Ohio River Valley Institute

TARIFFS AND APPALACHIA

ASSESSING THE ECONOMIC IMPACTS OF NEW TRADE POLICIES ON REGIONAL INDUSTRIES

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Executive Summary

On March 3, 2025, 25% tariffs were set to be enacted on US imports from Mexico and non-energy imports from Canada. These tariffs were subsequently delayed by President Trump and are expected to be implemented on April 2, 2025. A 10% tariff was enacted on imports from China and planned for Canadian energy imports. Additionally, the administration has planned "reciprocal tariffs" on other US trading partners, meaning that all industries would be subject to new tariffs equivalent to the tariff rate those countries impose on US exports. If fully implemented across all sectors, this bundle of tariffs has the potential to disrupt long-integrated global supply chains for key industries in the Ohio River Valley region and, in the short run, will likely lead to higher consumer prices and reduced US employment.

March & April 2025 Trump Administration Proposed Tariffs Summary

Country	Industry	Amount
Canada	Non-energy imports	25%
Canada	Energy imports	10%
China	All imports	10%
Mexico	All imports	25%
Other nations*	All imports	Tariff equivalent to that nation's tariff on US exports

*The administration has persistently focused on roughly 15% of other nations with a trade deficit with the United States.

This report analyzes US Trade import data, maintained by the US Census Bureau, to study how imports subject to the new Canada, Mexico, and China tariffs could affect the economies of Kentucky, Ohio, Pennsylvania, and West Virginia. Notably, this report attempts to minimize assumptions and therefore does not attempt to estimate the impacts of any retaliatory tariffs imposed by Canada, Mexico, or China nor does it attempt to assess reciprocal tariffs which have been much more in flux and may have sectoral carve-outs (Gavin, Dawsey, & McGraw, 2025). There is virtually no precedent or existing research that studies what a sudden and universal implementation of tariffs will do to economies in the context of modern globalization.

This report arrives at several key conclusions:

- China, Canada, and Mexico are the three largest trading partners of the Ohio River Valley states. Collectively, **these three countries represented over $100 billion in imports in 2024 which is just under one-third (33%) of total imports to the region**.

- **Total imports from Canada, Mexico, and China represent a sizable share of each state's overall economy**, ranging from approximately 2% of gross domestic product (GDP) in West Virginia and over 8% of Kentucky's GDP. Tariffs, therefore, have the potential to be highly disruptive for businesses in our region's states.

- If the proposed 2025 Trump Administration Tariffs had been in effect for 2024, they would have **represented a new import tax of over $21 billion on businesses across the four Ohio River Valley states**. This dollar amount would be the equivalent of the federal government suddenly raising taxes by $2,307 on every Kentucky household, by $1,753 on every Ohio household, by $1,609 on every Pennsylvania household, and by $797 on every West Virginia household.

- Tariffs on Canada, Mexico, and China will likely be passed by the importing US businesses onto consumers by US companies**, resulting in higher prices.** Nationally focused studies have estimated that these price hikes would cost the typical US household over $1,200 annually (Clausing & Lovely, 2025).

- Tariffs on Canada, Mexico, and China will likely **reduce state GDP growth, domestic employment, and consumption in the short term**. Businesses effectively have three responses to choose from when responding to new, sudden tariffs: use fewer of the imported inputs, find new, more expensive alternative suppliers for the inputs where possible, or pay the tariff outright. The first option would come with a scale-back in US production and potentially idling capacity would mean laying off workers and cutting costs. This would reduce GDP growth. The latter two options would both mean more expensive inputs, raising producer costs. Most peer-reviewed, empirical evidence from recent tariff data suggests that these higher costs will be passed through consumers (Fajgelbaum et. al., 2019). This would raise consumer prices and accelerate inflation as well as reduce consumption, further lowering GDP growth in the short- and medium-run.

- There may be **opportunities in the long run for positive economic impacts if tariffs are strategically implemented and in place long enough, with enough certainty, to spur significant domestic capital investment.** If producers believe the tariffs are not temporary, they may choose to "re-shore," or relocate, parts of their supply chain to the region. This could create new jobs and raise wages, so long as new trade agreements do not result in the subsequent elimination of the tariffs. Otherwise, producers may choose to "wait out" the tariffs rather than invest billions in manufacturing facilities. At this stage, haphazard and uncertain implementation signals indicate that tariffs may be intended to create leverage in renegotiating free trade agreements. In such a use-case, they would be unlikely to generate significant re-shoring of American production.

- **Positive economic impacts in the Ohio River Valley could be either partially or totally negated** by either retaliatory tariffs or sustained price increases for consumers in industries that cannot easily re-shore their supply chains. These effects could mean that even with new job creation and the reshoring of some industries, the net economic impact of the tariffs on the economy could be negative.

Figure 1. Summary of Key Findings:

	Kentucky	Ohio	Pennsylvania	West Virginia	Total
Canadian Imports (2024, USD)	$5.84 billion	$19.03 billion	$14.24 billion	$2.05 billion	$41.16 billion
Mexican Imports (2024, USD)	$9.91 billion	$11.51 billion	$6.69 billion	$114 million	$28.22 billion
Chinese Imports (2024, USD)	$6.73 billion	$10.24 billion	$16.55 billion	$206 million	$33.72 billion
Estimated New Import Taxes (Tariffs)*	**$4.13 billion**	**$8.47 billion**	**$8.36 billion**	**$575 million**	**$21.53 billion**
New Import Taxes as a % of 2024 GDP	1.48%	0.96%	0.86%	0.56%	0.96%
Import tax equivalent per household	**$2,307**	**$1,753**	**$1,609**	**$797**	**$1,716**
Most impacted industries by % of 2024 state GDP	Automotive, Aerospace, Computer and Electronics, Metals (Aluminum & Copper),	Automotive, Oil and Gas, Metals	Computers and Electronics, Chemicals, Food, Metals	Automotive, Metals, Chemicals	

*Note: This analysis makes several important assumptions. 1) It assumes that full tariff proposed by President Trump publicly (25% on non-energy Canadian goods, 25% on Mexican goods, 10% on Chinese goods and 10% on energy from Canada. 2) It does not account for reciprical or so-called "retaliatory" tariffs, which will create more negative economic consequences in US industries with heavy export volumes, such as agriculture. Analysis of hypothetical or unannounced tariffs imposed by foreign governments is not possible or would require too many assumptions to be meaningful. 3) We assume a static (constant) import level equivalent to 2024. In reality, as prices change for imported parts and goods, demand will cause for shifts in procurement or scaled back US production. As such, these represent high-end estimates. 4) It assumes there is no "gaming" the system -- i.e., imports are not routed through third party countries to circumvent tariffs.

Data Sources: US Census Bureau, US Bureau of Economic Analysis, US Bureau of Labor Statistics, Ohio River Valley Institute calculations

Background

Tariffs and 'trade wars' are again making headlines in the US. On April 2, 2025, President Trump is set to enact 25% tariffs on Mexico, 25% tariffs on most Canadian goods, and 10% tariffs on Canadian energy. These will follow a 10% tariff implemented on Chinese goods in early March. Much of the country's economic future for the next four years will depend on how the economy responds to these tariffs and whether they lead to new trade agreements between nations. [See "What Are Tariffs?" below.]

Tariffs have both critics and defenders and have been implemented by both Democratic and Republican Presidents in the past. Supporters contend that tariffs level the playing field for American manufacturing workers and lead to more US companies 'reshoring' their production and supply chains to US soil. This, they argue, will lead to higher wages for American workers. Critics have argued that tariffs raise prices and reduce overall economic production and growth.

Still, polling results from several prominent firms including Quinnipiac suggest that while the majority of voters are optimistic about the economy during Donald Trump's second term, there is not widespread support for tariffs. 51% of voters surveyed in December 2024 (after the election) oppose higher tariffs on goods from China, Canada, and Mexico. This includes 53% of

voters who identified themselves as politically independent – a group that President Trump performed well with in the 2024 election.

Voters have historically oscillated between supporting protectionist policies (such as tariffs and quotas) and free trade policies. Perhaps no issue transcends political partisanship more. The Democratic Party includes former President Bill Clinton, who signed the often-maligned North American Free Trade Agreement (NAFTA) in 1993, and former President Barack Obama, who worked hard to develop a similar free trade agreement between the US and Asian allies called the Trans-Pacific Partnership (TPP), as well as protectionists like Senator Bernie Sanders who, in his 2016 and 2020 campaigns for President, proclaimed he would use tariffs as President. Likewise, while the Republican Party has more recently been dominated by President Trump's protectionist 'America First' agenda, it also includes plenty of lawmakers such as Former Speaker of the House Paul Ryan and current US Secretary of State Marco Rubio who, in his 2016 presidential campaign, noted that he was "very much in favor of free trade."

What are tariffs?

Tariffs are a tax imposed by the government on the value of goods that are imported into the country. Tariffs are paid by the company that imports the shipment and are assessed against the value of the imported goods. For example, if a company imported $100,000 worth of machinery from China that was subject to a 10% tariff, the company would pay an additional $10,000 to the US government when the shipment passes through US Customs. Whether or not the company increases the final price of its goods to compensate for the tariffs is up to the individual company. This phenomenon, where companies increase consumer prices to pay for the tariff, is known as **pass-through**.

A country may want to enact protectionist policies like tariffs to shelter its industries from global competition, which allows infant industries to grow. Under free trade policies, other countries – particularly those with cheap labor costs – may be able to undercut the prices of domestic producers. As prices are driven down, it becomes harder for domestic companies to compete while still paying living wages and benefits to employees, which can lead to offshoring, outsourcing, or increased investment in automation. Traditional economic theory argues that by artificially increasing the price of these cheap foreign goods with tariffs, governments can "protect" domestic industries, allowing them to develop, grow, and hire more workers. The consumer pays a higher price while production may, in the long run, be shifted back to domestic firms.

Tariffs can also have negative impacts on the domestic economy in the short run. High pass-throughs to consumers can raise prices, causing **inflation**. Additionally, supply chains and **producer costs** may rise if a company is reliant on parts or raw materials from overseas that it cannot rapidly replace with alternatives in the short run. It takes a long time to find new sources of raw materials or to build new domestic factories to fix global supply chains that are broken by tariffs. As such, short-term employment may decline domestically while companies experience high input costs and scale back production or if consumer demand drops for their product due to rising inflation. The degree of pass-through to consumer prices is generally highly industry –, country –, and good–specific (Douglas, et. al., 2025). For example, in general, fine Italian wine is not able to be replaced by other products whereas sponges from China may be easily re-shored or purchased from a lower-tariffed country. Other goods, like a Ford pickup truck, could be re-shored but only with significant capital investment and time.

Finally, some countries may impose **retaliatory tariffs**. These tariffs are enacted on US exports and work in reverse to domestic tariffs. The prices of products made in the US are driven up artificially by foreign governments, making them less attractive to consumers abroad. This can then cause negative economic consequences domestically, as US farmers and manufacturers experience decreased demand for their goods, resulting in lower prices and revenues, and – potentially – decreased employment. ■

There is a concern among economists that inflation–the chronic rising prices that have plagued the US economy in the years following COVID-19–could be *worsened* by a sudden increase in tariffs with virtually no lead time for companies to invest capital in domestic capacity. The logic for this is that the federal government collects tariffs as a tax on the *American* companies importing the goods and *not* on the governments of the foreign countries exporting the goods – a common misconception. The fear is that the US companies will then pass these tax increases on to consumers. The reality of tariffs and their economic impact is extremely complex and not always as straightforward as politicians make it seem.

New tariffs and changes in US trade policy will create large ripple effects throughout the US and global economies. One of the regions where tariffs (especially those targeted at specific industries such as steel, solar panels, aluminum, and agricultural products) will be felt heavily is in the Appalachian areas of Pennsylvania, Ohio, West Virginia, and Kentucky. Broad tariffs on imports from countries like China, Mexico, or Canada will impact the price of everything from energy and plastics to cars, computer chips, cell phones, and fresh agricultural produce at the supermarket. But at the same time, as a once-mighty manufacturing region with skilled labor and latent industrial infrastructure, some strategic implementation of tariffs could present an opportunity for reshoring some American production and creating new economic opportunities for Appalachian workers. Thus, understanding the potential costs and benefits of tariffs is key to evaluating and planning for a prosperous economic future in Appalachian communities.

> *"...blanket tariffs on imports from countries like China, Mexico, or Canada will impact everything from energy and plastics prices to cars, computer chips, cell phones, and fresh agricultural produce at the supermarket. These price impacts will be felt by Appalachian households and businesses."*

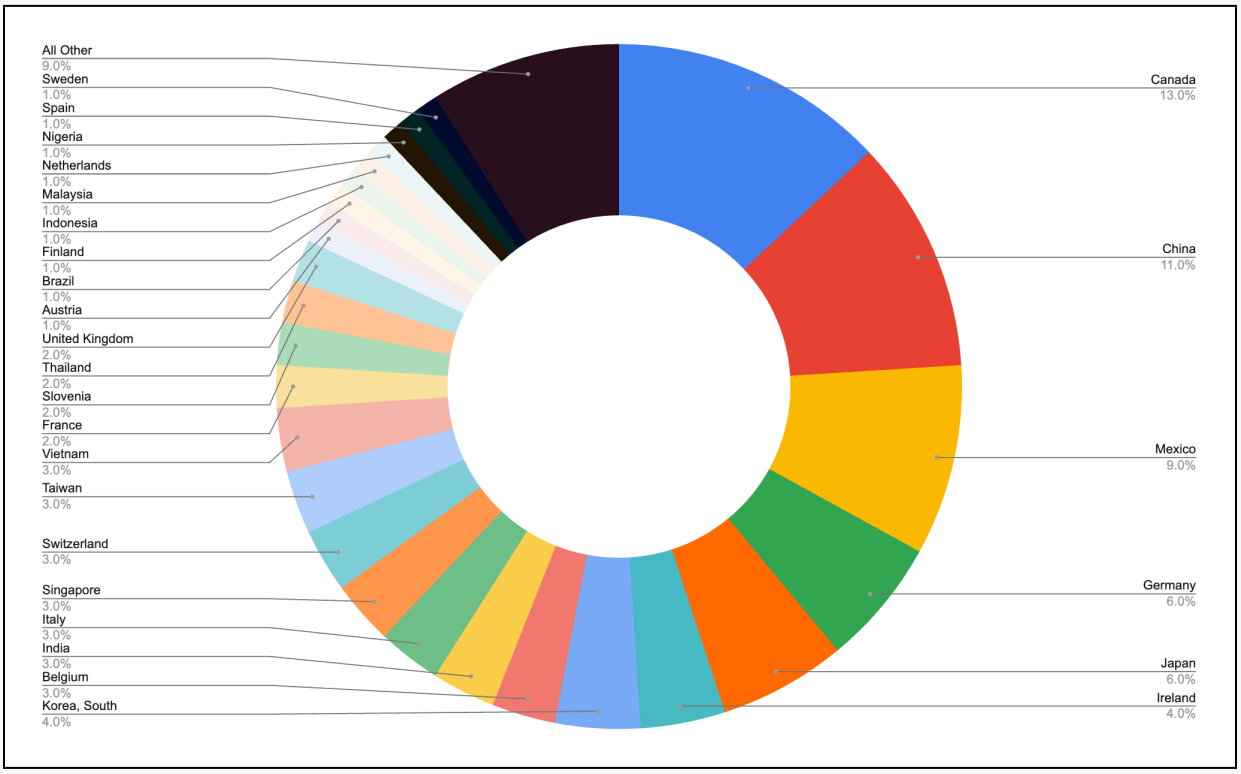
This report examines the potential impact of tariffs on Canada, Mexico, and China on Kentucky, Ohio, Pennsylvania, and West Virginia after first providing some numerical and historic context for the unprecedented period of globalizaiton around the beginning of the 21st century that very much changed the economic landscape of both the Ohio River Valley and the nation.

How much does Appalachia import from Canada, Mexico, and China?

According to data from US Customs, in 2024, the four states of the Ohio River Valley imported more than $100 billion in goods from China, Canada, and Mexico. These nations are the three largest trading partners of the Ohio River Valley states and collectively represent roughly one-third of total imports to Kentucky, Ohio, Pennsylvania, and West Virginia.

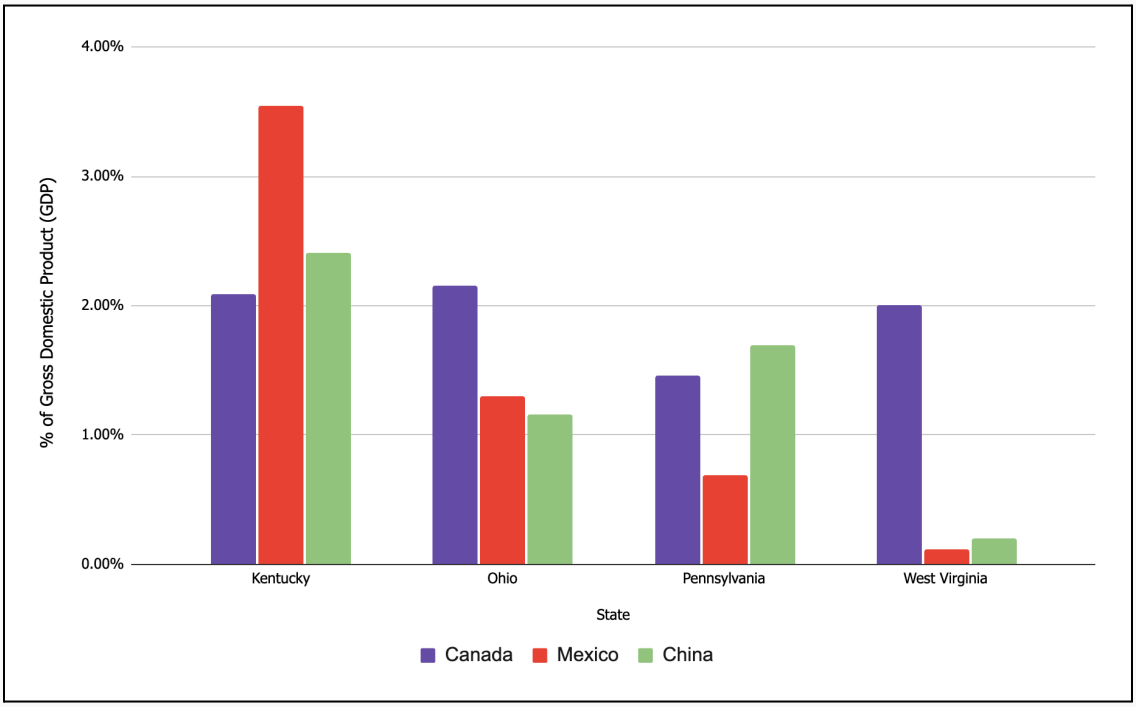
Figures 2 and 3 show the overall economic importance of imports from China, Canada, and Mexico to the regional economy. In 2024, imports from these three nations together represented just over 8% of Kentucky's GDP, 4.6% of Ohio's GDP, 3.8% of Pennsylvania's GDP, and 2.3% of West Virginia's GDP. Kentucky imports the most, as a share of its economy, from Mexico; Pennsylvania imports the most from China, while Ohio and West Virginia are more heavily reliant on Canadian imports.

Figure 2. 2024 Ohio River Valley Region Imports by Country (% of total imports)



Source: USA Trade, US Census Bureau
Note: Ohio River Valley includes Kentucky, Ohio, Pennsylvania, and West Virginia

Figure 3. Ohio River Valley 2024 Imports Affected by March 2025 Tariffs as a % of GDP



Source: USA Trade, US Census Bureau, US Bureau of Economic Analysis, Author Calculations

Together, the countries directly targeted by President Trump's new March and April 2025 tariffs represent a considerable portion of the region's imports. Imports from these countries directly impact manufacturing and business supply chains for raw materials and intermediate goods, as well as food and consumer electronics. The following section explores which industries, specifically, in each Ohio River Valley state could be hardest hit by a 25% tariff on Canada (10% on Canadian energy), a 25% tariff on Mexico, and an additional 10% tariff on China.[1]

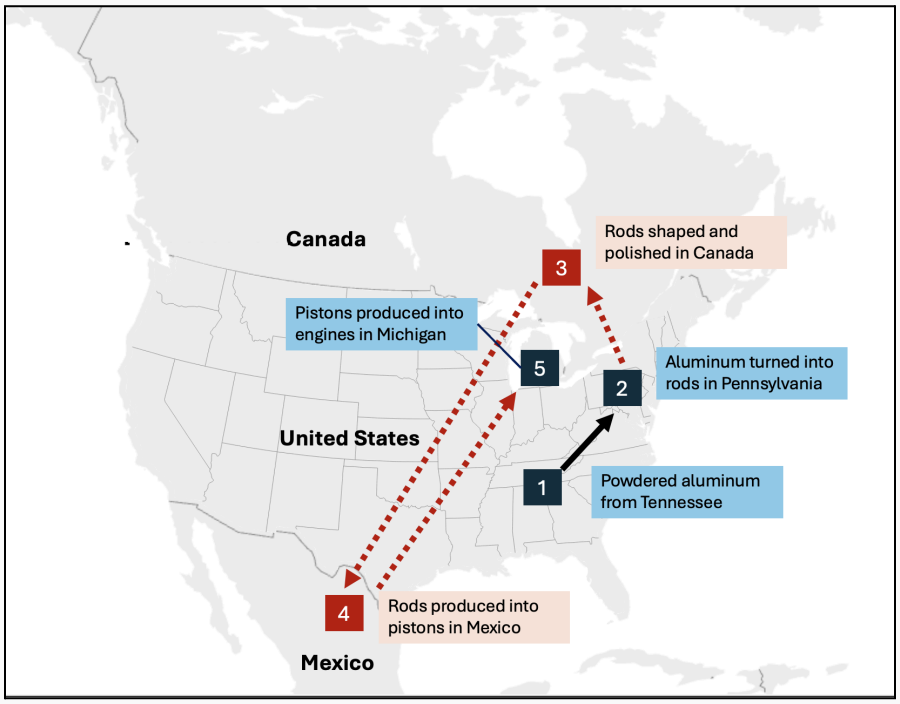
Unprecedented Integration of the Global Economy

We live in an age of unprecedented globalization. In 1993, President Bill Clinton signed the North American Free Trade Agreement (NAFTA), negotiations for which had begun in 1991 under the George H.W. Bush Administration. The agreement worked to phase out tariffs for goods moving between the United States, Canada, and Mexico and effectively phased out North American tariffs by 1998 (US Customs and Border Protection, n.d.). Today, the three

[1] This analysis considers the **new,** additional tariff on Chinese goods, rather than the total effective level of tariffs. On March 3, 2025 President Trump imposed an additional 10% general tariff on Chinese goods *beyond* pre-existing tariffs on Chinese goods or against specific industries.

economies are incredibly integrated, with exports and imports flowing back and forth. For example, no vehicle produced by US automakers is made entirely of American-produced parts. Barclays Analysts estimate that as much as 40% of the parts in US vehicles are provided by Mexico, and 20% are provided by Canada (Eckert, et. al., 2025). **Figure 4** illustrates one example using pistons for auto-engine manufacturing, showing that the production and supply chain crosses both the Mexican and Canadian border, impacting businesses in at least three US states.

Figure 4. The Journey of Piston Production Across North America



Source: BBC

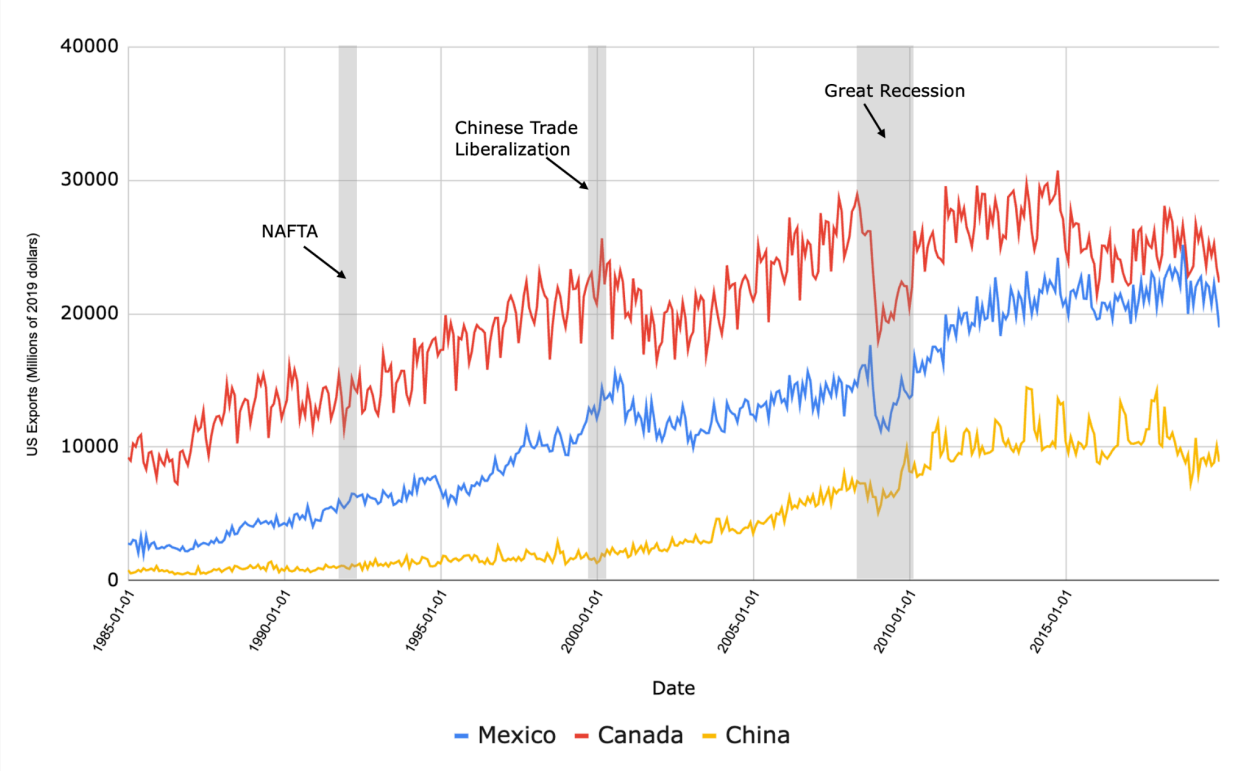
Economists have largely argued that NAFTA was beneficial for North American economies as trade between the three countries grew from $290 billion annually in 1993 to over $1.1 trillion by 2016, with a small net loss in US jobs (McBride and Sergie, 2020). The signing of NAFTA also kick-started a period of rapid proliferation of free trade agreements (FTAs) and led to many FTAs that incorporated labor and environmental provisions.

NAFTA has been politically unpopular within certain sectors and communities since its inception (Weintraub, 1998). This is especially true of manufacturing communities. The main criticism is that trade liberalization, particularly with Mexico, whose wages were more than 30% below those in the United States in 1993, led to US companies offshoring production and laying off higher-paid (more costly) middle-class American workers. This is of particular concern to

the Appalachian region and Midwestern states like Michigan, where manufacturing economies have long fueled American economic growth. Indeed, the globalization of supply chains and the growth of free trade agreements played a defining role in reshaping the geography of American jobs.

However, there is empirical evidence to suggest that even NAFTA's impact on American manufacturing employment may have paled in comparison to the growth of trade with Asia and, in particular, China since 2000, when the US granted China Permanent Normal Trade Relations (PNTR) status. China subsequently joined the World Trade Organization in 2001 (Autor, Dorn, and Hanson, 2016). These changes marked a major shift in US-Asia trade relations, allowing for reduced tariffs. Another reason that the growth of trade with Asian nations may have been more harmful than NAFTA to American manufacturing employment is that Asian markets tend to import fewer US-made goods than both Canada and Mexico. Trade with Asian partners tends to be more "one-sided", with US companies seeking low-cost labor overseas to manufacture goods to sell back to US consumers, rather than Asian consumers also buying American goods. To illustrate this point, **Figure 5.1** shows US exports to Mexico, Canada, and China between 1985 and 2019 (before COVID-19). While exports from American firms to Mexican and Canadian consumers tripled by 2010, exports to China are lower, and growth has stagnated in the last decade despite a rapid increase in Americans importing Chinese goods. This is important because new export markets also allow for more American production and, consequentially, employment in industries in which the US is competitive.

Figure 5.1. US Real Export Values to Mexico, Canada, and China (1985-2019)

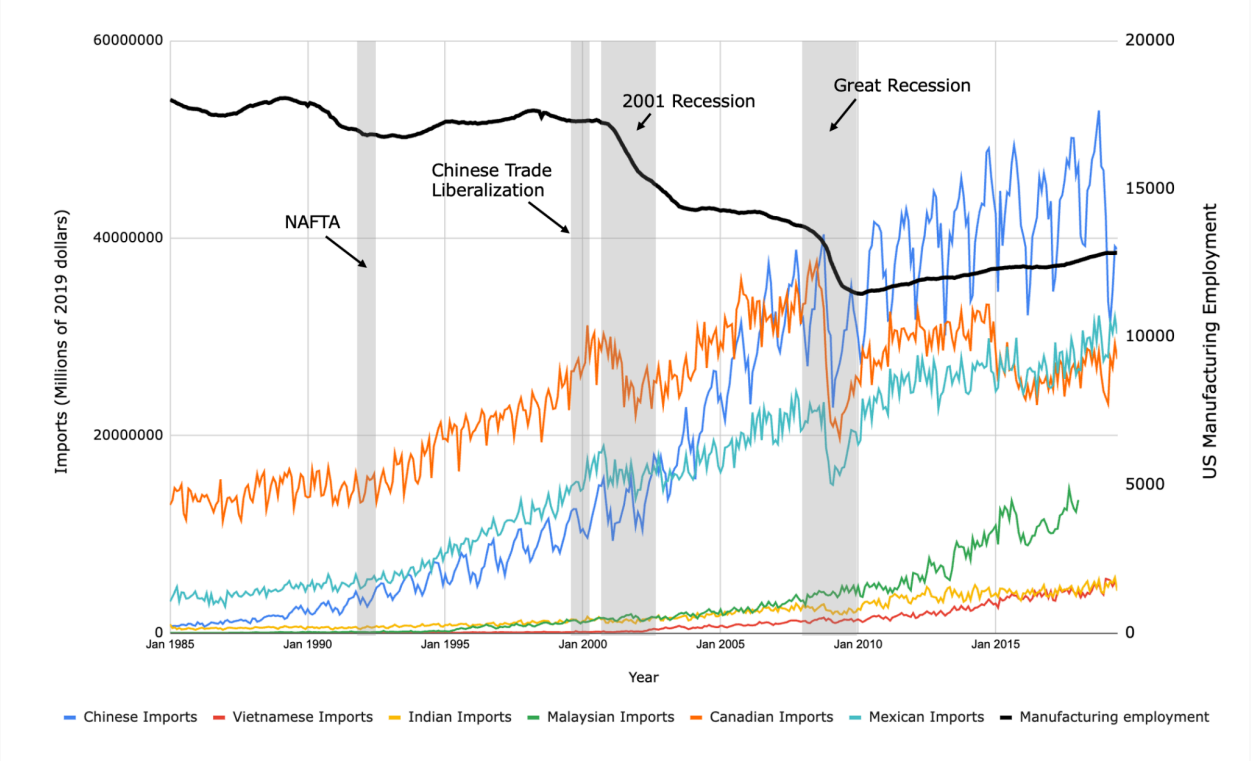


Source: US Bureau of Labor Statistics, US Bureau of Economic Analysis

Figure 5.2 shows US manufacturing employment and US imports from China between January 1985 and December 2019, notating the signing of NAFTA and the granting of PNTR status to China. Although correlation is not causation, and while this data does not account for automation and technology growth, we can see that some sort of relationship likely exists with a minor decline in US manufacturing employment after NAFTA and a more rapid decline in the decades following more open trade policy toward China. Between 2001 (when China joined the WTO) and 2010, US manufacturing jobs declined from over 17 million to 11 million – a decline of roughly 35% in just one decade.

A 2014 study by the non-profit, non-partisan Peterson Institute for International Economics found that NAFTA has been associated with a net loss of approximately 15,000 US manufacturing jobs per year – a relatively small share of the overall decline (Cimino-Isaacs, et al., 2014). One explanation is that domestic shocks and automation are still much larger factors driving trends in manufacturing employment. **Figure 5.2** illustrates that the steepest declines in American manufacturing employment between 1985 and 2019 came during recessions rather than being driven by trade policy.

Figure 5.2. US Manufacturing Jobs & Real Import Values from Major Producers (1985-2019)



Source: US Bureau of Labor Statistics, US Bureau of Economic Analysis
Note: Import levels are not seasonally adjusted. Employment in thousands of jobs

While this may seem like a strong argument to pursue new tariffs on China, it is important to consider that the global economy is much more integrated in 2025 than it was in 2000. Simply put, no empirical research exists on what happens when uniform and reciprocal tariffs are implemented overnight after decades of growing globalization aided by modern technology.

Companies have invested for two decades in complex and far-reaching supply chains. Disentangling these supply chains to shift production back to the US suddenly without significant supply disruption, high costs, and high prices is virtually impossible in the short- and medium-term. An increase in protectionist measures can help re-shore segments of the supply chain and build economic resilience domestically if implemented strategically (Mulholland and Williams, 2024). In addition, which industries benefit from protectionist measures may also depend, in large part, on whether or not their competitors in foreign countries are equally reliant on imports. In any event, the current tariff proposal is an ineffective and painful approach if the goal is to reverse either any of the ills of NAFTA or improve trade balances with China.

An Overview of 2018 Tariffs & Trade Policy

Beginning in 2018, during his first term, President Donald Trump enacted a series of tariffs on goods from China and used the threat of tariffs to renegotiate NAFTA, ultimately replacing it with the US-Mexico-Canada Agreement (USMCA). Part of the argument for new protectionist measures was that the US trade deficit was negative with these countries. This logic, however, is deeply flawed.

First and foremost, it is not useful to compare *bilateral* trade deficits in the global economy. For example, the US could run trade deficits with some countries and trade surpluses with others, and the net result could be an overall deficit or surplus, depending on the size of each bilateral trade flow. Second, US deficit spending for 20 years guarantees a negative overall trade deficit regardless of the flow of goods. Government spending (alongside negative US household savings) necessitates borrowing money and purchasing goods from other countries.

The USMCA was successfully renegotiated to replace NAFTA and passed through Congress with bipartisan majorities in July 2020. Among its accomplishments, the USMCA increased member content requirements for automobiles to 75% (up from 62.5%) and required that 40% of parts come from factories paying workers at least $16 per hour. The agreement also provided more US access to Canadian dairy markets, made a number of reforms to dispute resolution mechanisms, and instituted new rules for digital commerce.

Trade negotiations with China were less successful. The first Trump administration enacted tariffs on nearly $380 billion in Chinese goods. These were kept in place by the Biden Administration, which also levied tariffs on an additional $18 billion of Chinese goods, including semiconductors and electric vehicles.

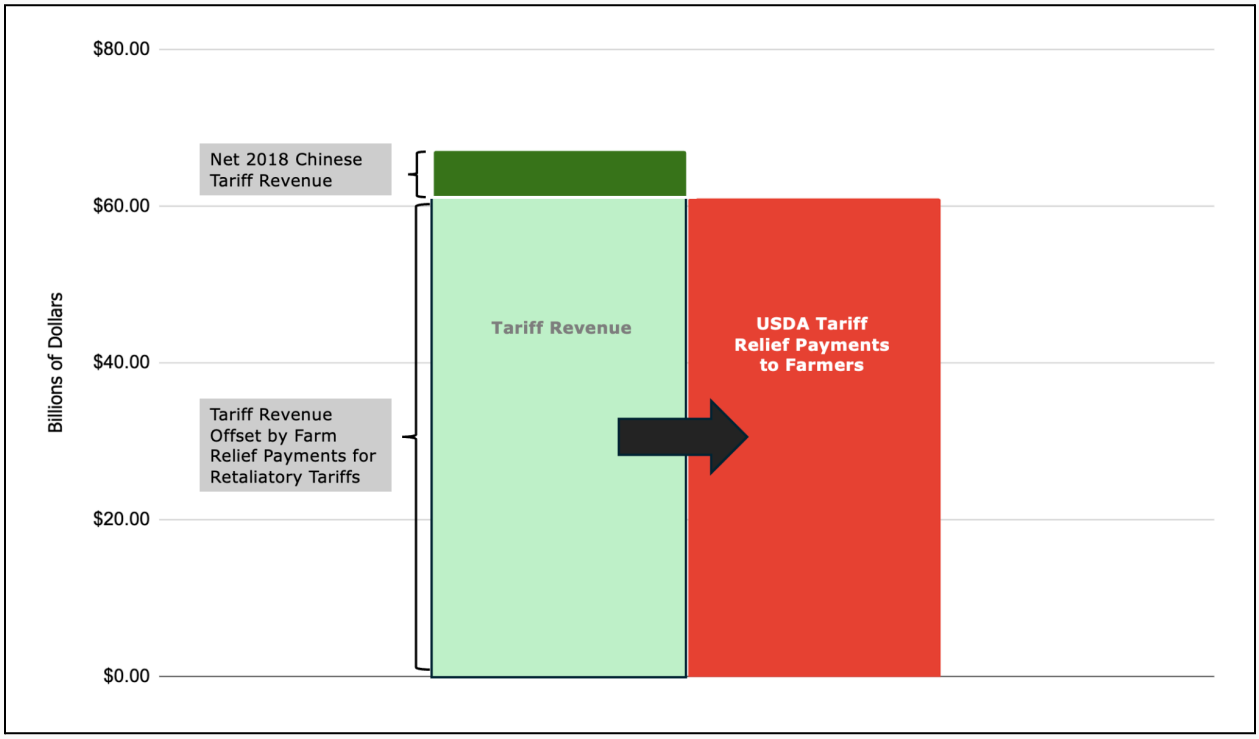
A study from the Tax Foundation estimates that these 2018-2019 “trade war” tariffs resulted in a reduction of long-run US GDP of 0.2% and cost over 140,000 jobs (York, 2025). This was partially due to retaliatory tariffs, particularly on US agricultural exports. As a result, 92% of the revenue generated by the 2018 tariffs between 2018 and 2020 were offset by US Department of Agriculture-authorized relief payments to US farmers (Alden, 2020). This is shown in **Figure 6.**

> *“...partially due to retaliatory tariffs...92% of revenue generated by the 2018 tariffs between 2018 and 2020 were offset by US Department of Agriculture-authorized relief payments to US farmers.”*

There is growing concern that this new round of 2025 tariffs could be much worse for farmers (Alatidd, 2025). President Trump posted on his social media accounts, *"To the Great Farmers of the United States: Get ready to start making a lot of agricultural product to be sold inside the United States. Tariffs will go on external product on April 2nd. Have fun!"* but farmers say that production is so high in the US that domestic markets simply don't need all of the product that US farms currently produce (Stein, 2025). For example, the US dairy industry currently exports 20% of its product to Canada (a key goal for President Trump's previous renegotiation of NAFTA). But US consumers simply can't consume 20% more dairy, and, as a result, lower demand and excess supply would cause prices to drop, making it difficult for many US dairy farmers to continue to operate.

The need to expend nearly all of the tariff revenue to defend US agriculture from retaliatory tariffs would seemingly call into question the often-made claim by the Trump administration that tariffs could be a new source of revenue used to pay down the national debt or pay for US tax cuts. The current US Secretary of Agriculture, Brooke Rollins, has previously stated that she would pursue farm relief payments similar to those made in 2018 to help alleviate the burden of the new March and April tariffs (Douglas, 2025).

Figure 6. 2018 Chinese Tariff Revenues & Authorized Relief Payments to US Farmers (2018-2020)



Source: US Customs and Border Protection, US Department of Agriculture

The steel and aluminum industries, which import roughly $28 billion annually, also faced prior rounds of tariffs in 2018. Altogether, the prior tariffs enacted by the Trump Administration and maintained by the Biden Administration are estimated to have resulted in large pass-through to consumer prices, over $1 billion in aggregate US income reduction, and a significant decline in US welfare via inefficiencies and deadweight losses (Amiti, et. al., 2019).

For steel and aluminum – two industries critical to the Ohio River Valley region – 2018's tariffs result in price increases of roughly 5% and 10%, respectively (Sachdev and Rao, 2025). These price increases outpaced world steel and aluminum price growth before beginning to decline but, crucially, never returned to below world prices. These significant price increases resulted in higher prices for all kinds of consumer metal products, including cars, and illustrate the type of disruptive impact tariffs can have. Steel and aluminum employment in the US did not appreciably increase over the same time period and remains lower today than one decade ago, according to data from the US Bureau of Labor Statistics.

The Economic Impact of 2025 Tariffs in Appalachia

The new tariffs in 2025 are much broader and will impact more goods than the 2018 tariffs did. The universal 25% tariff on Mexico, the 25% tariff on non-energy Canadian goods, and the 10% tariff on all Chinese goods and Canadian energy have the potential to significantly impact the US economy and particularly the impact of Appalachian states with manufacturing, metal, chemical, and nascent technology industries. The implementation of tariffs has also been uncertain, creating doubt about whether they will fully go into effect or whether they will be used as leverage in further renegotiating free trade agreements. This haphazardness and continual reversals and contradicting statements and social media posts about tariffs from the administration add to the likelihood that tariffs will not effectively achieve the goal of creating American jobs. Uncertainty will not induce companies to invest billions of dollars of capital into new domestic facilities if they do not believe that the tariffs will be in place by the time that their investments are operating.

Kentucky Industry & Economic Impacts

Figure 7 presents the Kentucky industries most impacted by the proposed new import tariffs on Canadian, Mexican, and Chinese goods by showing the potential annual tariff (tax) collected as a percentage of the state's 2024 GDP. Industries are tracked by North American Industry Classification System (NAICS) codes and the report uses 2024 import levels as reported by US Customs and Border Patrol.[2]

For example, the combined 25% tariffs on Canadian and Mexican goods and a new 10% additional tariff on Chinese goods would equate to roughly $867 million in new taxes in just 2024 for the Transportation Equipment industry in Kentucky, based on that year's import levels from these three countries. This $867 million would have had to have been paid by the Kentucky companies importing the parts or materials. Faced with this new cost, these companies would have had to either pay the tariff (reducing their revenue), scale back production to cut costs (reducing employment), or pass the cost onto their customers (raising prices and contributing to rising inflation).

The automotive industry stands to be, by far, the most impacted industry in Kentucky.[3] Kentucky is home to more than 550 automotive companies that employ over 100,000 Kentucky workers (Kentucky Cabinet for Economic Development, 2025). The auto industry is notorious for a complex global supply chain that relies on steel and metal, rubber, petroleum, chemical, machinery, and parts suppliers. Transportation Equipment also includes aerospace companies, which have been a featured growth point for the state economy. Since 2017, the Governor's Office has noted $1.1 billion in investment in over 40 facilities by aerospace companies. Over 20,000 Kentuckians are employed by such companies, which include large

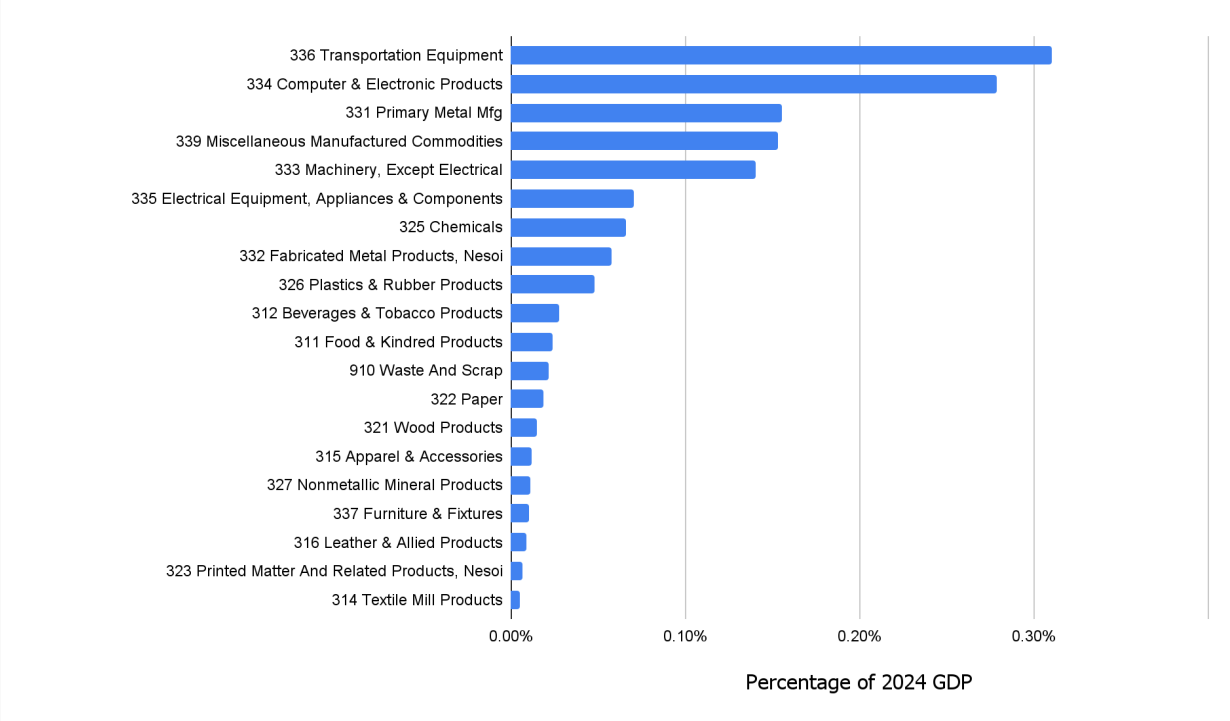
[2] In reality, the economy is dynamic and not static. Supply and demand will adjust to reach a new market equilibrium where US producers will import less in response to higher tariffs (taxes) on imports. However, this does not guarantee that US producers will invest billions of dollars to develop domestic supply chains and hire US workers. In some cases, niche industries with no direct replacement for their goods, companies will just pass on the tariff costs onto consumers. In other cases, companies may source from other countries not subject to the tariffs. Finally, companies could respond to higher input prices and lower consumer demand from tariffs by simply scaling back production and actually reducing domestic employment. This report does not attempt to model the dynamic economy, since company responses across states and industries is likely to be highly volatile and would require many impossible to predict assumptions. Instead, this analysis quantifies the tariffs as if 2024 import levels remained constant. Since we know, with near certainty, that tariffs will reduce import volumes, this represents a "high-water" estimate for the economic impact of the tariffs.

[3] At the time of publication, President Trump had announced on social media that the automotive industry would receive a lower tariff of 10% on Canadian and Mexican imports for a one-month period before potentially resuming a 25% tariff. Due to significant uncertainty and for consistency, this report models the original 25% tariff.

defense companies such as Lockheed Martin and Raytheon as well as air shipping giants like UPS.

Computer and Electronic Products, Primary Metal Manufacturing (including the aluminum and copper industries, which employ over 21,000 Kentuckians), Machinery, Appliances, Chemicals, Plastics, and Food and Beverages also all stand to be significantly impacted by tariffs on Canada, Mexico, and China.

Figure 7. Highest Tariff-Impacted Kentucky Imports by Industry, 2024



Source: USA Trade, US Census Bureau, Author Calculations

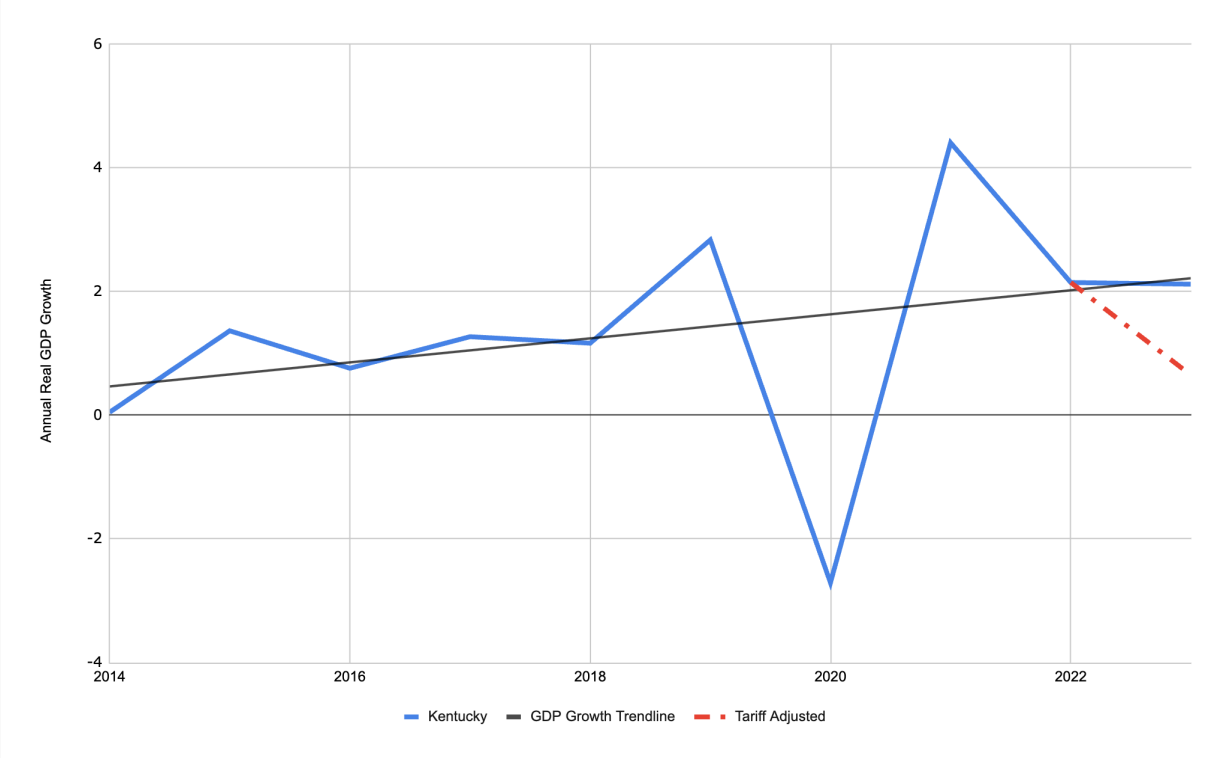
Cumulatively, the new March and April 2025 tariffs by the Trump Administration would create a new import tax burden of $4.1 billion on Kentucky businesses, equivalent to roughly 1.48% of Kentucky's current GDP, based on 2024 import levels. **Figure 8** shows this tariff figure in 2017 dollars (adjusting for inflation) so that it can be compared against US Bureau of Economic Analysis real GDP data. As the figure shows, had the additional tariffs on Canada, Mexico, and China been in effect, Kentucky's GDP could have, in the worst-case scenario, grown by significantly less, pushing it beneath 1% and far below the decade trendline.

The negative GDP effects of tariffs could appear through several channels, including inflation (which reduces real income and consumer spending) and reduced production. These estimates represent the "worst-case scenario" and could, over time, be mitigated by large investments

from US companies to “re-shore” their supply chains and hire American workers. These types of huge capital investments do not occur quickly, and if companies believe the tariffs will be rapidly revoked medium-term, they may choose to ride out the disruption rather than invest billions of dollars in new domestic production facilities only to be left holding the bag.

To help provide additional context at the micro-level, the import taxes imposed by the March and April 2025 tariffs on Kentucky businesses would be the dollar equivalent of a new tax of $2,307 on every Kentucky household. It is important to note that, in reality, spending patterns would not necessarily distribute the tariff equally across all income levels or geographies. Some households would forego the consumption of more expensive goods rather than pay the new tax on items such as new cars or electronics. This reduced consumption, however, would create further headwinds for the US economy by lowering consumer spending.

Figure 8. Percentage Change in Kentucky Real GDP (2014-2023) with Inflation-Adjusted Tariff Impact Modeled



Data Source: US Census Bureau, US BEA, Author Calculations

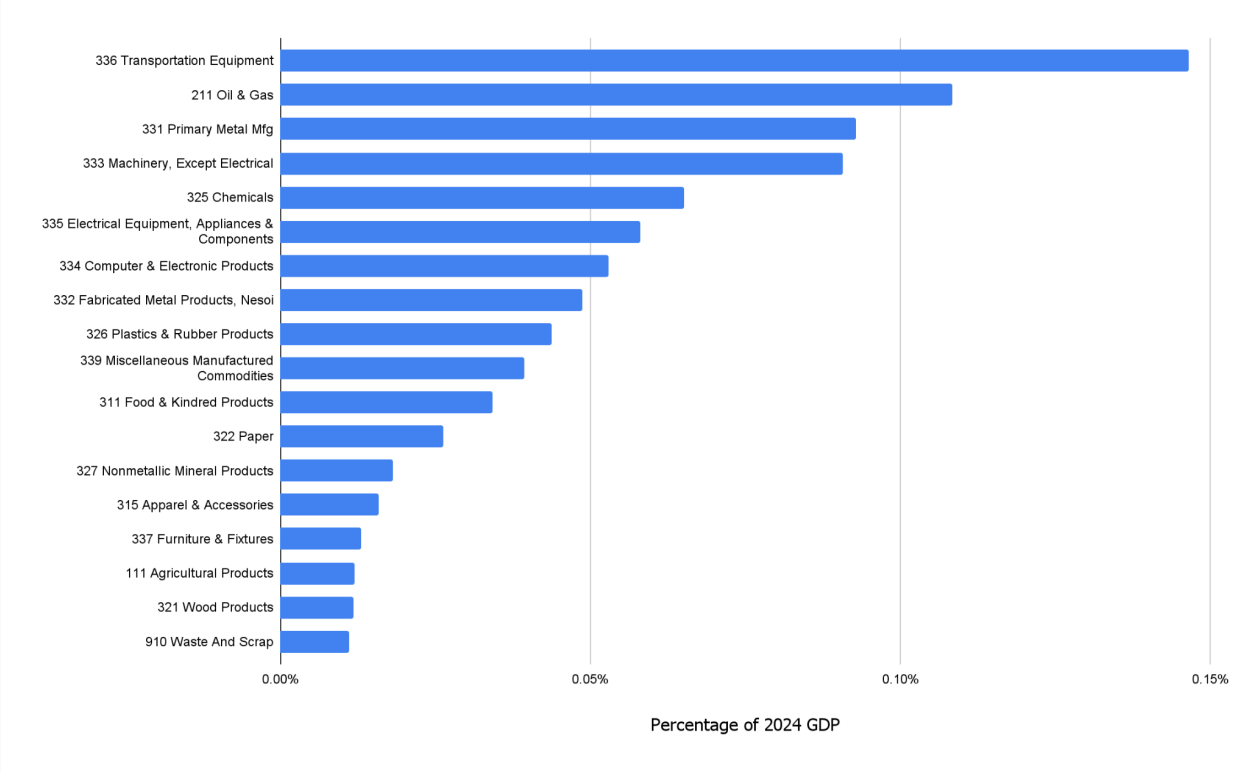
Ohio Industry & Economic Impacts

In Ohio, similar to Kentucky, the Transportation Equipment industry is hit hardest by the potential tariffs. This is predominantly due to Ohio's large automotive industry, which includes manufacturing facilities for Jeep, Honda, Acura, Ford, and Chevrolet. **Figure 9** shows the percentage of Ohio's annual GDP (2024 dollars) that 25% tariffs on Canada and Mexico and 10% tariffs on China would represent, based on 2024 import levels.

Interestingly, oil and gas imports are the second-most impacted industry in Ohio, despite Canadian energy products being subject to a slightly lower 10% tariff rate. Crude petroleum products from Canada are refined at facilities in Toledo, Ohio, and Lima, Ohio (Oil Price Information Service, 2024). Canadian company Cenovus Energy recently announced investments of over $1.5 billion in these two refineries. Related to oil and gas and energy costs, Ohio utility provider First Energy has stated that the new tariffs pose significant potential costs and will likely add expenses or delay investments in grid infrastructure in the region (Howland, 2025). These potential delays would come at a time when demand is projected to grow due to the proliferation of data centers in the region.

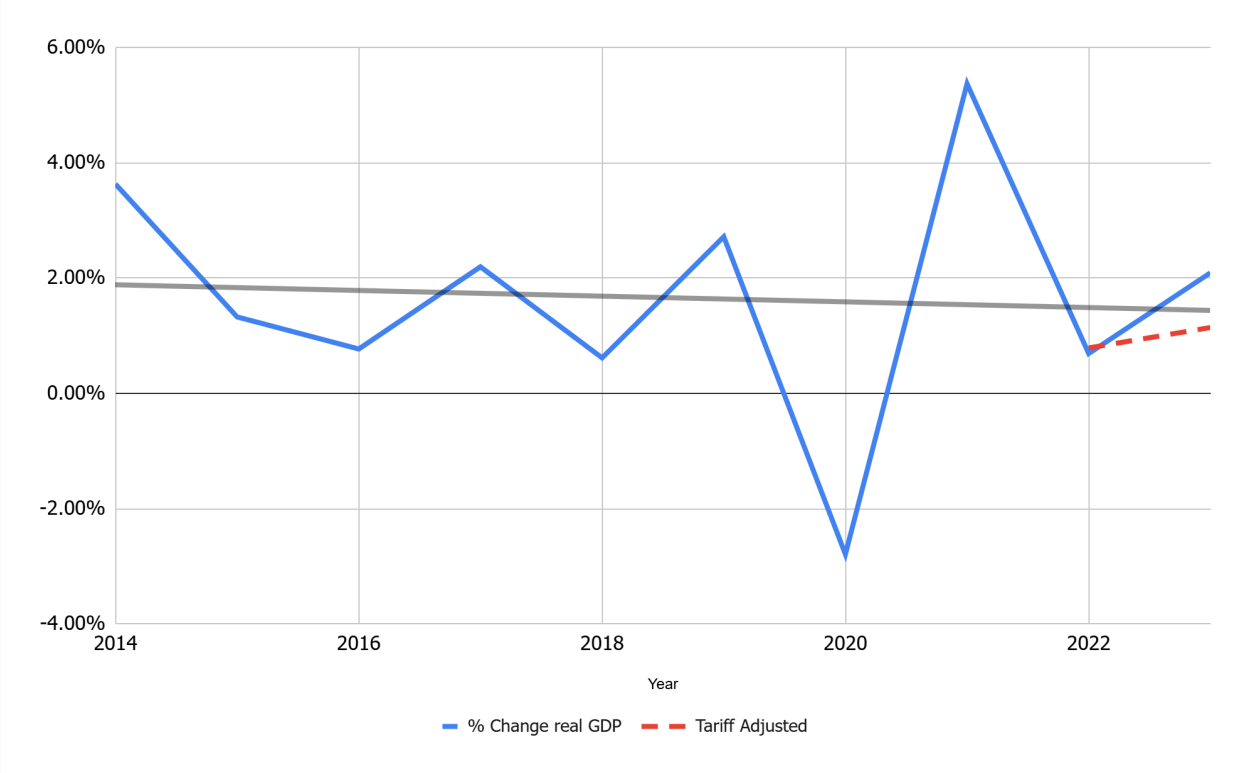
While no single industry impacts Ohio as much as the automotive industry impacts Kentucky, Ohio has more industries facing higher impacts from the new tariffs. These industries represent a broad range of goods, including primary and finished metals, chemicals, plastics and rubber, food, and timber-related industries such as paper and furniture. Intel's $20 billion investment in semiconductor production in Ohio also figures to be impacted by the tariffs that impact Computer and Electronic Products.

Figure 9. New Tariffs on Ohio Imports by Industry, % of 2024 GDP



Source: USA Trade, US BEA, Author Calculations.

Figure 10. Percentage Change in Ohio Real GDP (2014-2023) with Inflation-Adjusted Tariff Impact Modeled



Data Source: US Census Bureau, US BEA, Author Calculations

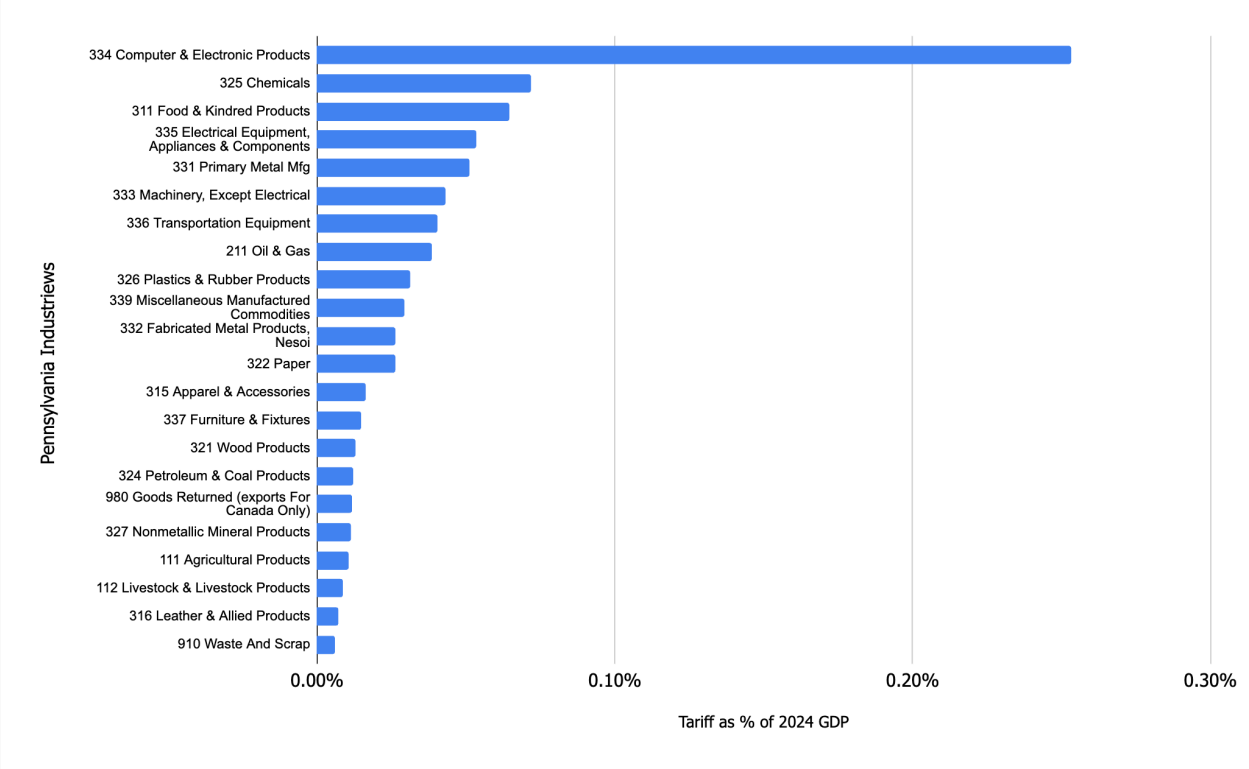
In terms of GDP, new tariffs on Ohio imports would have represented 44% of Ohio's total annual GDP growth from 2022 to 2023, the most recent year available in BEA data. **Figure 10** shows this projected difference in red. This would have shifted the state below the 10-year trend line for GDP growth (shown above in gray) rather than slightly above it. The purpose of this figure is not to predict exact declines but rather to demonstrate the downward effect that new tariffs will inevitably have on economic growth.

Similar to the analysis of Kentucky, this does not assume or account for reciprocal tariffs, which could present an additional drag on economic growth. Retaliatory tariffs pose a particular concern for Ohio's agricultural sector, which exports corn and soybean to Chinese markets. It is estimated that the 2018 round of tariffs imposed by the Trump administration on China cost US soybean farmers $19.2 billion via retaliatory tariffs and a Chinese shift toward Argentinian and Brazilian soybeans (Leigh, 2025). Ohio soybean exports did not recover, sinking 60% between 2019 and 2023 (Ohio Department of Development, 2023).

Pennsylvania Industry & Economic Impacts

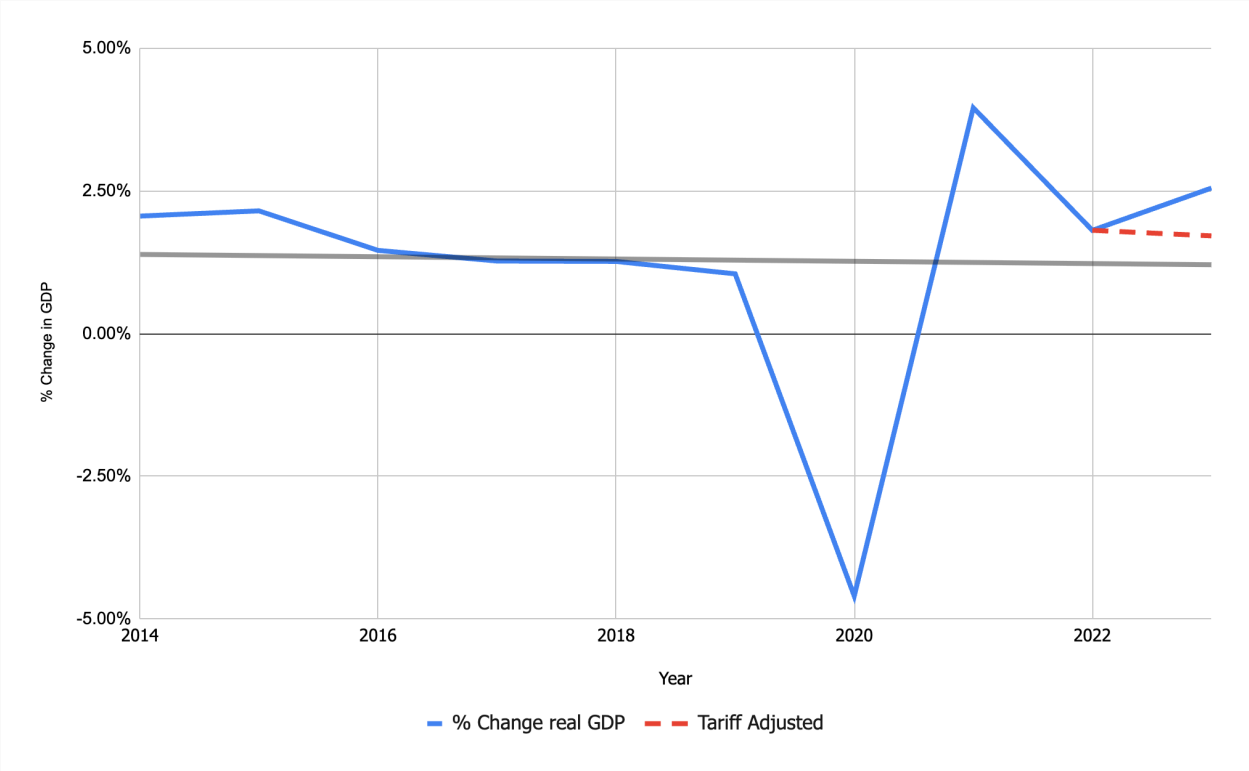
The economic impact in Pennsylvania hits a slightly different collection of sectors than Ohio and Kentucky, as shown in **Figure 11.** Computer and Electronic Products are the most impacted sector, followed by Chemicals and Food Products. Unsurprisingly, primary metal manufacturing is impacted, given Western Pennsylvania's history of producing steel and other metals and the increasingly integrated global supply chain. Notably, the highest impacted industry is one that current Pennsylvania Governor Josh Shapiro has promoted as a future growth engine for the state and procured large investments in semiconductor manufacturing capacity that could be impacted.

Figure 11. New Tariffs on Pennsylvania Imports by Industry, % of 2024 GDP



Similar to Kentucky and Ohio, the full impact of the proposed tariffs could result in a substantial annual reduction in Pennsylvania's GDP growth. This is shown in **Figure 12**, which again adjusts the estimated tariff (using current import levels) into 2017 dollars to allow for comparison to real GDP using BEA data, reducing Pennsylvania's annual GDP growth from approximately 2.5% to 1.7% when modeling the most recent data year. In household terms, the potential tariffs represent a new business tax equivalent to raising taxes by $1,609 on every Pennsylvania household.

Figure 12. Percentage Change in Pennsylvania Real GDP (2014-2023) with Inflation-Adjusted Tariff Impact Modeled

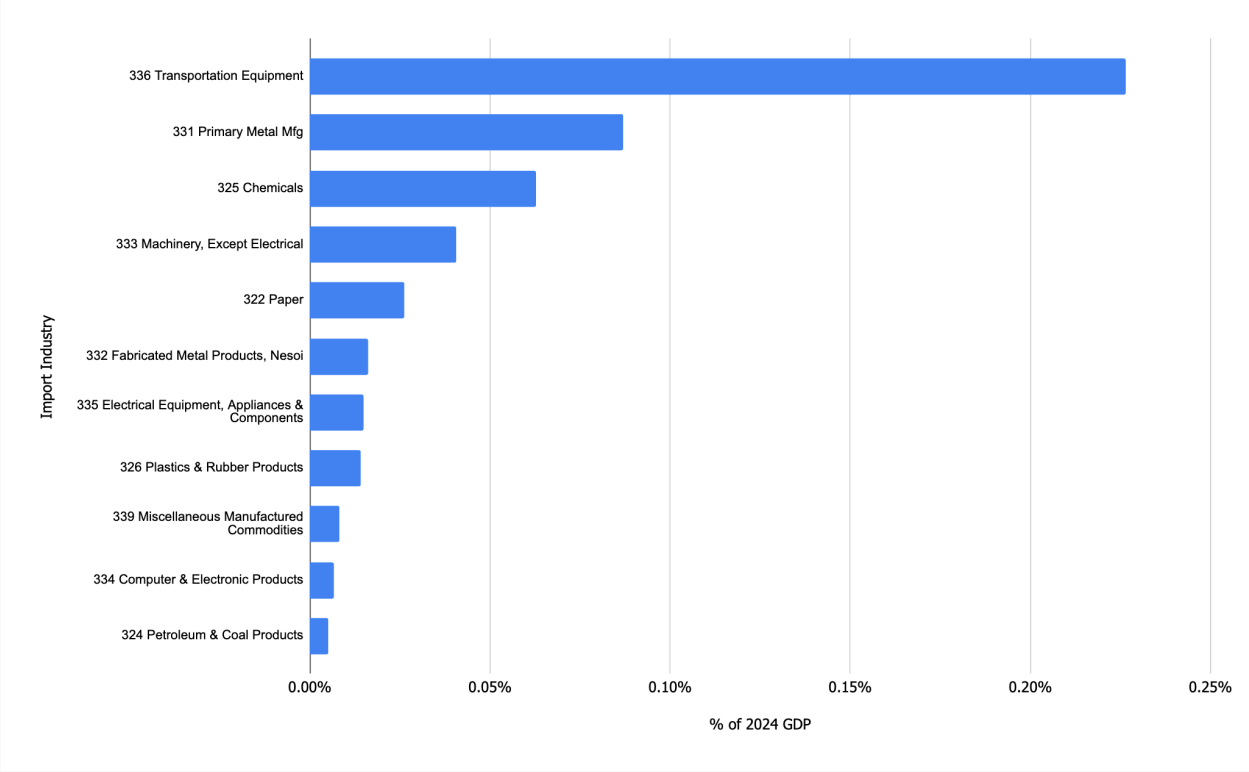


Data Source: US Census Bureau, US BEA, Author Calculations

West Virginia Industry & Economic Impacts

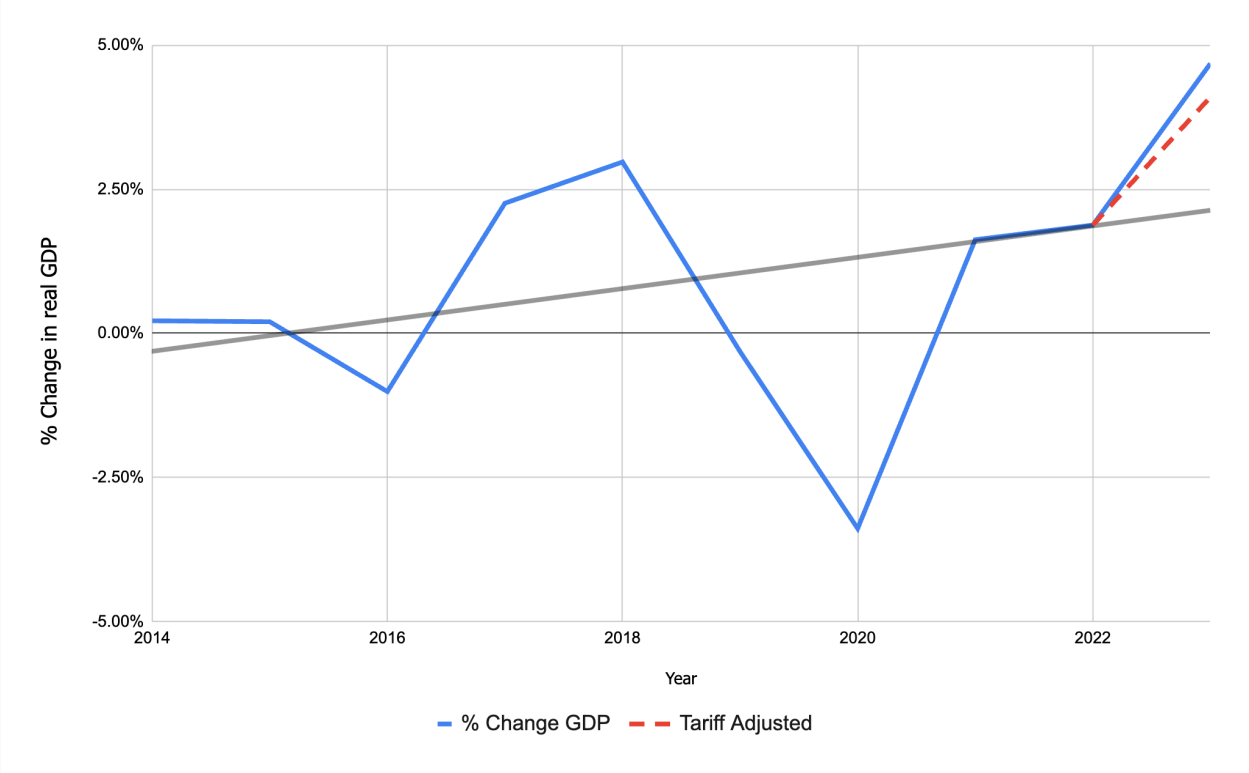
On the import side, West Virginia is predominantly impacted by the transportation and automotive industries. This impact is followed by smaller tariffs impacting Primary Metal Manufacturing,, Chemicals, and Machinery, as shown in **Figure 13.** However, it is important to note that West Virginia uniquely exports large volumes of coal to China and although this paper does not analyze hypothetical retaliatory tariffs, the industry could see severe negative impacts if China were to respond with tariffs on West Virginia coal.

Figure 13. New Tariffs on West Virginia Imports by Industry, % of 2024 GDP



In terms of GDP growth, tariffs reduce West Virginia's GDP, but overall growth would still have been positive when modeled with the tariff adjustment, as **Figure 14** shows. This makes intuitive sense, as West Virginia's economy is less reliant on imports from Canada, Mexico, and China and, therefore, less negatively impacted by the March and April 2025 tariffs. In 2024, West Virginia imports from Canada, Mexico, and China were valued at only $2.3 billion compared to imports from the three countries totaling approximately $22 billion in Kentucky, $40 billion in Ohio, and $37 billion in Pennsylvania.

Figure 14. Percentage Change in West Virginia Real GDP (2014-2023) with Inflation-Adjusted Tariff Impact Modeled



What does all of this mean? What should the Ohio River Valley Region communities expect?

The Ohio River Valley region employs hundreds of thousands of workers in the automotive, metals, machinery, chemical, and energy industries that stand to be impacted by new tariffs on Canada, Mexico, and China. And – although this report did not make direct estimates regarding retaliatory tariffs – our region is home to many industries such as Kentucky bourbon making, Ohio and Pennsylvania agriculture, and West Virginia coal mining that rely in part on export markets that could be squeezed by other governments.

Free trade deals and globalization have undoubtedly cost the Ohio River Valley region jobs and opportunities, particularly to Asian markets. But they have also brought goods that 21st-century households rely on, including food, energy, cars, computers, phones, and building materials like timber and steel. Trade agreements have also opened new markets to American manufacturers and farmers for exports, which have risen alongside imports. And, some

evidence suggests that free trade agreements have not been as harmful to US employment as automation due to technology and domestic shocks, such as recessions.

Still, local workers, businesses, and policymakers alike have very legitimate concerns about the decline of US manufacturing employment and there are resiliency and security concerns that could also be alleviated by re-shoring more manufacturing to the US. Strategically implementing tariffs in key industries in a way that is transparent and systematic could induce private capital investment in US manufacturing and provide jobs, higher incomes, and help build supply chain resilience.

But haphazard and unclear tariff implementation with chaotic communication and uncertain goals will create more economic harm than good. Rather than provide the certainty that companies need to make long-term investments in US production capacity, the current rollout approach is akin to an overnight federal tax increase of over $21 billion on Kentucky, Ohio, Pennsylvania, and West Virginia businesses. On average, this would be the equivalent of a new tax of roughly $1,700 on every household in these states. Businesses will have three choices when it comes to dealing with these new import taxes: they can either reduce their importing of inputs, source more expensive inputs if they are available, or pay the tariff. The first option would necessitate a decline in production, idling or reducing capacity at existing US facilities and potentially laying off workers and reducing GDP. The latter two options would result in a pass-through to US consumers and raise concerns about re-accelerating inflation, which would drive down consumption and also reduce GDP.

As Ohio River Valley communities and leaders plan for their economic future, they should understand the tradeoffs of both protectionist and free trade policies and consider how the region's industries, businesses, and workers may be positively and negatively impacted by both approaches to trade. This is particularly true after more than four decades of unprecedented globalization and technological advancement in automation, transportation, and communication. In addition, leaders should plan for short-term friction and further headwinds to economic growth under the current administration's proposed tariff plan, which is high in uncertainty and unlikely to induce rapid capital expenditure in the region by the private sector.

References

Alatidd, J. (2025, March 4). *Why Kansas Farm Bureau leader says Trump tariffs will hurt farmers.* The Topeka Capital-Journal. Retrieved March 24, 2025, from https://www.cjonline.com/story/news/politics/government/2025/03/04/why-kansas-farm-bureau-leader-says-trump-tariffs-will-hurt-farmers/81371061007/\

Alden, E. (2020, October 28). *92 percent of Trump's China tariff proceeds has gone to bail out angry farmers.* Council on Foreign Relations. https://www.cfr.org/blog/92-percent-trumps-china-tariff-proceeds-has-gone-bail-out-angry-farmers

Amiti, M., Redding, S. J., & Weinstein, D. E. (2019). The impact of the 2018 tariffs on prices and welfare. *Journal of Economic Perspectives, 33*(4), 187–210. https://doi.org/10.1257/jep.33.4.187

Autor, D. H., Dorn, D., & Hanson, G. H. (2016). *The China shock: Learning from labor market adjustment to large changes in trade* (NBER Working Paper No. 21906). National Bureau of Economic Research. http://www.nber.org/papers/w21906

Bade, Gavin, Dawsey, Josh, McGraw, Meredith. (2025, March 24) *White House Narrows April 2 Tariffs.* The Wall Street Journal. Retrieved March 24, 2025, from https://www.wsj.com/politics/policy/trump-tariff-reciprocal-deadline-industrial-delay-97508838

Cimino-Isaacs, C., Hufbauer, G. C., Kotschwar, B., McLarty, T. F., Medina Mora, E., Moran, T. H., Moran, T., Oldenski, L., Posen, A. S., Remes, J., & Schott, J. J. (2014). *NAFTA 20 years later* (PIIE Briefing 14-3). Peterson Institute for International Economics. https://www.piie.com/publications/piie-briefings/nafta-20-years-later

Clausing, K., & Lovely, M. E. (2025, February 3). *Trump's tariffs on Canada, Mexico, and China would cost the typical US household over $1,200 a year.* Peterson Institute for International Economics. Retrieved March 24, 2025, from https://www.piie.com/research/piie-charts/2025/trumps-tariffs-canada-mexico-and-china-would-cost-typical-us-household

Douglas, Jason, Anthony DeBarros, and Danny Dougherty. (2025, March 2). *How much do tariffs raise prices?* The Wall Street Journal. https://www.wsj.com/economy/trade/how-do-tariffs-affect-prices-trump-plan-009aa14e

Douglas, L. (2025, January 23). *Trump pick to lead USDA eyes payments to farmers to cover trade losses from tariffs.* Reuters. Retrieved March 24, 2025, from https://www.reuters.com/world/us/trump-pick-lead-usda-considering-payments-farmers-trade-losses-2025-01-23/

Eckert, N., Hall, K., & Shepardson, D. (2025, March 5). *Trump delays auto tariffs. Pickup trucks might explain why.* Reuters.

Elrich, Jamie. (2019, August 25). *Bernie Sanders says he would use tariffs as part of a strategy to counter China.* CNN. https://www.cnn.com/2019/08/25/politics/bernie-sanders-tariffs-trade-war-sotu-cnntv/index.html

Fajgelbaum, P. D., Goldberg, P. K., Kennedy, P. J., & Khandelwal, A. K. (2019). *The return to protectionism* (NBER Working Paper No. 25638). National Bureau of Economic Research. https://doi.org/10.3386/w25638

Howland, E. (2025, March 5). *Will Trump tariffs delay utility transmission, power plant plans?* Utility Dive. https://www.utilitydive.com/news/trump-tariffs-utility-transmission-power-plant-transformers-firstenergy-aep/741604/

Kentucky Cabinet for Economic Development. (2025). *Automotive industries in Kentucky*. Kentucky Cabinet for Economic Development. https://ced.ky.gov/Existing_Industries/Automotive

Leigh, Harri. (2025, February 3). *Proposed tariffs concern Ohio farmers.* Spectrum News 1. https://spectrumnews1.com/oh/columbus/news/2025/02/03/tariff-ohio-farmers

McBride, J., & Sergie, M. A. (2020, July 1). *NAFTA and the USMCA: Weighing the impact of North American trade*. Council on Foreign Relations. https://www.cfr.org/backgrounder/naftas-economic-impact

Mulholland, R., & Williams, M. (2024, May 29). *The Biden administration's targeted, strategic tariffs are effective industrial policy at work*. Center for American Progress. Retrieved March 24, 2025, from https://www.americanprogress.org/article/the-biden-administrations-targeted-strategic-tariffs-are-effective-industrial-policy-at-work/

Ohio Department of Development. (2023). *Ohio export report*. Ohio Department of Development. https://dam.assets.ohio.gov/image/upload/development.ohio.gov/research/economy/Ohio_Export_Report.pdf

Oil Price Information Service. (2024, April 11). *Cenovus Energy to invest in Toledo and Lima refineries.* Digital Refining. https://www.digitalrefining.com/news/1007849/cenovus-energy-to-invest-in-toledo-and-lima-refineries

Quinnipiac University Poll. (2024, December 18). *Slight majority oppose tariffs on Mexico, Canada & China, Quinnipiac University National Poll finds; Nearly 6 in 10 want to follow Australia's lead in banning social media for teens under 16*. Quinnipiac University. https://poll.qu.edu/poll-release?releaseid=3917

Schroeder, Peter. (2015, October 7). *Trade deal looms large for 2016*. The Hill. https://thehill.com/policy/international/trade/256009-trade-deal-looms-large-for-2016/

Stein, J. (2025, March 6). *Farmers fear more pain from Trump's trade war*. Time. https://time.com/7264403/farmers-trade-war-tariffs/

Sachdev, V., & Rao, A. (2025, March 11). *What happened the last time Trump imposed tariffs on steel and aluminum*. Reuters. Retrieved March 24, 2025, from https://www.reuters.com/graphics/TRUMP-TARIFFS/STEEL/gdpznwgdzpw/

U.S. Customs and Border Protection. (n.d.). *Description of NAFTA*. U.S. Department of Homeland Security. https://www.cbp.gov/trade/nafta/guide-customs-procedures/description-nafta

Weintraub, Sidney. (1999, February 7). *A Politically Unpopular Success Story.* Los Angeles Times.https://www.latimes.com/archives/la-xpm-1999-feb-07-op-5719-story.html

York, E. (2025, March 4). *Trump tariffs: Tracking the economic impact of the Trump trade war*. Tax Foundation. https://taxfoundation.org/research/all/federal/trump-tariffs-trade-war/