

Is Trade Really Toxic? How imports support American jobs

BY GEORGETOWN UNIVERSITY LAB FOR GLOBALIZATION
AND SHARED PROSPERITY



About Georgetown University Lab for Globalization and Shared Prosperity

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The mission of the Lab for Globalization and Shared Prosperity is to foster a deep understanding of the complex interplay between globalization, social investment, and inequality. Through its research initiatives and partnerships, the Lab aims to drive meaningful conversations, propose actionable solutions, and contribute to the advancement of a more just, inclusive, and sustainable world.

Eighty percent of Americans feel that the global economy hurts them, according to a Pew study. This is a worrying reversal in a country that built the current international economic order and has benefited disproportionately from its riches. America's challenge is that not everyone has benefited from globalization equally. Rising economic inequality compounds existing political and social tensions, deepening divisions in society. In response to these trends, some in the United States and elsewhere have called for a withdrawal from the globalized economy.

The study of globalization's effects currently emphasizes aggregate outcomes at the national and international level, with relatively limited attention paid to the local level, where daily life is experienced and where politics begins. To build a better future and respond to globalization's critics, the local costs and benefits of globalization must be understood and communicated. Equipped with this information, the leaders can enact precise policies that ameliorate costs from global competition without dismantling the beneficial features of the global economic system.

In response to this tension in the discourse and the critical gap in existing scholarship, Georgetown University recently launched the Lab for Globalization and Shared Prosperity. Drawing on multidisciplinary scholarly expertise and its location in Washington D.C., the Lab seeks to translate cutting-edge political economy research into actionable non-partisan policy solutions.

The Lab bridges theory and practice by actively communicating key results and recommendations to policymakers and the public. Through accessible online resources that detail the effects of globalization and social investment in local contexts and partnerships with leaders at all levels of government, the Lab will work to reshape the public conversation around globalization and advance policies that lead to shared prosperity.

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Introduction

The US economy has undergone significant transformations since China's export surge after Beijing's accession to the WTO in 2001, and it is now increasingly dependent on other emerging markets besides China for sourcing goods and services.

Both Democrats and Republicans have embraced economic nationalism as a means to disengage from the global economy. This approach entails the adoption of protectionist tactics, including tariffs, trade barriers, subsidies for domestic industries, reshoring, and limitations on foreign investment. At its core, economic nationalism prioritizes the economic welfare of the "nation," privileging some of its industries, and some of its workforce over other domestic firms, workers, and foreign interests. These policies are evident and ongoing, including the Buy American Act and similar initiatives, rising tariffs, waning support for multilateral institutions such as the World Trade Organization (WTO), the US-China trade war, and an overall reluctance to engage in new trade agreements. Imports from low wage developing countries are viewed with increasing skepticism across both parties. The past two presidential administrations have particularly sought to target China, identifying it as the primary reason for the decline of American manufacturing. Former President Donald Trump has tapped into a rich vein of sentiment that focuses on negative aspects of globalization and casting it as a pitch for "American Economic Independence".¹

While the notion of trade as a zero-sum game between nations holds significant popular appeal, policies and practices that perpetuate such thinking contradict conventional economic wisdom. According to foundational theories of international trade, foreign commerce enables countries to specialize and improve their economic efficiency, leading to gains that can benefit all parties. More specifically, globalization, marked by the interconnectedness of economies through the exchange of goods, services, capital, and ideas across borders, is vital for maintaining robust economic growth, increasing access to a wider array of affordable consumer goods, and generating new job opportunities for American workers. The shift toward protectionism ultimately holds both rich and poor nations back from accessing a myriad of positive outcomes.

The economic argument for open trade offers no guarantee that the gains will be distributed equally or that the process will be painless. Proponents of economic nationalism point to a series of shockwaves, that include the 2008-09 global financial crisis, the Covid-19 pandemic, and various economic ruptures in the US job market since the 1990s – caused by a combination of de-industrialization, automation, and the 'China Shock' – as evidence that US global economic engagement is harmful to the average worker. This has morphed into an emblematic message of populist parties that blame many of their countries' social woes on globalization. The result is a rise in reactionary protectionism spreading across nations. US trade openness has declined the most since 2010 relative to other rich nations.²

Is it necessary for the US to pursue economic nationalism? In this study, we investigate the impact of America's trade with low-wage countries – and China in particular – on job opportunities in the US today. The US economy has undergone significant transformations since China's export surge after Beijing's accession to the WTO in 2001, and it is now increasingly dependent on other emerging markets besides China for sourcing goods and services.

Despite the drawbacks of globalization such as job loss and reduced wages, America's challenge is to find effective ways to build a strong economy that captures the positive aspects of globalization, while ensuring widespread access to emerging economic opportunities.

Our research delves into the employment impacts on the US economy of imports from China and other low-wage economies around the world, with a particular emphasis on the decade up to the present.

Our analysis reveals four principal insights:

- First, political elites seem to be advocating for economic nationalist policies based on outdated information. Our analysis suggests the impact of the China Shock on employment in US manufacturing has been diminishing since 2011, predating the surge of economic nationalist policies.
- In fact, our second finding emphasizes how most imports have had a positive and significant effect on US manufacturing employment overall, both before and after 2011.
- Third, we analyze how the US has shown resilience to imports from rapidly growing low-wage economies. The data suggests that, for example, imports from the top US emerging economies, excluding China, have positively contributed to US manufacturing employment in the last decade.
- Finally, we argue that US policymakers would be wise to redirect their focus toward developing our comparative advantage in tradable services, rather than focusing on efforts to bring back long-lost manufacturing jobs to the US.

Despite the drawbacks of globalization such as job loss and reduced wages, America's challenge is to find effective ways to build a strong economy that captures the positive aspects of globalization while ensuring widespread access to emerging economic opportunities. Moving forward, the task at hand is striking a balance between the challenges posed by globalization and implementing policies that foster inclusive growth for both workers and families.



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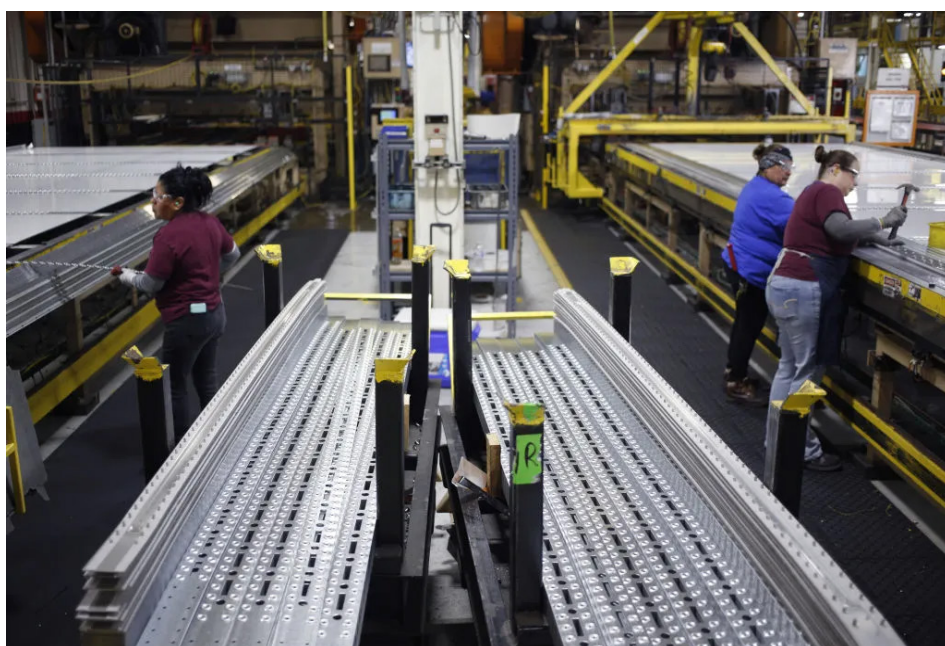
Trade with low-wage economies and the appeal of economic nationalism

Many Americans now express doubts about trade, fearing disruption to their communities and livelihoods. Only 36% of Americans believe trade creates jobs and only 31% believe it increases wages.

Why is so much political attention centered on shifts in US manufacturing employment? The manufacturing sector has historically played a central role in the American Dream, providing millions of well-paying job opportunities to uplift ordinary Americans. Indeed, for much of the 20th century, manufacturing alone was responsible for employing more than a third of all working-age men with a high school degree or less. It has also formed the backbone of American communities, helping local businesses to thrive.

However, manufacturing employment began to decline in the 1980s as the sector grew more capital-intensive in response to wage pressures, technological change, and import competition. Since the 1990s, the manufacturing sector has experienced greater competition from low wage economies, notably China. Companies in rich nations also began sub-contracting the production of goods to China, which could produce on a large scale and at a lower cost. Consequently, businesses supplying to and receiving inputs from Chinese manufacturing have experienced a surge in demand, and consumers globally have benefited from more affordable goods.

At the same time, certain US manufacturing industries that produced labor-intensive goods faced direct competition from Chinese imports. Sectors such as textiles, apparel, furniture, and electronics were among those most affected by the increased competition from China. Labor markets associated with these industries experienced significant job losses, wage stagnation, and economic dislocation in regions heavily reliant on these manufacturing industries.



Businesses supplying to and from Chinese manufacturing observe increased demand, even as certain US labor-intensive manufacturing sectors face direct competition from Chinese imports.

The impacts on labor markets have led to a host of political, social, and demographic consequences downstream. These include drug addiction, diminished rates of marriage and fertility, and rising support for populist politics.

Together, these negative consequences have led to souring attitudes toward free trade. Many Americans now express doubts about trade, fearing disruption to their communities and livelihoods. Only 36% of Americans believe trade creates jobs, and only 31% believe it increases wages.

Politicians who have advocated in favor of free trade have reversed course, and now, almost to a man, point to globalization as the culprit for the fading of the American Dream. Policymakers across the ideological divide are advancing protectionism as a response to competition from low-wage economies, purportedly to safeguard the interest of American workers. Take, for instance, these quotes by Hillary Clinton and Donald Trump during the 2016 presidential campaign, and more recently, President Joe Biden.

“Globalization... has left millions of our workers with nothing but poverty and heartache... Skilled craftsmen and tradespeople and factory workers have seen the jobs they love shipped thousands and thousands of miles away... I want you to imagine a much better life and a life where you can believe in the American dream again.”
Donald Trump, 28 June 2016

“My message to every worker in Michigan and across America is this: I will stop any trade deal that kills jobs or holds down wages... I oppose it now, I’ll oppose it after the election, and I’ll oppose it as president.”
Hillary Clinton, 6 August 2016

“Instead of relying on foreign supply chains, let’s make it in America.”
Joe Biden, 1 March 2022

“[I] will bring back jobs from countries like India, China, Japan and Mexico. .. [W]e came and we started talking about trade, how were being ripped off with China, ripped off with Japan ripped off with Mexico at the border and then trade, ripped off by Vietnam, and by India, and by every country.”
Donald Trump, 22 February 2016

Existing evidence: Trade with low-wage economies and American workers

What insights does existing evidence offer about the consequences of imports from low-wage economies on American workers? Since the 1990s, policymakers, activists, and the American public alike have shown growing apprehension regarding trade with developing countries, emphasizing reasons such as job loss, wage suppression, environmental, and human rights. Notably, the spotlight more recently has been on job losses, propelling the movement toward economic nationalism.

China, in particular, has drawn considerable scrutiny. China's integration into global markets fundamentally altered the international economic landscape. Three pivotal events preceded China's rapid ascent: (1) Deng Xiaoping, China's former Paramount Leader, spearheading economic reforms and opening up to global trade and investment from the late 1970s; (2) the enactment of the US-China Relations Act of 2000, conferring permanent normal trade relations status upon China; and (3) the nation's formal entry into the WTO in 2001; and China's large single market, then armed with very low wages and a state-business policy environment designed to leverage intellectual property gained from foreign direct investment.

The backlash against trade with low-wage countries can be traced back to a study by Autor et al. (2013), which found that imports from developing countries presented a shock to high-wage labor markets. China's spectacular export-led economic growth led to major import competition for US industries. Exposure to Chinese imports produced a host of negative labor market effects, including unemployment, reduced labor force participation, and lower wages (Autor et al. 2013). Subsequent research has produced findings that are consistent (Pierce and Schott 2016; Handley and Limão 2017; Caliendo et al. 2019). Together, this body of work has contributed to the now popular view that Chinese imports are bad for the US economy, disproportionately impacting geographic areas that have historically been centers of American manufacturing (Dorn and Levell 2021).

However, while there is consensus that China's entry into global manufacturing (an event often referred to as the 'China Shock') produced substantial effects across the American economy, the precise magnitude of the effects is debated. For instance, Caliendo et al. (2019) concluded that the "China trade shock resulted in a reduction of about 0.55 million U.S. manufacturing jobs... from 2000 to 2007." Acemoglu et al. (2016) found that import competition from China between 1999 and 2011 led to a reduction in employment between 2 million and 2.4 million jobs, including employment in sectors not exposed to the China Shock.³ More recently, Feenstra et al. (2019) found that imports from China led to a loss of 900,000 jobs between 1991 and 1999 and 1.3 million between 1999 and 2011. That said, when accounting for the positive impact of US exports on overall employment, the authors find that US employment gained more than half a million new jobs.

Beyond affecting employment, the China Shock is also blamed for increasing workers' reliance on state welfare, such as unemployment, disability, and retirement benefits (Autor et al. 2013, 2014).

Although the China Shock was thought to subside around 2010, recent research suggests that it has continued to exert an impact on US workers in hard-hit areas, particularly in the form of job loss, income, and utilization of social transfers such as Social Security and Medicare benefits (Autor et al. 2021).

Adding to public concern, separate but related literature explores the China Shock's broader effects outside of the labor market per se. This body of work paints a distressing picture, indicating that the shock significantly harmed Americans' quality of life. For instance, Charles et al. (2019) correlate the loss of manufacturing jobs in the US, influenced in part by China, with America's opioid crisis. They show that opioid prescriptions were higher in localities that experienced substantial reductions in manufacturing employment, such as the Midwest and Southeast. In doing so, they demonstrate a connection between economic decline in these areas and a notable surge in "deaths of despair" stemming from drug overdoses, suicide, and liver disease (Pierce and Schott 2020; Case and Deaton 2015).

The China Shock resulted in significant change to the US political landscape. According to Autor et al. (2020), it has affected a wide range of political outcomes—from media viewership to campaign contributions—and has led to growing polarization in American politics. The effect has been particularly pronounced in regions most reliant on manufacturing. Studies by Dippel et al. (2017), Malgouyres (2017), Dehdari (2021), Grossman and Helpman (2018), Bonomi et al. (2021), and Dal Bó et al. (2019) indicate that voters in these areas increasingly support protectionist measures. Che et al. (2022) suggests that US voters may even go so far as to switch their political affiliation toward the party that takes a tougher stance against trade. The impact of the China Shock has also been felt in US presidential elections. Incumbent parties are more likely to lose votes in areas where manufacturing imports rise and exports decline (Jensen et al. 2017, Quinn and Liu 2024).



Beyond affecting employment, the China Shock is also blamed for increasing workers' reliance on state welfare, such as unemployment, disability, and retirement benefits

The literature on the China Shock is not all negative, however. Many scholars attribute the rise of Chinese manufacturing with benefiting consumers with lower prices, (Bai and Stumpner 2019; Hottman and Monarch 2020; Jaravel and Sager 2021; Borusyak and Jaravel 2021), expanding other countries' access to global markets in certain sectors like technology (Feenstra et al. 2019), and having a positive effect on employment in industries like construction and services (Caliendo et al. 2019; Bloom et al. 2019; Dix-Carneiro et al. 2023). However, these positive insights have been largely overshadowed by insights to the contrary, especially those that emphasize declining employment and growing income inequality.

Given its far-reaching political, economic, and societal impacts, the China Shock continues to be extensively studied. Political leaders frequently highlight its adverse effects, contending that global trade is undermining the American Dream. This is a concern that resonates amongst the American public. Barely one-third of voters say they still have faith that their children will do better economically than themselves.⁴ By linking globalization to the dwindling American Dream, policymakers reinforce pessimistic attitudes toward trade and globalization in general. This effect is most pronounced among those who feel that the American Dream is now beyond their grasp (Ballard-Rosa et al. 2024).

Evaluating the ongoing impact of the China Shock – or any similar shock from low-wage countries – is thus critical. The initial step involves determining the extent of its persistence in the present era. This research holds significance for three reasons. First, it can provide insights on the efficacy of past and present trade policies in alleviating the job losses expected with low-wage countries. Given previous research indicating that the China Shock affected regional economic disparities in the US, it is crucial to understand the extent to which its effects on different regions have endured or have been mitigated. Second, what is the impact on US workers from imports from other low-wage economies aside from China? Trade with other emerging economies such as Vietnam and India has been rapidly increasing.

Lastly, we ask whether the broader economic transition away from low-skilled manufacturing reflects a natural progression in economic development. Transitioning toward a service-oriented economy and prioritizing tradable services enable the US to leverage its strengths and respond to changing global market dynamics. Tradable services often involve higher value-added activities compared to manufacturing. This can lead to higher wages and greater productivity, thereby benefiting workers and the economy overall.

Our findings: Estimating low-wage shocks on US manufacturing employment (1999-2020)

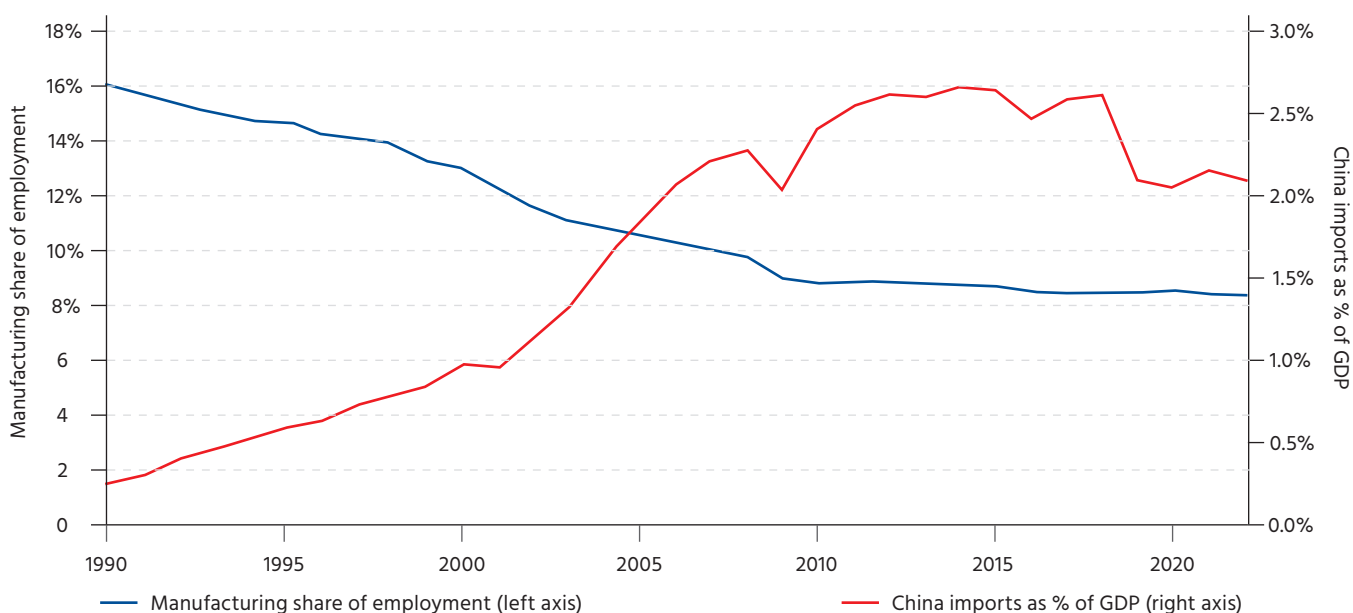
Neither the growth in Chinese import penetration post-2011 nor its subsequent collapse seems to have any effect on US manufacturing employment in the aggregate, in striking contrast to the previous decades.

The diminishing impacts of the China Shock

To assess the resilience of the US economy post-2011, we begin by examining the recent trends in Chinese imports and their effect on US manufacturing employment. As seen in Figure 1, Chinese goods imports as a fraction of US GDP continued its march upward after the global financial crisis, reaching a peak in 2014, before it ebbed and then dropped sharply in the wake of the Trump tariff war. Meanwhile, US manufacturing employment as a share of total non-farm employment, which had been losing ground for decades, dramatically slowed its pace of decline. Manufacturing employment grew steadily in absolute terms after 2010 at roughly the same rate as total employment. Importantly, neither the growth in Chinese import penetration post-2011 nor its subsequent collapse seems to have any effect on US manufacturing employment in the aggregate, in striking contrast to the previous decades.

The decoupling of Chinese imports from US manufacturing employment suggested by the post-2011 aggregate trends in Figure 1 can also be seen at the industry level. An industry-level view is important, because one might be concerned that imports from China continue to depress US employment as in previous decades but, unlike previous decades, this competition is now more selective – increasing in some industries and decreasing in others. If this were true, a tempting policy response might be to widen the scope of the Trump tariffs to include all industries.

Figure 1 – US manufacturing employment and imports from China

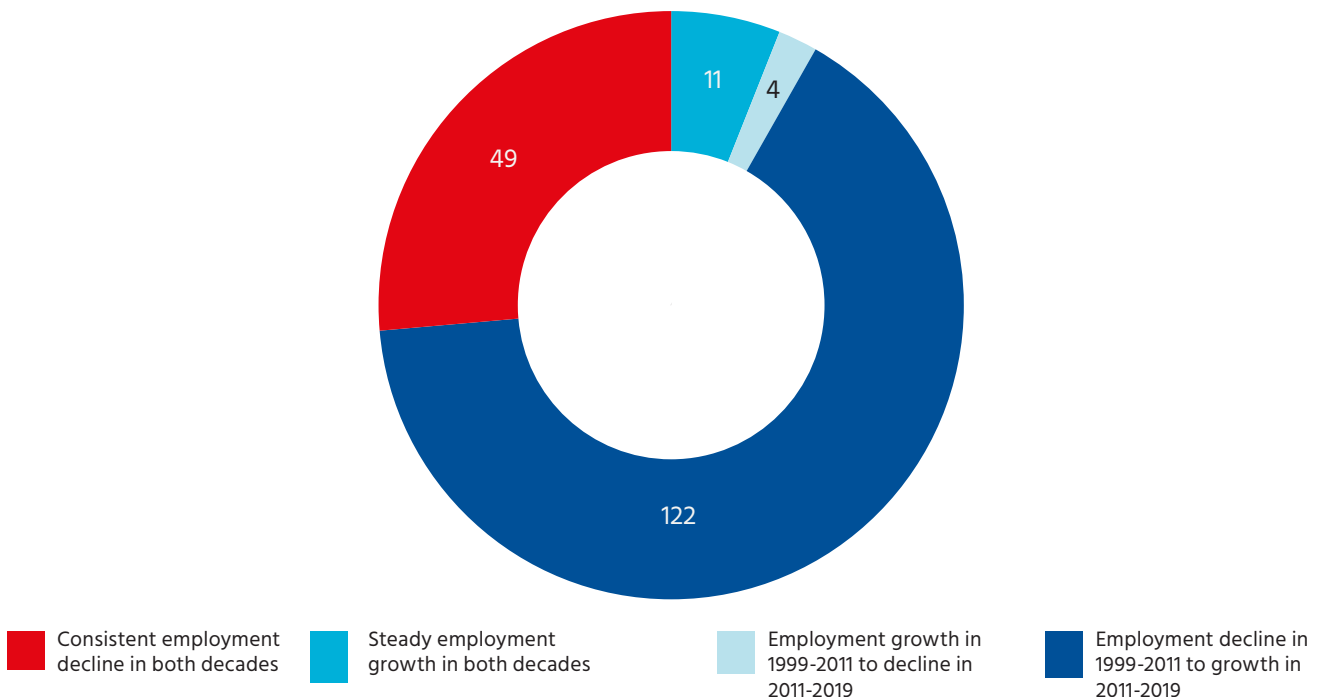


Source: FRED (Federal Reserve Bank of St. Louis).

However, this possibility is not supported by the industry-level evidence. Figure 2 shows employment trends for manufacturing industries which have experienced persistent China Shock, i.e. growing imports from China in both periods, 1999-2011 and 2011-2019.⁵ These represent approximately half of all manufacturing industries in our sample. We find that the vast majority of industries facing a persistent China Shock, 122 out of 186, experienced a **rebound** in employment in the last decade after suffering declines in 1999-2011. These include trucks and tractors, household furniture, and fluid power cylinders. Interestingly, 11 industries – such as manufacturers of vegetable sauces and seasonings, pharmaceutical preparations, and electromedical and electrotherapeutic apparatus – were resilient in both periods, while only 2% of industries in our sample recorded a switch from employment growth to decline. These include orthopedic, prosthetic, and surgical appliances, tanks and tank components, and cereal breakfast foods.

By itself, the evidence presented so far does not prove that the causal link between Chinese imports from US manufacturing employment post-2011 has been weakened. This requires careful estimation of the causal link, which we do at the industry level.⁶ We follow the approach and data sources outlined by Acemoglu et al. (2016) but expand the analysis to the latest decade.⁷ For the period 1991-2011, our results are consistent with the literature. However, for the last decade, 1991-2019, we find that the pattern of import growth from China across industries and commuting zones (i.e., geographical areas that reflect the local economy where people live and work) no longer drives the pattern of employment growth.

Figure 2 – Manufacturing employment trends in industries with persistent import competition



Note: Figures represent number of industries out of a total sample of 186.

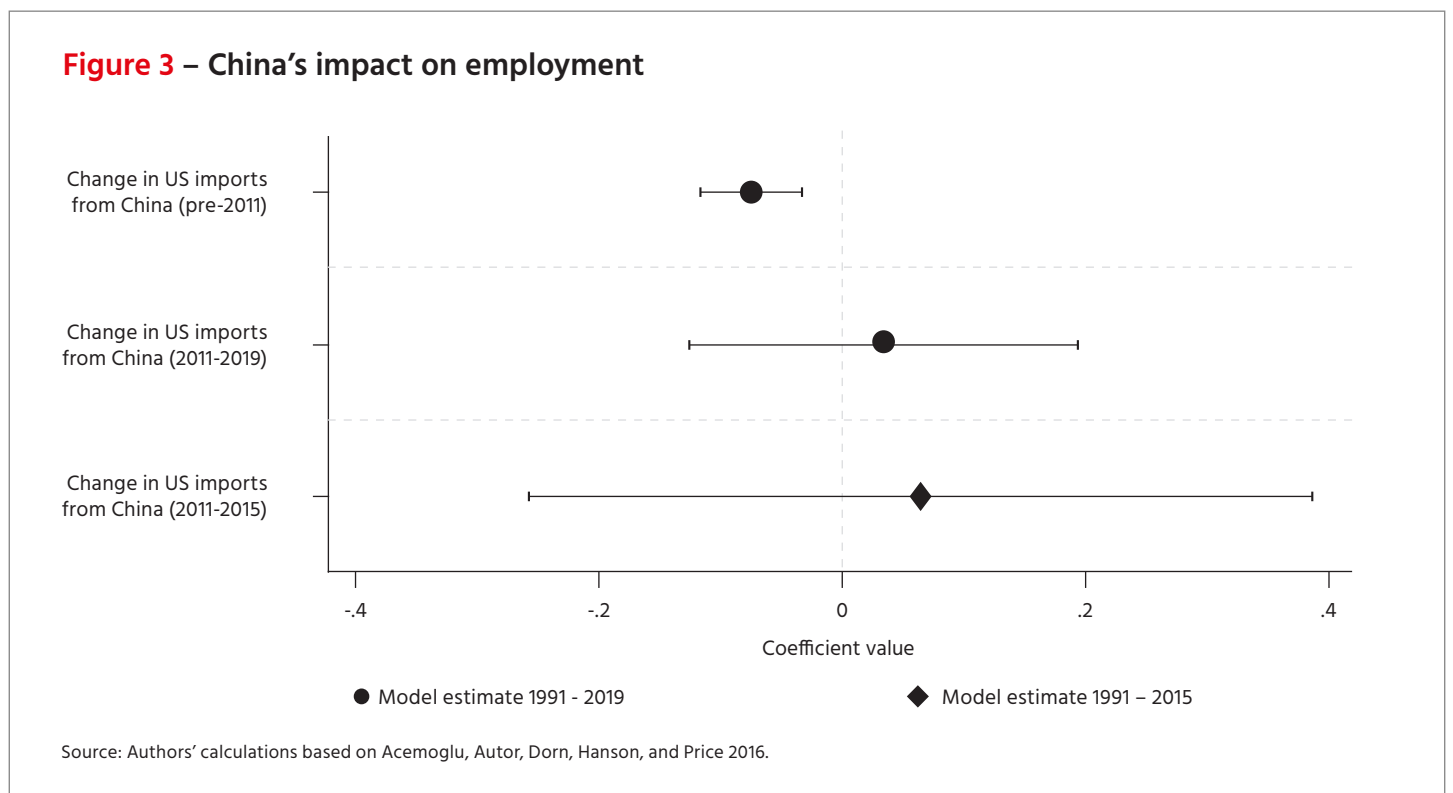
Source: Authors' calculations based on Acemoglu, Autor, Dorn, Hanson, and Price 2016.

The vast majority of industries facing a persistent China Shock, 122 out of 186, experienced a rebound in employment in the last decade after suffering declines in 1999-2011.

Figure 3 shows the estimated coefficients measuring the relationship between changes in China’s import penetration and changes in US manufacturing employment at the industry level over different periods since 1991. The figure shows the estimated coefficient for the period before 2011 and for two periods after 2011: the pre-pandemic period of 2011-2019 and the pre-Trump period of 2011-2015.

Before 2011, the estimated coefficient was -0.75 , implying that a 10 percentage point rise in industry import penetration reduces domestic industry employment by 7.5 percentage points. Moreover, this estimate lies within a tight confidence interval, as indicated by the width of the line segment on either side of the estimate in the figure. It implies that we have a high level of confidence (95% sure) that the true coefficient is indeed negative.

By contrast, in both post-2011 sample periods, the estimated coefficient is slightly positive, suggesting that import penetration increases domestic industry employment. However, the confidence intervals in both cases are wide, including coefficient values that are both positive and negative, indicating that we cannot be confident that there is any statistically significant effect at all.



The results shown in Figure 3 suggest that the weakening causal link between Chinese imports and US manufacturing employment is not a consequence of economic nationalism because it predates the Trump administration's efforts to curtail Chinese imports. What then explains it? While there are number of possibilities, it is most likely due to structural changes in the US manufacturing sector itself, including:

- Deepening of capital. US manufacturing has become much more capital-intensive, requiring fewer workers per unit of output. This is partly due to technological change (e.g., advances in automation technology), but it has also been shown to have occurred disproportionately in sectors experiencing import competition from China (Charles et al. 2019).
- A shift away from producing import-exposed manufacturing products toward higher-tech manufacturing products and business services.
- Greater reliance on imported intermediate inputs. For industries that import intermediate inputs, freer access to imports, whether from China or elsewhere, lowers costs and boosts employment. Indeed, Autor et al.'s (2024) analysis of the Trump-era US-China trade war found that restricting imports from China has not positively impacted US jobs, largely because of this structural change.

Much of the future work of this project will be aimed at understanding these and other structural changes in the US economy and how they relate to international trade and other forms of openness. One conclusion that is already strongly supported by our research is that post-2016 protectionist policies aimed at countering the effects of China's on US manufacturing are based on findings that are now effectively out of date.



The pattern of import growth from China across industries and commuting zones no longer drives the pattern of employment growth.

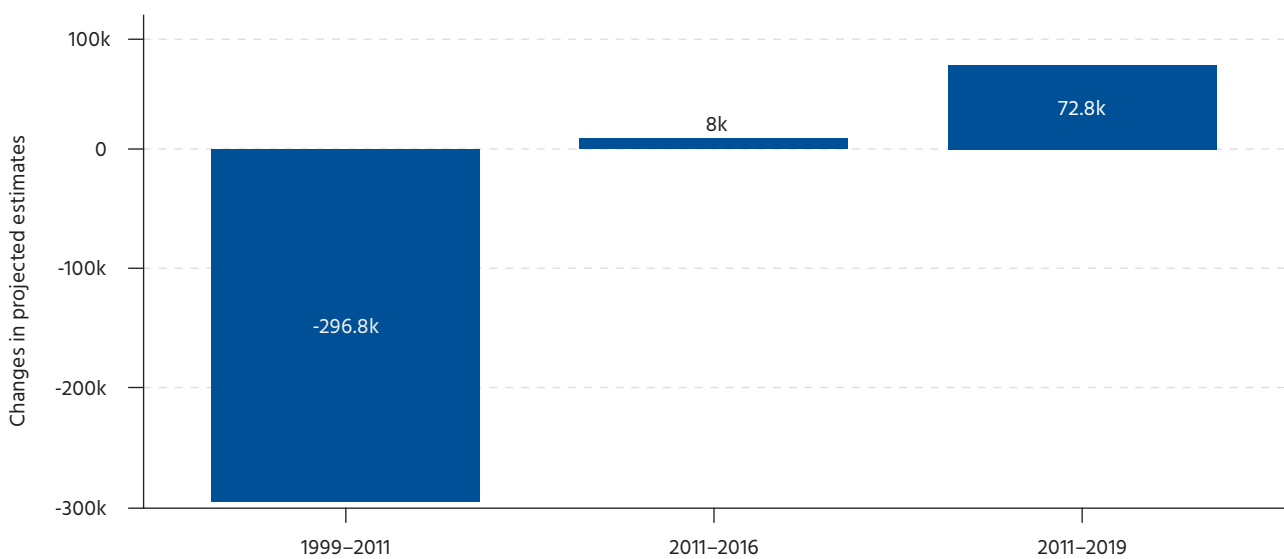
The good news: Imports are helping US employment overall

Although the China Shock’s role in the decline of US manufacturing employment has attracted headlines, the bulk (about 80%) of US imports come from other countries. In fact, our empirical analysis shows that these imports have had a positive and significant effect on US manufacturing employment, both before and after 2011. Moreover, this effect comes predominantly from imports of intermediate goods, which increase the competitiveness of US manufacturing. Taken together with the diminished effect of China’s imports since 2011, our findings suggest that imports overall are now helping US manufacturing employment.

Figure 4 shows how imports have affected aggregate manufacturing employment changes in the US since 1999, according to our estimates. From 1999 to 2011, we find that imports contributed to a significant loss in manufacturing employment of approximately 300,000 jobs, due primarily to the China Shock. From 2011-2019, we see imports contributing to increases in manufacturing employment, due to imports from other countries. Most of those increases occur after 2016, during the period of intensifying economic nationalism. While this trade-induced rebound in employment has not erased the losses from the China Shock, US manufacturing employment has shown considerable resilience, and this has occurred not because of economic nationalism but in spite of it.

Economic nationalism finds its greatest political support in traditional manufacturing strongholds. Indeed, existing literature has shown that these are the same areas of the country where the China Shock did the most damage to manufacturing employment. Are these same areas now being helped by imports, or have the benefits of trade passed them by once again? To answer this question, we can map the estimated import-induced changes in manufacturing employment before and after 2011 shown in Figure 4 to US commuting zones.⁸

Figure 4 – Estimated employment changes from imports in manufacturing sector



Source: Authors’ calculations based on Acemoglu, Autor, Dorn, Hanson, and Price 2016.

With the exception of some areas, such as New Orleans and southern Texas, as well as some areas in the Midwest, most of the commuting zones experienced a decline, mainly due to the China Shock. Los Angeles was among the regions hardest hit.

Figures 5 and 6 plot the predicted manufacturing employment changes, due to imports, in both periods by US commuting zone. Commuting zones in red represent areas which have faced import-related employment decline, while blue areas record employment gains. Figure 5 illustrates the predicted employment changes for the period 1999-2011 for all imports, including the impact of the China Shock. With the exception of some areas, such as New Orleans and southern Texas, as well as some areas in the Midwest, most of the commuting zones experienced a decline, mainly due to the China Shock. Los Angeles was among the regions hardest hit. Figure 6 repeats the same exercise for the last decade but focuses only on changes in manufacturing employment from imports from the rest of the world, during which imports from China no longer have a statistically significant effect (see Figure 3). We find that imports have contributed positively to many commuting zones between 2011 and 2019.

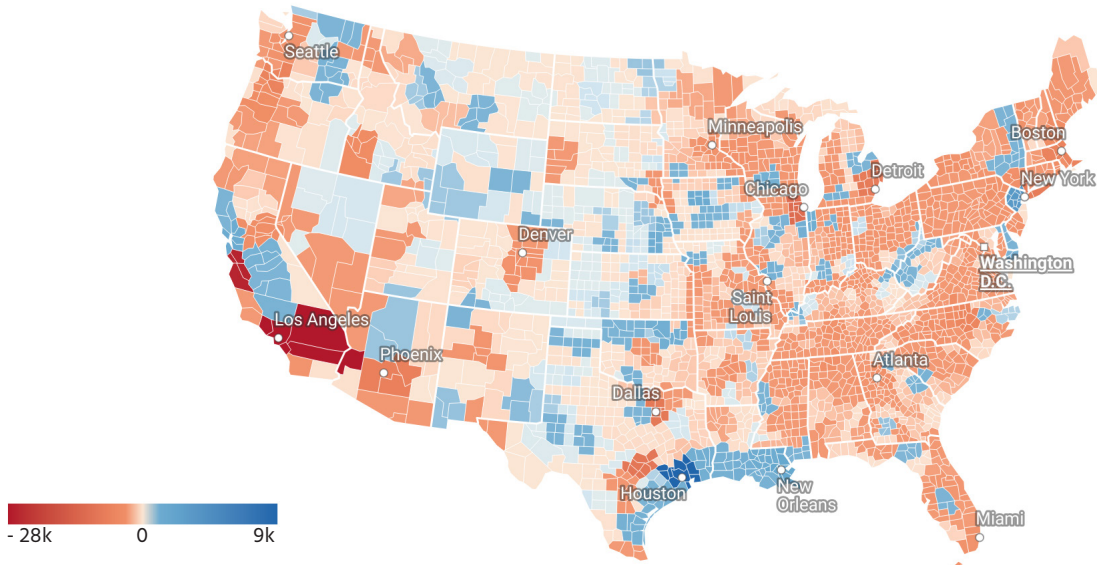
Two important points need highlighting. First, the rise in blue areas since 2011 (see Figure 6) signifies a substantial improvement in manufacturing employment in these regions, yet it does not necessarily denote that all local areas have completely recovered from the China Shock.

Second, contrary to the principles of economic nationalists, Figure 6 demonstrates that employment growth in many of these regions are rebounding precisely due to their connection to the global economy (via imports); and this is after a period of employment decline in response to the China Shock.

While future research must necessarily address the underlying reasons for this change, our findings show that the impacts of rising imports from China have not persisted and that the waning effects of the China Shock have taken place prior to the policies that politicians are calling for today.

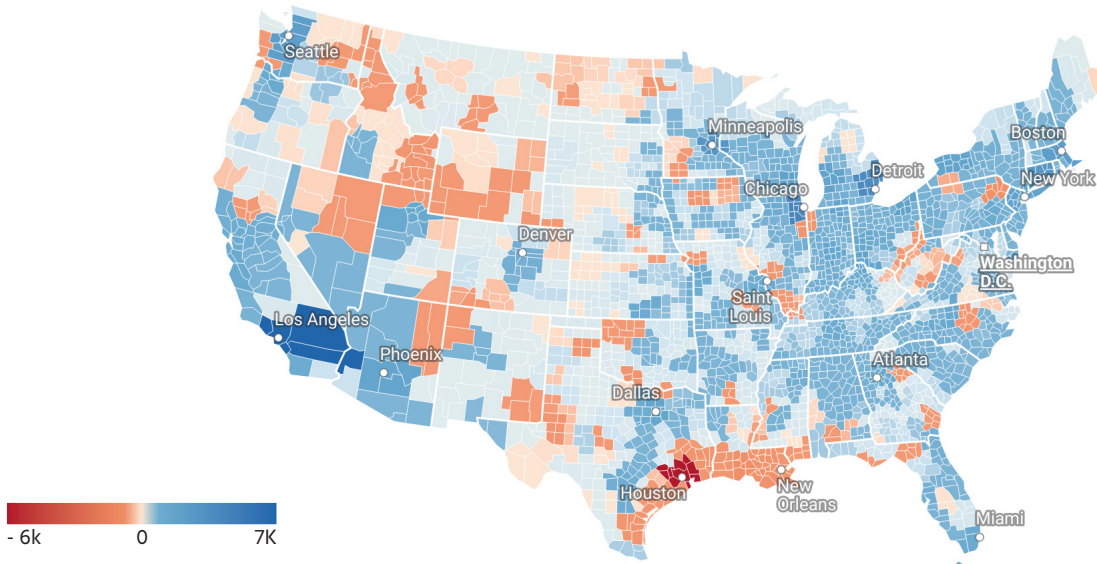
Ultimately, as the US invests in advancing its comparative advantage and transitions to an increasingly high-skilled services economy, the US economy will become increasingly dependent on manufacturing imports for its long-term success. With global supply chains on the rise, US manufacturers already increasingly depend on intermediate goods for the production of final goods for either domestic consumption or exporting.

Figure 5 – Changes in US manufacturing employment induced by imports from China and rest of the world 1999-2011



Source: Authors' calculations based on Acemoglu, Autor, Dorn, Hanson, and Price 2016.

Figure 6 – Changes in US manufacturing employment induced by imports from rest of the world ex-China 2011-2019



Source: Authors' calculations based on Acemoglu, Autor, Dorn, Hanson, and Price 2016.

Emerging-economy imports have contributed to almost half a million US jobs. This is the largest employment addition when compared to earlier periods, namely 1999-2011 and 2011-2016.

Resilience of American jobs against low-wage imports excluding China

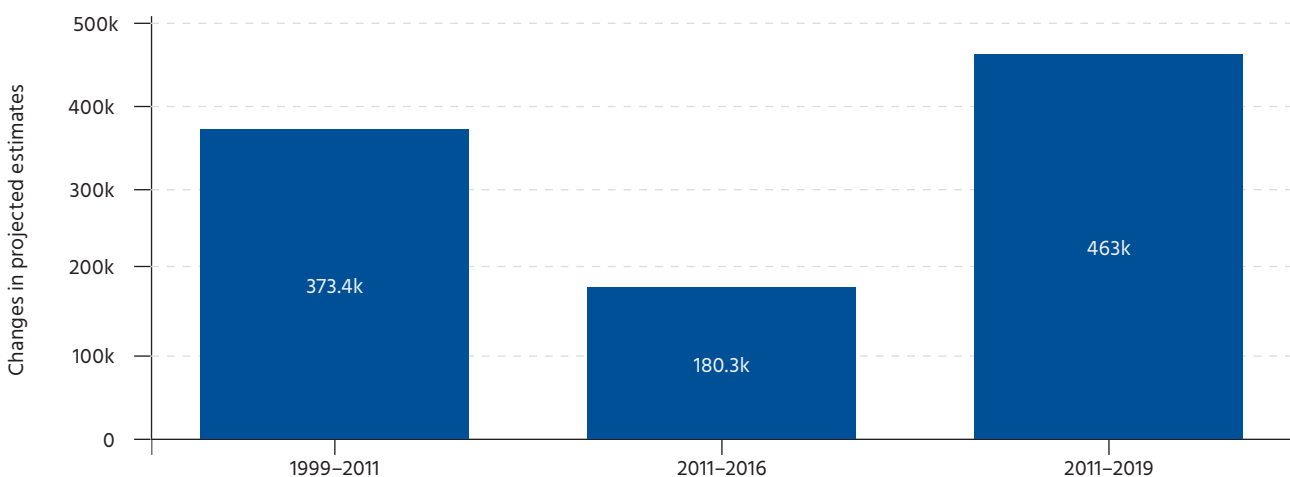
While the previous section focused on imports from all countries, imports from low-wage countries are typically regarded as the most threatening to US blue collar workers. As wages in China have risen and economic nationalism in the US has prompted calls for diversifying away from Chinese imports, US imports of labor-intensive goods have begun to migrate to other low-wage countries. Can we expect these countries to become the new sources of disruption to US manufacturing employment?

The answer so far is no. To show this, we replicate the methodology for the same period on a group of emerging economies that constitute the US' largest importers, excluding China (see Figure 7). These include Brazil, India, Mexico, South Korea, Thailand, and Vietnam. In the last decade, we find that imports from these economies have contributed significantly to US employment growth. We estimate that emerging-economy imports have contributed to almost half a million US jobs. This is the largest employment addition when compared to earlier periods, namely 1999-2011 and 2011-2016.

This pattern is good news for US workers, workers abroad, and overall geopolitical concerns. First, it demonstrates that imports from low-wage countries can provide job opportunities for American workers as well as workers from the low-wage exporting nations. This directly challenges ongoing zero-sum views of international trade on US employment. Second, consumers are also winners since imports from low-wage countries offer access to more affordable goods. Third, US firms gain as US industries can access cost-effective inputs from low-wage economies and participate in global value chains. Finally, trade with low-wage economies can foster diplomatic relations and promote international cooperation, contributing to peace and stability in the global arena.

Figure 7 – Estimated employment changes from leading emerging economies shock in manufacturing sector

Changes in projected employment



Note: Leading emerging economies include Brazil, India, Mexico, South Korea, Thailand, and Vietnam.

Source: Authors' calculations based on Acemoglu, Autor, Dorn, Hanson, and Price 2016.

The service sector is a large and growing contributor to the US economy, employing a majority of American workers. Some important sub-sectors within services pay high wages, in some cases higher than the average manufacturing wage.

Prioritizing US comparative advantage: Services

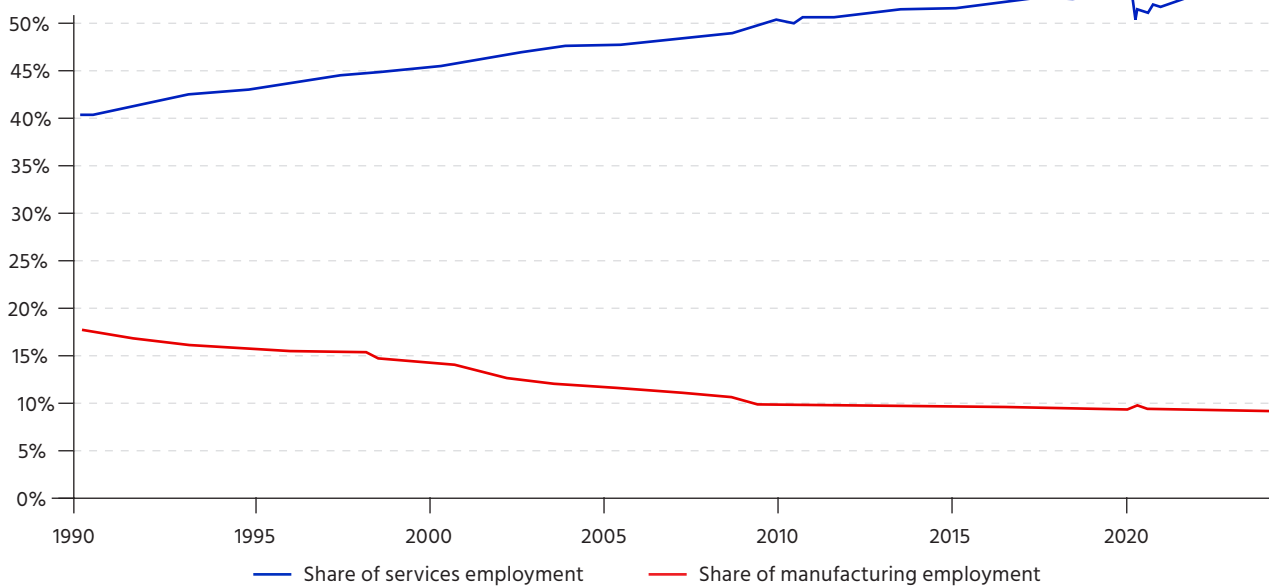
The services sector has historically employed a large share of American workers. Since the 1990s, the share of services employment has been steadily increasing relative to manufacturing. Today, manufacturing makes up less than 10% of US employment (see Figure 8).

Between 2002 and 2007, the services sector contributed significantly more than manufacturing in terms of total output. In 2007 alone, total services output was four times greater than manufacturing.⁹

The service sector is a large and growing contributor to the US economy, employing a majority of American workers. Some important sub-sectors within services pay high wages, in some cases higher than the average manufacturing wage. For example, according to the Bureau of Labor Statistics (BLS) 2022 data, business services (NAICS industries 51, 52, 53, 54, 55, and 56) employ 34 million and are paid an average wage of US\$83,058, employing 2.7 times as many workers as manufacturing and at higher average wages.

Jensen (2011) reports “the business service sector (which includes, among many others, information, financial, scientific, and managerial services) alone accounts for 25% of employment in the US — more than twice as many jobs as the manufacturing sector. (It employed only half as many as manufacturing 50 years ago.) Employment in the business service sector *increased* almost 30% over the decade 1997–2007, while manufacturing employment *decreased* by over 20%. The popular perception that most service jobs are “bad jobs with low wages” is wrong. In fact, the business service sector pays significantly higher wages and salaries on average than the manufacturing sector. Average annual wages in the manufacturing sector in 2007 were about US\$46,000. The figure for business services that year was about US\$56,000 — more than 22% higher.”

Figure 8 – The fall of manufacturing and rise of services as share of total US employment



Source: Bureau of Labor Statistics (BLS) and FRED (Federal Reserve Bank of St. Louis).

Despite rising total imports and a widening trade gap over the past few decades, the US still imports little high-wage, high-productivity manufacturing output from low-wage countries and continues to export high-wage, high-skill manufacturing products.

Many service activities — movie and music recording production, software production, research and development services, and engineering services, to cite a few examples — are “traded” (that is, transacted across distances) within the US and thus are at least potentially tradable internationally. Jensen (2011) reports that approximately 14% of the US workforce is in service industries classified as tradable. By comparison, about 10% of the workforce is in the entire manufacturing sector. When workers in tradable occupations (such as computer programmers in the banking industry, or medical transcriptionists in the healthcare industry) within non-tradable industries are included, the share of the workforce in tradable service activities is even higher.

Tradable service jobs, such as those at engineering or research and development firms, are good jobs, paying higher than average earnings. Part of this premium is due to workers in these activities having higher educational attainment on average than other workers, but even when one controls the econometric analysis for educational and other personal differences, Jensen (2011) reports that “workers in tradable service activities have 10% higher earnings. Within business service industries, a worker in a tradable industry and a tradable occupation has almost 20% higher earnings than a similar professional services worker in a non-tradable industry and occupation.”

Even though these jobs pay high wages, they are not likely to be lost to low-wage countries. Indeed, precisely because they are high-skill, high-wage jobs, they are jobs that the US is likely to retain and that can support exports. The US has comparative advantage in high-skill, high-wage manufacturing activities.

Despite rising total imports and a widening trade gap over the past few decades, the US still imports little high-wage, high-productivity manufacturing output from low-wage countries and continues to export high-wage, high-skill manufacturing products. There is every reason to think that US services trade will play out similarly, with trade in services that provide high-wage job opportunities growing at the expense of services that pay lower wages.

And while the US has comparative advantage in high-skill activities (both manufacturing and services), these relatively high-skill intensive industries employ a significant number of workers without college education. *A key longer-term objective of this project is to examine in more detail the characteristics of the high school-educated workers in tradable services to better understand who would benefit from increased trade in services.*

The World Bank reports that in 2021, the US accounted for 28% of global services value-added output – nearly twice as much as China (15%), the next largest service producer with a labor force several times the size of the US labor force. This suggests the US has a strong comparative advantage in services.

The US has been successful in exporting services. Indeed, the US consistently runs a trade surplus in services. But US service firms’ participation in the international economy lags that of US manufacturing firms: a far smaller share of service output than of manufacturing output is traded. Thus, there seems to be considerable opportunity for US firms and workers from increased service trade.

The potential of trade in services to provide opportunities for American workers should not be overlooked and, given the US's revealed comparative advantage in services, should be a part of any economic resilience strategy.

But increased service trade could pose some risks. It will undoubtedly cause some dislocation of production and jobs, just as what happened in manufacturing. Yet, Jensen (2011) reports that a relatively small share of US employment in tradable services is in the low-wage, low-skill activities likely to face competition from low-wage, labor-abundant countries. The majority of employment in tradable services is in activities where the US is likely to export more.

To our knowledge, scholars have yet to estimate how changes in services trade have affected labor markets in the US. Trade in services is growing, both imports and exports, and the share of employment in tradable services activities is large, potentially exposing a large share of the US workforce to foreign competition. It is our intention to use a methodology similar to the methods described above to examine the impact of trade in goods to exploit the variation in the presence of different tradable service industries across regions to try to identify the impact of changes in service imports and exports on regional US labor markets – for both skilled – and less-skilled workers alike. This is a fairly large gap in scholars' understanding of the impact of international trade on labor markets and it is our intention to address it.

While important research needs to be done to examine the impact of trade in services on labor markets, it seems self-evident that the potential of trade in services to provide opportunities for American workers should not be overlooked and, given the US's revealed comparative advantage in services, should be a part of any economic resilience strategy.



Growing trade in services, with sizable employment in tradable services, exposes much of the US workforce to foreign competition.

Concluding thoughts

Imports from the leading emerging economies, excluding China, have made a positive contribution to US manufacturing employment over the past decade.

The future of the global governance framework for the international political economy is at its most uncertain since the end of World War II. Economic nationalism is on the rise. Yet our analysis shows the US economy began demonstrating resilience against China's imports, as well as imports from other low-wage countries, even prior to the inward turn in American trade policy and public attitudes toward globalization. Instead, this approach risks causing irreparable damage to US competitiveness, slowing economic growth, alienating our allies, and potentially intensifying economic inequalities.

In summary, our data indicate that the impact of the China Shock on US manufacturing jobs is not significant post-2011. We also find a statistically insignificant effect prior to the introduction of economic nationalist policies (see Figure 3, period 2011-2015). This pattern suggests that politicians advocating for economic nationalist policies are basing their trade policy decisions on evidence that no longer holds. Certain hard-hit regions as well as a large number of manufacturing industries have recovered from the China Shock and jobs have increased. This observation highlights an important aspect of the US economy's adaptability and resilience to global economic shocks.

Perhaps even more remarkable, our research underscores the resilience of US jobs to imports from around the world, including low-wage economies. Notably, imports from the leading emerging economies, excluding China, have made a positive contribution to US manufacturing employment over the past decade.



Certain hard-hit regions as well as a large number of manufacturing industries have recovered from the China Shock and jobs have increased.

In other words, imports from the top low-wage economies (other than China) trading with the US have not only not undermined US manufacturing jobs, they have actually increased employment over the past two decades.

The positive contribution of imports from these economies emphasizes the benefits from US engagement with the interconnected nature of the global economy. Trading with emerging economies can support US manufacturing jobs, and serves as an opportunity for economic growth, efficiency, and innovation.

Finally, our third main insight from the data is that US policymakers would do well to pivot their focus toward our comparative advantage in tradable services, rather than prioritizing efforts to bring back lost manufacturing jobs. Data challenges make empirical research focused on trade in services difficult and this is the likely source of the dearth of empirical analysis of trade in services.

Given the apparent comparative advantage of the US in tradable services, this is an important gap in our understanding of the impact of international trade on the US labor force. Our intention is to address this gap in the literature using methods similar to those used to examine the impact of trade in manufacturing goods on the labor market.

These findings must be put into a broader perspective. Globalization has indeed had negative impacts on US workers, as previous research has confirmed. America's challenge lies not in globalization itself, but in the growing disparity in the distribution of its benefits and the inability of workers to capitalize on emerging economic opportunities, such as in tradable services.

Our data suggests the answer does not appear to be greater protectionist policies. Reactionary protectionism can inflict even greater harm than foreign imports on American workers and businesses. This approach risks causing irreparable damage to US competitiveness and potentially worsen economic inequalities, rather than help them. America's challenge is to find effective ways to build a strong economy that captures the positive aspects of globalization while simultaneously increasing the number of workers and families who benefit from emerging economic opportunities.

Next steps

To address this challenge, the task ahead is to unveil the complexities of various dimensions of globalization at the local level, recognizing both its opportunities and challenges. Misinformation about the pros and cons of globalization is widespread, and this needs to be corrected. Ultimately, to build a better future and respond to globalization's critics, the local costs and benefits of globalization must be understood and communicated. Equipped with this information, our leaders can enact precise policies that ameliorate costs from global competition without dismantling the beneficial features of our global economic system.

Not all local areas have recovered from the China Shock, and these cases deserve detailed attention. For instance, Cleveland, Mansfield, and Findlay in Ohio are three commuting zones with comparable employment levels that experienced similar impacts from the 'China Shock'. Yet, Cleveland and Findlay recovered, while Mansfield did not. Why? Understanding how to capture the gains from globalization to achieve shared prosperity requires a detailed and comprehensive examination of both high-recovery and low-recovery regions. In other words, we must delve into the underlying factors contributing to the recovery of areas such as Cleveland and Findlay that prospered in the face of globalization, while other localities continue to struggle. Utilizing this information, we can identify the factors that can help distribute the gains from globalization more broadly and formulate bipartisan solutions tailored to local contexts.



To build a better future and respond to globalization's critics, the local costs and benefits of globalization must be understood and communicated.

To do so more precisely, we must begin by quantifying and estimating country-level globalization measures that include not just merchandise exports and imports, but also tradable services, foreign investment, supply chain connections, and immigration.

At this stage, it is imperative to also assess the impact of trade in services on labor markets in the US, for both skilled – and less-skilled workers. This comprehensive analysis is vital for gaining a complete understanding of the local effects of globalization, rather than solely focusing on the China Shock in manufacturing.

Next, we must estimate how each component of globalization impacts the quality of life for the median voter, encompassing factors beyond employment, such as intergenerational mobility prospects (i.e. the American Dream), housing costs, high school and college graduation rates, poverty, health, air quality, crime, homelessness, and political polarization. Such rich and nuanced data will paint a more vivid portrait of how globalization shapes modern American livelihoods at the local level.

Finally, to achieve globalization and shared prosperity, we must investigate the importance of integrating globalization with essential public goods investments. This includes strategic public and private investments in skill development for future generation, which may or may not require college education. A primary policy focus must be based on analyzing how workforce development initiatives – such as childhood education, skill building, vocational training, and childcare assistance – impact the left behind and allow them to become part of the global economy. Studies demonstrate that workers with a high-school education are employed in tradable services sectors and potentially benefit from increased service exports. To achieve a broad distribution of the gains from globalization, it is essential that we thoroughly investigate this trend. Research findings on globalization opportunities aligned with our comparative advantage and the precise shortcomings in local workforce development must serve as the foundation for constructive dialogues with Congressional representatives, community organizations, and regional stakeholders.

Researchers' bios

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PhD Candidate, Department of Government

Niccolò W. Bonifai is a PhD Candidate in the Department of Government at Georgetown University. His research examines the role of global businesses to explain the recent return of economic nationalism. He is affiliated with the Lab for Globalization and Shared Prosperity and the Global Political Economy Project. His work has been featured in Comparative Political Studies and Foreign Affairs.

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Jensen pioneered the use of plant-level microdata to investigate the impact of international trade and investment on the US economy. He is author of *Global Trade in Services: Fear, Facts, and Offshoring* and a number of highly cited scholarly articles. Jensen's work on trade in services was referenced in the United States Trade Representative's letter to Congress announcing the Administration's intention to enter into negotiations for the Trade in Services Agreement (TiSA). His research has been cited in the Economic Report of the President and popular press publications including the Economist, Financial Times, Wall Street Journal, New York Times, Fortune, and Businessweek. Jensen's research has been supported by the National Science Foundation, the Alfred P. Sloan Foundation, and the John D. and Catherine T. MacArthur Foundation.

Prior to joining Georgetown, Jensen served as deputy director at the Peterson Institute for International Economics. Jensen also served as director of the Center for Economic Studies at the US Census Bureau, on the faculty at Carnegie Mellon University, and as a visiting professor at the Tuck School of Business at Dartmouth College. Jensen received a Ph.D. in Economics from Stanford University and a B.A. from Kalamazoo College.

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Nita Rudra is a Professor of Government at Georgetown University. Her research interests include: the distributional impacts of trade and financial liberalization as they are mediated by politics and institutions; the influence of international organizations on policies in developing economies; the politics of trade agreements involving developing economies, and the causes and effects of democracy in globalizing developing nations.

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Endnotes

1. <https://www.politico.com/story/2016/06/full-transcript-trump-job-plan-speech-224891>
2. <https://www.pii.com/research/piie-charts/united-states-has-been-disengaging-global-economy>
3. Some scholars disagree that China is responsible for this impact. While many attribute a decline in employment to Chinese indigenous manufacturing firms, Quinn and Liu (2024) find that the ‘China shock’ is driven primarily by non-Chinese multinational corporations. Bloom et al. (2019) find no evidence of net job losses from China import competition.
4. <https://www.wsj.com/us-news/american-dream-out-of-reach-poll-3b774892>.
5. Our analysis is based on 392 Standard Industrial Classification (SIC) manufacturing industries.
6. We also conduct the estimation at the level of geographic “commuting” zones, as in Autor et al. (2013). Here we report only industry-level regression estimates, but the commuting-zone estimates are similar.
7. We present results from a Two-Stage-Least-Square (2SLS) regression. Our model instruments US imports from low-wage economies with imports from low-wage economies to eight high-income economies, namely Australia, Denmark, Finland, Germany, Japan, New Zealand, Spain, and Switzerland. These are the same countries used by Autor et al. (2013).
8. Commuting zones tend to comprise several counties.
9. In our analysis, the term ‘services’ refers to industries categorized under North American Industry Classification System (NAICS) codes 50s, 60s, 70s, and 80s. Notably, industries encompassing retail and wholesale trade, as well as the government sector (NAICS 92), are excluded from this definition of services.

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