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# The Surprising Resilience of Globalization: An Examination of Claims of Economic Fragmentation

by Brad Setser



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# The Surprising Resilience of Globalization: An Examination of Claims of Economic Fragmentation

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**ABSTRACT**

Bipartisan doubts about the value of liberal trade in the US are shared by many populist European parties, who also question the value of deeper international economic integration. Yet for all the skeptical rhetoric—and real steps from the US and other advanced economies—globalization is not in retreat. Global trade continues to rise alongside global economic growth. If anything, trade has picked up since the pandemic. Widespread expectations that the global economy would fragment into rival blocks have not yet come to pass. Global flows related to corporate tax avoidance remain significant, cutting into US fiscal revenues. China's increasingly troubled domestic economy and its large-scale industrial policies risk leaving the US and its allies more, not less, reliant on Chinese supply in key sectors. The recent surge in China's trade surplus is evidence of ongoing globalization, and China's continued reliance on the world's big democracies for demand runs counter to any coherent definition of fragmentation. But increased global reliance on China for supply emerges more from China's own economic imbalances than from a healthy global division of labor. There is thus scope for policy reforms that support a healthier form of integration: notably, ending the perverse incentives in the US tax codes that undermine US production and revenues and harmonizing clean industrial policies to deepen trade among allies.

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## Introduction

Deglobalization and fragmentation have become new buzzwords. *The Economist* (2024) posits that fragmentation is "visible in the economic data, as investors reprice assets and redirect capital in a less integrated world." *Bloomberg* columnist Andreas Kluth (2024) is even more blunt: "Global trade and finance are fragmenting into rival and increasingly hostile blocs, one centered on China and extending into the global South and another around the United States and other Western countries."

The International Monetary Fund (IMF) research team is bit more careful, acknowledging that "the extent of fragmentation is still relatively small," while worrying that "the decoupling between the rival geopolitical blocs during the Cold War suggests [fragmentation] could worsen considerably should geopolitical tensions persist and trade restrictive policies intensify" (Gopinath et al. 2024, abstract). The IMF paper's title, "Changing Global Linkages: A New Cold War?," captures the current mood.

The Trump tariffs, the interruption of global trade during the COVID-19 pandemic, the disruption to energy markets following Russia's 2022 invasion of Ukraine, and America's turn toward industrial policy in the Inflation Reduction Act (IRA) all marked the end of an era. The world, to use the famous Tom Friedman phrase, is no longer flat. Expectations of increasing interdependence have given way to the imperatives of strategic competition; the end of new trade liberalization has ushered in an era of industrial policy.

The now-standard tale of deglobalization certainly contains a kernel of truth. Policies meant to accelerate economic integration across borders no longer command a clear political majority, certainly not in the United States.

But as a description of the current global economy, this paper argues that that narrative is incomplete at best and in many ways simply inaccurate. As significant as the political forces pushing for a less integrated world are, there are also strong forces pushing for further integration—even when further integration isn't necessarily healthy.

One important example is the US corporate tax code, which continues to strongly incentivize offshoring in key sectors of the economy, notably in advanced pharmaceuticals. The resulting pattern of trade and investment is a function of tax avoidance rather than a reflection of a healthy international division of labor.

More significantly, China's own domestic downturn—and Chinese president Xi's resistance to consumer-focused stimulus—is pushing China's economy to rely more on exports, even as its trading partners express growing concerns about dependence on Chinese supply. Unbalanced integration is still a form of integration—measures of

globalization grew rapidly during the run-up to the global financial crisis. But large countries that need to export without importing—to make up for an internal shortage of demand—will generate more sources of supply dependence without allowing for a reciprocal expansion of trade. The resulting pattern of trade and financial flows is thus not really a sign of a healthy global economy.

This paper focuses on thorough description rather than grand theory. A close examination of the data shows that the world economy remains far from truly fragmented along political lines. In some ways, that lack of fragmentation is a risk, as the global economy is more integrated than it should be according to the political consensus in any major part of the global economy. The IMF and others are right to warn of the risks of a sudden stop to trade and financial flows across different political blocs. Yet recognition of the ongoing risk of a sudden "deglobalization" shock should not lead to the conclusion that all forms of current global integration are healthy.

This paper also highlights three areas in which reform could generate a healthier pattern of integration: reform of the pro-offshoring elements in the current US corporate tax code; the introduction of subsidies-sharing agreements and other measures to harmonize industrial policies in clean energy sectors among allies; and a renewed focus on the external spillovers from China's unbalanced domestic economy. The overarching theme, though, is that the immediate risk facing the global economy is perhaps better described as unhealthy integration than fragmentation.

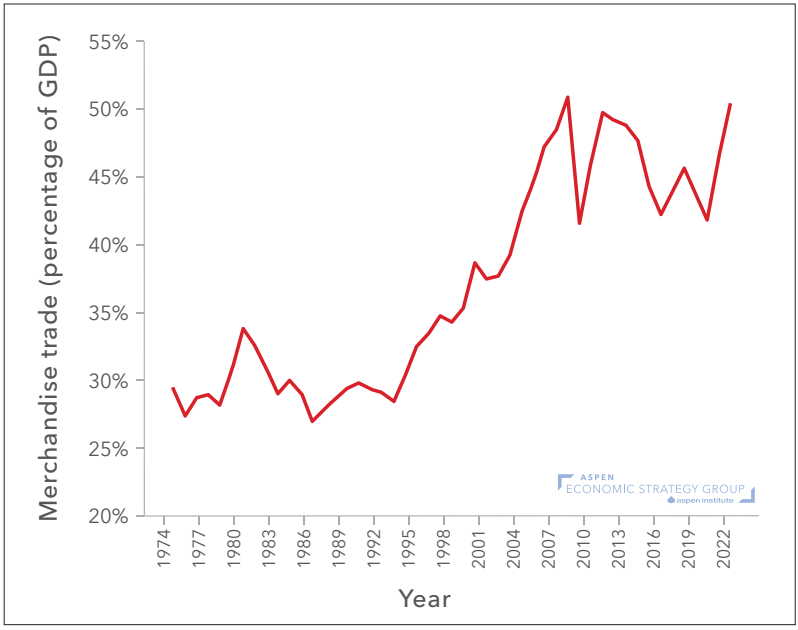
## 1. Deglobalization or resilient globalization?

The standard method by which to measure globalization is to look at a host of global trade and financial flows relative to world GDP. Increased integration shows up as increased trade and increased cross-border finance relative to world output. Another oft-cited measure is the degree of balance between trade-liberalizing and trade-restricting measures. The IMF (2024) has noted a tripling of trade restrictions over the last five years.

It is important, however, not to assume that the political shifts against globalization have reduced measured global trade, as figure 1 demonstrates. After Donald Trump forcefully rejected the Trans-Pacific Partnership (TPP), US trade with Asian members of the TPP actually accelerated as US imports from Southeast Asia grew much more rapidly in the six years after the TPP was rejected than they had in the prior six years.

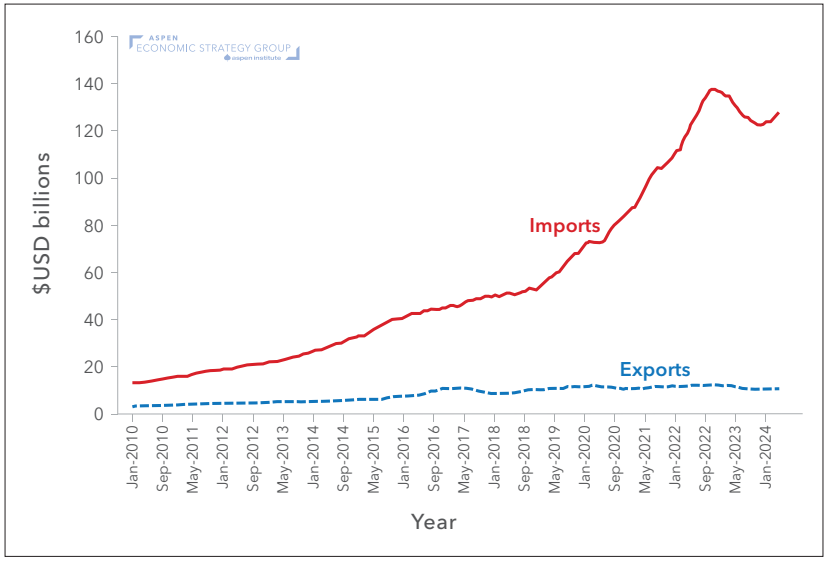
Why? After 2014, the dollar was strong, encouraging imports. US demand growth recovered from the post-global-financial-crisis doldrums, also boosting imports. Moreover, assembly operations in Southeast Asian countries also achieved critical mass. US trade with Vietnam, displayed in figure 2, is illustrative.

**Figure 1: World trade in goods (percentage of GDP), 1975–2022**




**Note:** GDP data in current USDs.
**Source:** Calculations by Richard Baldwin, World Bank (2024).

**Figure 2: United States trade with Vietnam, 2010–2024 (USD billions, trailing 12-month sums)**




**Source:** US Census Bureau (2023a) and US Census Bureau (2023b) via Haver Analytics.

As Chad Bown (2024) and others have noted, actual US tariffs are generally low for all members of the WTO, so in many important sectors, the true impact of a preferential free-trade agreement is modest. Finally, US trade with Southeast Asia—and many of the Asian newly industrializing economies (NIEs)—was also boosted by the tariffs on roughly $350 billion of Chinese imports introduced by the Trump administration's section 301 trade action.

These observations raise an important, broader point: the net effect of the Trump section 301 tariffs on China, which now have been extended and, in clean energy sectors, expanded by the Biden administration, has not been a reduction in global trade. The tariffs resulted in only a modest substitution of US goods for Chinese goods (Fajgelbaum and Khandelwal 2021).

In many sectors, US firms simply paid the tariffs and, in some cases, absorbed the costs (Cavallo et al. 2019). In other sectors, the main effect was the substitution of Southeast Asian assembly for Chinese final assembly (Baldwin et al. 2023). Freund et al. (2023) has shown that countries that saw a large increase in exports to the United States also increased their imports from China. A strong argument can be made that the tariffs reduced supply chain concentration in China and thus increased measured trade. Michael Strain makes similar points in his AESG paper in this volume (Strain 2024).

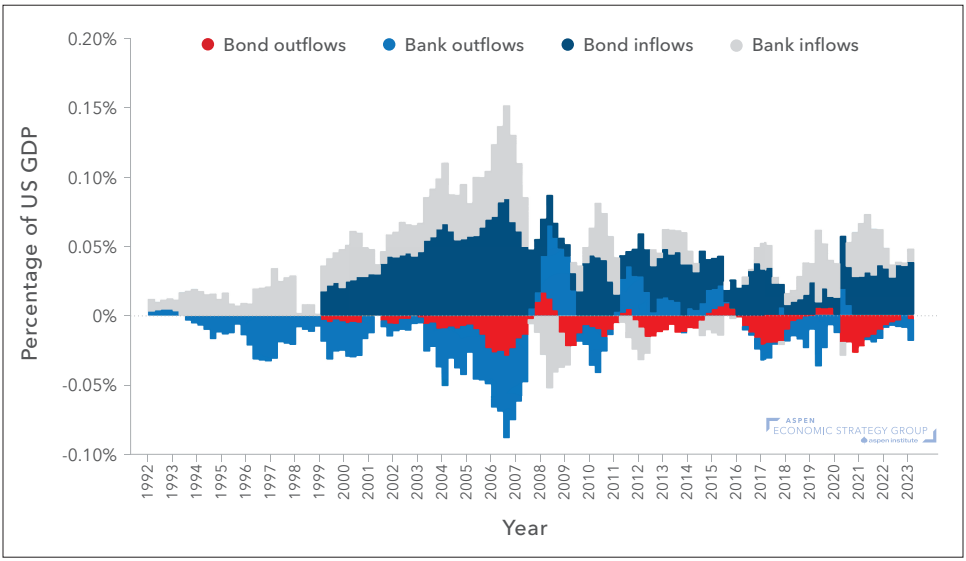
In some ways, this result should not have been a surprise. The trade remedies against Chinese photovoltaic panels produced a similar result: Chinese solar firms set up assembly operations in Southeast Asia that imported Chinese solar wafers and cells to produce panels for the export market. Subsequent across-the-board safeguards on all solar panel imports were also ineffective, both because of exemptions (for so-called bifacial panels) and because of the relatively modest (14.25 percent) tariff.

In these cases, the persistence of globalization may mask ongoing distortions in global trade, which impede the efficient direct flow of Chinese-assembled consumer goods—and Chinese components for US production—into the US market.

But more generally, we should make no across-the-board assumption that higher levels of globalization necessarily reflect more perfect markets and/or the elimination of arbitrary restrictions on cross-border flows. Rather, certain forms of integration stem from distorted incentives, and thus a fall in measured integration can be a sign of a healthier and more balanced global economy.

Consider two data points tied to the evolution of cross-border capital flows, which are plotted in figure 3.

**Figure 3: Cross-border bank and bond flows to the United States, 1992–2023 (Percentage of US GDP)**




**Source:** US Bureau of Economic Analysis (2024) via Haver Analytics.

The years prior to the global financial crisis were clearly associated with a large fall in cross-border capital flows, specifically bank and bond flows into and out of the US. Prior to the global financial crisis, this rise in cross-border flows was generally interpreted positively.

Alan Greenspan famously argued that increased financial flows had allowed for the geographic separation of savings and investment, and thus he initially welcomed rising trade and payment imbalances as evidence that globalization had reduced the importance of borders and allowed a higher level of dispersion between national savings and national investments (Greenspan 2004).

Many regulators, as well as the IMF, expressed a similar view: they argued that financial innovation had allowed the risks tied to the rise in US housing prices to be dispersed globally, leaving the core of the US financial system sound.

We now know better. The acceleration in cross-border bank flows prior to the global financial crisis was in fact the product of a dangerous cocktail of loose regulation, increased leverage among the world's big banks, and the indirect strains on global finance created by unprecedented global reserve accumulation and the associated payment imbalances.

Brender and Pisani (2010) note in an underappreciated book that a world marked by a large deficit in the US household sector on one side and a large accumulation

of foreign-exchange reserves on the other required long "chains of financial intermediation" to transform the underlying exposure to the US residential housing market into a form that central banks were willing to hold as reserves. The oft-celebrated increases in measures of financial globalization were in fact leading indicators of the risk of a crisis among the great financial institutions of the North Atlantic (Tooze 2018; Geithner 2014).

The persistence of foreign direct investment (FDI) following the global financial crisis is another example of how simply looking at the scale of total financial flows can paint a misleading picture of economic health. All analysis of financial flows after the global financial crisis have found that FDI flows continued to increase while bank and bond flows slowed (Lane and Milesi-Ferretti 2017). But there is an important catch: a very large fraction of that FDI flowed through centers of corporate tax avoidance.

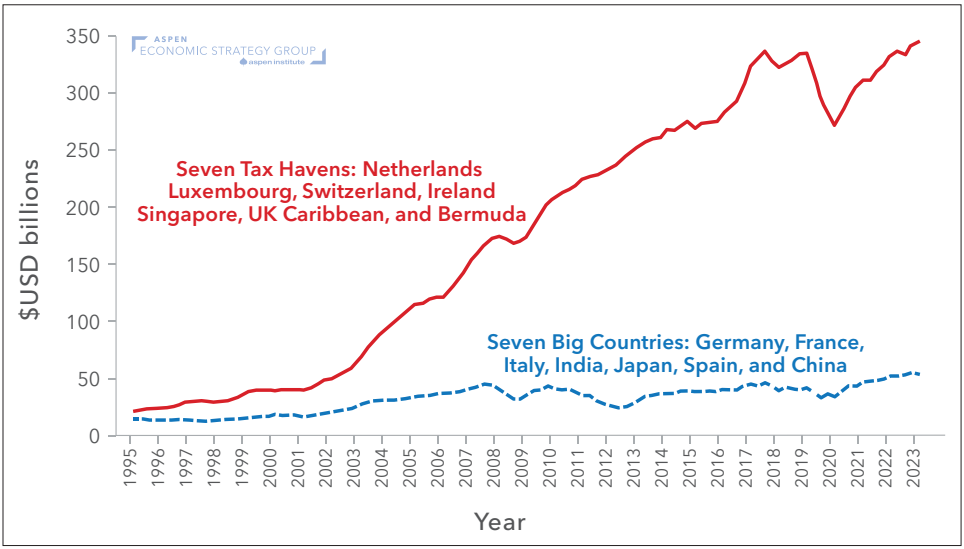
Analysts started to talk about "phantom" FDI: large paper investments in corporate tax centers that shifted profits out of high-tax jurisdictions and into low-tax jurisdictions (Damgaard, Elkjaer, and Johannesen 2019). This phenomenon is apparent in the geographic distribution of US foreign direct investment, as there is an obvious concentration of foreign direct investment in the world's major centers of tax avoidance.

It is therefore especially important to be cautious in interpreting the recent fall in FDI flows, seen in figure 4, as evidence of unhealthy deglobalization. For example, the 2017–2018 fall in FDI flows into the US is sometimes attributed to Donald Trump's populist economic policies (Posen 2018). In fact, this fall was tied to the end of a surge in FDI linked to inversions; that is, nominally Irish companies acquiring US companies as a means of changing their notional headquarters to Ireland and reducing their effective corporate tax rates.

The broader 2018 fall in the global FDI data has also sometimes been interpreted as a leading sign of economic fragmentation. However, careful work from Di Nino, Habib, and Schmitz (2020) and Lane (2024) showed that this fall was due to a simplification of the tax structure of many multinational companies, which resulted in an enormous fall in reported FDI through shell companies in the Netherlands and Luxembourg.

The broader point, of course, is that in a world where a large share of FDI is tied to profit-shifting, many big swings in FDI flows are linked to changes in tax policy and not to changes in the broader fundamentals of the global economy. In some ways, the unhealthy forms of globalization—those driven by corporate tax avoidance strategies as well as large and persistent trade and payment imbalances—have been too resilient.

**Figure 4: US FDI income, seven tax havens vs. seven large countries, 1995–2023 ($USD billions)**




**Source:** Bureau of Economic Analysis (2023) via Haver Analytics.

## 2. The large impact of tax avoidance on global trade and FDI flows

### *2.1. BEPS and the 2017 tax reform*

It is worth taking a moment to review how the OECD's initial effort to reform aspects of global taxation (base erosion and profit shifting, or BEPS) and the 2017 US tax reform have impacted the global and US data, and thus the balance between healthy and unhealthy forms of global integration.

Before both reforms, US firms could, in theory and sometimes in practice, report the bulk of their offshore profits in zero-tax jurisdictions (typically the Cayman Islands, Bermuda, and/or Jersey) and avoid paying any US tax on this income, so long as the profit legally remained offshore. Firms found creative ways to access these funds nonetheless, notably by borrowing onshore against the legally offshore profits.

The net result was a set of obvious distortions. Many globally profitable US firms accumulated large sums of offshore funds and significant onshore debts. This buildup led to an artificial increase in measures of globalization, as the non-repatriated profits of US companies inflated measures of US direct investment abroad and their purchases of US bonds with their offshore funds inflated measures

of foreign holdings of US bonds. For example, during this period the US data showed that Ireland became a large holder of US bonds.

Reform was obviously needed. But the impact of the first round of changes from the OECD and the new US corporate tax structure introduced by the Tax Cuts and Jobs Act (TCJA) was mixed at best. There was a reduction in the complexity of certain tax strategies, which reduced measures of overall global FDI.

As noted earlier, fewer shell companies were needed to implement the central tax strategies of major US multinational firms. But in many sectors, the underlying incentive to shift profits to low-tax jurisdictions abroad remained, hence the persistence of a pattern where large US multinationals report earning almost no profits in large global markets while earning large profits in a few low-tax jurisdictions.

### *2.2. The end of the "Double Irish"*

The key reform in the initial OECD base erosion and profit shifting process was an agreement to end stateless income or income in zero-tax jurisdictions. Apple was, thanks to the work of Carl Levin's Senate Investigative Committee, the best-documented example of a firm that had large stateless income prior to 2014.

Before its international tax reorganization, Apple's Irish subsidiary was considered American by the Irish tax authorities and therefore was not taxed in Ireland, while also being considered Irish by the US authorities and thus not taxed in the United States (technically, the US tax liability was simply deferred, but so long as the profit remained legally offshore it was untaxed).

Microsoft, Alphabet (Google), and Facebook/Meta used a more conventional "double Irish" structure, with sales channeled through an Irish company that was a tax resident of Ireland while the profit accrued to another Irish company that was a tax resident of either Bermuda or the Caymans. The net effect was similar.

As part of the BEPS process, Ireland committed to eliminating Irish-registered companies that were not also tax residents of Ireland. But this reform did not mean that all profits flowing though the Dublin subsidiaries of major US companies would be taxed at 12.5 percent. Rather, firms developed tax strategies to take advantage of provisions in Ireland's tax law that allowed for the depreciation of investment-intangible intellectual property. An Irish shell company set up by a US multinational could notionally purchase the intellectual property held by a subsidiary in Bermuda, the Caymans, or Jersey and amortize that notional price against their newly Irish profit, significantly reducing the firm's effective tax rate.

The results were obvious both in the Irish balance of payments and the bottom line of many US firms: there were noticeable surges in Ireland's reported imports of intellectual property, which materially changed the overall European balance of payments data. The reorganized Irish subsidiaries of US multinational companies generally achieved tax rates in the low single digits (Coffey 2024).

The *New York Times* (2017) and others have publicly reported the key details of Apple's pioneering transaction: Apple's Irish subsidiary bought intellectual property from Apple's Jersey subsidiary for over €200 billion. That notional cost could be depreciated against Apple's reported Irish profit over ten years, reducing Apple Ireland's taxable profit by as much as €20 billion per year.

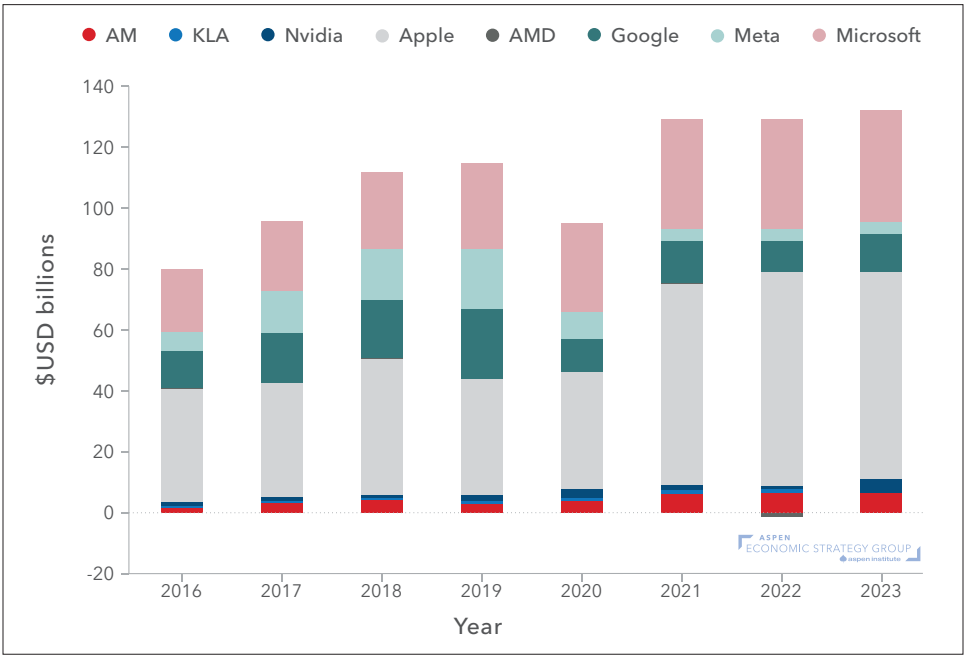
These results of this scheme became significant in recent years: as Apple's non-US profit increased in the last five years, the taxable Irish profit of Apple's Irish subsidiary also increased—raising Apple Ireland's effective tax rate and generating a very visible windfall for Ireland's Treasury (Hubert and Setser 2023). The rise in foreign profits booked in Ireland from €40 billion in 2014 to €160 billion translated into at least €15 billion a year in extra tax revenue for the Irish government and, of course, a bounty for the shareholders of the firms who achieved a lower effective tax rate in the process.

The very visible and easy-to-track surge in the Irish-shoring of the world's most highly valued intellectual property was consistent with the agreed OECD BEPS reforms—and, as importantly, fit well within the reforms to the US corporate tax code in the 2017 Tax Cuts and Jobs Act (TCJA). The TJCA reduced the headline corporate tax rate from 35 percent to 21 percent, ended deferment (legacy profits were deemed to be repatriated, and offshore cash faced a one-time levy of 15.5 percent), and created two new special tax rates—the 13.125 percent tax rate for Foreign Derived Intangible Income (FDII) and the 10.5 percent tax rate for Global Intangible Low Tax Income (GILTI).

The 10.5 percent rate is particularly important as it created an incentive for US firms operating in low-tax jurisdictions abroad to maintain their offshore structures. As shown in figure 5, the annual reports of US firms usually make it clear which of the two international tax rates large, internationally active firms are using: Alphabet (Google), Meta, and Qualcomm have all repatriated intellectual property to the US and pay the FDII rate on their non-US profit; Apple, Microsoft, Oracle, and the major US pharmaceutical firms have retained offshore-based tax structures and generally pay tax on their offshore income at the GILTI rate (Clausing 2020).[1]

1 85 percent of foreign tax paid abroad can be deducted against the 10.5 percent GILTI rate. Firms also aren't liable for US tax on a 10 percent deemed return on their tangible assets abroad.

**Figure 5: Big Tech: reported foreign income, 2016–2023 ($USD billions)**




**Source:** Author's calculations from company 10-Ks: Applied Materials (2023), KLA Corporation (2023), NVIDIA (2023), Apple (2023), Alphabet (2023), Meta (2023), Microsoft (2023).

### *2.3 The persistent but unhealthy globalization of pharmaceutical firms*

The pharmaceutical sector provides unambiguous evidence that neither the initial BEPS reforms nor the 2017 TCJA ended the incentives to offshore jobs and profits in the pharmaceutical industry (Setser 2023).

Four data points are worth highlighting:

1) US imports of pharmaceuticals are large and growing; they have more than doubled since the 2017 Tax Cuts and Jobs Act. The biggest sources of US pharmaceutical imports by value are Ireland, Singapore, and Switzerland—not the low-cost generics producers of India and China (Kosloff 2024). An additional $40 billion by value is imported from Puerto Rico, which is offshore for US corporate tax purposes.

2) US pharmaceutical firms have announced several new greenfield investments in Ireland linked to the production of new patent-protected drugs; Conefrey and McLaughlin (2023) of Ireland's Central Bank have even warned about the resulting concentration of Ireland's exports in a narrow set of products.

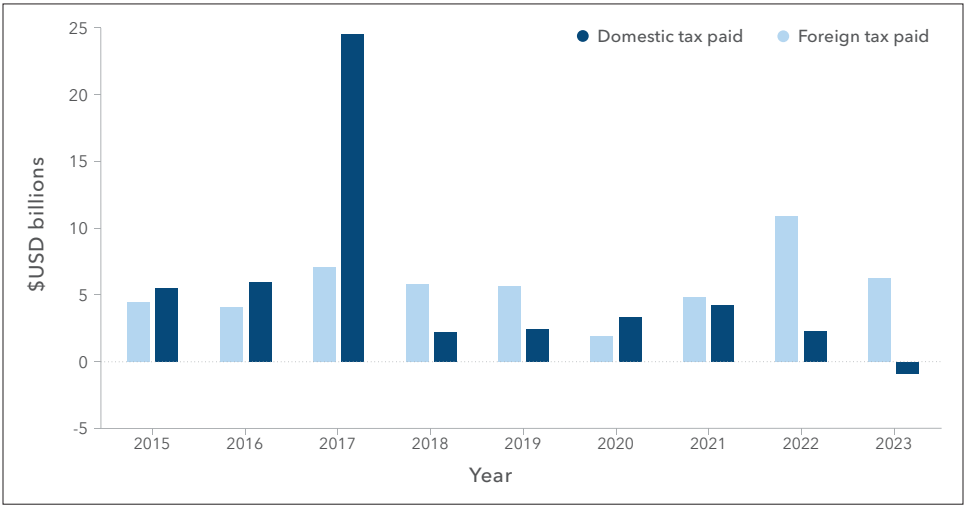
3) US pharmaceutical firms consistently report losing large sums on their US operations in their annual 10-K SEC disclosures even though US patent-protected drug prices are roughly three times higher than the global norm. Those same firms consistently report earning large profits outside the US even though said earnings are smaller than their US revenues.

4) As plotted in figure 6, many pharmaceutical firms pay essentially zero in actual tax in the US, despite significant global profits. Their global tax rate is typically reported to be in the low double digits—but that doesn't imply that they are paying 10.5 percent of their global profit to the US Treasury.

The absence of reported profits in the US translates directly into a loss of federal tax revenues. In 2022, the major pharmaceuticals paid about $3 billion in US tax on their $105 billion in global profit—an effective tax rate in the US of less than 3 percent. In 2023, the same set of companies, in aggregate, paid zero US tax on their $60 billion in combined global profits.

In 2023, AbbVie, which generates almost all its profit in its zero-tax Bermuda subsidiary (that holds the intellectual property for its blockbuster drug Humira) and thus paid the GILTI tax, was the only one of the four largest US pharmaceutical companies to report paying any US tax. Johnson and Johnson, Pfizer, and Merck all did not pay any 2023 income tax to the federal government.

**Figure 6: US Big Pharma, foreign vs. domestic tax paid, 2015–2023 ($USD billions)**

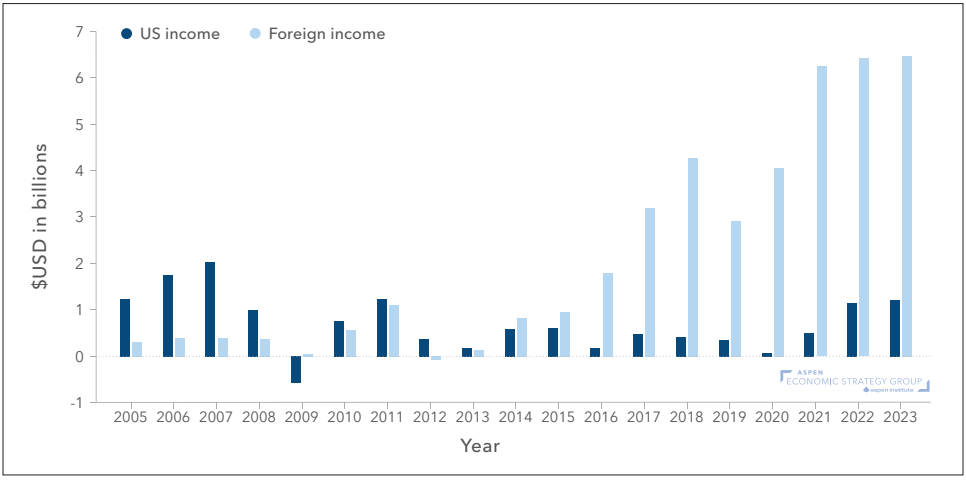



**Note:** Firms include Pfizer, Johnson and Johnson, Bristol Meyers Squibb, Amgen, and Gilead.
**Source:** Author's calculations from company 10-Ks: Pfizer (2023), Johnson and Johnson (2023), Bristol Meyers Squibb (2023), Amgen (2023), and Gilead (2023).

In some other strategically important sectors as well, the tax code appears to have acted as a de-industrializing policy in the US. Perhaps the most significant of these sectors is the industry that makes the machines used in the manufacturing of semiconductors. The leading company in this industry, ASML, is Dutch. But the US is home to several large companies in this space, including Applied Materials and Lam Research. Both companies now report earning the bulk of their profit abroad—and both increasingly manufacture abroad as well.

As figure 7 displays, Applied Materials' 10-K reports show that it has shifted from reporting almost all its income in the US to reporting almost no income in the US. Its 10-K reports highlight the importance of Singapore to its low tax rate.[2] It seems likely that by increasing its manufacturing in Singapore and other jurisdictions, it was able to move much of its intellectual property to its lightly taxed offshore subsidiaries. Lam Research's 10-K disclosures also show large rises in its foreign income, and it too has shifted its manufacturing to Southeast Asia.[3]

**Figure 7: Applied Materials: US vs. foreign income, 2005–2023 ($USD millions)**




**Source:** Applied Materials (2023).

2 The foreign operations with the most significant effective tax rate impact are in Singapore. The statutory tax rate for fiscal 2023 for Singapore is 17%. We have been granted conditional reduced tax rates that expire beginning in fiscal 2025 excluding potential renewal and subject to certain conditions with which we expect to comply" (Applied Materials 2023, 93).

3 Many companies' tax structures can be deduced from countries whose tax provisions are cited as risk factors in the firms' 10-K disclosures. Most pharmaceutical companies cite some combination of Ireland, Switzerland, Singapore, and Puerto Rico. Both AM and Lam Research mention Singapore. Apple, of course, mentions Ireland.

The unhealthiest form of globalization therefore persists. The large trade and investment flows in pharmaceuticals and certain other advanced manufacturing sectors are in no way evidence of increased economic efficiency, only of efficient tax planning.

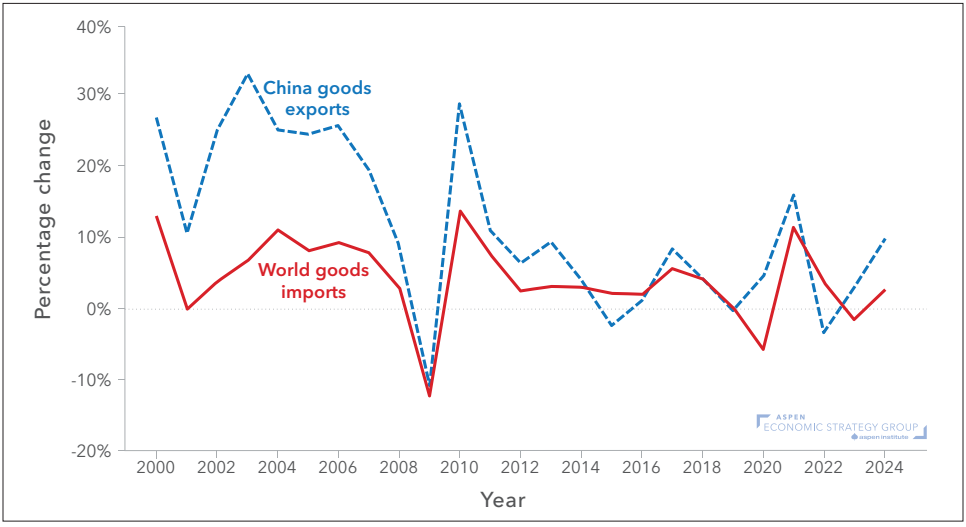
## 3. China's surprising impact on the data on global integration

Any discussion of globalization ultimately leads to China.

China is the second-largest economy in the world and by far its biggest exporter of manufactured goods. For most of the period after the global financial crisis, China was the fastest-growing economy in the world, so changes in its export- and import-to-GDP ratios have had large impacts on global aggregates.

Perhaps surprisingly, China actually drove most measures of deglobalization in the ten years after the global financial crisis, for the simple reason that exports grew more slowly than China's own GDP did, so the ratio of exports to GDP fell. This happened even as Chinese export growth generally exceeded world trade growth (figure 8), as Chinese GDP growth in the years immediately after the global financial crisis far exceeded global GDP growth. Exports were an inordinately large share of Chinese output back in 2007 (Fang 2023), so this swing was, in fact, quite healthy; any rebalancing of the global economy back in 2007 needed China's economy to rely less on exports and net exports for growth.

**Figure 8: Trade in goods: China and the rest of the world, 2000–2024 (percentage change)**




**Source:** IMF 2023.

However, China's imports also grew more slowly than Chinese GDP, as displayed in figure 9. This outcome was unusual; even in the "slowbalization" era, imports of most countries generally have grown in line with GDP.

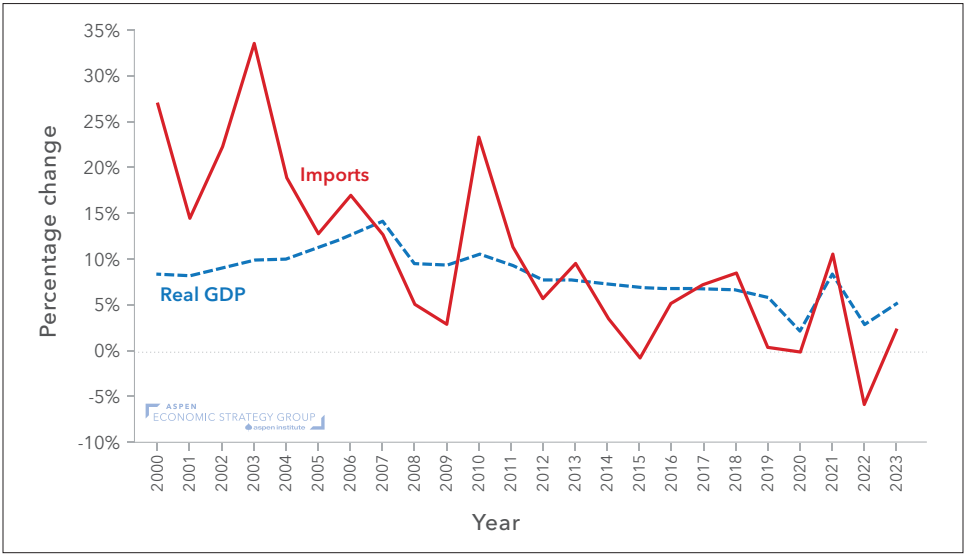
As a result, careful economic analysis has shown that the fall in global trade relative to global output after the global financial crisis is almost entirely explained by China. This outcome holds even when imports of parts tied to exports are netted out; Chinese imports simply have not kept up with the country's rapid output growth (Al-Hashimi et al. 2016; Wolf 2022; Baldwin 2022).

The Chinese data is also important for a second reason: there recently has been a clear inflection point in the data, and China's economy is now re-globalizing.

This trend is obvious in the data above. Exports have recently grown much faster than China's own economy. As a share of China's GDP, exports are now up by about 3 percentage points.

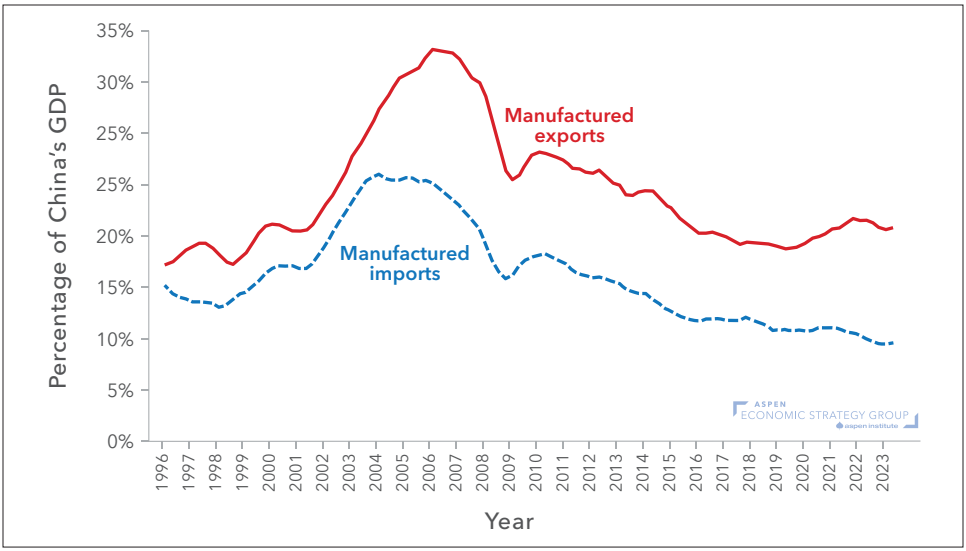
The close-to-a-trillion-dollar surge in China's exports over the last four years stands in opposition to any narrative of a fracturing and deglobalizing world economy. In fact, measured relative to the GDP of its trading partners, China's surplus in manufactured goods, plotted in figure 10, has increased by about three-quarters of a percentage point of world GDP and is now at a record high (Baur, Setser, and Weilandt 2024).

**Figure 9: China: real GDP vs. imports, 2000–2023 (percentage change, year-over-year)**




**Source:** IMF 2023.

**Figure 10: Trade in manufactures as a percentage of China's GDP, 1996–2023**




**Source:** Author's calculations based on General Administration of Customs of the People's Republic of China (2023).

The fall in Sino-American bilateral trade thus misleads, as the broader global economy remains deeply integrated across economic blocs and China's own economy remains very dependent on exports. Indeed, the increased importance of Chinese supply to the global economy complicates any effort to "derisk" global supply chains (Lovely 2023). Sending Chinese components to Southeast Asia for assembly avoids the bilateral tariffs but has no real impact on the United States' underlying exposure to a shock emanating from China.

These data points highlight the surprising conclusion that, in years after the pandemic and after the imposition of Trump's tariffs, China's economy has become more integrated, not less integrated, into the structure of global trade.

*"The fall in Sino-American bilateral trade thus misleads, as the broader global economy remains deeply integrated across economic blocs and China's own economy remains very dependent on exports."*

The recent surge in China's exports and in its trade surplus stems primarily from China's sharp domestic slowdown and its still-unresolved property market crisis. China's internal demand growth has faltered, and it has instead relied again on exports and global demand to support its growth. This form of globalization is unhealthy to be sure, as it stems from unresolved imbalances inside China's economy, but it is nonetheless globalization.

### *3.1 Microeconomic distortions*

One oft-noted irony: over the past twenty years, the liberalization of trade seems to have led to the concentration of production in the most state-directed major economy, namely China. In other words, free markets appear to favor a country that hasn't freed its own market.

China's immense strength in global manufacturing has many sources, not least the fact that countries that import commodities generally do need to export other goods to cover their import bill. China also provides extensive government support to favored sectors in both the old and the new economies. Those subsidies have tilted the playing field to China's advantage in several specific cases.

A key point in all the studies that have examined Chinese subsidies carefully is that a large share of state support comes from the provision of cheap equity and cheap debt financing rather than from direct cash payments. Central direction leads provincial governments to direct their own efforts to support favored sectors (DiPippo et al. 2022; Bickenbach et al. 2024), and favored firms and sectors can tap China's immense state-banking system for cheap long-term funding. Looking only at the formal subsidies provided out of the central government's budget thus misses much of the story.

Three examples help illustrate the breadth and complexity of China's sectoral support.

Zhidou, a Chinese EV producer, was recently recapitalized after experiencing deep financial difficulties that might well have forced it out of the market; the company is now expanding production and looking to start exports. It recapitalized itself with equity from the China Three Gorges Corporation (a major state-owned enterprise), the City of Zhengzhou, and Geely, a private Chinese company that bought Volvo with substantial support from the state banks (Kubota and Leong 2024).

Huawei's efforts to develop "indigenous" chip-production equipment have received hefty support from Shengzhen, and its efforts to produce leading-edge chips are backed by Shanghai and no doubt others ("China Secretly Transforms Huawei" 2023; Pan 2024). Huawei's global exports of telecommunication equipment, of course, also receive substantial backing from China's policy banks, who themselves received large-scale support from China's State Administration of Foreign Exchange.

The equity capital for the development of the C919, China's indigenous competitor to the Boeing 737 and Airbus 320, came from the Aviation Industry Corporation of China, China's military aircraft producer), the Aluminum Corporation of China, Baosteel Group Corporation, Sinochem Group, Shanghai Guosheng Corporation Limited, and the State-Owned Assets Supervision and Administration Commission. But most of the development costs of this aircraft were covered by loans from a host of state banks. The fact that such a risky project was substantially debt-financed (even without a

government guarantee) is itself a form of subsidy. Finally, COMAC was able to build a significant order book thanks to support from main state airlines and the aircraft leasing arms of the big state banks. These tight, complex, and at times opaque interlinkages between firms, the government, the banks, and the party are all part of what Mark Wu (2016) called the "China, Inc." challenge to global-trade governance.

China of course also provides more direct forms of policy support to priority sectors. The early development of its electric-vehicle sector stemmed both from very substantial subsidies for battery production and significant restrictions on the ability of imports to supply its internal market. Access to China's consumer EV subsidies was regulated by lists of qualifying vehicles. No imported car ever qualified. And initially, only domestically made EVs with batteries made by a Chinese battery firm qualified (batteries made by Korean firms in China originally didn't pass muster). China is now a world leader in EVs, and its domestic market is highly competitive—but its success started with heavy-handed government intervention.

### *3.2 Oversaving*

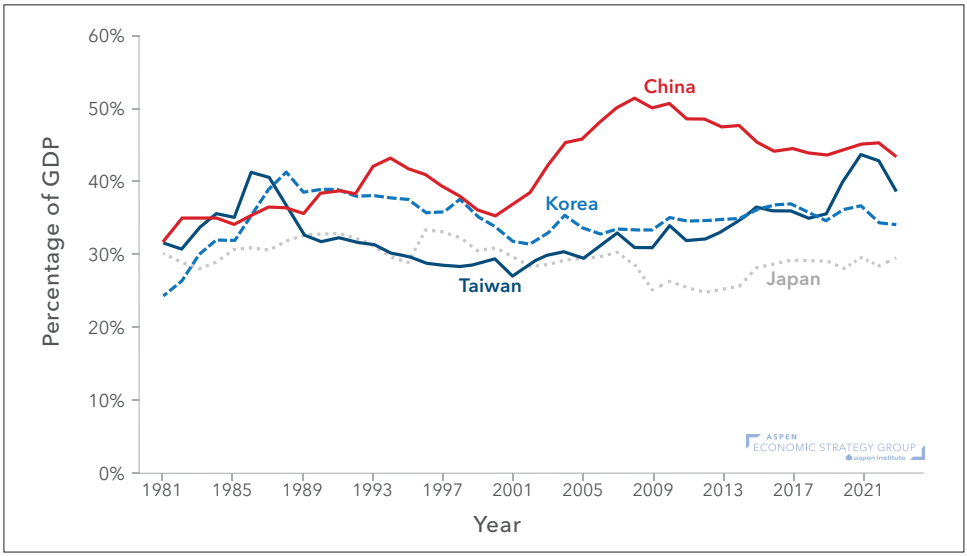
The sectoral distortions created by the combination of China's scale and its at-times-innovative forms of state capitalism are very real. Yet the full challenge China poses to the global economy is far broader—and much harder to solve.

China, put simply, saves far too much and thus relies too heavily on exports to offset its own limited internal demand. As shown in figure 11, while high savings rates are common throughout East Asia, China is squarely in a league of its own, with a national savings rate of close to 45 percent of its GDP. This level of high savings has thus been unusually persistent, as figure 11 highlights.

Such a high level of savings and low level of household consumption in a major economy has complicated China's domestic economic management. Over the last twenty-plus years, China has essentially traded off between export-led growth and debt-fueled growth:

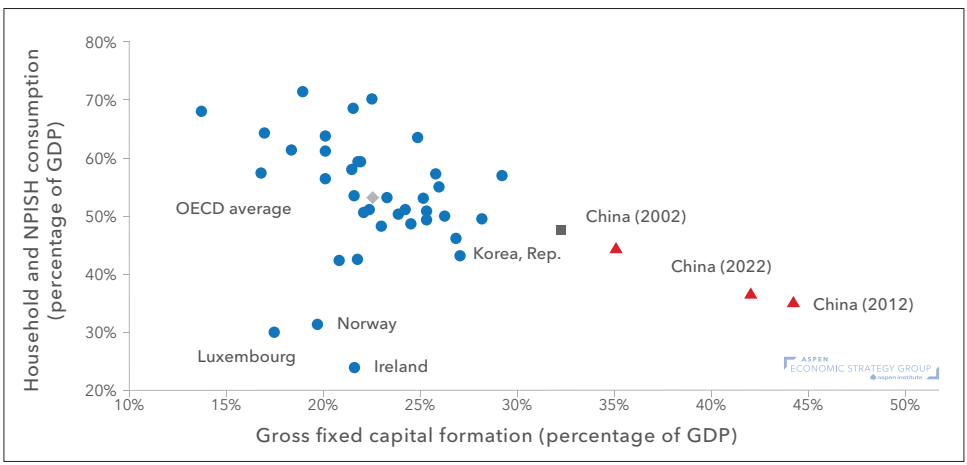
> Before the financial crisis, excess East Asian savings stoked the US housing bubble and helped to create internal imbalances in the United States and the eurozone, which were sustained only through the accumulation of toxic risks in the US and European banking systems. Since the crisis, they have contributed to bubbles and bad debts within the region, notably in China. Throughout, the need to rely on exports to offset the weakness in demand that often comes with high levels of savings has put pressure on trade-exposed manufacturing communities in other regions, with political consequences that have been underappreciated until recently. (Setser 2016)

**Figure 11: Savings rates: China vs. other Asian economies, 1981–2024 (percentage of GDP)**




**Source:** IMF (2023).

**Figure 12: Household and NPISH consumption (percentage of GDP)**




**Note:** NPISH are non-profit institutions serving households.
**Source:** Wright et al. (2024).

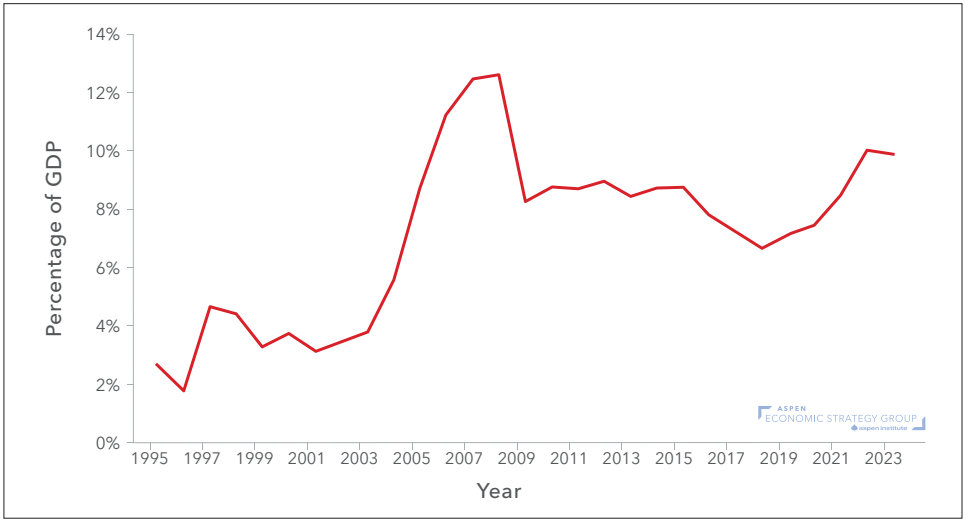
The global challenge posed by China's high level of savings is particularly acute now.

The property sector has long absorbed a large share of China's excess savings. But according to the IMF, property construction is expected to normalize at about 5 percent of GDP, about half of its level during the boom. The ability of China's heavily indebted local governments to sustain their current high rates of infrastructure investment is also in question. The IMF estimates suggest that a reduction of at least 5 percent of GDP is needed in the infrastructure investment financed by off-balance-sheet, local government-financing vehicles (LGFVs).

Such a sustained structural slowdown in investment deprives China of its main growth engine at a time when households also lack confidence and are pulling back. Weak investment therefore creates pressure on China to return to an export-driven growth model. Without an economic impetus from property and infrastructure investment, China struggles to grow and needs to run even larger trade surpluses to maintain domestic output.

This concern isn't just theoretical. China has generated around a percentage point of growth from net exports in three of the last four years and looks set to do the same in 2024. President Xi's policy of encouraging investment in "new quality productive forces" rather than stimulating household demand creates a real risk that the policy-induced overcapacity now manifesting in the steel and solar-PV-cell sectors will extend to other areas, including autos.

**Figure 13: China: manufactured goods surplus (percentage of GDP)**




**Source**: UN Comtrade (2023).

In other words, China's structural propensity to oversaving is directly tied to its tendency to generate overcapacity in priority sectors. Treasury secretary Yellen and National Economic Council director Lael Brainard have both highlighted the connection between China's macroeconomic imbalances and structural overcapacity across a range of industries. In April, Yellen said:

> I am particularly worried about how China's enduring macroeconomic imbalances—namely its weak household consumption and business overinvestment, aggravated by large-scale government support in specific industrial sectors—will lead to significant risk to workers and businesses in the United States and the rest of the world. China has long had excess savings, but investment in the real estate sector and government-funded infrastructure had absorbed much of it. Now, we are seeing an increase in business investment in a number of "new" industries targeted by the PRC's industrial policy. That includes electric vehicles, lithium-ion batteries, and solar. (Yellen 2024)

A final point: the global economy cannot truly fracture along geopolitical lines into a "democratic" bloc (led by the United States) and an autocratic bloc (led economically by China) so long as the autocratic world collectively runs an enormous surplus that only balances with a large deficit across the democratic bloc (Setser 2024). This persistent imbalance, of course, also implies a net flow of capital from the autocracies to the democracies, even if that flow is now well-disguised.[4]

### *3.3 Policy Issues*

In previous AESG papers, Lovely (2023) and Bown (2021) have made the case for narrowing the section 301 tariffs on China. However, such a shift appears unlikely in the near term. President Biden expanded the tariffs on clean-energy sectors without any substantial tariff rollback. Former president Trump is campaigning on a platform that includes raising tariffs on China to 60 percent, well in excess of the average "list B" non-WTO tariff level of 45 percent.

The final section 301 tariff list was not especially well-targeted, as it was designed to prove that the US had the capacity to impose tariffs on a larger amount of trade than China could. Yet any current adjustment appears to reward China at a time when China's economic and security policies are a growing source of concern.

4 Technically, the US financial system could absorb all the Treasury bonds the US needs to issue, and the US external deficit could be financed by selling other financial assets to the world (equity, corporate bonds, shares in money-market funds, etc.). Right now, the data on US international capital flows still show significant net inflows to the Treasury market from the rest of the world. However, the bulk of the flow is coming from financial centers like the UK. Of course, the UK runs its own current account deficit; it registers in the US data because large financial institutions in London act as global intermediaries.

President Xi responded to the property slump by directing credit and other support toward the expansion of China's leading edge in manufacturing sectors rather than by taking policy action to support household consumption (Rosen and Wright 2024). Expanded Chinese exports of parts and machine tools have also indirectly supported Russia's military manufacturing, helping to sustain the war against Ukraine (Snegovaya et al. 2024).

So even as the economic case for a somewhat narrower US tariff list remains sound, the political case for rewarding Chinese policy decisions that appear to double down on an export-focused growth model is hard to make.

However, it would be a mistake for US policy toward globalization to be defined entirely by the nature of the tariffs on China. Several other concrete steps offer the prospect of starting to define a path toward a healthier form of globalization.

### *3.4 US corporate tax reform*

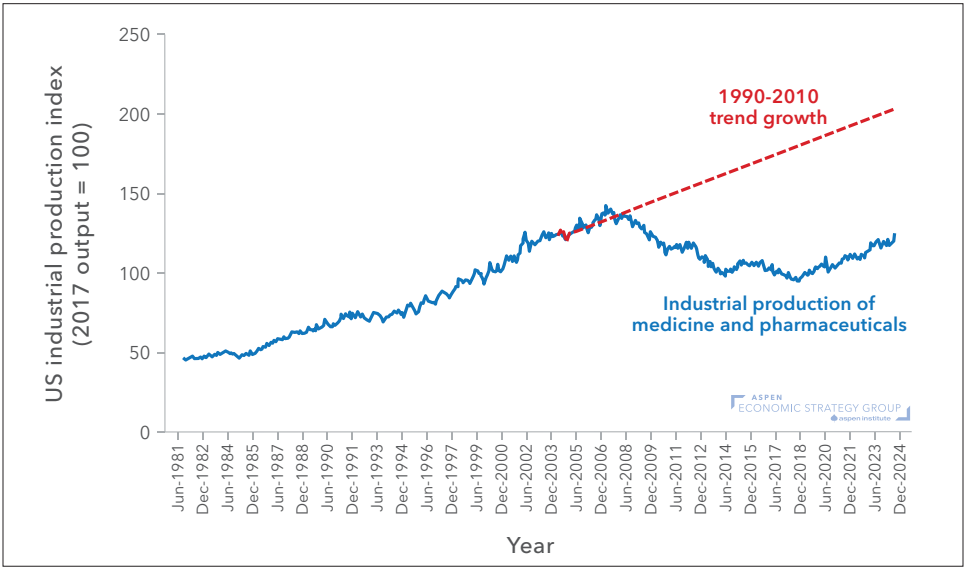
Substantial scope exists to reform the provisions of the US tax code that have encouraged US multinational firms to continue to move production of high-end components and profits abroad.

The tax avoidance of large US multinational firms appears to have reduced US manufacturing output in certain advanced industrial sectors. While the US continues to be home to many leading-edge biomedical companies, US industrial production in pharmaceuticals peaked in 2005, and it is currently 20 percent below its 2005 levels. Had US pharmaceutical production continued to expand at its 1990-to-2005 pace, US industrial output in this sector would be roughly 50 percent larger than it is now.

The loss of tax revenues is, if anything, larger than the loss of employment. In 2022, the foreign profit of seven of America's largest pharmaceutical companies amounted to over $90 billion, six times their reported US profit. In 2023, those companies reported losing a combined $14 billion on their US operations while earning $60 billion abroad. Eli Lilly is less forthcoming with its earnings data, so the total foreign profit of America's leading pharmaceutical companies is likely even larger than these calculations suggest.

The reforms to the US tax code needed to limit the offshoring of these profits can be done unilaterally; they are not dependent on US ratification of the OECD two-pillar global tax reform. The core case for reforms is that they are in the United States' direct self-interest, not that they are needed to bring the US into compliance with a more cooperative global tax regime.

**Figure 14: US industrial production: pharmaceuticals and medicine, NAICS 3254, 1981–2024**




**Source:** Author's Calculations based on Federal Reserve Board (2024).

A range of potential reforms would help:

a) The US should raise the global intangible low-taxed income (GILTI) rate from 10.5 percent to at least 15 percent and apply it on a country-by-country basis.

b) The US should limit the ability of US firms to deduct US R&D from their taxes if they shift intellectual property supported by the R&D tax deductions to their offshore subsidiaries.

c) The US should reinvigorate subpart F, which was designed to limit firms' ability to shift profits on US sales abroad.

d) The US should make the proceeds from the sale of a firm's intellectual property from one international subsidiary to another international subsidy a taxable event in the US, making it harder for companies to shift intellectual property around on a stepped-up basis that limits their global tax liability.

It is worth noting that none of these reforms hinges on the level of the headline US corporate tax rate. Key firms are currently using transfer pricing games to achieve tax rates well below the current headline 21 percent rate.

The potential revenue gains are substantial—the US is currently collecting essentially no corporate income tax on the roughly $70 billion of annual profits generated by America's large pharmaceutical firms in a typical year, and it collects only modest tax on the $125 billion of foreign income generated by Apple and Microsoft (in its 10-K disclosure, Apple reports paying more tax on its $70 billion in offshore profit in Ireland than it does in the United States).

Finding ways to effectively tax these easily identifiable profit streams that are currently only lightly taxed in the United States could generate up to $30 billion a year in new tax revenue with no loss of economic efficiency. Alstadsæter et al. (2024) note that in 2022, US firms reported around $370 billion in annual profits in the major centers of corporate tax avoidance, so the potential tax base that could be taxed at 15 percent (or more) in the US is even more substantial—$30 billion a year and $300 billion over ten years is a very low-end estimate based on picking only the lowest-hanging fruit among the big pharmaceutical and tech companies.

### *3.5 Harmonizing trade and industrial policies among allies*

Another area of potential reform is through a new effort to harmonize the clean-energy transition policies of the US and its major allies, maximizing opportunities for healthy trade among security partners while continuing to restrict trade with China. Two specific sectors offer immediate opportunities for a new approach that would strengthen ties among allies and increase competition in the US market.

#### *3.5.1 Subsidies sharing for electric vehicles*

Both the United States and many of the member states of the EU have introduced subsidies for the purchases of EVs. Yet these broadly similar policies have not been coordinated, and the IRA's "Buy North American" requirements have been a particular point of transatlantic friction. French president Macron (2022), for example, initially called the IRA "super aggressive."

Current US subsidies are explicitly discriminatory.

The EV battery subsidy is only available when a car uses a battery made in North America or by a "free trade agreement" partner. The lowercasing of *free trade agreement* is important as the term isn't defined, and thus relatively narrow trade agreements may allow a country to access this subsidy. The EV subsidies themselves are limited to electric vehicles made in North America. However, these subsidies provide a significant exception for commercial leases (Bown 2024).

Europe's subsidies are, by contrast, not overtly discriminatory. Any qualifying vehicle, including an imported vehicle (for example, a Chinese-made Tesla sold in

Europe) benefits from national EV subsidy programs. These subsidies are thus WTO consistent, but they now suffer from another form of policy incoherence. Notably, the consumer subsidies encourage the import of Chinese EVs that, separately, are now subject to countervailing duties meant to offset the impact of China's own production subsidies.[5]

In the other words, the US subsidies discriminate against EVs produced by friends; while the EU subsidies—when available—don't discriminate against cars produced in countries that gained a competitive edge through their own discriminatory policies.

A "subsidies-sharing" agreement would offer a straightforward way to integrate the US and EU markets—and the same basic principles could be extended to other allies. To make the agreement symmetrical, the EU would need to introduce a "buy European" provision into its national subsidies. The EU and the US then could enter into a subsidies-sharing agreement in which European-made EVs would get full access to US EV subsidies and American-made EVs would get full access to EU subsidies. The effective market size for American and European EVs would increase, helping to lower costs. Instituting such an agreement would require amending the IRA and, therefore, congressional approval.[6]

Subsidies-sharing is likely to be easier than harmonizing current EV tariffs. The US tariffs against China stem from the original section 301 case, and thus they are formally part of a case intended to prompt China to change its policies on the protection of intellectual property and "forced" technology transfer. The EU tariffs, by contrast, are the outcome of a standard, WTO-consistent case against China's EV subsidies.[7]

A subsidies-sharing agreement need not reconcile the substantive differences between the US and EU tariffs on Chinese EVs; it need not even harmonize tariff levels. It must simply allow European-made cars to qualify for US subsidies and US-made cars to qualify for European subsidies. It may be thought of as a precursor to a broader negotiation that aims to create a common North Atlantic auto market with a common external tariff between the United States–Mexico–Canada Agreement (USMCA) countries (Deese 2024).

5 This incoherence stems from the EU's interpretation of its WTO commitments; countervailing duties are a remedy allowed by the WTO, while consumer subsidies should, in principle, be provided on a nondiscriminatory basis.

6 Any amendment would need to set out local content requirements for what constitutes an "EU car"—a Chinese EV kit assembled in Europe, for example, should not qualify—but the basic principle is clear. Tesla, GM, Ford, and potentially Hyundai would gain the opportunity to qualify for European subsidies even with North American production, and BMW, Mercedes, VW, Stellantis, and Renault would be able to qualify small European-made cars for the US subsidies.

7 The European CVDs are the result of sector- and company-specific investigations, and the tariffs are theoretically tailored to the level of support provided to a specific company.

### *3.5.2 Steel*

Both the US and the EU have restrictions on steel trade. In the US, this restriction is the result of both standard dumping and countervailing duty-trade remedies and the 25 percent tariff on all imported steel introduced by the section 232 (National Security) case. The EU has supplemented its standard trade remedies with a special safeguard against all imported steel.[8]

China's enormous steel-production capacity does truly pose a unique challenge to the global market. China produces over a billion tons of steel each year (well over 50 percent of the total global supply), and it is exporting about one hundred million tons of steel. Thus, China now exports substantially more than the US produces and exports— a sum not far from the EU's 126 million tons in total production. China's steel is also unusually dirty, as the majority of it is produced from coal-fired blast furnaces.

The US and EU are therefore both interested in preserving their domestic steel industries in the face of the undeniable distortions to global markets created by China's massive production scale. They both also wish to shift toward cleaner sources of supply. However, attempts to negotiate a more coherent North Atlantic policy toward this sector (the Global Arrangement on Sustainable Steel and Aluminum) have floundered.

In this case, a more coordinated framework should be built on the European model, which is based on both internal carbon pricing and its Carbon Border Adjustment Mechanism (CBAM).

While replicating Europe's domestic carbon price in the United States requires unlikely-to-pass legislation, a plausible legal path exists for introducing a carbon-based border adjustment through amending the remedy in the existing 232 national security case.[9] Rather than imposing a 25 percent tariff on the value of imported steel, the US could set a fee on the embedded carbon in a ton of steel imports.[10]

The EU would, of course, prefer that the US fully emulate its approach to internal carbon pricing, but that outcome isn't currently realistic. A compromise in which the US moves its regime closer to that of the EU should still offer substantial advantages to the latter.

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8 That safeguard, incidentally, is technically intended to protect the EU from trade diversion introduced by the US section 232 national security tariffs. Its underlying legal justification isn't tied to the threat posed by China's enormous steel-production capacity.

9 The case requires that the US take action to assure sufficient domestic-steel production to meet national security needs but doesn't require that the action take the form of an ad valorem tariff. A tariff on every ton of carbon embedded in imported steel would achieve the overall national security goal.

10 The carbon import levy could even be set at the same rate as the EU's CBAM.

Such an approach would provide real benefits to European steel producers going forward, as European producers of low-carbon steel would have unfettered access to the US market. An American move toward a carbon-based import charge is a move toward eventual convergence with the EU's more elegant approach to carbon-pricing—a convergence that will be optimal during the transition to a future world of clean steel production (hydrogen reduction for non-recycled steel).[11]

Such policies are a step back from past dreams of a fully integrated global trading regime but, largely as a result of excluding China, they are also potentially realistic ways to maintain the benefits of healthy trade in the world.

### *3.6 Pressuring China not to export its internal imbalances*

A final imperative for US policy: finding effective ways to pressure China to change its current growth model and move toward policies that effectively support domestic household consumption demand. China's unbalanced external trade is a direct reflection of the country's unbalanced domestic economy, notably its structurally high savings rate, low level of household consumption relative to GDP (Fang 2023) and resulting reliance on either overinvestment or a hefty external surplus for full employment and strong growth.

Change here is in China's own long-run self-interest, as China has already overbuilt its property sector and is too big to rely on external demand for long.

*"The negative global spillovers from China's unresolved internal imbalances are once again increasing."*

Yet it is intrinsically difficult for others to prompt changes to the very domestic policies that lead to structurally high savings and low levels of household consumption. China's systems for taxation and the design of its system of social insurance are directly related to its unusual pattern of saving but aren't typically the subject of international negotiations (*People's Republic of China* 2018). And many in China still believe that high saving was a central feature of China's ability to industrialize and modernize rapidly without the external vulnerabilities often faced by rapidly growing emerging economies.

The negative externalities from China's low level of consumption have been recognized for the last twenty years but still haven't given rise to significant policy shifts. The negative global spillovers from China's unresolved internal imbalances are once again increasing.

11 A carbon levy in the absence of a domestic carbon price isn't obviously WTO compliant, but the US would still be able to argue that it falls within the WTO's national security exemption as it does now. The US could then expand the argument to include climate change as a security threat.

A China that needs to export to make up for internal demand shortfalls will intrinsically create sectoral-supply dependencies even in the absence of sector-specific government intervention at a time when concerns about over-reliance on Chinese supply are real. Creativity is needed, including increased coordination across the G7. European policymakers share American concerns about Chinese sectoral overcapacity but haven't been as forceful in linking overcapacity to oversaving.

A simple first step would be to put pressure on the IMF to again take issues around global trade imbalances seriously. The IMF's current policy advice to China—lower interest rates (price-based monetary policy transmission) and a weaker currency (currency flexibility right now would lead to a weaker yuan)—needs reconsideration. The predictable impact of the proposed policy shifts would be an increase in China's already-large trade surplus in goods, hardly an outcome that would lower trade tensions.

The IMF, by contrast, should much more forcefully encourage China to make use of the substantial fiscal space available to China's central government to clean up the property sector and provide more substantial support for household demand. Central government debt is only 25 percent of GDP, and intriguing research from the IMF itself suggests that the net worth of the central government—which has substantial domestic assets through its ownership of the State Assets and Supervision and Administration Commission and Central Huijin—is positive (Badia and Lam 2023).

Advice from the IMF is, of course, not decisive inside China. But the IMF's current advice is indicative of the ways in which the global discussion remains focused on the illusion of deglobalization. A narrative focused on the American and European turn away from open trade ignores the pressure that China's internal imbalances create for unhealthy reliance on exports for growth and the resulting return of unbalanced globalization.

Ultimately, pressure for China to change has to come from within. But China's trading partners can help accelerate the needed internal shift by making it clear to China's leaders that they will resist new forms of unbalanced integration, and thus that drawing on net exports for yet more growth isn't ultimately a viable strategy for an economy as large as China's.

It is easier to challenge Chinese policies in sectors like aircraft and vehicles, where the emergence of new export sectors risks creating new forms of dependence, than it is to directly challenge the underlying reasons why China is once again looking toward exports for growth. China's manufacturing surplus is already bigger than the largest combined surplus run by past Exportweltmeisters Germany and Japan.

## 4. Conclusion

China's weakness is creating pressure globally for further but ultimately unhealthy globalization. The auto industry is a powerful example. China has gone from being a modest net importer of autos to being the world's largest vehicle exporter—with a substantial lead over Germany and Japan—in just three years. Unbalanced interdependence with an economy as large as China's will inherently create new forms of supply chain dependence; it also risks undermining investment in leading-edge sectors that are hoped-for sources of future growth and productivity.

Common policy approaches among allies are the best response to these pressures, even if they are difficult to introduce in practice. Reform of the US corporate tax code is of course also not easy, but it offers a clear strategy to address concerns that the actual economic outcomes from the era of unfettered globalization generated outsized gains for the few while leaving many behind.

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