

Impact of Trade Policy on Global Macroeconomy

The Tariffs and Protectionism Story: A Negative-Sum Game?

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Abstract:

Tariffs are a kind of sanction and are getting used ubiquitously by those intending to change behavior and/or to encourage indigenous production. Populism, whether on one end of the political spectrum or the other, has much to do with it, as does some genuinely unfair set of trade practices by some countries. Our paper studies the effects of tariffs and other forms of protectionist policies on the global macroeconomy, especially in this day of unmitigated nationalism. Notwithstanding the utility of this protectionist tool, it is the broader implications arising therefrom that need addressing. They include - and are not just limited to - trade wars, global supply chains disruption, economic decline, distressed employment, and inflationary pressures. A review of the literature on economic theories, case studies of the recent protectionist measures, and general other qualitative consequences informs us that the persistent use of such practices is detrimental and calls for a holistic reassessment of trade policies. It is our intent, via this paper, to bring out ideas to encourage fair trade policies, create a healthy business environment based on *relative advantage*, and foster sustainable economic growth on a global plain. The intent of the paper is to provide a perspective on protectionism as a tool, and not to track the ongoing changes in the various trade wars that are currently prevalent.

Introduction:

The economic and business world is woefully aware of the imposition of the Smoot-Hawley Tariff Act during the Great depression and its adverse impact on the global macroeconomic front (Irwin 1998). Given the changes in the world economy in the last almost a century, the comeback of tariffs as an economic tool is being justified for all those reasons that have been instrumental in making us a *global village*. Interestingly, and not quite unexpectedly, the tension leading to such protectionist measures is boiling over among the largest global economies. The preceding shows less of genuine concerns and more of a fight to retain competitiveness and economic strength. Such sentiment is understandable as it is the right of any country's leadership to maintain and advance its position globally; what, however, we believe is not viable for the global economy is the unwarranted use of such protectionist tools for the underlying objective. It is our view that it goes against the grain of business and is self-limiting not just for the countries involved but for the world. It retards development both on human and economic plains, as it myopically focuses on production of those goods best left to countries in whose orbit such manufacturing naturally falls. After all, that is the gist of the International Product Lifecycle. It is a process, and like all processes,

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it lends itself to continuous improvement, or should. Such impositions, if left persistent, come in the way.

Historically, economic crises precede protectionism as governments seek to shield domestic industries from external shocks. That and the emergence of political populism and anti-globalization sentiments in recent decades has only compounded the appeal of protectionist measures, leading to an increase in tariffs and other types of sanctions globally. We can see recent examples, including the sweeping tariffs by the US on China's goods, and the threats of more. In addition, there is the additional threat of such measures on both Mexico and Canada, two of the other members of the 21st century, high standard trade agreement, USMCA. It may be lost on some of us that such policies beget retaliation in both quantitative and qualitative measures, further exacerbating cross-border and international/diplomatic relations.

This paper intends to address key questions with regards to the implication of these policies on the global macroeconomy: What are the macroeconomic impacts of tariffs on trade relationships and economic growth? How do these policies influence consumer behavior and the resultant inflation? By contextualizing the discussion within current events and economic theory, this paper seeks to iron out the intricacies between economic policy and global trade dynamics.

We start with methodology and then move on to results/discussion, which entails findings as well as some of the prevalent emergent trends, before offering our conclusions and venturing out to some soft, macro recommendations. Of course, we will also outline some of the limitations of our research and any possible potential topics to study in the future that might not have been addressed here.

Data Methodology:

This is a desk-research study, based on secondary data. The first step was to read up in detail on the subject, from early sources to ensure a complete context and avoid recency bias. We based our search on Google Scholar using keywords and terms generically related to protectionist measures, specifically tariffs and the impact of such tools on the global macroeconomy. We focused on finding the effects of protectionism in a historical context. We also established a set of criteria that would enlighten us on the theoretical aspect of the subject. With the sources cited below, we can see that the key data sources include reports on tariff rates, trade volumes, macroeconomic indicators, and scholarly analyses of trade policies. By studying these sources, the goal is to provide a holistic overview of the impact of tariffs and protectionism on the global macroeconomy.

After pruning the initial pool of sources for relevance, we were left with a total of 45 sources.

Total sources by type

<i>Source Type</i>	Number of Sources
<i>Book</i>	4
<i>Central Bank</i>	2

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<i>Government Agency/Bureau</i>	1
<i>Journal/Newspaper/Publication</i>	22
<i>Organization</i>	16
<i>Other</i>	3
<i>Total</i>	45

Table 1: Sources types

Results and Discussion:

We believe that a good start to exploring the essence of the paper is to delve into the ***theoretical aspects of trade and the various forms of protectionism***. The free trade consciousness historically began with Adam Smith's claim that individuals act not necessarily out of benevolence but also for self-interest when they produce something for society. It is this act, he claimed, that benefited everyone. Such inferences undermine the value of altruism and perhaps form a basis for the Ayn Rand thought process, ably brought out in her various publications, including novels.

Adam Smith wrote in *The Wealth of Nations* (1776) in an attempt to repudiate the mercantilists who believed in the maximization of exports and policies that would control imports, thus promoting protectionism. A tad over three decades after Smith's insight on trade, it was David Ricardo who introduced a modification in the form of relative efficiency's role in deciding who exports and imports what. It wasn't until the early 1900s that the theory was further refined by two Swedish economists, Bertil Heckscher and Eli Ohlin, who considered other factors of production in addition to just labor. Basically, the theory rests on which country has the relative advantage in producing a good. If the UK is richer in capital and textiles is capital intensive, then she should export it to Portugal which is more abundant in labor; Portugal, in turn, should export wine, considered labor intensive, to the UK.

Another concept important to the study is that of 'terms of trade' (Krugman, 1991). It refers to the export volume needed given a certain quantity of imports, underlying the benefit of fewer export numbers in the equation. It is important to note here that the terms of trade are not static and can change with varying demand and supply, governmental measures, and even productivity improvements, which, ironically, goes to worsen the country's terms of trade position.

Under threat, a country can impose tariffs or engage in currency manipulation to improve its terms of trade position. We have seen such measures in the recent past which will be delved into later in the paper. Tariffs, when unwarranted, beget retaliation, which makes for a poor prognosis for both countries involved. Even if there is no retaliation, the world is worse off as the country that is at the receiving end suffers. As such, the free trade proponents believe that the way to overall health of the global macroeconomy is through emancipation of consumer choice which is facilitated by competition and specialization based on comparative advantage.

Conversely, protectionist theories contend that tariffs serve as necessary tools to protect emerging industries from foreign competition and may promote growth and innovation when needed most.

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Or when a country engages in unfair trade practices – again a vague and subjective judgment – the country that is the object of such unfairness can use tariffs as a tool to thwart such behavior. Tariffs can also be justified to mitigate national security concerns which is not the focus of this paper. These protectionist measures are called for in certain situations as described above; however, the issue arises when tariffs are used at will to change behavior that may not need changing, or when they are used on a persistent basis which defies its purpose and causes more harm than benefit and efficiency on an overall basis. Such tariffs may be considered punitive tariffs.

A thorough understanding of protectionism and its tools calls for an exploration of economic theories that support or express disapproval of such measures, as detailed in the preceding lines.

In terms of *domestic markets*, the implementation of tariffs can result in higher inflation, compromised competition, and other structural dynamic-change on a functional basis. An analysis of the U.S. tariffs imposed on Chinese goods indicates significant price increases for consumers while benefiting specific sectors, even though, on a more macro basis, there could be opposing views.

The evolution of trade and its structure over a period entails the formation of GATT in November 1947, even though it traces its origins back to the 1944 Bretton Woods Conference leading to the IMF and the World Bank. As a result, countries with similar levels of factors of production traded with one another, with Nobel laureate Paul Krugman noting that trade occurred based on product differentiation and economies of scale (Krugman, et al., 2014). The larger the production, the more efficient the output is, *ceteris paribus*.

We have seen total trade in the US as well as in the rest of the world grow leaps and bounds over time. Since 1970, the world's trade-to-GDP ratio has increased from around 25% to 63% in 2022, while the US has grown its share of trade as a percentage of GDP to 27.04 for the same period. This is in spite of the fact that the recent policies between and among the more powerful economies have been less than open.

China entered the WTO in 2001 and gained the PNTR (Permanent Normal Trade Relations) status, thereby reducing the high tariffs on her exports to the US. Another mechanism that facilitated in the decreased cost is the productivity improvement with the help of lower input tariffs by China, enabling the current producers to lower their prices and encouraging new entrants in production. **Figure 1** below shows the growth of exports in industries where the input tariff cut was above or below the median cut of 4.6%, with clear indication that the larger cut allowed for higher growth.

China's US Exports and Input Tariffs

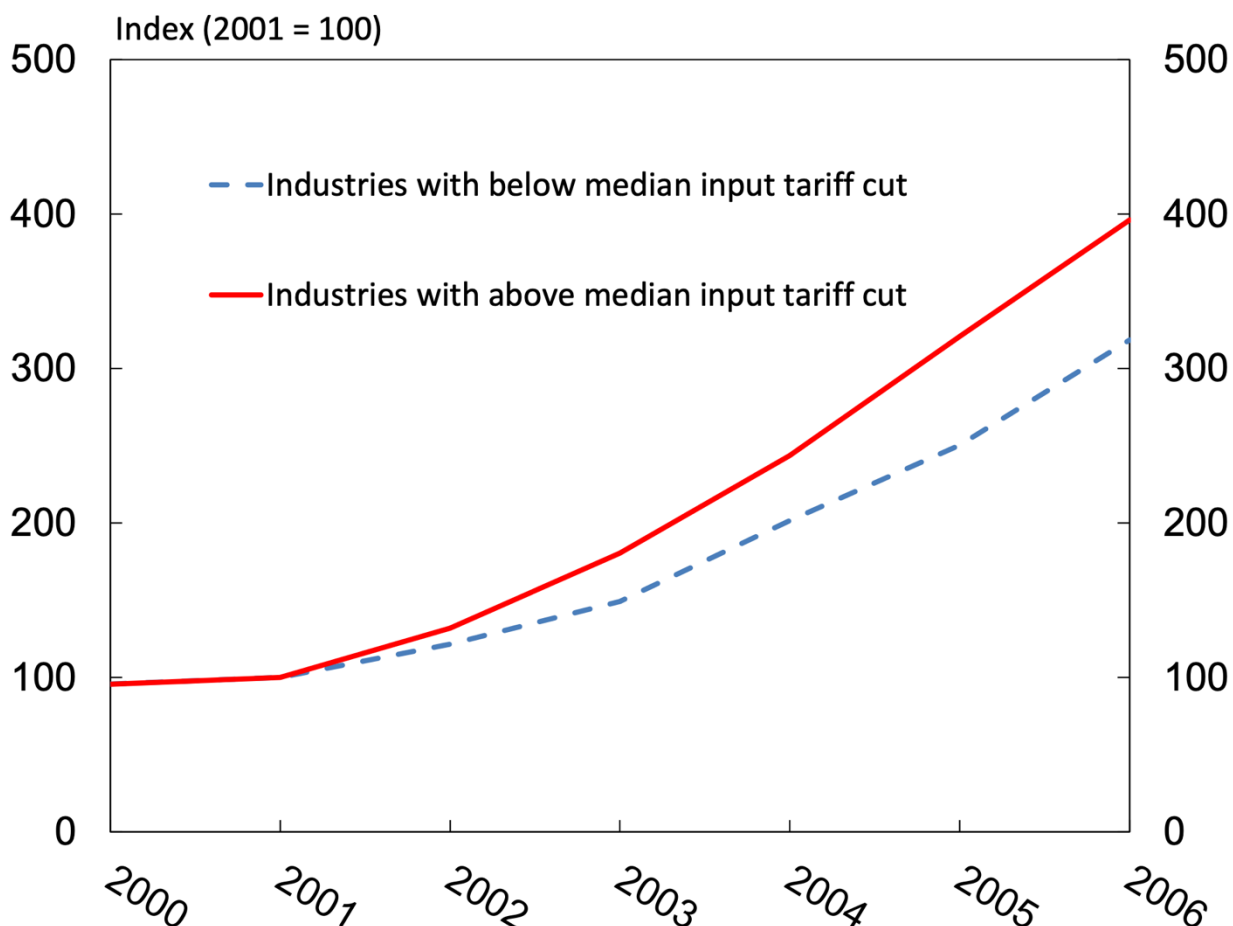


Figure 1: (USTR, US Census Bureau)

Amit et al. (2018), in their December 2018 paper "How did China's WTO entry Affect US Prices?", deployed a highly robust regression methodology using real data on exports from China to the US, which pointed to a 7.6% reduction in US prices since the admission of China to the WTO (Amiti et al., 2018). Notably, the China component of the U.S. price index accounted for 60% of this change, and about a third of the price reduction owing to China came directly from existing exporters lowering their prices, while the rest was a result of the entrants in the field, which increased overall product variety in the U.S. market. Interestingly, there was also a spillover effect on competition as they reduced their prices in response.

Fig 2 below spans out the various tariff rates as we saw the waves of protectionism in 2017; while the effect of such measures was rather tame till mid 2017, the impact can be seen being more pronounced, especially as of September 2017. The effect is gauged by the average tariff rate shown which took off around that time. The total volume of exports affected by such measures accounted for almost \$300 BN. Tariffs are not just a one-way street; tariffs beget tariffs. As a retaliatory

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measure, China also imposed duties on US exports throughout the year as did other countries in Europe and the south of the border, affecting around \$120 Bn of US exports, with China's tariff share of it being predominant at around 90%.

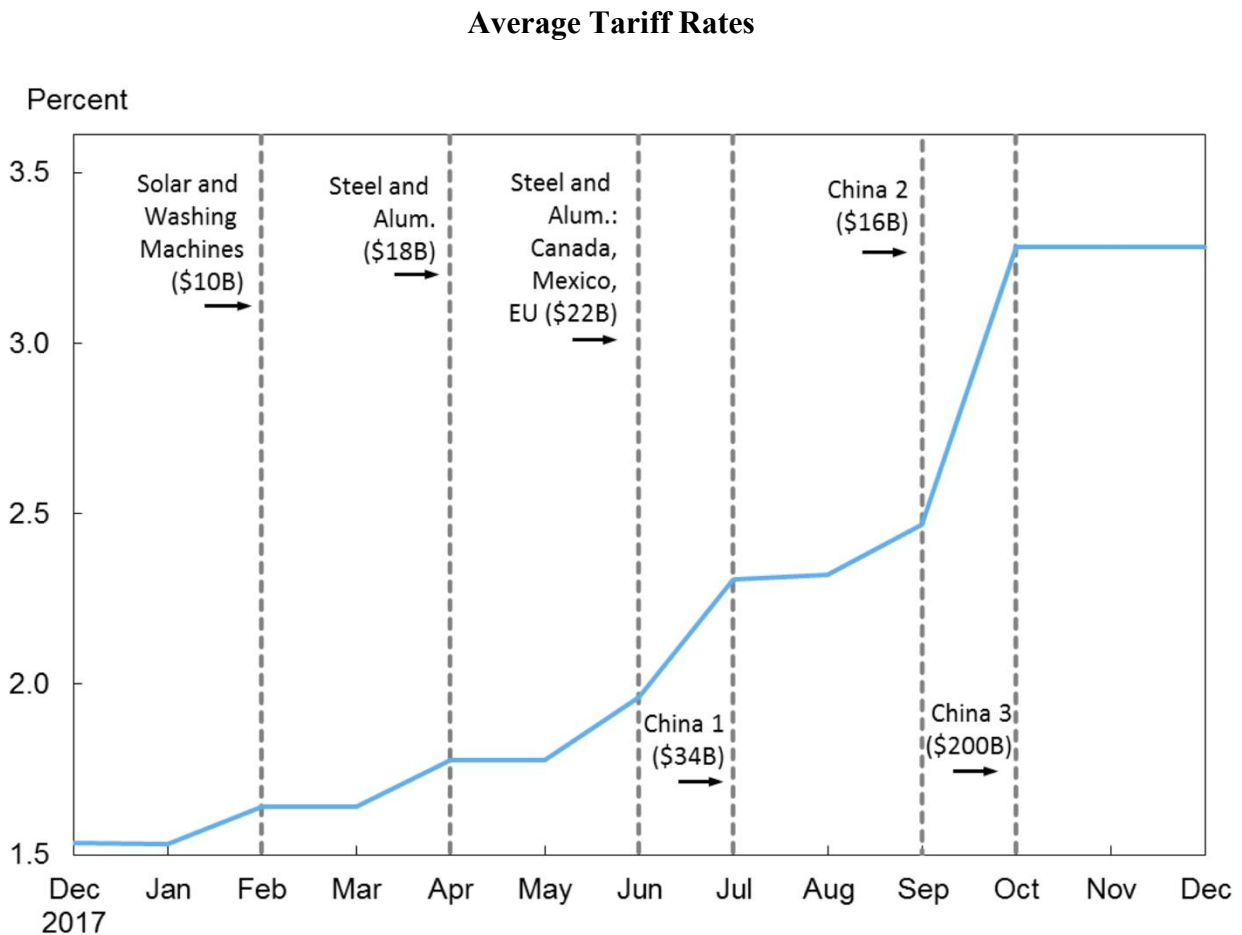


Figure 2: (USTR, US Census Bureau, USITC)

Fig 3 below shows the Major Appliance CPI since the imposition of US tariffs. The prices of products like washing machines and other major appliances which had been decreasing till the onset of the trade war started to rise quite precipitously.

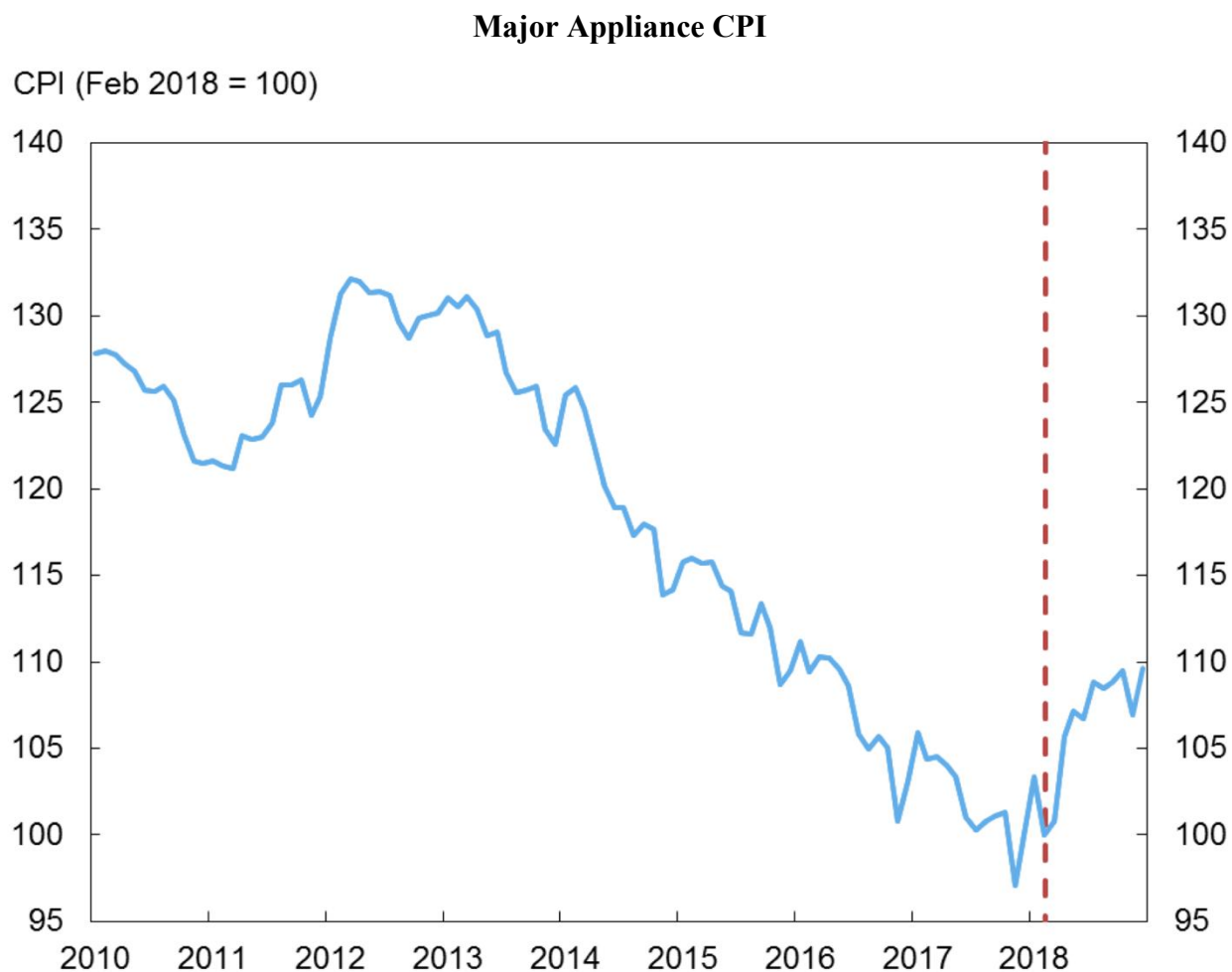


Figure 3: (Bureau of Labor Statistics)

Fig 4 shows the proportional change in import prices by tariff waves identified above in Fig 2. The change can be compared to the sectors and countries left alone (untreated) which, at worst, show a flat line, while those industries that were affected demonstrate a sharp rise. What is also interesting to observe is that the price change is in the 10% to 30% range which happens to coincide with the rate of the tariffs imposed. It gives us reason to believe that all the tariffs were passed on to the importers. Besides, one factor that is not demonstrable here is the price increase in response to the corresponding increase by their competitors on account of those that are in the ‘untreated’ category of products/industries and countries; therefore, what we see here is a watered-down version of the actual price spiral.

12-month Proportional Change in Import Prices by Tariff Wave

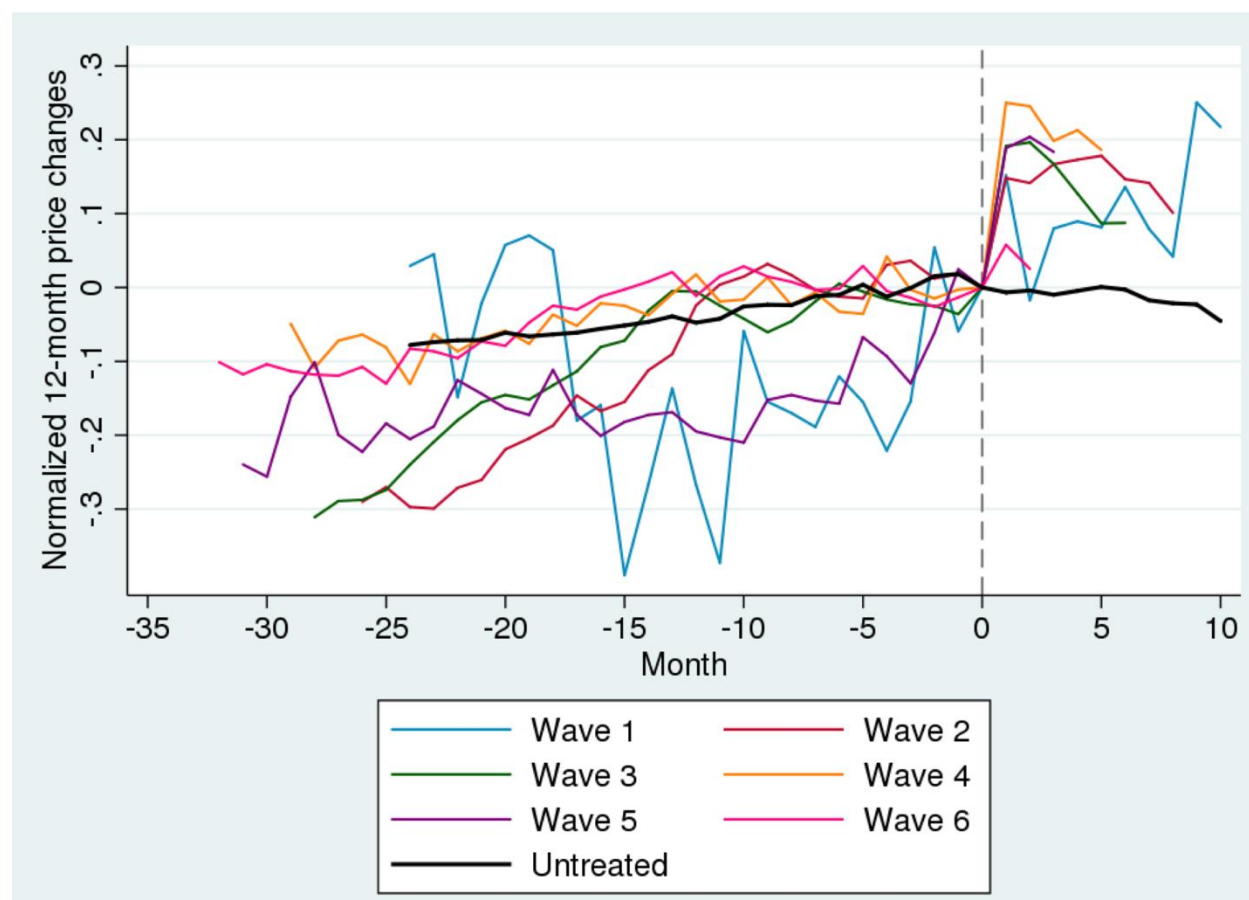


Figure 4: https://www.nber.org/system/files/working_papers/w25672/w25672.pdf

Fig 5 is a replicate of Fig 4 with the exception of replacing volumes for prices. The findings indicate that the imposition of tariffs had pronounced effects on the volume of imports from affected countries and industries. The significant decrease in import levels for affected goods (an average of 30%) relative to unaffected products and countries, which went up by over 10%, highlights the influence of tariff policies on international trade dynamics. Import substitution behavior further illustrates how market actors respond to tariff-induced price changes by shifting preferences and sourcing from alternative suppliers.

Total Import Values by Tariff Wave

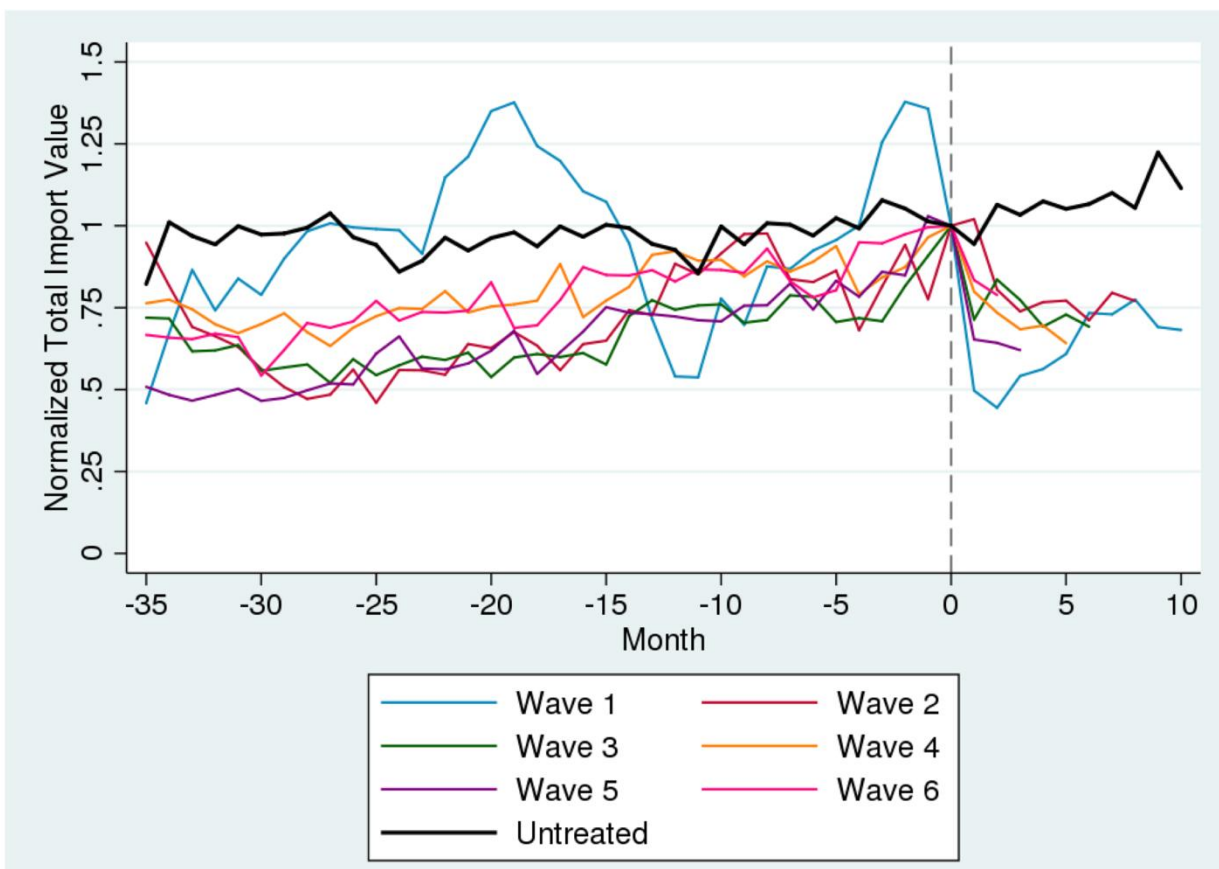


Fig 5: (Amiti et al., 2018)

It is not surprising that protectionism profoundly affects the *global macroeconomic landscape*. Supply chains are most obviously disrupted. And it is the same chains that have evolved over a regime of liberalizing trade. It is normal practice for businesses to source raw materials from different parts of the world for optimally efficient production. Tariff impositions can alter these arrangements that have been established over a period and raise production costs in addition to causing shortage of availability, which further exacerbates pricing pressures.

A case in point is the US-China trade war that started in 2017. Businesses relocated their sourcing to where the tariffs were non-existent or lower, thereby causing massive disruption in terms of geographic logistics and economic alignment. A lot goes into it, not the least of which is rehiring labor, retraining staff, and adapting to a new regulatory environment.

Furthermore, the World Trade Organization (WTO) and various trade agreements play crucial roles in structuring global trade dynamics. Disputes resulting from tariffs and other forms of protectionism have a way to escalating to trade wars which goes to undermine the very spirit and foundational principles of the agencies that have been brought into existence to resolve such

conflicts. This potentially affects not just the countries involved but also threatens to spill over to neutral countries that may experience increased uncertainty and volatility in global markets.

Globally, as described in the preceding lines, GATT was replaced with WTO after the former ran into functional snags for various reasons, including, but not limited to, the difficulty in being able to resolve trade conflicts and the emergence of voluntary export restraints (VERs). It was in the mid 1990s that WTO came into being with the promise of possessing the capacity and the ability to settle disputes between and among the trading partners. As part of the creation of the agency, VERs became a non-entity, as shown in **Fig 6**, and the services and intellectual property aspects in exports were given its due share which was a direct benefit to the US; last but not the least, the WTO was also mandated to settle disputes via an Appellate Body.

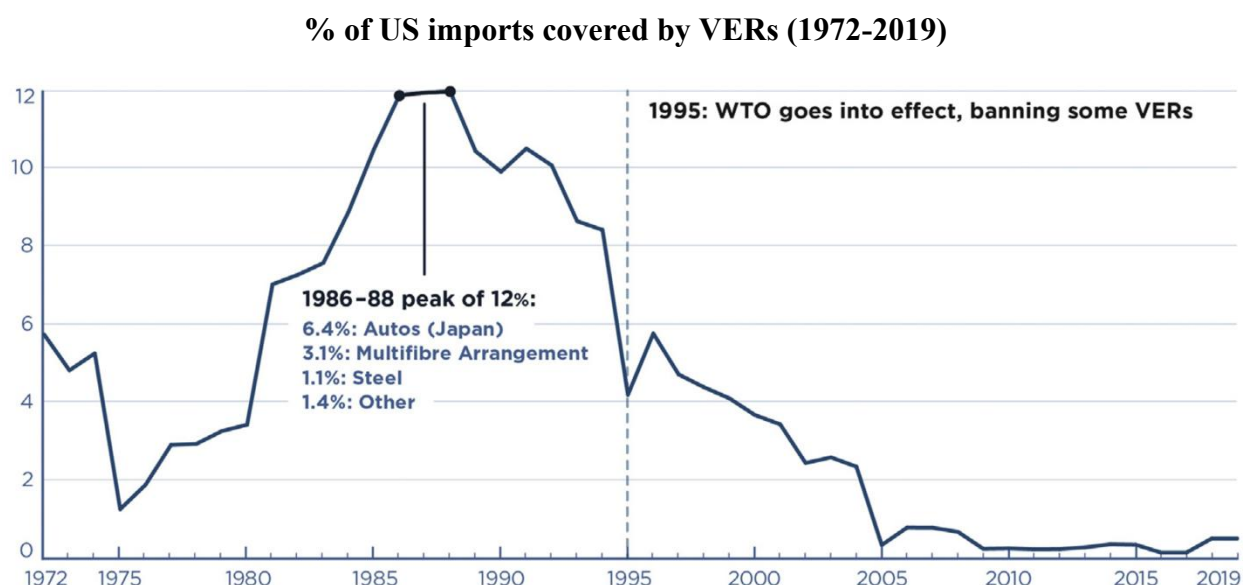


Figure 6: (Bown & Keynes, 2020)

From 1995 onward, till around 2016, there were several cases brought to WTO, a number much larger than during the GATT regime and over a longer time-period. It is noticeable that the countries with heavier trade tended to be the more active complainants. **Fig 7** shows us that the exporters were the offensive filer of disputes in much larger numbers just as it was the importers that bore the brunt of the cases brought against them.

WTO disputes/cases Vs. trade involvement

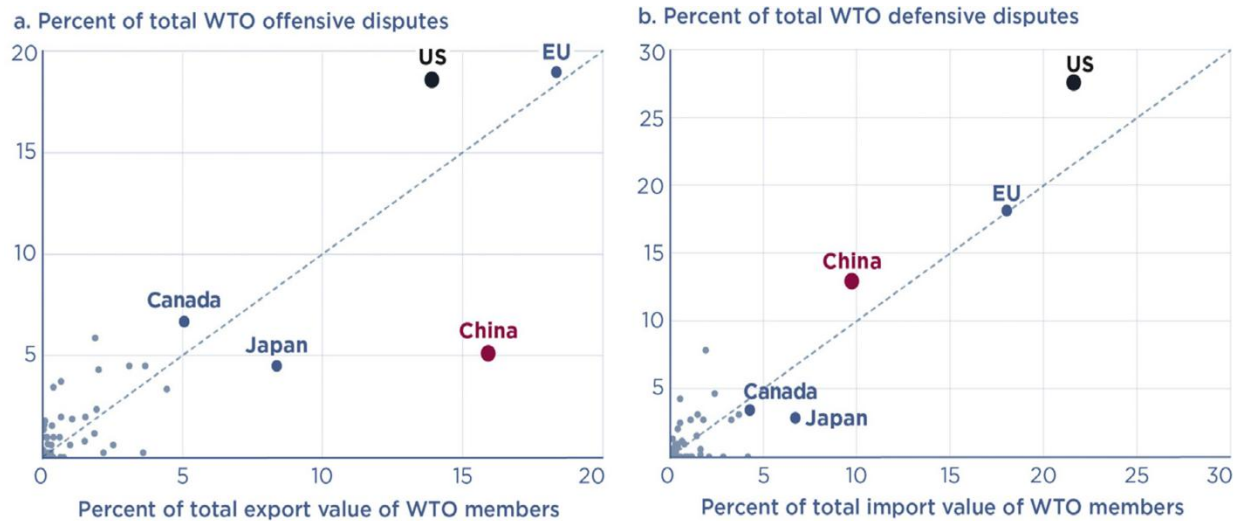
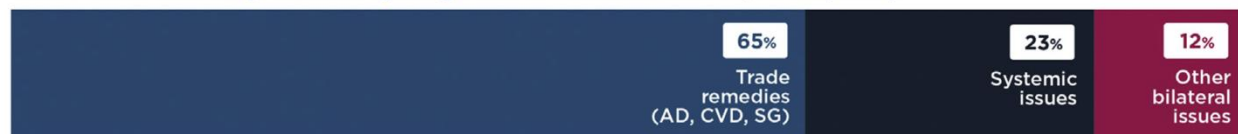


Figure 7: (WTO, US Labor of Statistics, World integrated Trade Solution)

The US involvement in the WTO disputes arena is rather interesting. It is noteworthy to see that a large proportion of the cases brought against the US were based on its use of trade remedies, like antidumping duties and safeguard measures. As opposed to this, it was only a minority of the cases brought against other large trading partners that were filed with similar complaints; in fact, the ratio was 2:1, on a relative basis. And where the US found it fitting to bring a case, it was mainly in the systemic issue domain, where over 80% of the cases were filed against its trading counterparts. **Fig 8** below demonstrates it.

% of WTO disputes by type, 1995-January 2017

Other countries' disputes brought against the United States (141 disputes)



Other countries' disputes brought against other countries (293 disputes)



US disputes brought against other countries (114 disputes)



Figure 8: (Bown & Keynes, 2020)

While trade remedies entail measures taken to protect indigenous production from the perceived unfair competition that a country may feel it is being subjected to, systemic issues focus more on broad-spectrum structural conflicts involving discrimination between local producers and 'all' foreign producers, so, in effect, it could be a fight for other exporting countries too and not just for the US.

Given the above, and its evidentiary overload of burden, the United States did not end up doing well in the proverbial court of law as an offensive filer, whereas it lost most of the cases brought on by other exporters against its use of trade remedies where the cases were seemingly more straightforward. This was an irritant for some US officials and the Trump administration in 2017, via its USTR office, headed by Robert Lighthizer, started acting on undermining the entire WTO Appellate Body apparatus. The nominees to the body found it hard to be approved by the US and the number of members declined to a point where the agency became irrelevant from an adjudication standpoint. Thus was the demise of the WTO's Appellate Body, or its Sheriff. The US has decided to take on issues on a bilateral basis which is a disruption of the established world order. If the Appellate Body were allowed to be reformed and nurtured back to health, we might have had a different story to tell. Sadly, that will remain a hypothetical.

One interesting artifact worth mentioning here is that as China rose to its stature as a trading partner to reckon with, following its entry into WTO in 2001, the US started playing a cautious game of parrying the Chinese offense. We can see in **Fig 9** below that she initiated 18 cases on its own or with a co-complainant against China during the referred period. As against this, the other countries filed way fewer cases against China and only the one on its own while the others were alongside with the US.

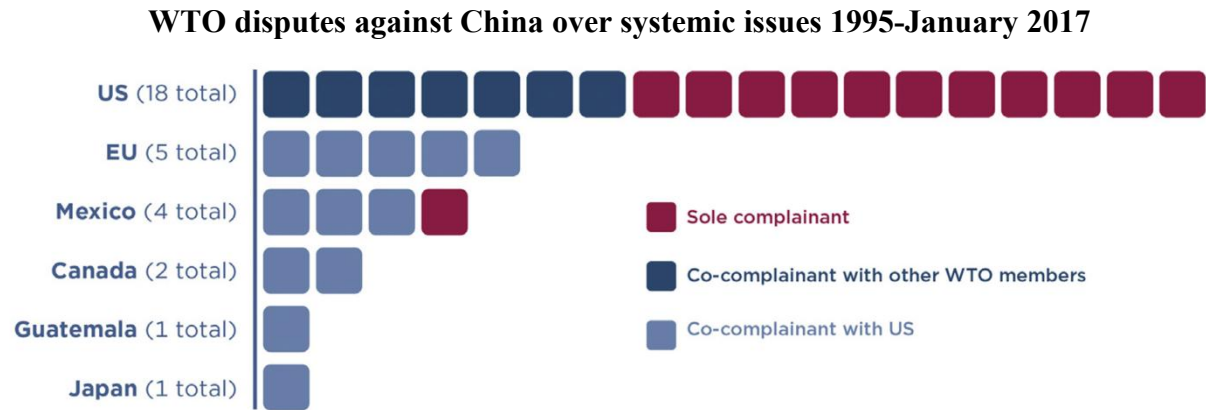


Figure 9: (Bown & Keynes, 2020)

In terms of the global trade make-up, regardless of whether a country is a net exporter in a sector or otherwise, there is evidence of it importing inputs for the finished product. **Fig 10** shows us that every region in the world relies on trade, with varying degrees. Specifically, it reveals more than 25 percent of its consumption of at least one type of critical resource, manufactured good, or service is dependent on imports.

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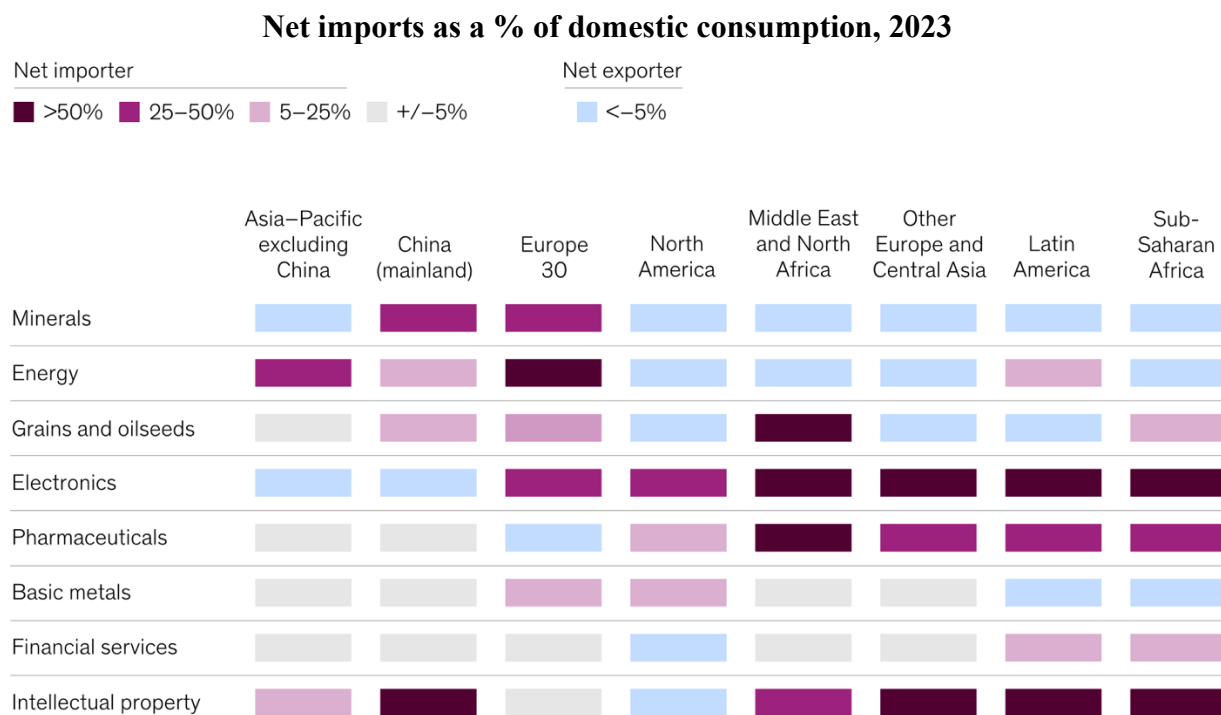


Figure 10: (WTO-OECD)

While we know that all economies engage in trade, we now plan to take it further by showing that there are distinct footprints, measured by:

- Trade intensity (Fig 11)
- Geographic distance traveled (Fig 12)
- Geopolitical distance traveled (Fig 13)
- Import concentration (Fig 14)

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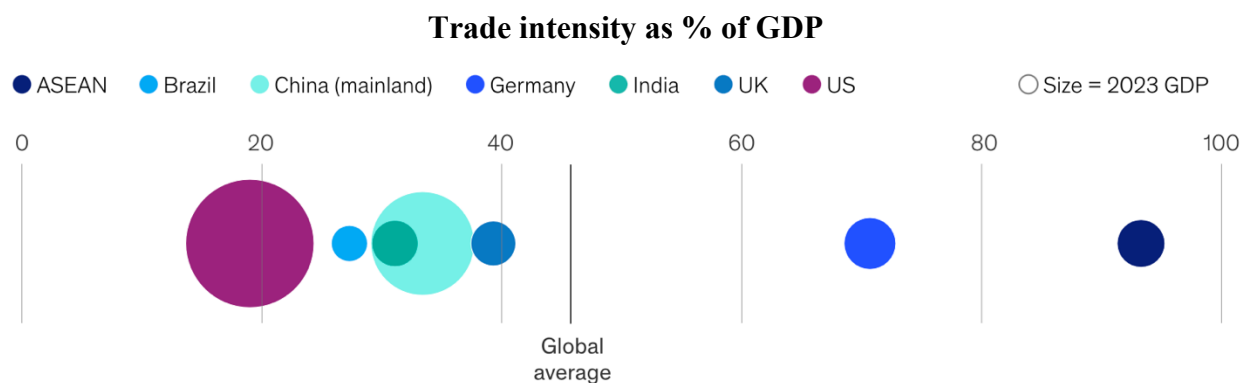


Figure 11: (US Census Bureau; World Bank)

Fig 11 shows us the relative trade of each country/region to its economic output. Germany and ASEAN have a higher proportion because of its reliance on integrated, cross-border manufacturing set-up. The US's is lower because of its vast domestic market and sufficiency in provision of goods and services, thanks to the plentiful natural resources.

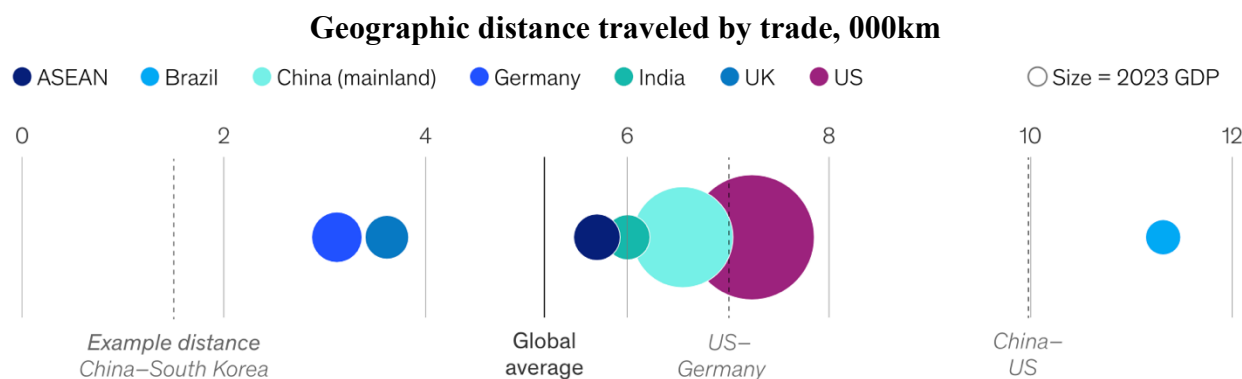


Figure 12: (US Census Bureau)

Fig 12 provides us an idea of the geographic distance that countries cover for trade. We see Brazil traveling the farthest with her trade relationship with China while the European capitals remaining more cohesive within Europe.

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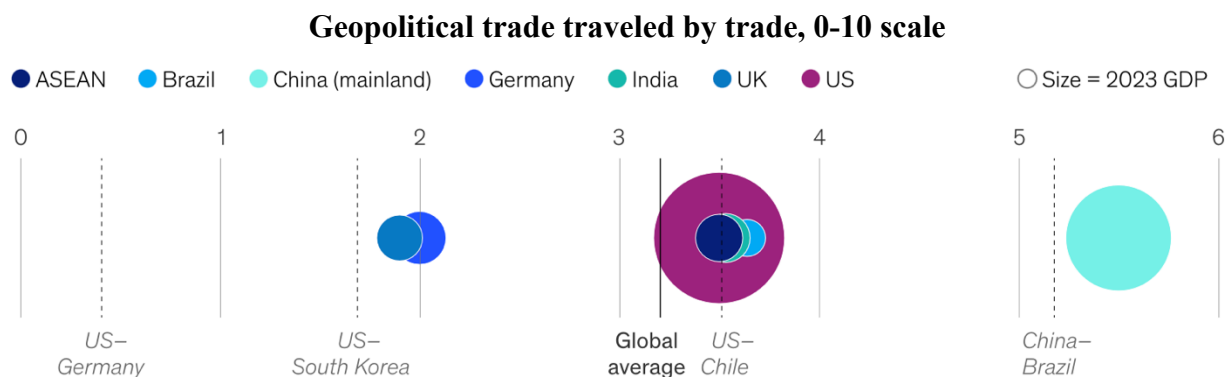


Figure 13: (US Census Bureau)

Countries cover both geographic as well as geopolitical distances for trade. While there is a push to promote more regional trade – still in its infancy – there is clear evidence that economies also trade with those with whom there is no alignment on global issues. Trade is such a necessity for sustenance that it transcends such friction and conflict of values. **Fig 13** shows China's outreach in trade with entrenched relationships with Australia, the US, the EU etc. Again, the European capitals remain cozy within the continent.

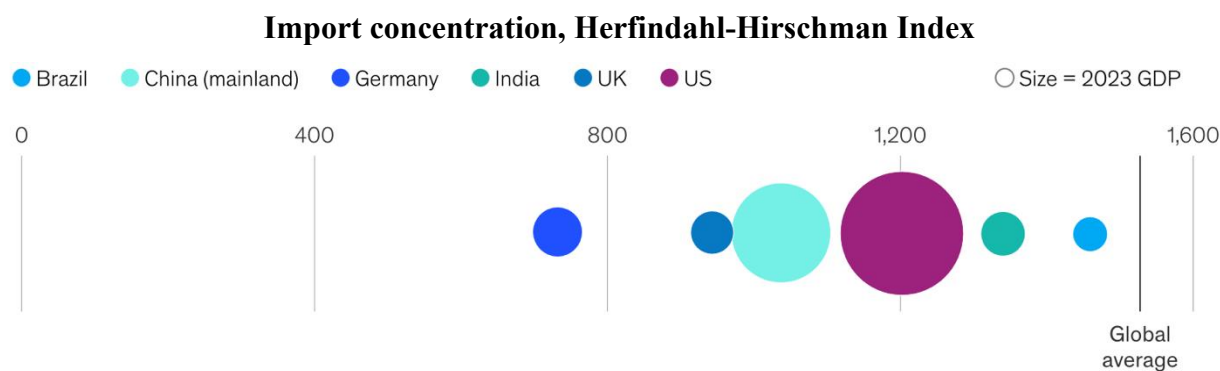


Figure 14: (US Census Bureau)

Market concentration, whether in supply or labor, carries high risk. Similarly, it is a risky proposition in terms of imports as well. Relying on a few supply chains can prove hazardous. We can see from **Fig 14** that most large economies tend to be relatively diversified in terms of their supply chains, albeit not optimally. Brazil is the one with the most concentration given her reliance on China for materials and finished products. Germany, while a significant trading economy, has a relatively low import concentration with its extensive intra-continental trade.

With geopolitical tension rising between and among the larger economies, we do see a decline in geopolitical distance traveled by trade. **Fig 15** below demonstrates that, while showing that the other metrics stay close to being unchanged.

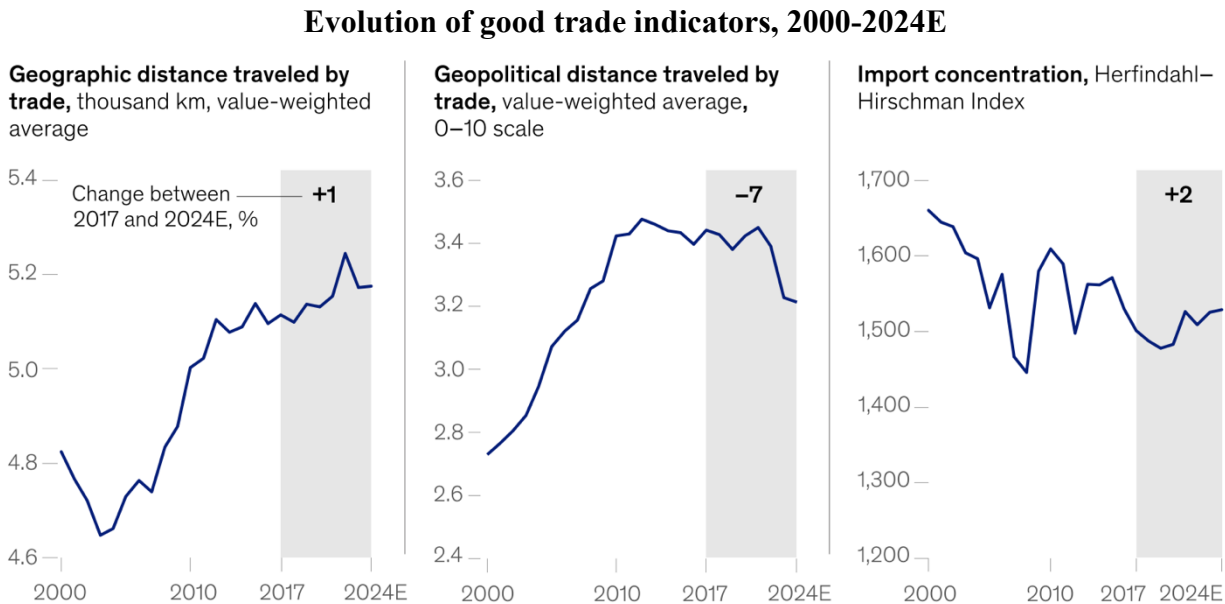


Figure 15: (UN Comtrade)

We have observed the distancing of trade initiated by the US from China and instead moving to other countries for supply chains. **Fig 16** below shows the decline of trade with China and an increase with ASEAN. It also shows an increase with Mexico; however, with the latest tariff imposition, we are still unclear where that will land us.

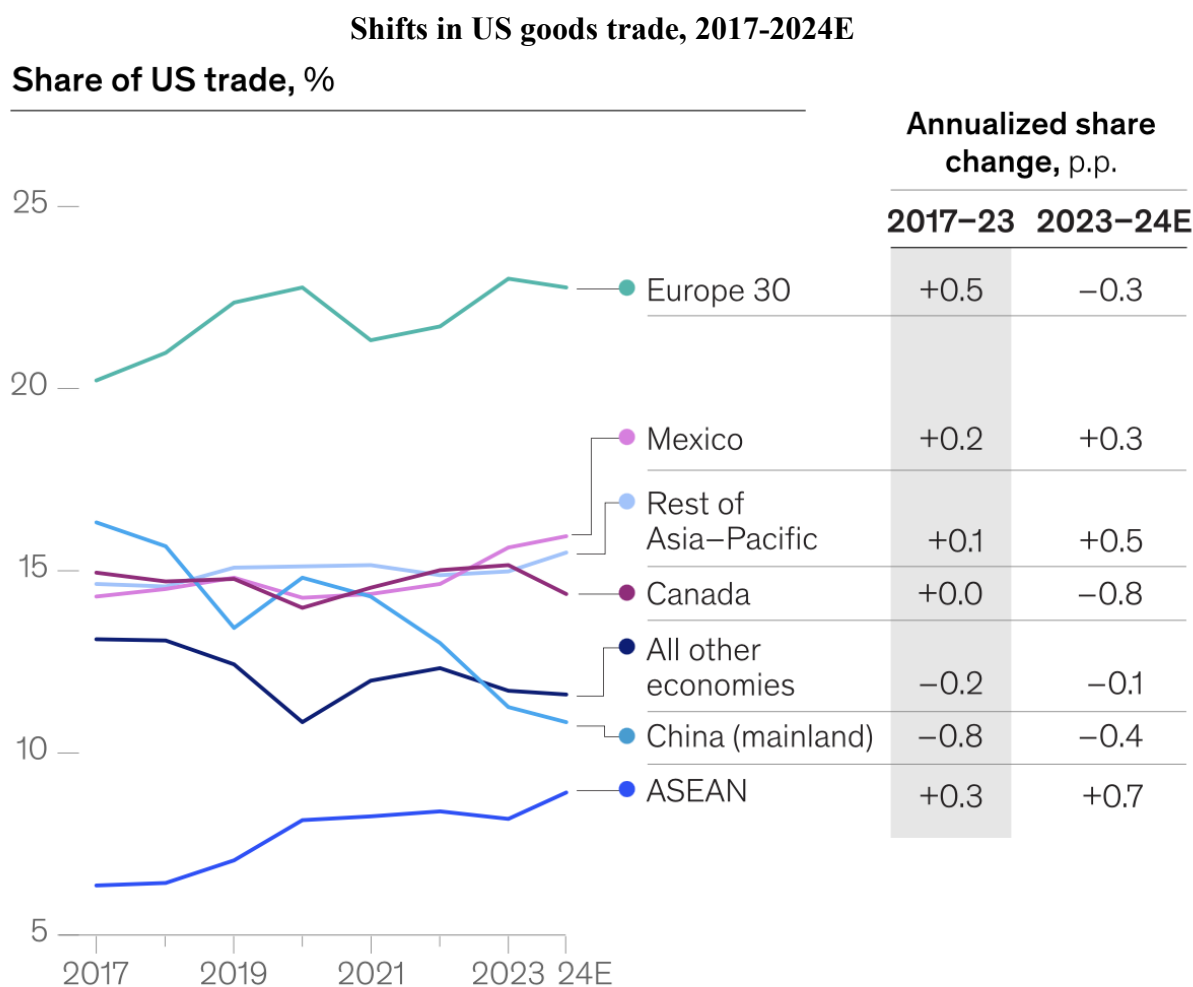


Figure 16: (*US census Bureau*)

As we can expect, China has also moved away from its entrenched trade relationship and we see that in their share of total trade, as suggested in **Fig 17** below.

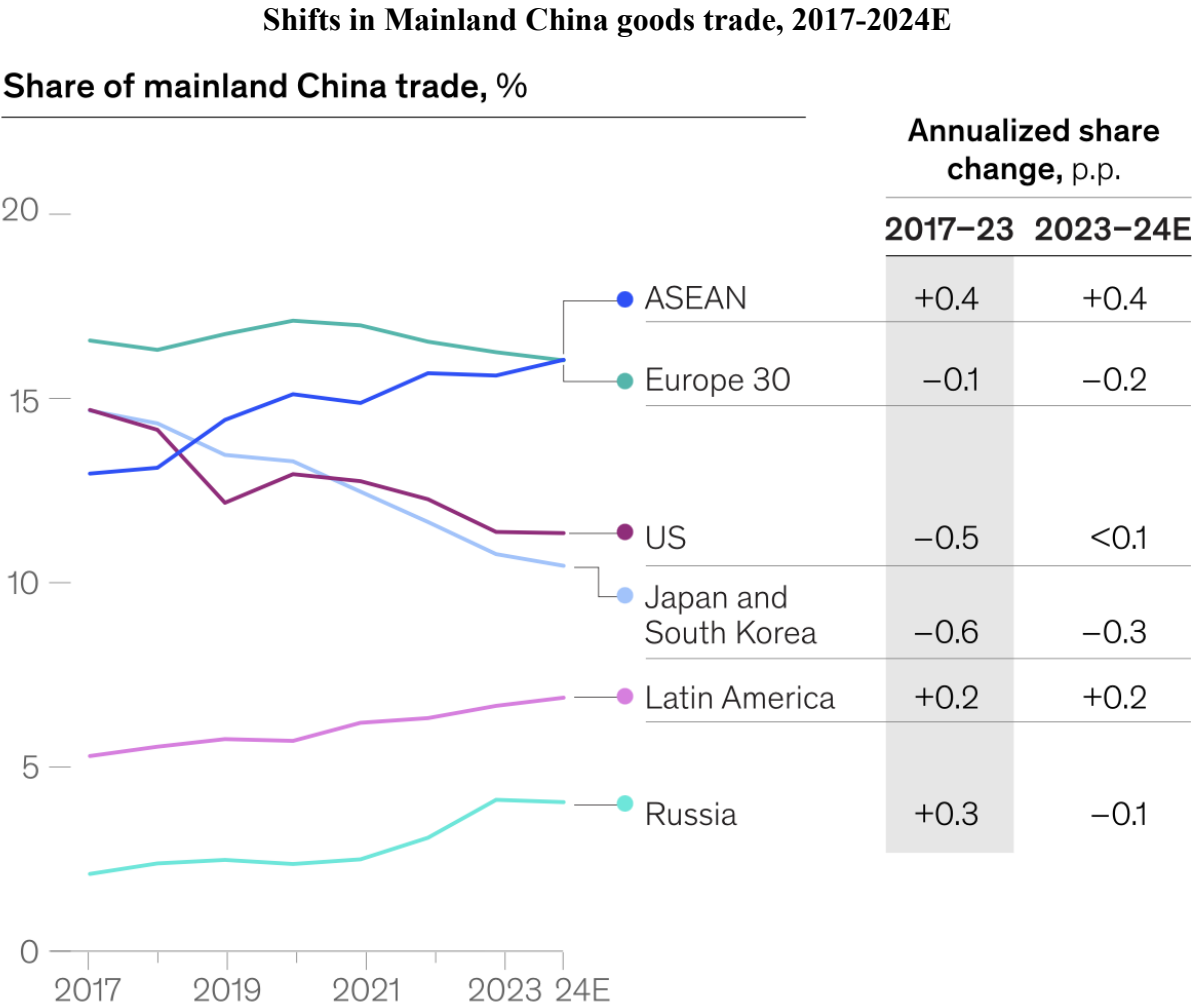


Figure 17: (US Census Bureau)

The above shows us the evolving characteristic of global trade and how it is a dynamic process with geopolitical and geoeconomic interests changing with time. The trade policy - a subset of the economic policy - plays a vital role in how we see the shifts in the trade of goods, especially among the countries directly affected.

Regarding economic policy uncertainty (EPU), which could be caused by political leadership changes, health and other crises, global conflicts, legislative reshuffle, and unexpected monetary policy changes, a lower trade growth rate has been seen to be a corollary. The decline can be direct or indirect. If the EPU is the reason for lower output growth which it may well be, then trade growth decline necessarily follows. Directly, the impact could be because of the firms changing their sourcing decisions.

Fig 18 below has a robust representation of the preceding. We see a clear negative correlation between EPU and the growth rate of global trade.

World trade/imports growth Vs. EPU, January 2012-June 2019

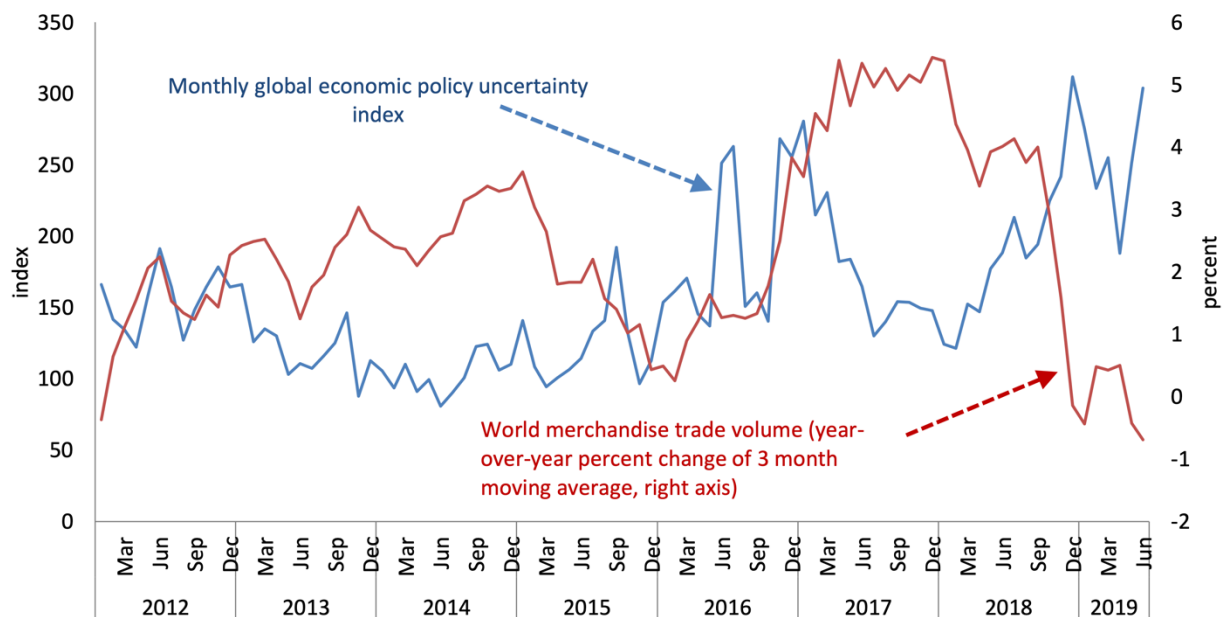


Figure 18: (CPB Netherlands Bureau of Economic Policy Analysis)

In keeping with the above, we can see the effect of tariff imposition on output growth, both on an immediate basis as well over a period of years. **Fig 19** shows the impact with one (1) STD and three (3) STD increase, with 1STD estimated to be around 3.6%. The findings suggest that tariffs have an adverse effect on output, with the negative impact both larger and more persistent over time. For example, after the second year, the residualized output growth is $-0.4/-0.8$ for one/three standard deviation(s) increases in tariffs, respectively. After four years, tariff increases are associated with an annual negative output growth of 1.5 percent when tariff increase is above three standard deviations.

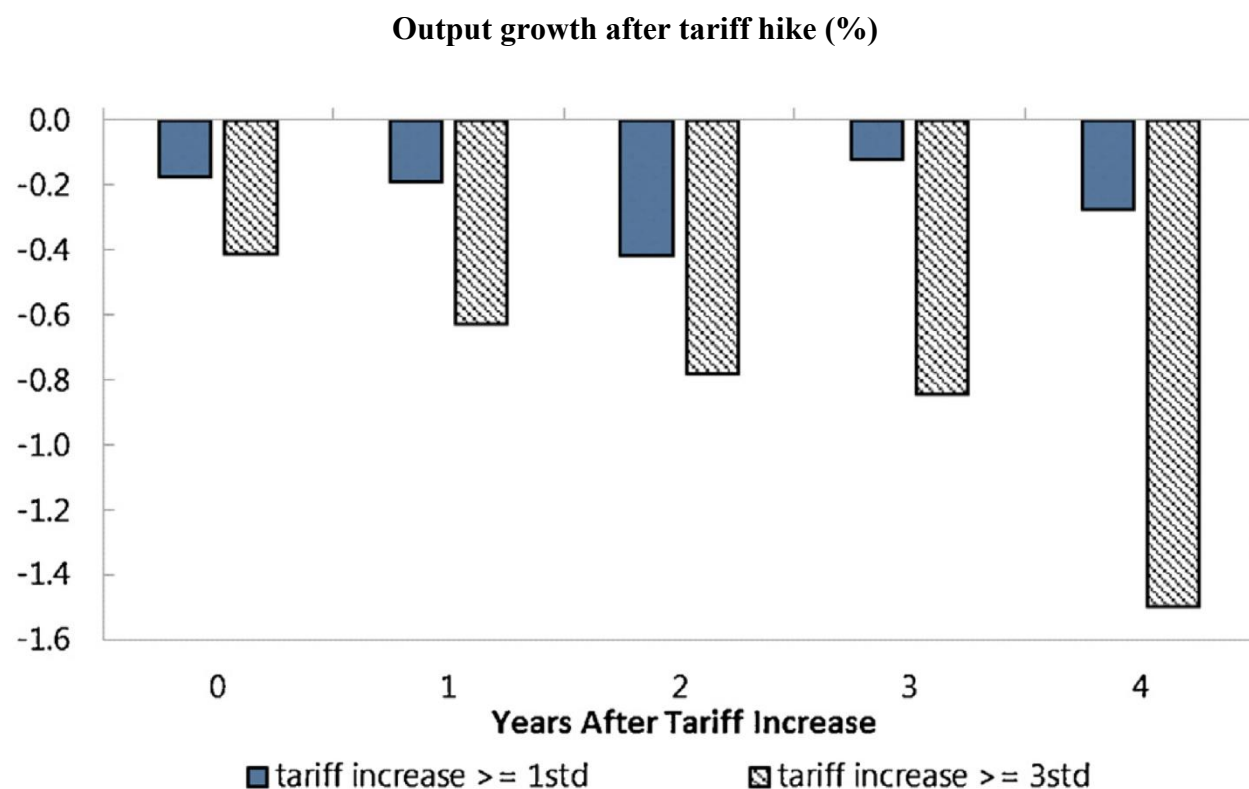


Figure 19: (Furceri et al., 2020)

Another model suggests that with a 1STD increase in tariffs, which is the equivalent of 3.6% approximately, the first-year impact is around a negative of 0.2% but that the negativity continues through time to about 0.4% per annum at year five. **Fig 20** below shows the results, with the asterisks representing that the results are with a 90% confidence interval. The empirical evidence on the growth effects of tariffs is based on using an annual panel of macroeconomic data for 151 countries over 1963–2014, and it clearly demonstrates the detrimental effect of tariffs on output growth, with the negative impact being a function of the tariff hike rate.

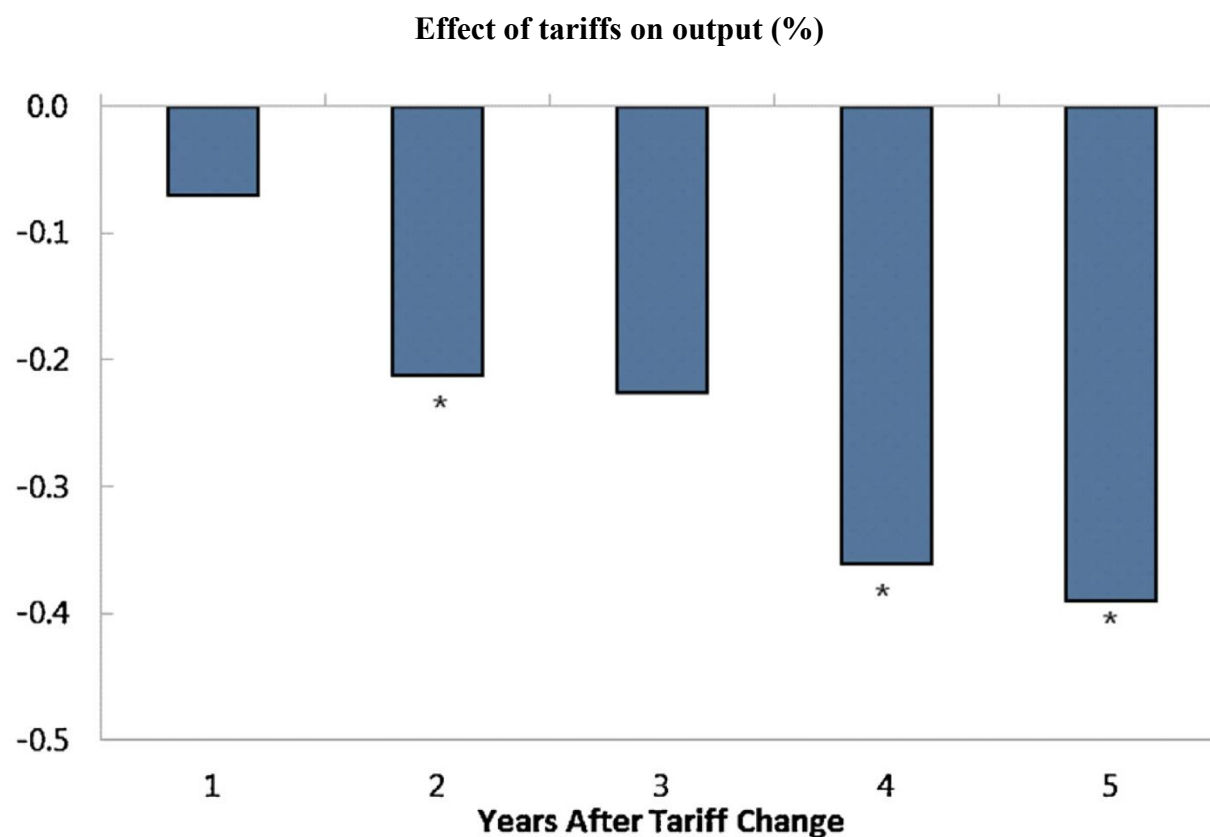


Figure 20: (Furceri et al., 2020)

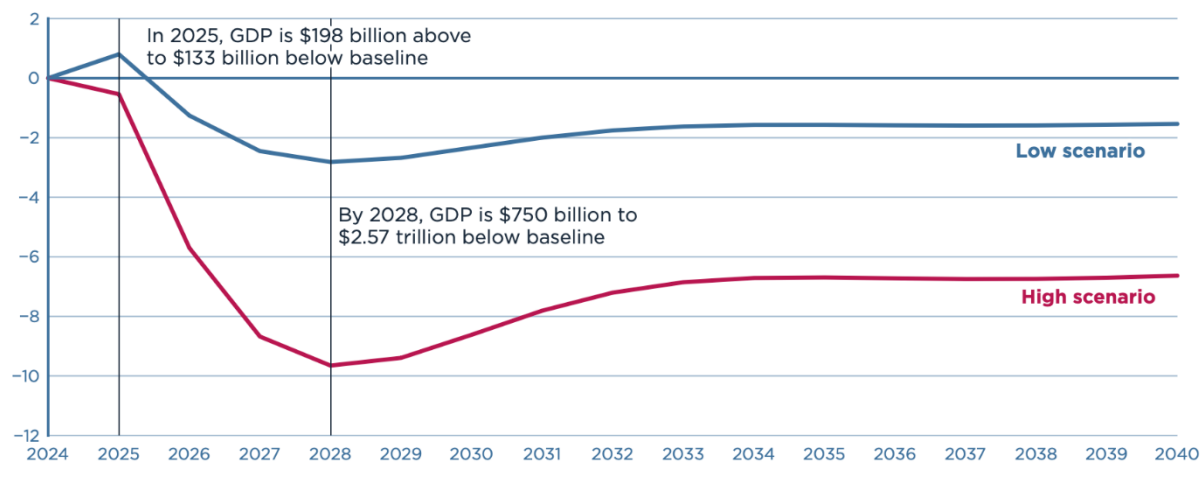
More currently, with the new administration and its professed policies, we are apprehensive about the impact it will have on the US economy and, by extension, on the global economy. Going back to the policy tools for a better America, there have been attacks on migrants and the threat to deport them on a massive scale; in addition, there has now already been pronouncements on tariffs, not just on the perceived adversaries but also on allies; then, there is the masked plan to recalibrate the Federal Reserve as an entity and, as such, nibble at its independence.

Figure 21 below shows the effect of the combined policies, if implemented, on the various economic metrics. The range of implementation can be seen to be the main driver in the intensity of the detriment (the gap between the red and the blue curves).

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Effect on US GDP with combined plans

Projected percent change from baseline for US real GDP under two scenarios, 2025–40



Notes: Labels show estimated change in 2018 dollar value based on model projections. High scenario is 8.3 million unauthorized workers deported; increases in tariffs on all US imports by an additional 10 percentage points and on US imports from China by an additional 60 percentage points, with retaliation by all trading partners, including China; and erosion of Fed independence. Low scenario includes the same tariff increases as high scenario but with no retaliation by other countries, 1.3 million unauthorized workers deported, and erosion of Fed independence.

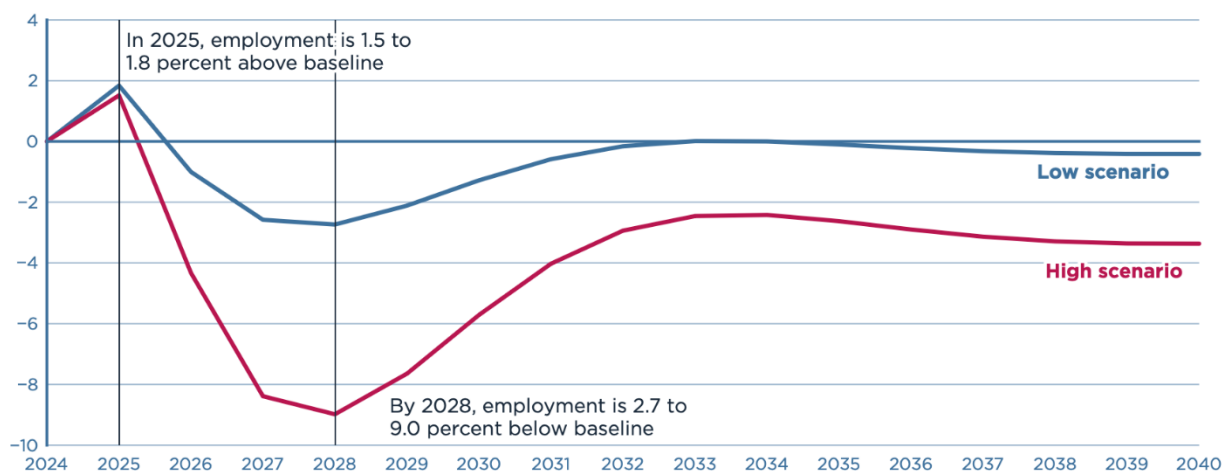


Figure 21: (McKibbin, Hogan, & Noland, 2020)

Let's now look at the impact of such policy set on total employment over a period. Fig 22 below demonstrates the results.

Effect on employment with combined plans

Projected percent change from baseline for US employment (hours worked) under two scenarios, 2025–40



Notes: High scenario is 8.3 million unauthorized workers deported; increases in tariffs on all US imports by an additional 10 percentage points and on US imports from China by an additional 60 percentage points, with retaliation by all trading partners, including China; and erosion of Fed independence. Low scenario includes the same tariff increases as high scenario but with no retaliation by other countries, 1.3 million unauthorized workers deported, and erosion of Fed independence.



Figure 22: (McKibbin, Hogan, & Noland, 2020)

On inflation, we have Fig 23 below signifying the adverse impact.

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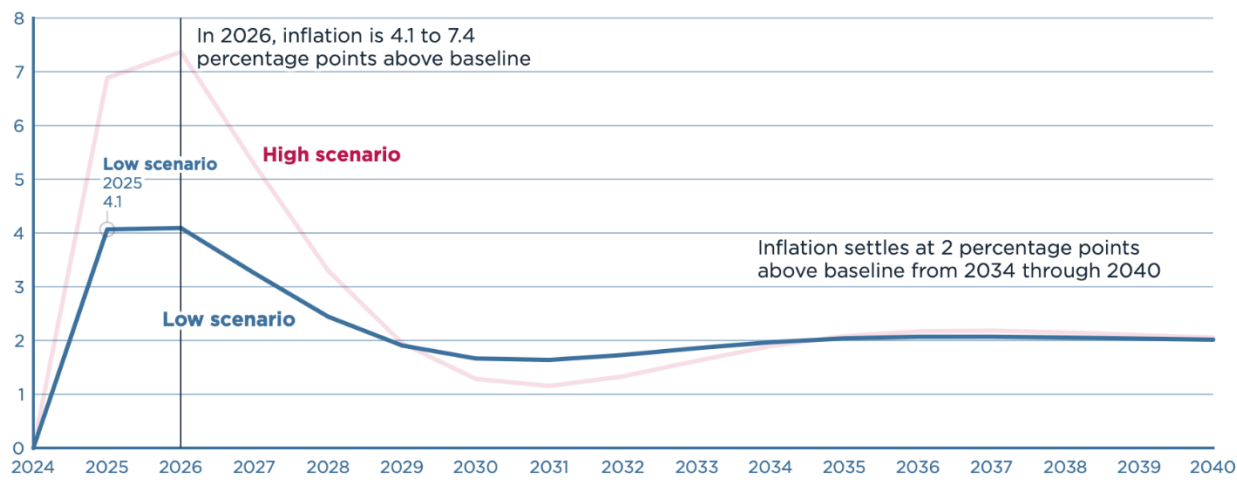
Summarily, based on the graphic representations above and below, here is what was found:

- US real GDP will be between 2.8 and 9.7 percent lower than baseline by the end of 2028. Though the GDP recovers later but remains relatively through 2040 (as in Fig 21).
- Employment increases at first but then falls and remains lower through 2040 than otherwise (as in Fig 22). Employment is between 2.7 and 9 percent below baseline by 2028, starting in 2026. It stays lower through the period.
- The US inflation rate climbs to between 4.1 and 7.4 percentage points higher than the baseline number by 2026, signifying peaks at between 6 and 9.3%. That means, on top of baseline inflation of 1.9 percent, inflation peaks then at between 6 and 9.3 percent. The inflation rate settles at 2 percentage points above baseline, or almost 4 percent, from 2034 through 2040 (as in Fig 23).

Effect on inflation with combined plans

Under Trump's combined plans, US inflation would climb more than 4 percentage points higher than otherwise by 2026

Projected percentage point change from baseline for US inflation under two scenarios, 2025–40



Notes: High scenario is 8.3 million unauthorized workers deported; increases in tariffs on all US imports by an additional 10 percentage points and on US imports from China by an additional 60 percentage points, with retaliation by all trading partners, including China; and erosion of Fed independence. Low scenario includes the same tariff increases as high scenario but with no retaliation by other countries, 1.3 million unauthorized workers deported, and erosion of Fed independence.



Figure 23: (McKibbin, Hogan, & Noland, 2020)

More recently, about the tariffs on neighbors, Mexico and Canada, which were later deferred, it is interesting to observe the extent of impact on both GDP and inflation in the three affected countries. The figures below show the results both with retaliation and without. We can see that the impact is much more severe with retaliation as then there is no end to the damage. Let it be remembered here that before the tariffs were temporarily withdrawn by the US, her neighbors to the south and the north had both retaliated with tariffs.

Fig 24 below shows the effect on GDP which is quite detrimental. The effect on GDP is particularly adverse in Mexico, especially with retaliation by the country. It shows the brittleness of the economy. And it also represents the reliance on trade. It's the same for inflation (Fig 25).

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Canada fares better but still has a much lower number than otherwise as does the US which is the least affected, both in terms of GDP and inflation, demonstrating the robustness of the country's economy and its vast consumer market and self-sufficiency. That said, let us also not lose sight of the fact that the US has comparatively low base numbers to begin with than Mexico.

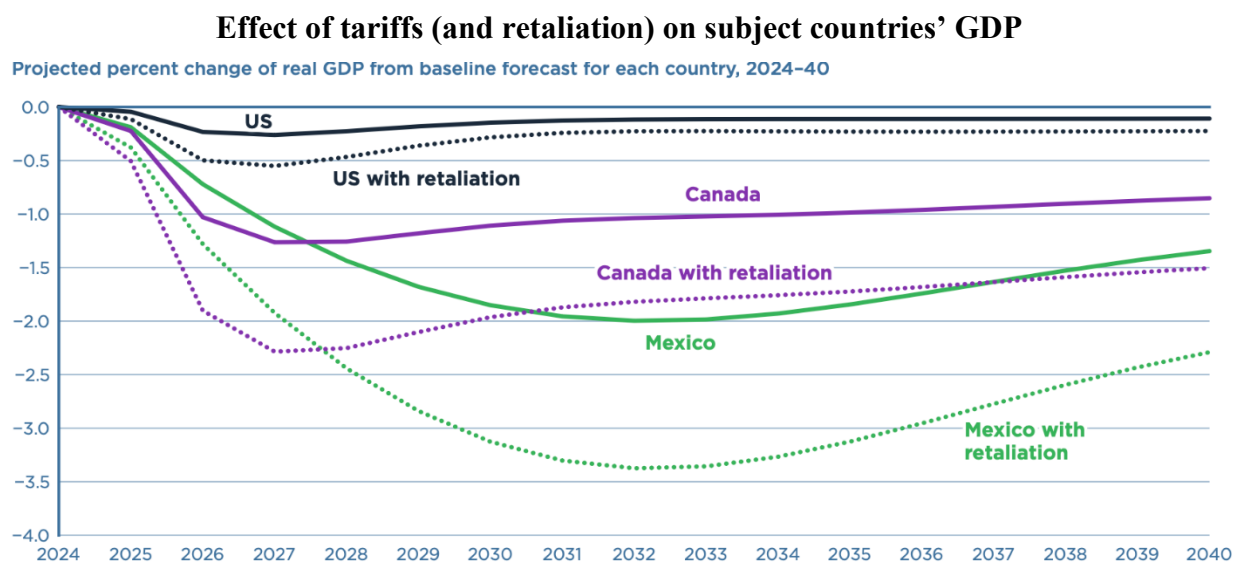


Figure 24: (McKibbin, Hogan, & Noland, 2020)

While the macroeconomic implications of tariffs often dominate policy discussions, their effects on small and medium-sized businesses (SMBs) present an equally critical challenge. Unlike large multinational corporations that can diversify supply chains and negotiate better pricing, SMBs typically operate on tighter margins and lack the leverage to mitigate cost increases. As highlighted by recent trade disputes, small businesses in sectors such as manufacturing, retail, and agriculture have faced higher input costs, pricing pressures, and declining competitiveness.

In Mexico, the imposition of 25% tariffs on key exports to the U.S. has had disproportionate effects on family-owned enterprises and manufacturers heavily reliant on cross-border trade. The uncertainty surrounding these tariffs has led some SMBs to explore alternative markets in Latin America, Europe, and Asia, though shifting trade relationships is neither quick nor inexpensive. Meanwhile, businesses have increasingly turned to automation and AI-driven procurement solutions as a way to manage supply chain volatility and reduce exposure to fluctuating tariffs.

As policy decisions continue to evolve, it is essential to consider SMB-focused mitigation strategies, including preferential financing, government-backed trade support programs, and digital trade facilitation. Without such measures, the long-term consequences of protectionist policies could extend beyond macroeconomic indicators, fundamentally altering the landscape for small businesses and employment across key industries.

Effect of tariffs (and retaliation) on subject countries' inflation

Projected percentage point change of inflation from baseline forecast for each country, 2024–40

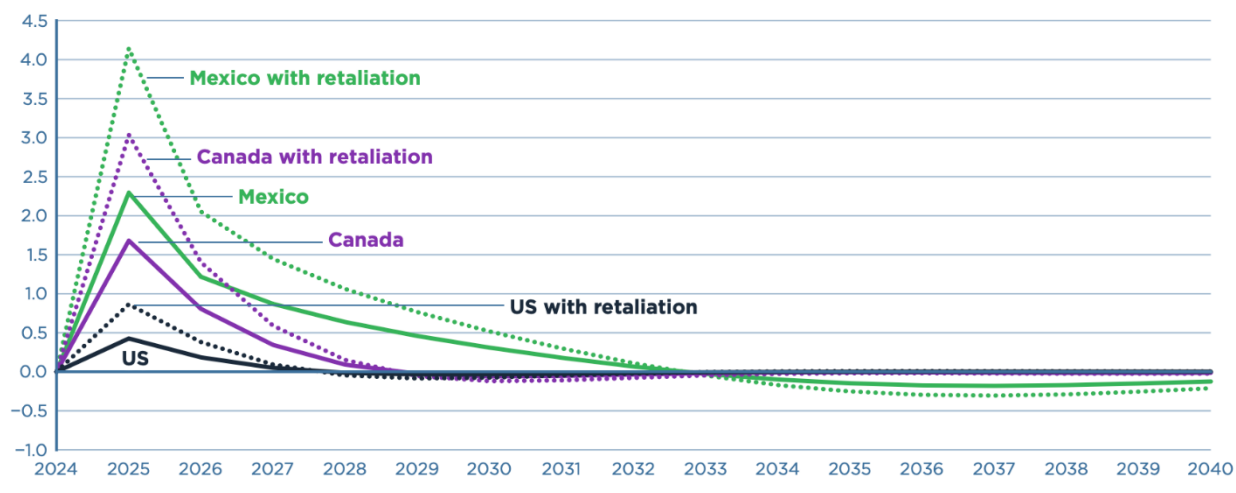
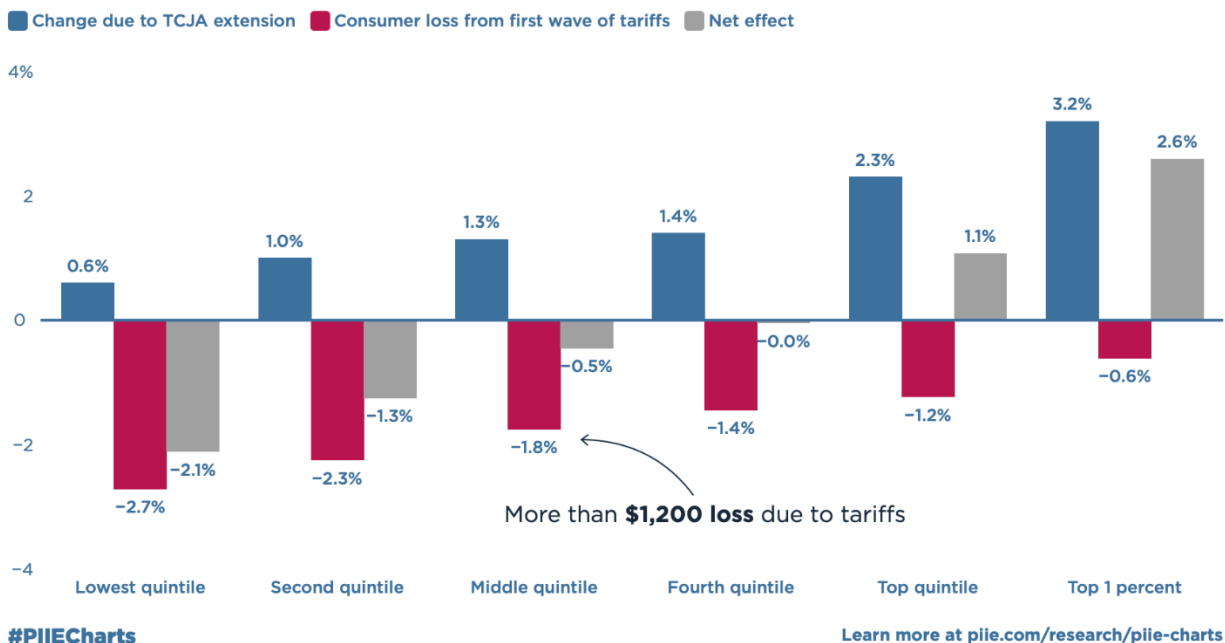


Figure 25: (McKibbin, Hogan, & Noland, 2020)

Going along in the same vein, now we can look at the income-groups most severely affected by such tariff increases. It is no surprise that those in the lower stratum of the society feel the most pinch. So, in effect, a tariff, especially when imposed arbitrarily and with no significant national security concerns, works like a regressive tax on the population. After all, the lower stratum of the society has a higher propensity to consume items that are like the subject of the tariffs. This is shown in **Fig 26** below where the median US household will be subject to a \$1,200 loss on annual basis. The figure is a net of the benefit from the lower taxes from 2017 proposed to be extended this year and the higher cost due to tariffs.

Effect on US median household of tariffs on Mexico, Canada, and China

Distribution of tax increases and reductions under Trump tariffs on Canada, Mexico, and China announced on Feb. 1, 2025 and TCJA extensions, percent change in after-tax income



TCJA = Tax Cuts and Jobs Act



Notes: The tariff estimates consider a 25 percent tariff for most goods from Canada and Mexico, a 10 percent tariff on Canadian energy imports, and an incremental 10 percent tariff on Chinese imports. The net effect bars show the combined net effect of the loss from proposed tariffs and the gain from TCJA extensions.

Figure 26: Tariff calculations are done using data from the Consumer Expenditure Survey (US Bureau of Labor Statistics) on consumption patterns, following the method of Clausing and Lovely (2024) and using data on incomes from the US Treasury.

If the tariffs on all the three countries were implemented in full, the sectors that would be impacted are represented in **Fig 27** below. These sectors are the most affected as they constitute a large proportion of the US total imports.

Sub-sectors impacted by latest tariffs, if implemented in full

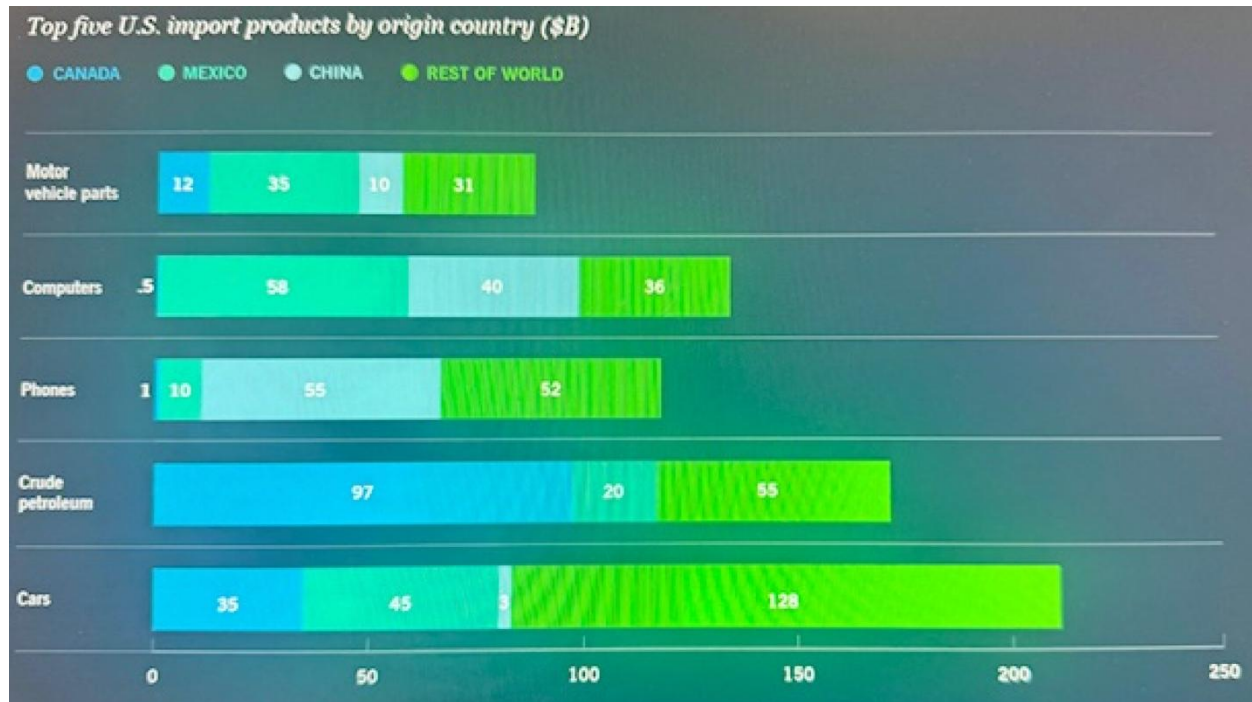


Figure 27: (Saira Malik, 202)

To achieve objectivity, let us also look at the actual impact of tariffs during the first term of Trump. We can see that inflation was not an issue then, as most measures remained stable during the start and the process of the trade war. **Fig 28** below shows that quite clearly.

Inflation during 2017-2020

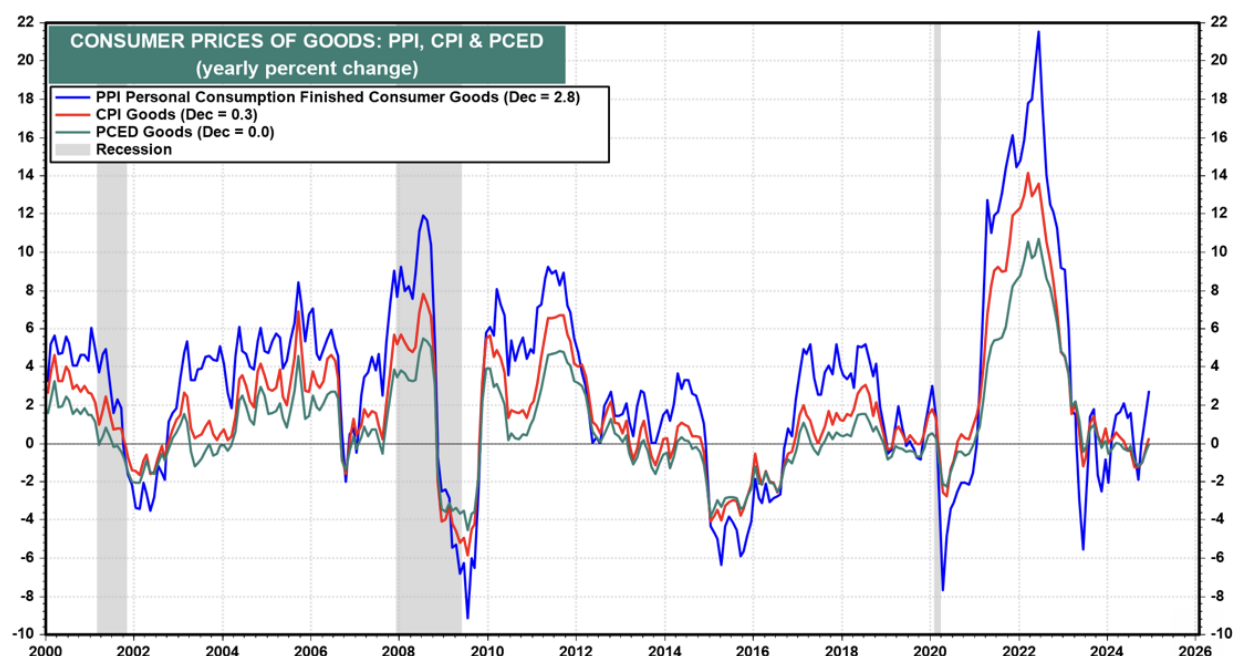


Figure 28: (LSEG DataStream and Yardeni Research, 2025)

In addition, both the Federal Reserve Bank NY Consumer Survey Inflation Expectations chart (Figure 28) and the Treasury Break-even Inflation picture (Figure 29) show a muted outlook.

Inflation Expectations

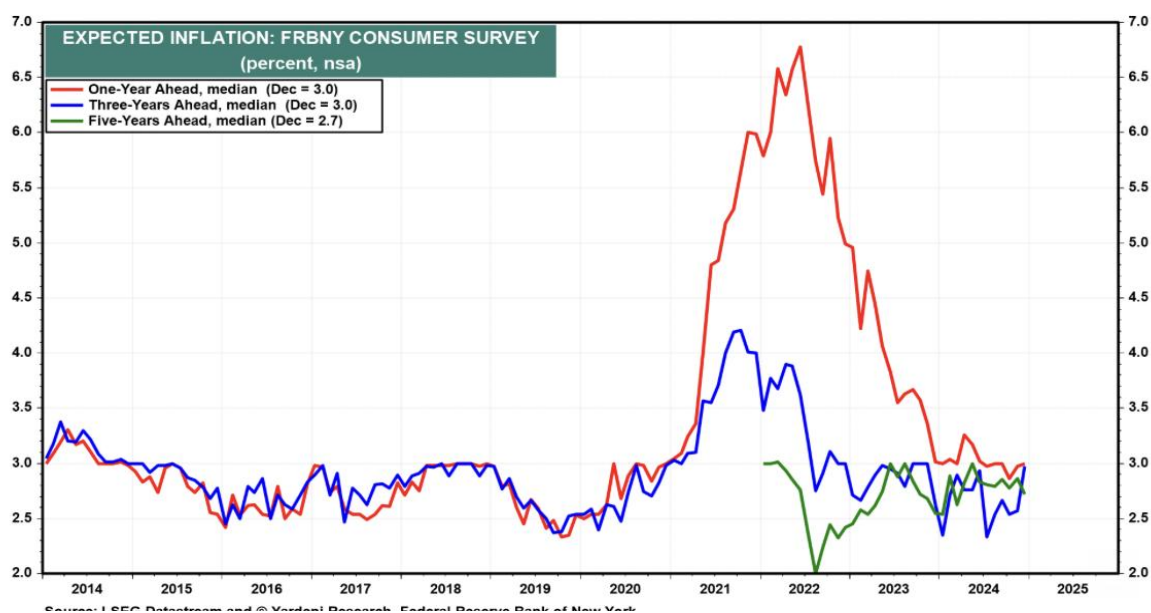


Figure 29: (LSEG DataStream and Yardeni Research, 2025, FRBNY)

Treasury Break-even Inflation Expectation

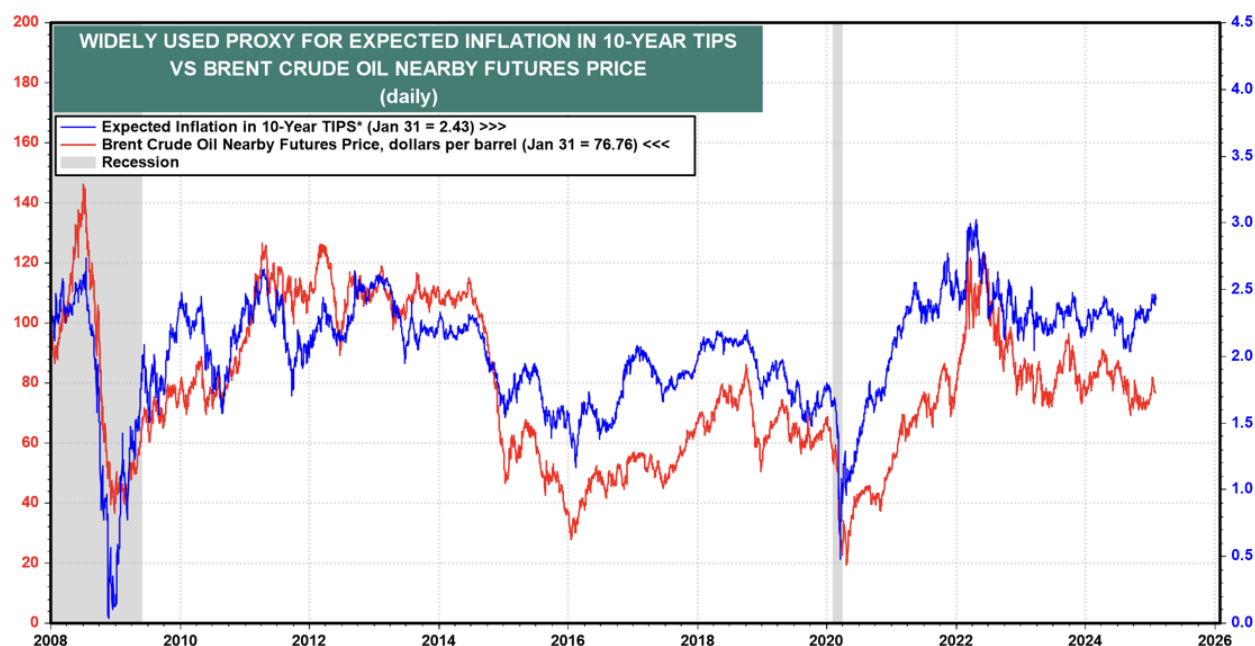


Figure 30: (LSEG DataStream and Yardeni Research, 2025)

While the above two charts do not flash a warning signal, let it also not escape us that the period of 2017 was much different from now. The economy was then still not as robust as it is now; policymakers were more concerned about deflation than about inflation; immigration was more free flowing; fiscal conditions were relatively tight, and monetary policy was loose as well, as opposed to neutral today. Additionally, given the ugly stint of inflation the last couple of years, consumers are wary of even a slight uptick in the measure, further constricting the margin of error.

The ***social and political implications*** from the great drive toward globalization in the last few decades are important to understand. There is extensive literature on the subject. The rise of populism around the globe has been closely connected to protectionism, either as a stunt for politicians to stand on or as a natural corollary to globalization and free trade, especially since China's entry into WTO in 2001.

We see populism growing globally for some time now but it has been on a precipitous rise in the last 25 years, coinciding with the time of China being admitted to WTO. **Fig 30** below shows that quite clearly. Going further on the subject, we also see how capital-account liberalization and trade interdependence, gauged by the Chin-ito index, can lead to financial openness with its detrimental impact on the labor share of income. **Fig 32** represents the advantage to the high income earners Vs. the labor class, and this largely explains the marginalization felt by the latter. There is little doubt that inequality has increased in the last several years.

The rise of populism

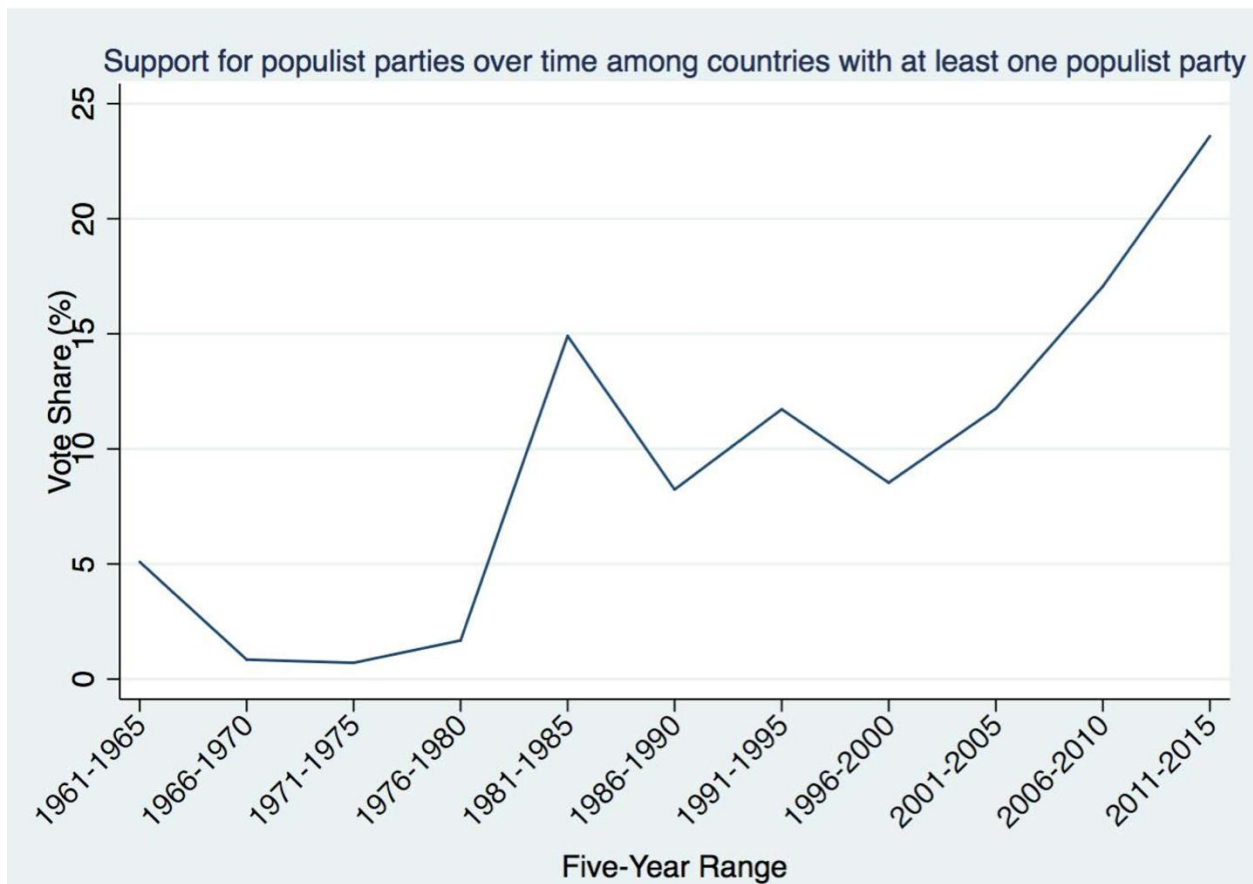


Figure 31: Dawn Brancati, “Global Elections Database,” Technical report, New York: Global Elections Database. URL <http://www.globalelectionsdatabase.com> and Ken Kollman, Allen Hicken, Daniele Caramani, David Backer, and David Lublin, *Constituency-Level Elections Archive*, technical report, Produced and distributed by Ann Arbor, MI: Center for Political Studies, University of Michigan, 2016.

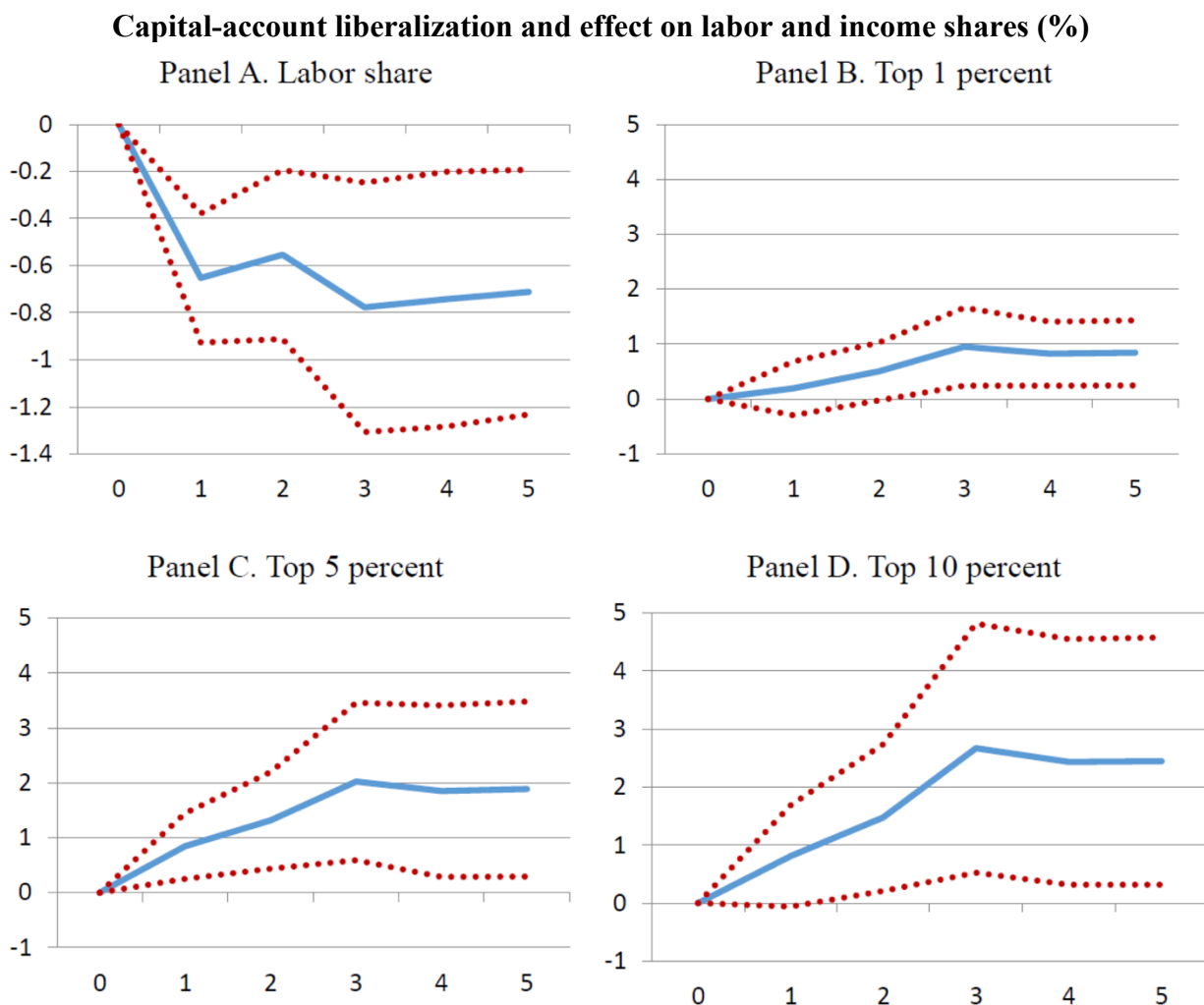


Figure 32: Furceri, et al (2017); https://www.nber.org/system/files/working_papers/w23559/w23559.pdf

In a world as dynamic as today's, it is not hard to see the labor market changing in terms of its characteristics. With technology advancing and the economy becoming more sophisticated - and automated - the demand for education has gained more significance. We can infer that there is growing inequality; however, what we cannot conclude is that it is purely globalization or trade that is responsible. **Figure 33** shows that education level stands out as a determining factor in the growth, or otherwise, of wages.

While inequality is so often ascribed to trade or globalization only, we see that those who have an advanced degree experienced a rise in real wages relative to those with just a college degree earning about the same; those who did not have at least a college-level education lost out in terms of real wages.

Productivity improvements require CAPEX and human capital investment; CAPEX implies technological outlay so that more can be produced per man hour; it has the potential of displacing workers with either automation or a complete recalibration of the assembly line.

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Table 2 reflects the impact of productivity improvement and trade on job losses, and the evidence shows a far higher loss associated with productivity than with trade.

Education level and wages of US Working Age Males

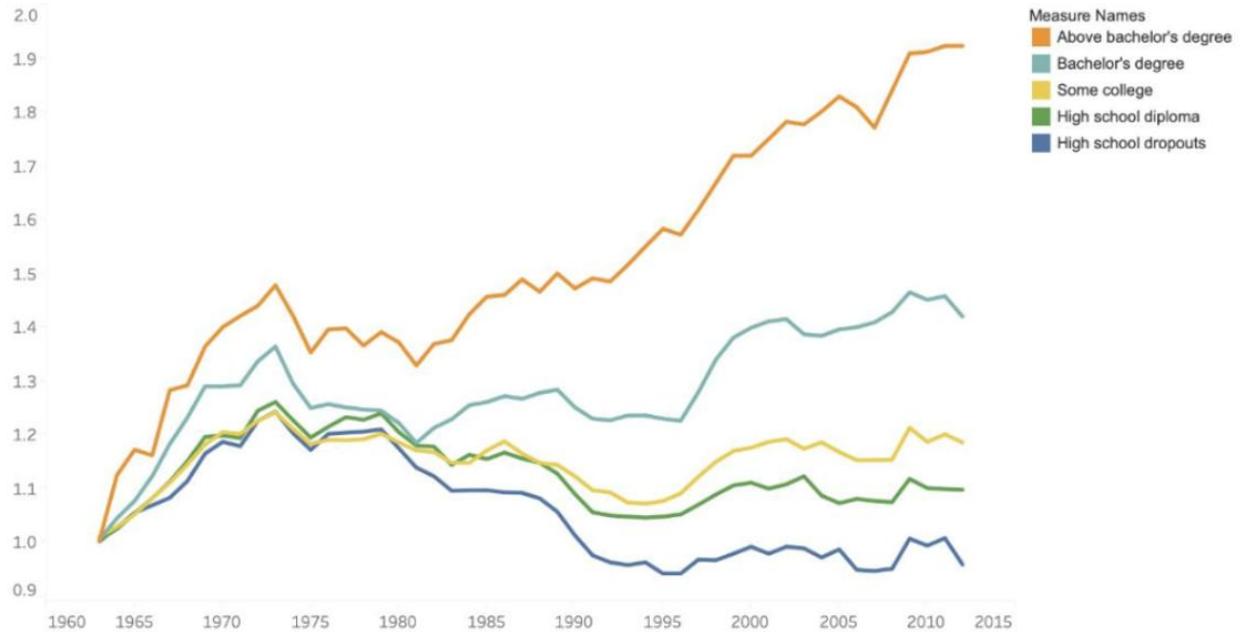


Figure 33: The Economic Consequences of Globalization in the United States; Petri, Manga, January 2020; US Current Population Survey

Trade and Productivity Effects in Manufacturing

Sector	Production change per worker	Actual job losses	Job losses due to trade	Job losses due to productivity	Job gains due to demand
All manufacturing	67.5%	5,647,700	13.4%	87.8%	1.2%
Durable goods manufacturing	82.9%	3,737,200	12.3%	88.2%	0.5%
Wood products	47.0%	274,900	14.4%	81.9%	−3.6%
Non-metallic mineral products	6.5%	177,000	12.8%	90.4%	3.2%
Primary metals	39.1%	248,500	−3.3%	76.7%	−26.7%
Fabricated metal products	8.9%	478,200	6.9%	97.7%	4.5%
Machinery	39.9%	447,400	0.8%	99.6%	0.4%
Computer and electronic products	350.3%	694	18.8%	117.7%	36.5%
Electrical equipment, appliances, and components	57.3%	233,700	19.0%	88.1%	7.1%

Table 2: The Economic Consequences of Globalization in the United States; Petri, Manga, January 2020; US Census Bureau

Limitations and Future Research:

While this paper attempts to bring to fore a holistic overview of tariffs and the various forms of protectionism, including stringent immigration policy, there is an inherent sense of there being much left to be desired. One, we have relied on secondary sources that may involuntarily bring biases, tainted by the currency of the economic landscape and political stand. Furthermore, the effect of tariffs can vary significantly across different sectors and economies, and this paper may not have incorporated all the nuances.

We would, the in the future, like to go even longer-term in terms of the implications of tariffs on output growth, unemployment, and inflation, not to mention the bilateral, or multilateral, trade relations. We can also, given resource limitations, seek first-hand views of major stakeholders, including, but not limited to, consumers, policymakers and political leaders. Finally, do digital forms of trade change the tariff landscape? That's a question that will be on top of mind when next studying the topic.

Conclusion:

We have explored the effect of tariffs and other forms of protectionism on the global macro economy with a multifaceted approach, revealing sufficient evidence that such policies – when implemented without regard to the nuances – cause damage to the subject parties at least on a short- to medium-term basis. Tariffs, historically, were used for protection of indigenous production and as a response to external shock, and not implemented on a persistent basis which can lead to outcomes unfavorable to the very reason that they were originally thought of.

In terms of the effect of tariffs on the different sectors, we can see in **Fig 1** the benefit of higher growth in industries with above median input tariff cut. In the same vein, we also see how tariffs can be a reason for higher consumer prices as in **Fig 3** which shows a precipitous relative increase in prices of major appliances following the imposition of tariffs during the 2017/18 trade war.

Similarly, we see the impact of tariffs on import prices during each of the waves of tariffs in affected industries versus those that were left untreated (or not subjected to tariffs). We do see a clear spike in **Fig 4** as we see a reduction in import values given the same scenario in **Fig 5**.

Since the imposition of tariffs on China, taking the second largest global economy as a case in point, the US has seen a shift in the trade of goods to other countries from China, as evident in **Fig 16**; we see the same dynamic with China's share of trade relative to the US in **Fig 17**.

Economic Policy Uncertainty (EPU) leads to trade uncertainty and a reduction in trade volume. We can see the effect of it on global trade volume in **Fig 18**, amply demonstrating the inverse relationship.

The above encapsulates the main takeaways from the paper itself, based on which we conclude that tariffs beget tariffs and other forms of protectionism. There is also disruption of supply chains as goods trade shift to and away from regions. And there is evidence of inflationary environment created with these tariffs as someone ends up paying and the end-consumer feels the pinch as import volumes also decrease, creating further pressure on prices. On a broad-spectrum basis, while there may be temporary benefit to nascent industries, the effects are more detrimental, such as higher input costs and consequently consumer prices, lower efficiency levels, and then the damage in terms of retaliation which is a negative both qualitatively and quantitatively. All this has a profound effect on economic growth which has also been brought out in this paper.

We do wish to point out that while the inflationary pressures were muted during the 2017-2019 trade war, the macroeconomic environment was completely different. Inflation then was not a concern as policymakers were more focused on avoiding deflation. The economic strength of the economy today far exceeds the macro fiber of the state of the affairs then. Consumers have just been through the worst stint of inflation in almost 50 years and are fed up with it. As such, the margin of error, based on the preceding, is rather thin. There is a high chance of inflation raising its ugly head yet again as we do see its persistence in certain sectors, and it is not within the comfort range of the Federal Reserve.

The paper has also delved in to the social implications from a historical perspective. We have seen political populism – both left- and right-wing – on the rise in the last quarter of a century, and more

so since the GFC (Great Financial Crisis). This has made the global macroeconomic landscape more complex and, in some cases, self-defeating in objectives. Unfortunately, most of the bases on which populism is founded lacks credible evidence. There is assumption of global trade being the culprit for job losses. While we do see some displacement of jobs in industries which have been outsourced for relative efficiency reasons, **Table 2** demonstrates that it is technological development, hence productivity, that is more responsible for job losses than global trade. Furthermore, we note the dreadful potential to exacerbate income inequality (**Fig 32**) from the lack of investment in education and other societal aspects, leading to populist movements as political stunts (**Fig 31**). In keeping with the preceding, **Fig 33** shows us the value of education in maintaining job levels.

Politicians will do well realizing that such populist policies are anti-growth and almost imperialistic if used incessantly as a sanction by a superpower. It is more important and beneficial to foster an economic environment in the world that is based on fair competition, where tariffs are used for strategic purposes of protecting upcoming domestic industries and for preserving national security. It is also more important to invest in one's people, and reinvent them to take on newer jobs that evolve as technology advances and as positions get displaced due to other reasons. If government focused on this, there would hardly be any need to raise populist undertones trying to echo people's miseries. Nothing succeeds like success, and success comes with self-introspection and continuous improvement, a la *Kaizen*.

We most certainly are of the viewpoint that as the global economy unfolds, as it does being a dynamic process, more, and not less, mutual cooperation is imperative. That is the sole path forward to a robust global macroeconomy.

In conclusion, the study does see the policy devolving into a negative-sum game.

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