living standards, a reduction in global inequality since the mid-1990s, and the lifting of millions out of extreme poverty. These gains were supported by the rules-based international order established after World War II. However, these achievements are now under threat. Escalating trade wars risk not only causing significant economic harm to both the United States and low-income countries, but also exacerbating geopolitical tensions.

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1 Introduction

Disputes over trade policy are as old as the field of economics itself. Yet they have taken on new urgency with the recent U.S. administration's adoption of strategies aimed at restructuring global trade flows and patterns of economic interdependence. To assess the consequences of these policies, it is important to consider what foreign trade has accomplished to date, the core features of the international trading system, and the likely effects of these new policies on the well-being of nations.

Section 2 reviews key facts about the evolution of foreign trade and its governing institutions, as well as trends in global income inequality and poverty. Judged by these outcomes, the post–World War II trading system has performed remarkably well, and these facts set the stage for the discussions that follow.

In Section 3, I examine survey data on public attitudes toward trade. The point of this discussion is to show that despite recent criticism of globalization, majorities in both the U.S. and Europe continue to view international economic relations favorably. Section 4 then turns to the rise of global value chains (GVCs), which have been central to boosting productivity and growth, particularly in poorer countries. At the same time, GVCs have deepened cross-country interdependence and exposed vulnerabilities that have prompted calls for reshoring and domestic production. I draw on recent research to explore these issues.

This naturally leads to Section 5, which considers the rise of China as the world's largest trading nation and the policy responses it has triggered. These responses extend beyond trade policy to encompass national security and broader geopolitical concerns. Section 6 evaluates the economic costs of such responses, including potential further escalation of trade conflicts.

Finally, Section 7 offers concluding comments.

2 Background

Foreign trade has expanded rapidly since the beginning of the 19th century, playing a vital role in economic development around the world. Global merchandise exports, which accounted for a mere 5% of GDP in the early part of the 19th century, increased to 25% in the 21st century.[1] However, this expansion was not uniform over time. While trade grew rapidly after World War II, the interwar period disrupted the "first globalization" of 1870-1914. The value of world trade declined from over $29 billion in 1929 to less then $22 billion in 1932.[2]

[1] See Figure 2, p. 19 of WTO (2023).
[2] See Figure 1, p. 17 of WTO (2023).

Trade in manufactured goods has played a central role in this process, with services becoming increasingly important in recent years. Merchandise exports totaled $25 trillion in 2022. Exports of commercial services, which were negligible in the early 1980s, exceeded $7 trillion in 2022 (see WTO STATS). China, the United States, Germany, and Japan are among the world's leading importers and exporters.

Globalization, particularly through foreign trade, has been a key driver of economic growth. Many technological advancements required access to large-scale markets to be profitably implemented. Market integration provided this scale, fostering innovation and productivity gains. After World War II, countries that increased their exports relative to GDP tended to experience faster growth in per capita income.[3] While the direction of causality in this correlation remains difficult to establish—whether increased trade leads to faster growth or vice versa—there is strong evidence that international knowledge flows contribute to productivity improvements across trading nations.[4] Trade and foreign direct investment serve as important channels for the diffusion of knowledge, whether generated by research and development or by other means, such as learning from business partners.

Global income inequality increased over time until the 1990s, primarily due to rising disparities in income per capita across countries.[5] However, during 1993-2018 global inequality declined, driven by narrowing per capita income gaps between countries.[6] As economic growth accelerated in poorer nations, overall world inequality decreased.

Beginning in the late 1970s, economic inequality within some countries—primarily high-income but also some middle-income nations—began to rise. This trend led many observers to attribute the growing inequality to globalization. While some studies did find that foreign trade contributed to rising wage inequality within countries, they also concluded that trade accounted for only a small share of the overall increase. Instead, technological change was identified as a much bigger driver of inequality during this period.[7]

[3]See the chart https://ourworldindata.org/grapher/growth-of-income-and-trade on the website Our World in Data for 1945-2014, accessed on June 19, 2025.

[4]See the theoretical foundations in Grossman and Helpman (1991), the review of evidence in Chapter 5 of Helpman (2004), and the recent analysis of Buera and Oberfield (2020).

[5]Although inequality also rose within certain countries. See below.

[6]See Figure 2 in Milanovic (2024).

[7]See Helpman (2018). More recently, Acemoglu and Restrepo (2022) studied the impact of automation on U.S. wage inequality between 1980 and 2016. They concluded that 50%–70% of the changes in the U.S. wage structure during that period "...are accounted for by the relative wage declines of worker groups specialized in routine tasks in industries experiencing rapid automation. We also verified that our task displacement variable captures the effects of automation technologies (and to a lesser degree offshoring) rather than changes in overall capital intensity, other types of technologies, markups, industry concentration, unionization, or Chinese import competition. These alternative economic trends do not appear to play a major role in the evolution of the U.S. wage structure between 1980 and 2016 and have negligible effects on our estimates." (pp. 2013-2014)

Concerns about inequality remain widespread, particularly with regard to the world's poorest populations. The World Bank defines extreme poverty as living on the equivalent of one U.S. dollar per day in 1990 prices (adjusted to $2.15 in 2017 prices). In the early 1980s, over 50% of the global population lived in such extreme poverty. By 2019, this share had declined to approximately 10%.[8] During this period, an estimated 1.3 billion people were lifted out of extreme poverty. This dramatic reduction was driven by the rapid growth of low-income countries, a transformation that would have been impossible to achieve without their integration into the global trading system.

The establishment of international institutions such as the World Bank, the International Monetary Fund (IMF), and the General Agreement on Tariffs and Trade (GATT) after World War II played a key role in promoting trade and economic integration. Through multiple rounds of negotiation, GATT facilitated substantial tariff reductions, culminating in the Uruguay Round, which led to the creation of the World Trade Organization (WTO) in 1995.[9] The WTO's Dispute Settlement Mechanism helped ensure compliance with trade rules, including the enforcement of Most Favored Nation (MFN) tariff obligations.

However, as tariffs declined, they were increasingly replaced by non-tariff barriers (NTBs), such as countervailing duties and technical regulations. In recent years, the WTO's Dispute Settlement Mechanism has crumbled, contributing to growing disorder in the multilateral trading system. This institutional breakdown began well before the current period turmoil and widespread disregard for WTO rules.

The formation of the WTO also marked the end of major multilateral trade negotiation rounds and spurred the proliferation of Regional Trade Agreements (RTAs). In 1994, there were 34 RTAs in force; by 2005, this number had risen to 134, and by 2025, it reached 376.[10] The debate over whether these agreements enhance economic efficiency and pave the way for future multilateral trade liberalization remains unresolved.

[8] See Figure 6, p. 12 in WTO (2023).

[9] The U.S. average Most Favored Nation (MFN) tariff on manufactured products declined from 6.4% prior to the establishment of the WTO to 5.7% in 1995, and further to 3.7% by 2022. In Canada, the average MFN tariff fell from 10.4% before the WTO's formation to 9.5% in 1995 and 2.4% in 2022. By 2022, nearly all OECD countries maintained low average MFN tariffs, with the notable exception of Turkey, where the average MFN tariff rose sharply from 4.5% in 2021 to 12.2% in 2022. See the World Bank data https://data.worldbank.org/indicator/TM.TAX.MANF.SM.FN.ZS?end=2022&locations=OE-TR&name_desc=false&start=1988&utm_source=chatgpt.com&view=chart accessed on June 23, 2025.

[10] See the WTO Regional Trade Agreements data base https://rtais.wto.org/UI/PublicMaintainRTAHome.aspx, accesed on June 23, 2025.

	Opportunity for growth	Threat to economy
1992 Sept 11-15	44%	48%
2000 May 18-21	56%	36%
2006 Feb 6-9	43%	48%
2015 Feb 8-11	58%	33%
2020 Feb 3-16	79%	18%
2022 Feb 1-17	61%	35%
2025 Feb 3-16	81%	14%

Source: Gallup surveys on the U.S. Position in the World, https://news.gallup.com/poll/116350/position-world.aspx?utm_source=chatgpt.com, accesed on June 23, 2025

Table 1: Gallup Polls

3 Attitudes toward Trade

A backlash against globalization has gained traction in public discourse, yet many misconceptions persist. An important one—often overlooked—is that while by some measures support for international economic relations has declined in recent years, it remains widespread overall. In a large-scale survey, Stantcheva (2023) found support for liberal trade policies, although at a decreasing rate in recent years. The share of respondents who agreed that "Increasing trade with other countries and reducing barriers to trade is something the U.S. should aim for," declined from 69% in 2019 to 59% in 2020 and 57% in 2023. As is evident, however, it remained large. As she summarized in her Coase Lecture at the London School of Economics: "Support for open trade policies is primarily driven by the perception of efficiency benefits. People who believe trade enhances economic efficiency are more likely to favor reducing trade barriers and increasing openness. However, those concerned about the distributional impacts of trade are not necessarily opposed to free trade. Instead, they support policies that redistribute trade gains to mitigate negative effects on vulnerable groups." See Stantcheva (2024).

In Gallup surveys that asked, "What do you think foreign trade means for America? Do you see foreign trade more as an opportunity for economic growth through increased U.S. exports or a threat to the economy from foreign imports?" 44% of respondents in 1992 saw foreign trade as an opportunity for economic growth, while 48% perceived it as a threat to the economy.[11] By 2020, 79% viewed foreign trade as a growth opportunity, while only 18% saw it as a threat to the economy. The pandemic led to a decline in the fraction of respondents who viewed foreign trade as a growth opportunity, but in the February 2025 poll this fraction increased to 81% and only 14% saw trade as a threat to the economy. In

[11] See Table 1.

short, a large majority of respondents to Gallup polls see foreign trade as growth enhancing rather than as a threat to the U.S. economy.

A 2023 survey by the Chicago Council on Global Affairs found that 74% of Americans believed international trade benefited the U.S. economy, 82% believed that it is good for consumers like themselves, 63% believed that it is creating jobs in the U.S. and 80% believed that it is good for their own standard of living. However, 66% also agreed that "US trade policy should have restrictions on imported foreign goods to protect American jobs." These attitudes were prevalent among Democrats and Republicans alike, although to a different degree.[12] Now as then, jobs loom large in the public discourse on economic policies.

In the European Union, 62% of respondents in a 2024 survey said they benefited from international trade, while 34% said they did not (see European-Commission (2024)). In 2019, 60% reported benefiting and roughly 34% said they did not. At the same time, 57% thought the EU should increase tariffs; among them, about one-third supported raising tariffs only against countries that raise tariffs on EU exports (reciprocity), and about one-quarter favored increases to protect industry and jobs.

In sum, majorities in the U.S. and EU view foreign trade favorably; when they endorse protection, it is primarily to safeguard jobs.

4 Supply Chains

A major factor behind the decline in support for open trade was the COVID-19 pandemic. It triggered a shift in demand away from services such as entertainment and travel toward goods—further exacerbated by lockdowns. As a result, international shipping became overloaded, and production of goods struggled to keep pace, leading to widespread shortages. This was interpreted as poor performance of Global Value Chains (GVCs) that evolved into a vital components of the global trading system.

The pandemic-driven decline in international trade was brief. The drop during the financial crisis of 2008 was both steeper and more prolonged, yet in both instances, trade rebounded quickly. In other words, contrary to popular belief, supply chains proved to be remarkably resilient.

Supply chains have grown increasingly complex, involving numerous partners across different countries. While some inputs are sourced from anonymous global markets, many specialized transactions take place within GVCs, facilitated by the fragmentation of production. GVCs require careful matching of compatible partners, often incurring substantial

[12] See Friedhoff and El Baz (2023).

Company	No. of Tier-1 Suppliers	No. of Tier-2 Suppliers and below
Genera Motors	856	18,000+
Airbus	1,676	12,000+
Apple	638	7,400+
Nestlé	717	5,000+

Source: Exhibit 5 in Lund et al. (2020)

Table 2: Suppliers

search costs. They also frequently involve relationship-specific investments, fostering durable partnerships and creating "stickiness" in supplier relationships.

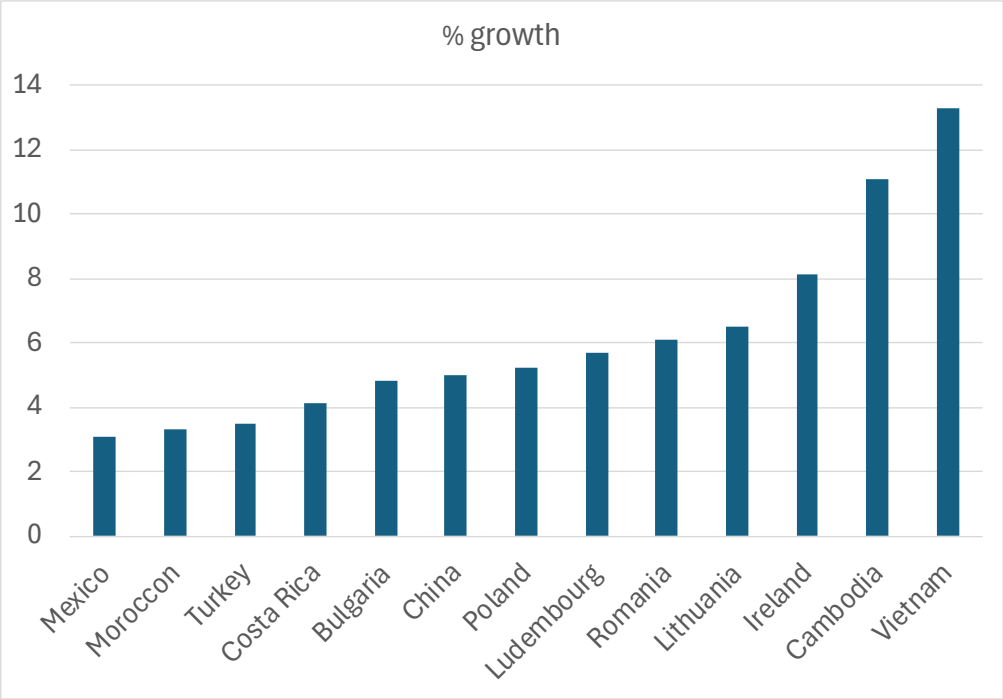
The manufacturing of many essential products relies on extensive networks of suppliers. Table 2 presents data on the supplier networks of four major companies. General Motors, for example, had 856 Tier-1 (direct) suppliers and over 18,000 Tier-2 and lower-tier suppliers. Similarly, Airbus had 1,676 Tier-1 suppliers and more than 12,000 Tier-2 and lower-tier suppliers. These complex supply chains span numerous countries, with many low-income nations benefiting from their expansion over time.

While innovative activities within GVCs remain heavily concentrated in Europe and North America, Asia plays a large role in advanced manufacturing. In contrast, several African and South American countries tend to be involved in more limited forms of manufacturing.[13]

The importance of Global Value Chains in international trade has increased significantly over time. In 1970, the share of manufactured GVC trade in global trade was approximately 37%. By 2007, just before the global financial crisis, this figure had risen to over 50%.[14] Although this share did not continue to grow after the crisis, it remained stable at around half of global trade in the subsequent years.[15] Similarly, trade in services within GVCs expanded prior to the crisis, surpassing 37%, but then declined slightly to just under 35% in the following years.[16]

As shown in Figure 1, a fair number of low- and middle-income countries, increased participation in GVCs at a fast pace. For instance, between 2010 and 2020, China's GVC participation grew at an average annual rate of 5%. Growth rates were even higher in other countries: 6.1% in Romania, 6.5% in Lithuania, 11.1% in Cambodia, and 13.3% in Vietnam.[17] Greater integration into global supply chains has been instrumental in accelerating the rise

[13]See Map 1.1, p. 21 in World-Bank (2020).
[14]See Figure 1.2, p. 19 in World-Bank (2020).
[15]See Figure 3 in Borin et al. (2021).
[16]See Figure 3 in Borin et al. (2021).
[17]GVC participation is measured as foreign value added in a country's exports plus domestic value added in other economies' exports



Source: Figure B.18, p. 41 in WTO (2023)

Figure 1: Average Annual Growth in GVC Participation, 2010-2020

in living standards in these countries.

Major supply chain disruptions have occurred over the past 15 years. For example, in 2011, a powerful earthquake and tsunami struck Japan, leading to a 0.47 percentage point decline in the country's real GDP growth in the following year.[18] That same year, severe flooding in Thailand dealt a heavy blow to Japan's automobile industry, which relied on supply of parts and components from Thailand. Haraguchi and Lall (2015) report that according to UNISDR, the floods reduced global industrial production by 2.5%. In March 2021, a container ship operated by Evergreen Marine blocked the Suez Canal for about one week, stranding more than 400 vessels in the Mediterranean and the Red Sea.[19]

During the COVID-19 pandemic, semiconductor shortages became widespread, persisting for several years. Additionally, the pandemic led to shortages of essential products such as masks, toilet paper, and shipping containers.

While these events called attention to vulnerabilities in supply chains, they masked the fact that business firms constantly deal with risks of supply disruptions. According to the McKinsey Global Institute, companies experience supply chain disruptions of varying dura-

[18]See Carvalho et al. (2021).

[19]See https://www.theguardian.com/world/2021/apr/03/suez-canal-blockage-last-ships-expected-to-pass-through-today?utm_source=chatgpt.com, accessed on July 3, 2025.

tions at regular intervals. On average, they face one to two weeks of disruption every two years, two to four weeks every three years, one to two months every four years, and more than two months of disruption approximately every five years.[20]

The cost of supply chain disruptions varies across industries. In aerospace, the average cost over a ten-year period amounted to nearly 67% of net annual earnings, making it one of the most affected sectors. In contrast, the pharmaceutical industry experienced relatively lower costs, averaging 24% of net annual earnings. Across all industries surveyed by the McKinsey Global Institute, the average cost of disruptions stood at 42% of net annual earnings.[21] Given that business firms routinely deal with supply disruptions, should governments be concerned with the resilience of international supply chains? More specifically, should they encourage companies to diversify their suppliers or rely more on domestic sources? These questions are further discussed below.

5 Ascent of China and Response

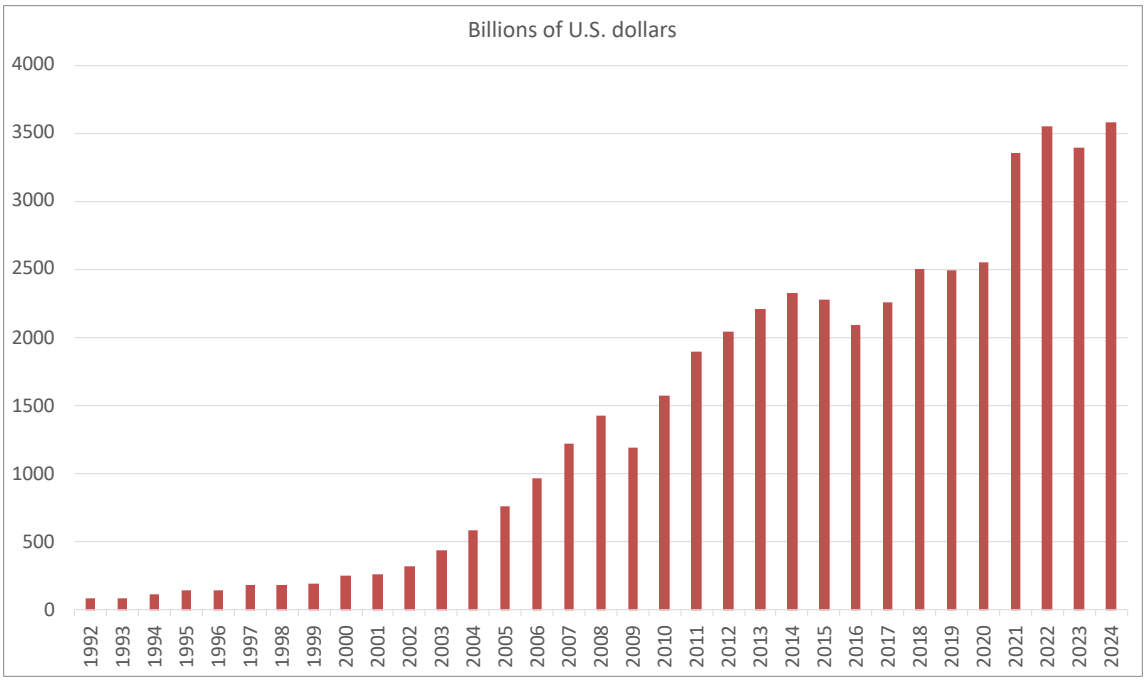
China's economic growth and increasing participation in international trade have raised widespread anxiety, particularly in the United States. Since joining the WTO in 2001, China has rapidly expanded its exports, becoming the world's largest exporter in 2009. As shown in Figure 2, in 2000 China's exports amounted to 250 billion dollars. This increased to 1.6 trillion in 2010, 2.5 trillion in 2018 and more than 3.5 trillion in 2024.

As shown in Figure 3, over time, trade between the U.S. and China has grown, but Chinese exports to the U.S. have risen at a faster pace than U.S. exports to China.[22] This imbalance has led to a widening U.S. trade deficit with China (also shown in this figure), further fueling concerns in the United States.

Despite growing apprehension about trade with China, estimates suggest that 17% of U.S. gains from trade between 1995 and 2011, a period that includes China's accession to the WTO, can be attributed to trade with China, while only 10% of China's gains from trade can be attributed to the U.S.[23] During this period, the U.S. overall gains from trade were substantial, amounting to 3.39% of GDP, whereas China's gains reached 4.58%.

In 2018, President Trump—who was concerned then with the U.S. trade deficit as much as he is today—imposed tariffs on imports from China, marking a significant shift in U.S. trade policy. Before 2018, trade barriers were higher on final goods than on intermediate inputs. According to Bown and Cowley (2016), in 2013 MFN tariffs on final goods were 70–

[20] See Exhibit E1, p. 4 in Lund et al. (2020).
[21] See Exhibit E5, p. 12 in Lund et al. (2020).
[22] This figure was inspired by Figure 3 in Blanga-Gubbay and Rubinova (2024).
[23] See Caliendo and Parro (2023).



Source: Federal Reserve Bank of St. Louis
https://fred.stlouisfed.org/series/XTEXVA01CNA667S#, accessed on July 4, 2025

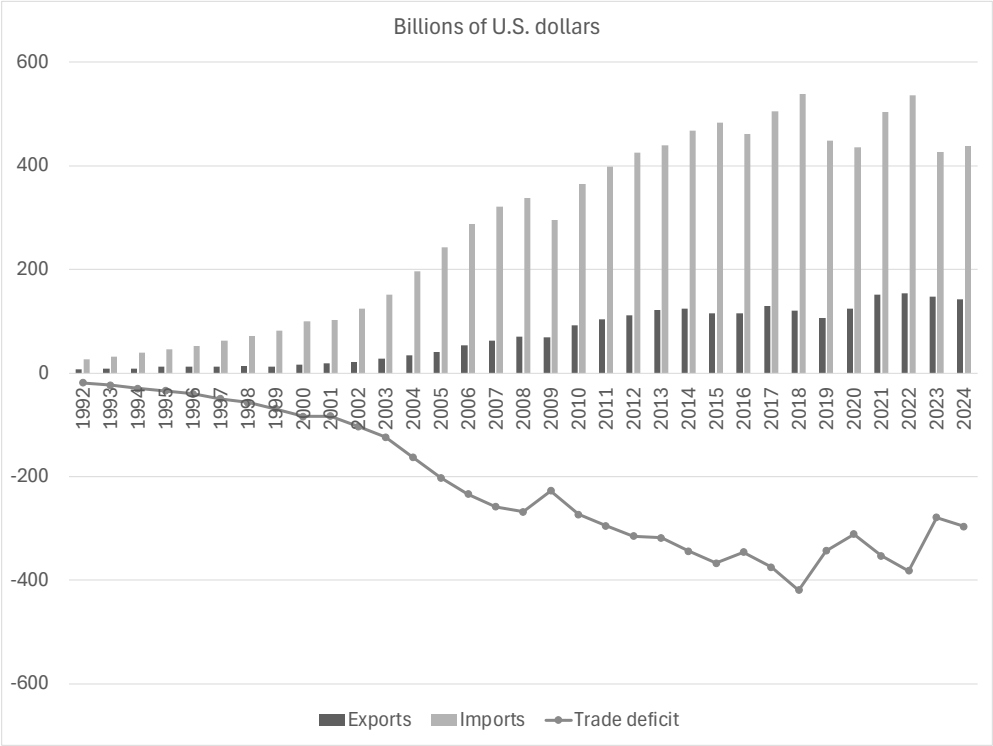
Figure 2: China's Annual Exports of Commodities, 1992-2024

75% higher for the G20 high income and emerging economies than on intermediate inputs. The 2018 U.S. trade policy reversed this pattern, increasing tariffs on intermediate goods at a much faster rate than on final products. The rising cost of intermediate inputs due to these tariffs negatively impacted U.S. exports.[24] Since imported intermediate inputs tend to raise productivity, barriers to sourcing them from abroad adversely affects productivity growth.[25]

U.S. trade policy led to a shift in trade away from China toward other low-cost Asian countries that were not subject to President Trump's tariffs. This trade diversion allowed businesses to reconfigure supply chains, sourcing goods from other countries to mitigate the impact of higher tariffs on Chinese goods.[26]

However, this shift increased the overall cost of U.S. imports, as companies had to secure new suppliers and pay higher prices for inputs sourced from other Asian countries. Studies found that Trump's tariffs were almost fully passed through to higher prices in the U.S.[27] Moreover, while U.S. reliance on direct imports from China declined, indirect dependence

[24]See Handley et al. (2020).
[25]See Halpern et al. (2015) for Hungary and Goes and Bekkers (2022) for various regions of the world.
[26]See Grossman et al. (2024).
[27]See Amiti et al. (2019), Fajgelbaum et al. (2020) and Cavallo et al. (2021). The latter study found that the incidence of higher prices fell predominantly on U.S. importers.



Source: U.S. Census, https://www.census.gov/foreign-trade/balance/c5700.html?utm_source=chatgpt.com#1999, accessed on July 5, 2025

Figure 3: China-U.S. Trade in Goods, 1992-2024

expanded. Asian countries such as Vietnam and Indonesia, which increased their exports to the U.S., also expanded their own imports of intermediate goods from China in order to manufacture products for the U.S. market. As a result, China's central role in global supply chains remained largely intact, with direct dependence shifting to indirect dependence. This is a vivid example of the unintended consequences of trade policies and should serve as a warning for current policy design.

Another major misconception was that tariffs on Chinese imports would reduce the U.S. trade deficit, despite evidence suggesting that tariffs are poor instruments for this purpose. Trade deficits are largely a macroeconomic phenomenon, driven by the gap between investment and savings. In this context, the U.S. government's budget deficit contributes significantly to the trade deficit. As expected, the Trump administration's 2018 tariffs failed to meaningfully reduce the overall trade deficit. However, recent research suggests that tariffs can influence the valuation of financial assets, which could have a measurable—though indirect—effect on the trade balance.[28]

[28]See Itskhoki and Mukhin (2025). Prior to the pandemic, in 2019, the Federal debt was about 105% of GDP. This ratio increased during the pandemic to 133% and declined to 121% recently. See https://fred.stlouisfed.org/series/GFDEGDQ188S, accessed on July 8, 2025.

Emphasizing the use of tariffs to reduce bilateral trade deficits is particularly imprudent. A country can maintain bilateral trade deficits with some partners and surpluses with others while still achieving overall trade balance. These bilateral imbalances often reflect differences in comparative advantage and patterns of demand. Imposing tariffs to artificially enforce bilateral trade balance undermines economic efficiency and lowers the standard of living.

The 2020 pandemic triggered a surge in negative sentiment toward global supply chains, leading to calls for reshoring, nearshoring, and friendshoring policies aimed at enhancing supply chain resilience. However, these proposals were largely misguided, lacking both theoretical foundation and empirical support.

The incoming Biden administration opted to maintain the Trump-era tariffs on China. Furthermore, shortly after taking office, on February 24, 2021, President Biden issued Executive Order 14017: America's Supply Chains, establishing a task force directed to develop strategies for strengthening the resilience of American supply chains.[29] Section 1 of the order states:

> "The United States needs resilient, diverse, and secure supply chains to ensure our economic prosperity and national security. Pandemics and other biological threats, cyber-attacks, climate shocks and extreme weather events, terrorist attacks, geopolitical and economic competition, and other conditions can reduce critical manufacturing capacity and the availability and integrity of critical goods, products, and services. Resilient American supply chains will revitalize and rebuild domestic manufacturing capacity, maintain America's competitive edge in research and development, and create well-paying jobs."

Over time, these policies were further elaborated by Treasury Secretary Janet Yellen and National Security Advisor Jake Sullivan, with a strong emphasis on national security considerations. In a speech on April 20, 2023, Secretary Yellen stated:[30]

> "... national security is of paramount importance in our relationship with China. ... The U.S. government's actions can come in the form of export controls. ... We also carefully review foreign investments in the United States for national security .... And we are considering a program to restrict certain U.S. outbound investments in specific sensitive technologies..." "... We've mounted a historic expansion of American semiconductor manufacturing through the CHIPS and Science Act." "A top priority for President Biden is the resilience of our critical

[29] See https://bidenwhitehouse.archives.gov/briefing-room/presidential-actions/2021/02/24/executive-order-on-americas-supply-chains/?utm_source=chatgpt.com

[30] See https://home.treasury.gov/news/press-releases/jy1425.

supply chains ... We are also pursuing a strategy called "friendshoring" that is aimed at mitigating vulnerabilities that can lead to supply disruptions."[31]

This U.S. policy alarmed many countries in Europe and Asia. In an interview with *The Economist* published on May 2, 2024, French President Emmanuel Macron expressed deep concerns about Europe's security and the potential consequences of escalating global tensions.[32] He emphasized the urgency for Europe to strengthen its strategic autonomy and reduce dependence on external powers. He said: "...[the Americans] have stopped trying to get the Chinese to conform to the rules of international trade". Calling the Inflation Reduction Act "a conceptual revolution", he accuses America of being like China by subsidizing its critical industries. "You can't carry on as if this isn't happening," Macron said and he called for a European response in the form of industrial policy.

National security-related trade concerns have become increasingly prominent and have been raised more frequently in WTO committees since 2013.[33] Relatedly, Steil and Harding (2024) note that during the first 70 years of the GATT/WTO system, members rarely invoked Article XXI to justify protectionist measures on national security grounds. This changed in 2017, when the United States began using national security to justify 30 Technical Barriers to Trade (TBTs). Since then, reliance on GATT Article XXI's security exemption for protectionist purposes has increased—especially among low-income and lower-middle-income countries.[34] According to the World Bank's classification, low income countries are those with an income per capita of $1,145 or less, while lower middle-income countries have an income per capita between $1,146 and $4,515. These types of barriers have become increasingly central to geopolitical trade considerations.

Then as now, a major concern in U.S. policy was the decline in manufacturing employment, which had been steadily decreasing since the 1970s as a share of the civilian labor force. As shown in Figure 4, manufacturing employment as a share of civilian employment was 23% in 1969, it declined to 12% in 2000, to 9% in 2007 and to 7.5% in 2025. This downward slide, driven mostly by automation, rising productivity and a shift in demand toward services, was only modestly influenced by the rise of China. Despite this long-term trend, manufacturing employment stabilized after the 2008 financial crisis. Nonetheless, the issue remained central

[31]The CHIPS and Science Act of 2022 aimed to bolster domestic semiconductor manufacturing and reinforce the U.S. position in technology and innovation. It allocated $52.7 billion to support semiconductor production, research, and workforce development, along with a 25% tax credit for semiconductor manufacturing investments. Additionally, the act increased funding for the National Science Foundation (NSF), the Department of Energy (DOE), and the National Institute of Standards and Technology (NIST). It also included programs to expand STEM education and workforce training to support the industry's long-term growth.

[32]See https://www.economist.com/europe/2024/05/02/emmanuel-macron-in-his-own-words-english.

[33]See Figure 4, p. 20 in WTO (2023).

[34]See the figure in Steil and Harding (2024).

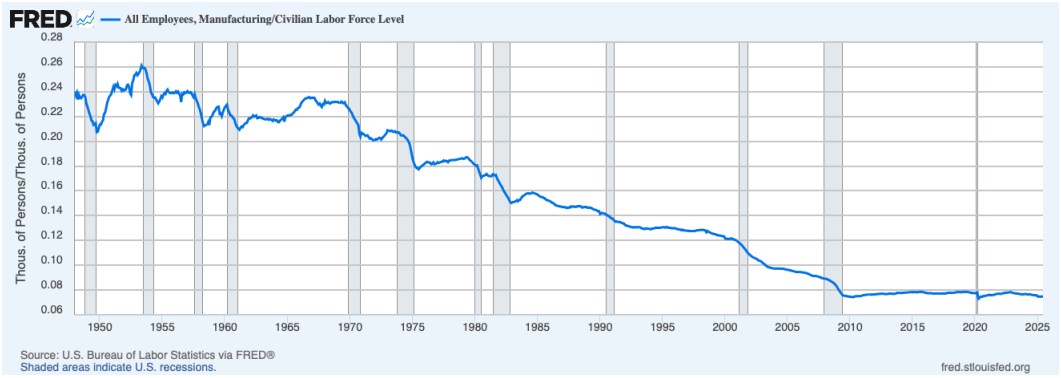


Figure 4: U.S. Manufacturing Employment as Share of the Civilian Labor Force, 1943-2025

to debates on trade and industrial policies. Recent studies emphasize the broader need to create "good jobs" across the economy, not exclusively within manufacturing.[35] Given that the service sector employs more than ten times as many workers as manufacturing, it should be capable of providing many more high-quality employment opportunities.

Can tariffs raise domestic employment in manufacturing? In principle, they can—by shifting demand away from foreign products toward domestic substitutes. However, an increase in employment is not guaranteed. Domestic production may expand, but if much of it is automated, few new jobs will be created. Furthermore, when tariffs are imposed on intermediate inputs, they raise production costs and may reduce employment. Finally, if foreign countries retaliate with their own tariffs, domestic exports can decline, further negatively impacting employment. Therefore, the net effect on employment can be either positive or negative.

A study of the 2018-2019 tariffs on China by Flaaen and Pierce (2024) found that the negative effects—higher input costs and foreign retaliation—dominated. As a result, the tariffs led to a relative decline in U.S. manufacturing employment. This finding is highly relevant to the current policy debate.

Trade restrictions began to increase following the 2008 financial crisis, with the pace of restrictions accelerating significantly after 2018.[36] These restrictions were primarily concentrated in goods trade, but gradually spilled over into services. This shift reflected a growing trend toward protectionism, driven by concerns over national security, domestic employment, and—importantly—geopolitical competition.

Terms such as "Reshoring," "Onshoring," and "Nearshoring," promoted by Yellen, have gained prominence in corporate presentations, reflecting a growing emphasis on reducing reliance on distant suppliers and relocating production closer to domestic or regional mar-

[35] See Rodrik (2023).

[36] See Figure 7, p. 11 in Aiyar et al. (2023).

kets.[37] These strategies aim to enhance supply chain resilience, mitigate geopolitical risks, and strengthen local manufacturing capabilities. Such considerations now play an outsized role in policymaking. However, whether they achieve these goals remains controversial.

6 Consequences

Geopolitical considerations have become increasingly influential in shaping trade relations, elevating the importance of alliances in international affairs. Countries with more treaties—particularly economic ones—tend to trade more with each other.[38] Moreover, participants in Regional Trade Agreements are more likely to vote similarly in the UN General Assembly than countries without such agreements.[39] In the context of two emerging blocs—one centered around the U.S. and the other around China—trade between these blocs has expanded at a slower pace than trade within them since Russia's invasion of Ukraine, echoing patterns seen during the Cold War.[40] Should this trend continue, the economic repercussions for the global economy will be grim. This is especially significant because the Soviet bloc was not as deeply integrated into the global trading system as the current Chinese bloc is.

Tariffs imposed on goods within global supply chains can have substantial economic impacts. Grossman et al. (2024) estimate the cost of the Trump-era tariffs at around $24 billion—triple earlier estimates that disregarded the role of supply chain linkages.

Caselli et al. (2020) examined the relationship between trade openness and income volatility, particularly through the lens of increased specialization. They found that while trade openness can heighten income volatility by encouraging specialization, it can also reduce volatility when country-specific shocks are significant. In such cases, access to international markets helps buffer domestic disturbances. Quantitatively, they concluded that international trade has, in fact, reduced economic volatility for most countries in recent decades.

An important case study highlighting the insurance benefits of access to international markets is provided by Moll et al. (2023). They examined Germany's response to the loss of Russian gas imports following the outbreak of war in Ukraine. Comparing July 2022–March 2023 with the same period in 2019–2021, they found that Russian gas supply fell by 41% of total consumption. However, Germany largely compensated for this shortfall through international diversification: "Additional supplies from third countries (like Norway, Algeria, and the United States) accounted for 33 percent of the gap, while gas demand in 2022–2023 was about 20 percent lower compared to the 2019–2021 average." (p. 416)

[37] See Figure 9, p. 11 in Aiyar et al. (2023).
[38] See Broner et al. (2025).
[39] See Sokolova and DiCaprio (2018).
[40] See Gopinath et al. (2025).

Moreover, as shown earlier, companies routinely face significant disruption risks in the normal course of business. To design effective public policies for resilient supply chains, we must therefore first address the following questions: Are private risk management strategies insufficient? From a societal perspective, do firms invest too little—or perhaps even too much—in mitigating these risks? Grossman et al. (2023) have studied these issues, finding that companies may diversify too much, and not necessarily too little as often argued in policy debates.

There has been a rapidly growing body of research on the impact of geopolitics on economic policy, because the trade war between the United States and China is driven not only by economic considerations but also by geopolitical motives. Both major powers seek to encourage other countries to align with them in order to strengthen their positions on the global arena. These geopolitical dynamics are evident in voting patterns at the United Nations General Assembly, where some countries align with the United States while others side with China.[41]

Becko et al. (2025) examine the formation of trade policies—specifically, tariffs and free trade agreements—in a world where two major powers use these instruments as sticks and carrots to induce smaller countries to align with them. Their analysis shows that in this case the geopolitical component of tariffs is large and that rising geopolitical tensions lead to increased protectionism globally and to a decline in the volume of trade. They also find in counterfactual simulations that the growth of China from 3% of the world's GDP in 1997 to 17% in 2024 raised average protection in the world and reduced global trade volumes.

The costs of trade fragmentation vary across estimates, depending on the methodology used and the specific form of decoupling involved. Accounting for harm to international flows of knowledge raises these estimates substantially, as does accounting for the impact of fragmentation on R&D and innovation.

Bolhuis et al. (2023) highlight the critical role of trade in commodities, particularly those essential to the upstream tiers of global value chains (GVCs). They explore several fragmentation scenarios, including relatively limited ones involving prohibitive trade barriers in sectors such as energy, agriculture, and high-tech goods (e.g., electronics and machinery). More severe scenarios include what the authors term Geo-economic fragmentation, wherein the U.S. and EU cease trade with Russia and China, compelling other countries to align with one bloc or the other, but not both. Under this scenario, global GDP is projected to decline by 4.8% in the short run and 2.3% in the long run. The impact on low-income countries is especially pronounced, with estimated output losses of 10.8% in the short term and 4.3% in the long term—reflecting their heavy dependence on commodity-based trade, particularly

[41] See Figure 4 in Becko et al. (2025).

on exports of metals and energy.

Cerdeiro et al. (2021) examine the effects of technological decoupling—specifically, the elimination of trade in high-tech products—on labor productivity and output. The central hypothesis is that trade in high-tech goods facilitates international knowledge spillovers, which in turn enhance labor productivity. Following the approach of Coe and Helpman (1995), the analysis uses foreign R&D as a proxy for the stock of knowledge available abroad, with trade serving as a channel for its diffusion. Their findings suggest that such knowledge spillovers have significantly contributed to innovation and productivity growth in both the United States and China.

An interesting scenario, out of six, considered involves a complete cessation of high-tech trade between the U.S. and China, with other countries aligning themselves with either power based on their largest trade volumes (Scenario 2). This results in the formation of two distinct blocs—a U.S.-led club and a China-led club—with trade restricted to within each group. In this counterfactual scenario, China's GDP is projected to decline by approximately 4% after ten years, while the U.S. experiences a 3% drop. The most severely affected is South Korea, with a GDP contraction exceeding 6%. The European Union and Japan also face notable declines, ranging from 3% to 4%.

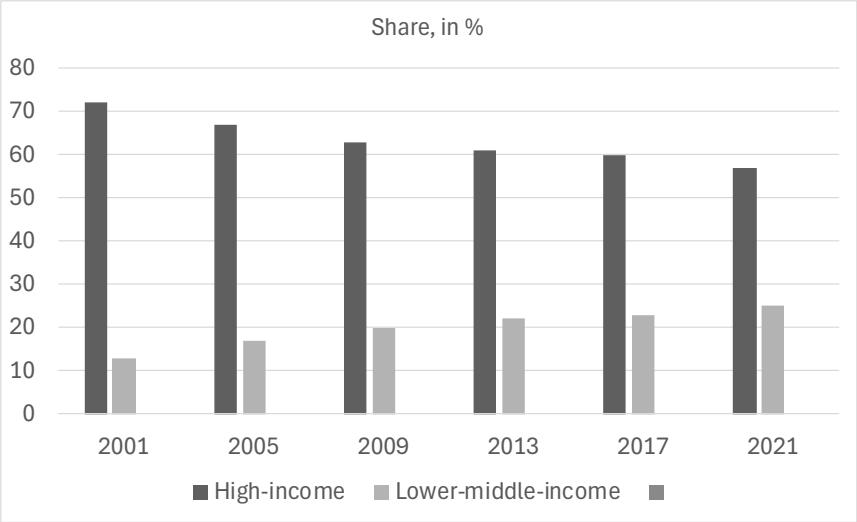
A more elaborate analysis of the diffusion of ideas through the use of intermediate inputs sourced both domestically and internationally is provided by Goes and Bekkers (2022).[42] In this framework productivity evolves over time in response to the diffusion of ideas. They group countries into blocs based on foreign policy similarity scores proposed by Hage (2011). A Western bloc, aligned with the U.S., includes the EU, Canada, Australia, Japan, and South Korea. An Eastern bloc, aligned with China, comprises India, Russia, most of North Africa, and Southeast Asia. Latin America and Sub-Saharan Africa are positioned in between, with the former more closely aligned with the U.S. than the latter.

Goes and Bekkers (2022) explore two scenarios: (i) full decoupling, in which trade continues within each bloc but ceases across blocs; and (ii) tariff decoupling, where tariffs between blocs are raised by 32 percentage points.[43] In both scenarios, decoupling reduces welfare across all countries, though the impact is heterogeneous. In the Western bloc, real income declines range from 1% to 8% by 2040, with a median loss of 4%. In the Eastern bloc, the losses are more severe, ranging from 8% to 12%, with a median decline of 10.5%.

These estimates suggest potentially enormous economic costs from fragmentation of the

[42]Their mechanism for knowledge growth is similar to Buera and Oberfield (2020).

[43]They cite Nicita et al. (2018) as the source for this estimate. However, Nicita et al. (2018) report a 35 percentage point increase in tariffs when shifting from a cooperative to a non-cooperative tariff regime. This three-percentage-point discrepancy is likely to have only a minor effect on the results reported by Goes and Bekkers (2022).



Source: Figure B.16, p. 38 in WTO (2023)

Figure 5: Share of Global Merchandise Exports by Income Group

world's trading system—especially from a loss of the international diffusion of knowledge. Recent policies have been often directed toward restrictions on the cross-boarder sharing of knowledge, which amplify such losses. We have also seen that poorer countries are particularly vulnerable to decoupling. They were beneficiaries of fast growth of participation in global value chains, as shown in Figure 1, and from the growth of their participation in foreign trade more generally, as shown in Figure 5.

Between 2001 and 2021, the share held by high-income countries in global exports declined from 72% to 57%, while the share of lower-middle-income countries rose from 13% to 25%. In other words, the ratio of high-income to lower-middle-income countries' share of global trade dropped from over 5:1 to just over 2:1 during this period.[44] The share of upper-middle-income and low-income countries remained relatively stable throughout these two decades.

7 Concluding Comments

The global economy faces enormous risks due to the erosion of the rules-based international order. Uncoordinated industrial and trade policies, combined with growing geopolitical fragmentation into exclusive "clubs" of countries, threaten global trade and investment.

While Global Value Chains (GVCs) may not always operate at peak efficiency, they have shown remarkable resilience and performance in recent years. Businesses already factor supply chain risks into their strategic planning, and it remains unclear how government

[44]Income per capita of lower-middle-income countries was between $1,136 and $4,465 in 2024.

intervention can enhance this form of risk management.

Foreign trade has been instrumental in reducing global income inequality and lifting large populations out of extreme poverty. It has also contributed to a decline in income volatility across many countries. Undermining this stabilizing force will have damaging consequences. In particular, trade-restrictive policies targeting supply chains pose a risk of substantial economic losses, especially for lower-middle-income countries.

To avoid economic fragmentation and safeguard the benefits of global trade, international cooperation in policy design is essential. Yet, at present, the pendulum appears to be swinging in the opposite—and ultimately counterproductive—direction. According to the Chart Book of Global Trade Alert, on August 18, 2025, the trade-weighted effective tariff rates on U.S. imports stood at 47.3% for China, 30.0% for Brazil, 26.7% for Switzerland, 22.0% for Japan, 18.8% for Germany, 16.7% for Mexico, 15.6% for South Korea, 11.6% for Canada, and 6.6% for Ireland.[45] Moreover, threats to impose further tariff increases on multiple countries persist, exacerbating uncertainty and undermining the prospects for global trade stability.

The trade war between the United States and China poses significant risks that extend beyond mere economic consequences. At its core, it reflects a broader geopolitical struggle between an established global power and an emerging one. As Allison (2017) compellingly argues, historical precedents of such clashes can culminate in war when the dominant power fails to effectively accommodate the rise of its challenger. In this context, economic statecraft is critical for managing tensions and facilitating peaceful adjustment, whereas a trade war exacerbates rivalry and undermines the prospects for stable coexistence.

[45] See Fritz (2025)

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