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About the Guest Editor: Prof. Dr. Badar Alam Iqbal

Emeritus Professor Badar Alam Iqbal; Ph.D. & DBA; M. Com; DSW; B.A. [Hons] Economics. had been the DAAD, Fellow at German Institute of Economic Research; Berlin, Kiel Institute of World Economics; Kiel, South Asia Institute, University of Heidelberg; Germany; Ford Foundation, American Research Center USA; Fulbright Visiting Professor; USA; Institute of Developing Economies; Tokyo; Former Fulbright scholar-in-Residence (SIR) 2004-05 at School of Business; Claflin University; South Carolina, USA. In 2016-17, the Fulbright Commission Washington was again nominated for Scholar-in-residence (SIR) at School of Business; Kentucky State University; USA.

Now Dr. Iqbal is Emeritus Professor; External-Relation- Chair of Research; at Federic Bastiat Institute for African Research; Ghana. Adjunct Professor; Faculty of Economics and Finance; Monarch University; Switzerland; Visiting Professor at University of Rennes1; France; University of South Africa; Pretoria; Former Extra Ordinary Professor, School of Economic Sciences; North-West University; South Africa; Visiting Professor of Research; Vaal University of Technology; South Africa; International Islamic University Malaysia. In 2021, 2022, the Vice Chancellors of the three leading South African Universities [University of South Africa; Tshwane University of Technology; Walter Sisulu University and Stellenbosch University] have appointed Prof. Badar Iqbal as an Extraordinary Professor at their respective universities. Recently, The Southern African Policy and Development Nexus; has appointed Prof. Iqbal as a Senior Research Associate. Prof. Iqbal has also served as Non-Resident Distinguished Fellow at Turkish Center for Asia Pacific Studies; Ankara Turky.

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Editorial. Trump's Tariff War: Impacts and Implications for World Trade and the Global Economy

Guest Editor: Prof. Dr. Badar Alam Iqbal
Monarch Business School, Switzerland
dr.badar@umoarch-email.ch

The States President Donald Trump's aggressive tariffs regime towards world major economies have resulted in a mixed bag of economic outcomes across the regions. Due to the Trump's announcement, the US economy Squeezed by 0.3 per cent during quarter 1 of 2025, resulting into the first decline in last three years, Similarly, China's factory operation goes down to a 16-month low, while Taiwan's GDP surged 5.4 per cent on pre-tariff tech exports. Europe saw 0.4 per cent growth before tariffs hit and Canada is on track to miss GDP estimates. From the US and Europe to China and Taiwan, the repercussions of his aggressive trade policies are visible in everything from factory output to GDP forecasts.

The main logic given by Trump administration for the sweeping tariff policy is to restore balance to USA's trade relations with major trading partners and protect US industries. But the reality is somewhat different. When analysed the available economic data, trends and situation revealed a far more imbalanced scenario across regions of the world. Trade experts are of then firm opinion that sweeping rise in US tariff in 2025 are impacting in a big way the world trade. Added to this, the increase in existing tariffs may distort output patterns and also may lead to a sharp reconfiguration of world value chains, resulting in a less efficient and more opaque trade system.

Emerging Observations

In February and March 2025, the rise in tariff has impacted imports from Canada, Mexico, and China especially steel and aluminium and cars. It is believed that the US sweeping so-called "reciprocal" tariffs are affecting most of its trade partners. The structure of these new measures, rather than being driven by actual discrepancies between US tariffs and those imposed by trade partners, is instead guided by the ratio of trade deficits to imports, with a minimum increase of 10 percentage points – far exceeding market expectations (Baldwin and Barba Navaretti 2025, Evenett and Fritz 2025).

Southeast Asian countries namely - Vietnam, Indonesia, and Malaysia are among the most seriously affected. Similarly for the EU, the announced tariffs would raise the effective tariff rate to around 17per cent, up from below per cent before the beginning of Trump's second term. China's initial retaliation to the US' announcement triggered a tit-for-tat escalation of symmetric tariff hikes, which led the two countries to reach a bilateral tariff rate of around 12 per cent (Francesco *et al.* May 2025).

Understanding the implications of sweeping tariff measures does require a clear-cut view of the tariff landscape prior to President Trump's second term. Yet accurately measuring applied tariffs remains a challenge (Caliendo *et al.* 2023, Teti 2024). To overcome the limitations of the widely used WITS database – particularly its omission of tariffs imposed through trade disputes – we use as a starting point the 2019 CEPII MAcMap-HS6 database (Guimbard *et al.* 2012) and incorporate detailed data on tariff escalation between the US and China during Trump's first term (Fajgelbaum *et al.* 2024), as well as tariff reductions granted under Biden's term. As a matter of fact, the new tariffs measures are certainly higher than that to be required to achieve genuine reciprocity.

Keeping in mind, the magnitude is exceptionally high even by historical parameters – the new tariffs may have far reaching effects on macroeconomic aggregates, trade patterns, and the structure of global value chains (GVCs). Based on the available database there could be three possible scenarios to examine the potential impact of the 2025 measures on global trade and economy.

First there is a mild scenario involving the February and March2025 measures, the observed tariff escalation with China, and the suspension of the reciprocal tariffs announced on 2 April. In this 'status quo' scenario, we also include the retaliation implemented by China and Canada. The 'full' scenario, instead, assumes no suspension of the 2 April tariffs, combined with the extension of tariffs to pharmaceuticals and electronics, as already announced. We assume that these products will face tariff increases in line with those previously imposed on steel, aluminium, and cars – *i.e.* a 25-percentage point hike (Francesco *et al*. May 2025).

Lastly, we also evaluate the possibility that affected countries retaliate by matching US tariff increases at the sector level ('full + retaliation').

With these given observations, it has become imperative that academicians and experts should be invited to study the emerging issues in in-depth, intensively, and extensively in terms of impacts, implications and bring out the possible solutions to minimise the effects on global trade and economy. This has been possible in the form of the Special Issue.

The special issue which is in hand; has seen the light of the day, with enormous interest shown by the contributors. The special issue has covered the significant issues which are directly and indirectly related to the global tradeand global economy.

These papers have been provided the intensive; extensive and the needed in-depth knowledge on the topic. The special issue will prove to be an asset for the academician, policy thinker, and administrative people.

In completing the special issue many people and organization have extended the needed support. First, the contributors are grateful to accept the invitation for contributing well developed and documente papersd. Second, the reviewers who have spared their valuable time in reviewing the papers on voluntary basis and shortest possible period. Third, the Editor in Chief of the journal PhD Laura Ungureanu; without her sustained help and efforts the special issue could not have been possible. Lastly, the publisher of the journal, who has taken the keen interest and the responsibility of publishing the volume in given period.

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Sino-European Relations During Donald Trump's Second Term

Sebastien Goulard
Cooperans, Paris, France
ORCID: 0000-0001-9221-9736
s.goulard@cooperans.com

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Abstract: The United States' tariff threats - and their subsequent enforcement - have ramifications that extend well beyond bilateral trade relations. They disrupt the global trading system as a whole. During his second term, President Donald Trump planned to extend new tariffs to the world's two other major trading blocs: China and the European Union. These two powers, already embroiled in mutual trade tensions, had imposed tariffs on selected goods from one another. In this context, a key question arises: to what extent has the U.S.-driven trade war influenced the course of Sino-European trade negotiations? Has it compelled both parties to reassess their strategies and move toward closer coordination? By examining the decisions taken by China and the EU, especially in comparison to the positions adopted during Trump's first term, we observe a notable hardening of positions on several fronts.

Both actors, though long-time advocates of free trade, have shifted away from this principle under increasing geopolitical and economic pressure. While U.S. influence partly explains the EU's firmer stance toward China, the trend reflects a deeper and more enduring transformation in Sino-European trade relations.

Keywords: China; European Union; trade policy; protectionism; geopolitics.

JEL Classification: F12; F14; F51; F62.

Introduction

Reducing the U.S. trade deficit has become the central objective of the trade policy pursued by the second Trump administration. Since April 2, 2025 - designated "Liberation Day" by Donald Trump - the United States has adopted an overtly protectionist trade agenda that is reshaping the global economic order and destabilizing international trade. During his first term, Trump had already waged a trade war against China and engaged in confrontations with other major trading partners, including the European Union as well as Canada and Mexico, members of the North American Free Trade Agreement (NAFTA). This earlier wave of protectionism disrupted global supply chains and marked a turning point in the worldwide resurgence of economic nationalism.

The second Trump administration's trade policy is broader and more ambitious in scope, targeting nearly ninety countries. On April 5, 2025, the United States imposed a universal 10% tariff on all imports - a measure that President Trump described as a "reciprocal tariff," justified by the alleged non-tariff barriers faced by American firms abroad. This sweeping policy has prompted major global economies to seek closer engagement with Washington in the hope of securing new trade agreements and restoring a measure of stability in their exchanges with the world's largest economy. In August 2025, the European Union and the United States concluded an "Agreement on Reciprocal, Fair, and Balanced Trade," which, despite its title, appeared rather one-sided: it established 15% tariffs on European goods while leaving American exports to Europe untaxed.

In China's case, negotiations have proved more protracted. As the primary target of the Trump administration's new trade doctrine - largely due to the sizeable U.S. trade deficit with China, which reached 295.5 billion dollars in 2024 - Beijing faced an escalating series of tariffs between April and May 2025, peaking at 135% on Chinese imports before a truce was declared on May 12. Talks between the two economic powers have continued since. However, the Chinese Ministry of Commerce's decision on October 9, 2025, to expand an export

licensing system for most rare earth elements - a sector in which China dominates the global market - reignited tariff threats from Washington.

This article examines the potential consequences of U.S. trade policy toward the European Union and China for Sino-European relations since April 5, 2025. Has American protectionism deepened the rift between China and the European Union, whose relations had already deteriorated since 2021? Or, conversely, can signs of coordination between Brussels and Beijing be discerned, aimed at mitigating - or even exploiting - the effects of U.S. protectionism? The central question our analysis seeks to answer is therefore the following: how might the China - United States - European Union triangle evolve during Donald Trump's second term? While Sino-American relations have been extensively scrutinized by scholars and the international media, the implications of these developments for the European Union - nonetheless the world's third-largest economic power - have received comparatively little attention. The hardening of U.S. trade policy has undeniably sharpened tensions between China and the EU; yet these tensions cannot be explained solely by Trump's brand of protectionism but must also be understood in the light of broader geopolitical dynamics.

1. Literature Review

The impact of protectionist measures on global trade has been extensively examined in academic literature. Economic historians such as Findlay and O'Rourke (2009) have shown that the surge of protectionism in the 1930s led to a significant slowdown in global growth. There is now broad consensus regarding the detrimental consequences of protectionist policies for the world economy - a point regularly emphasized by the International Monetary Fund, whose economists consider such measures to be counterproductive (Cherif and Hasanov, 2024). Nevertheless, recent years have witnessed a growing challenge to the principles of free trade (Chenou, Leiteritz and Urrego-Sandoval, 2025), potentially signaling the end of globalization as we have known it (Papadimitriou, Yajima and Zezza, 2025).

From a historical perspective, however, protectionism is far from a novel feature of U.S. economic policy. As Philippe Barbet (2025) observes, "Trumpian protectionism" stands within a long American tradition traceable to President William McKinley (1843–1901), who likewise raised tariffs in the name of national economic interest. Similarly, in the 1930s, in response to the prevailing protectionist climate, the United States again increased its tariffs. It was only in the aftermath of the Second World War that Washington began to advocate, on the international stage, for the removal of tariff and non-tariff barriers in order to facilitate the global expansion of American business. Yet, beginning in the 1970s, the United States returned to a more defensive trade posture in response to Japan's rapid economic ascent - particularly the surge of Japanese automobile exports to the American market (Nelson, 1996).

The transatlantic trade dispute between the European manufacturer Airbus and the American firm Boeing (McCrohan, 1983) further illustrated this persistent tendency toward reciprocal protectionism, a pattern that continued well into the twenty-first century. The trade policy pursued by the second Trump administration thus represents not a rupture, but rather an intensification of a long-standing dynamic that had already begun during his first term.

The first U.S. - China trade war, initiated in 2018 and partially suspended under President Joe Biden through the "Phase One Trade Deal," has been the subject of extensive analysis (Fajgelbaum and Khandelwal, 2022). Scholars have examined its effects on the global economy (Itakura, 2019), on wages (Guo, *et al.* 2018), and on technological transfers (Liu & Woo, 2018). As the world's two largest economies, the United States and China exert profound spillover effects on third countries, and the conflict prompted shifts in global production chains. U.S. tariffs on Chinese goods indirectly benefited other economies such as Vietnam (Choi and Nguyen, 2023), whose exports became more competitive on the international market (Fajgelbaum *et al.* 2024). This first trade war arguably deepened global divisions and accelerated a process of economic decoupling between Chinese and American firms, raising the prospect of a world divided into rival economic blocs (Kwan, 2019).

Yet Europe's position within this emerging U.S. - China rivalry remains underexplored. Although some studies suggest that the European Union may have benefited in the short term from the U.S.- China trade conflict (Dang, Krishna and Zhao, 2023), the long-term implications for the EU's strategic autonomy and global competitiveness are less clear. Moreover, relations between China and the European Union have been deteriorating for several years - independently of the U.S.–China trade war. The European Commission's designation of China as a "systemic rival" in March 2019 (European Commission, 2019) marked a turning point in Sino-European relations and signaled the end of a period of relative European naivety toward Beijing's global ambitions.

2. Methodology

The analysis presented in this article is based on a qualitative approach drawing upon both primary and secondary sources to assess the impact of U.S. trade policy on Sino-European relations since April 5, 2025. Our objective is to intersect economic and geopolitical dynamics in order to better understand how the protectionist agenda of the second Trump administration has directly or indirectly shaped the respective positions of Beijing and Brussels.

Primary sources include official statements and press releases issued by the European Commission and China's Ministry of Commerce, as well as the main trade agreements concluded or proposed between April and October 2025. These documents provide valuable insights into each actor's stated priorities and negotiating strategies. In parallel, the article conducts a comparative analysis of European and Chinese responses to U.S. trade policy, highlighting convergences and divergences in their strategic orientations.

Finally, this study adopts both a contextual and forward-looking perspective, situating current developments within the broader trajectory of deteriorating Sino-European relations observed since 2021.

3. Research Results

3.1 Europe's Openness to Coordination with China

The European position has primarily been one of coordination with China in response to U.S. tariffs: both Brussels and Beijing seek to maintain stability and avoid unnerving global markets. In the days following President Trump's announcement of new tariffs, stock markets experienced heightened volatility. On April 7, European Commission President Ursula von der Leyen and Chinese Premier Li Qian discussed the situation, issuing a joint statement emphasizing the importance of predictability in the global economy and the need to de-escalate tensions. This conciliatory approach did not prevent the European Commission President from urging China to provide greater market access for European companies (European Commission, 2025a).

The issue of trade barriers and tariffs was also addressed during the 25th EU - China Summit, held in Beijing on July 24, 2025. The European side emphasized the need for "fairness" and equity in Sino-European trade, while both parties committed to preserving multilateralism and deepening dialogue. Despite these more consensual declarations compared to the often-tense Sino-American meetings, the substantive topics remained largely the same: tariffs on European and Chinese products and access to rare earths. While both the EU and China face U.S. tariffs, Europe also remains concerned about China's strategic export restrictions.

3.2 The Rare Earths Question

Like the United States, the European Union confronts Chinese-imposed restrictions on rare earth elements. China controls 70% of global rare earth extraction and 85% of global refining capacity. These elements are essential for artificial intelligence and the energy transition (Depraiter and Goutte, 2023). In contrast to China, the EU possesses no domestic rare earth resources (Kim *et al.* 2025) and is thus heavily dependent on Chinese supply.

In early April, Beijing announced the implementation of export controls on certain rare earth elements, with five additional elements added to the restricted list in October 2025. Chinese companies wishing to export rare earths must now obtain a license. Furthermore, China introduced an extraterritorial provision applying to any foreign company seeking to export products containing rare earths produced in China (Ministry of Commerce of the PRC, 2025). Beijing justified this measure by claiming that Chinese rare earths were being used in foreign military industries, but the policy is primarily a strategic tool to enhance Chinese political leverage (Li, 2025). This decision places the United States, the EU, and other countries seeking autonomy in AI and energy sectors in a difficult position.

Europe's stance is nuanced. The EU aims to increase its autonomy in rare earth production through initiatives such as the European Raw Materials Act, unveiled in March 2023, which seeks to secure access to strategic resources, including rare earths. By 2030, the EU intends that 10% of its annual consumption of strategic materials be sourced from domestic extraction, and no single third country may supply more than 65% of any resource on the list. The Act draws heavily on the U.S. mining strategy (Lapie, 2023, March). However, Europe's rare earth processing capacity remains limited, with only two facilities located in France and Estonia (Josephs, 2025), and no domestic extraction sites. To address this gap, the EU plans to create new partnerships with allied states through a "Critical Raw Materials Club" (Findeisen, 2023). Rather than confronting China directly, Europe seeks to strengthen multilateral cooperation, while remaining mindful of China's growing influence in Africa and Latin America.

3.3 Electric Vehicles and Anti-Coercion Measures

Similarly, EU member states do not hold a uniform position on Chinese electric vehicle tariffs. Nonetheless, some European leaders have expressed a willingness to respond more firmly to Chinese restrictions. During the European Council on October 23, 2025, French President Emmanuel Macron suggested using all available tools - including the newly established anti-coercion instrument - to counter Chinese actions. Adopted in October 2023, this instrument was originally designed to respond to Chinese trade restrictions against Lithuania since 2021 (European Parliament, 2023). In addition to imposing measures against states engaging in dumping toward the EU, it allows the Union to implement countermeasures on trade and investment against countries applying coercive policies toward EU members.

Notably, President Macron had previously proposed using the instrument - referred to as a “bazooka” - to counter U.S. protectionism, though no consensus had been reached among EU members (Mancini, Adghirni and Valero, 2025). For the first time, following Macron’s remarks at the Berlin Global Dialogue, European Commission President Ursula von der Leyen publicly indicated that the instrument could be deployed in response to Chinese measures, declaring: “Europe cannot do things the same way anymore. We learned this lesson painfully with energy; we will not repeat it with critical materials” (European Commission, 2025b). Von der Leyen acknowledged that China’s rare earth export controls occur within a broader context of Sino-U.S. frictions but emphasized that the EU is also affected. The anti-coercion instrument could be relatively straightforward to implement, as it requires only a qualified majority rather than unanimity among member states (Schaupp, 2024), preventing a single state from blocking the decision.

3.4 Sino-European Trade Tensions

While the U.S. - China trade war dominates headlines, disputes between China and the EU persist. Like the United States, the EU faces a substantial trade deficit with China, which exceeded €300 billion in 2025. Brussels has accused Beijing of distorting free trade rules through subsidies in sectors such as solar panels, while China has, in turn, accused the EU of dumping certain products.

Even before Trump’s second term, the U.S. and the EU pursued similar approaches to shared disputes with China. In May 2024, the U.S. imposed 100% tariffs on Chinese electric vehicles under Section 301 of the Trade Act of 1974 for “unfair trade practices,” while the EU adopted a comparable, albeit smaller, 35% tariff in October 2024. This EU decision was divisive: Italy and France, with significant domestic automotive sectors, supported the measure, whereas Germany opposed it, fearing retaliatory tariffs that could restrict access to the Chinese market. Ten member states abstained from taking a position (IISS, 2024).

In response to EU measures on electric vehicles, China raised tariffs on selected European products. While Beijing denies retaliating against European measures, the tariffs targeted highly specific goods, such as Spanish pork - 20% of Spain’s exports (Gonzàles, 2025) - and French brandy, affecting Cognac producers already impacted by U.S. tariffs (Alderman and Bradsher, 2025). Targeting specific products may aim to disrupt EU unity.

Another example is the EU and U.S. response to Chinese fast fashion platforms, such as Shein and Temu. In April 2025, President Trump not only applied tariffs on Chinese goods but eliminated de minimis exemptions for parcels under €800 and tripled tariffs on these shipments, imposing a minimum $100 charge per parcel. A European Parliament report noted that nearly 90% of low-value parcels entering the EU originate from China (European Parliament, 2025, July 9). While the EU plans to apply a modest €2 minimum tariff per parcel by 2028, some member states are considering earlier implementation. The discrepancy between U.S. and EU measures could incentivize Chinese platforms to pivot toward the European market.

European states have sometimes acted preemptively on strategic issues without waiting for EU-level directives. For example, in October 2025, the Dutch government blocked the acquisition of the semiconductor manufacturer Nexperia by Chinese parent company Wingtech to prevent potential technology transfers. Analysts suggest U.S. pressure influenced the decision (Xu, 2025), as Wingtech had been blacklisted as a national security risk (Quarles van Ufford, 2025,). Regardless of the degree of independence in decision-making, EU and U.S. interests appear closely aligned, limiting the potential for direct Sino-European coordination on strategic matters.

Nevertheless, China and the EU continue to cooperate on shared issues, particularly environmental concerns. On July 14, 2025, the sixth China - EU High-Level Environment and Climate Dialogue was held in Beijing to prepare for COP30 in Belém, Brazil. But this a long-term cooperation.

3.5 The Geopolitical Context in Sino-European Relations

The EU has historically promoted political reforms in China and remained critical of human rights, notably regarding the Uyghur minority in Xinjiang. This stance, for instance, blocked France from signing the Comprehensive Agreement on Investment proposed by the European Commission in December 2020 (Bouissou, 2020).

However, as of 2025, Europe's strategic priorities have shifted. Beyond human rights and Taiwan issue, the war in Ukraine dominates EU foreign policy and shapes its approach toward China. Initially, the EU viewed Beijing as a potential partner to influence Russia. During the 23rd EU–China bilateral summit on April 1, 2022, Ursula von der Leyen called on China to leverage its "uniquely close relations with Russia" to support peace efforts (European Council, 2022). By September 2025, at the UN General Assembly, she again encouraged Premier Li Qian to use China's influence to bring Russia to the negotiating table (Bonini, 2025). Yet these statements were largely formal; European leaders, like Ukrainian President Volodymyr Zelensky, no longer expect Chinese intervention (McCartney, 2025).

The EU's stance toward China has grown more assertive. In the 18th sanctions package against Russia (July 2025), the EU targeted two Chinese banks operating in Russia (Le Monde, 2025). In October 2025, the 19th package included additional Chinese firms, including two refineries and a PetroChina subsidiary, prompting a sharp response from the Chinese Foreign Ministry (Tao and Chen, 2025).

Geopolitical tensions have also highlighted the vulnerability of China's Belt and Road infrastructure. In early September, Poland closed its borders for roughly two weeks due to the presence of Russian drones and the Zapad-2025 military exercise on its frontier, suspending rail connections between Europe and China. Despite discussions between Polish Foreign Minister Radosław Sikorski and Chinese Foreign Minister Wang Yi on September 15, Poland maintained its position. Consequently, Central and Eastern European states (excluding Hungary), previously receptive to Beijing's Belt and Road Initiative and the 17+1 platform launched in 2012, have distanced themselves due to China's pro-Russian stance. The Czech Republic, for example, explicitly cited China as a potential source of instability in its 2023 defense strategy (Ministry of Defence of the Czech Republic, 2023).

Finally, the Sino-American trade war and the EU's derisking policies (Garcia-Herrero and Vasselier, 2024, October) have accelerated Brussels' search for new partners. After prolonged difficulties in negotiating a Comprehensive Economic Partnership Agreement, the EU and Indonesia reached a political agreement in July 2025, finalizing negotiations in September 2025 (European Commission, 2025, September). In April 2025, the EU and the United Arab Emirates launched talks on a free trade agreement, following stalled negotiations with the Gulf Cooperation Council (Karacsony, *et al.* 2025). For Europe and other global economic centers, Sino-American tensions have acted as a catalyst for developing alternative partnerships and supply chains less dependent on the two superpowers.

4. Discussions

The intensification of the U.S. - China trade war during President Donald Trump's second term has not fostered coordination between the European Union and China. Although the EU has also been subject to the tariffs introduced by Trump in April 2025, Brussels appears to pursue a policy broadly aligned with that of the United States, adopting a very US compatible approach in its dealings with Beijing. The instruments developed by the EU, as well as its ongoing efforts to achieve strategic autonomy, are largely modeled on American examples.

However, unlike the United States, the EU's internal structure creates a greater potential for divergence among member states. As a result, EU measures are generally less forceful than U.S. policies, leaving a relatively narrow window for constructive dialogue with China. At the same time, the war in Ukraine has strengthened European ambitions for autonomy, and Beijing's position on this issue suggests that future coordination between China and the EU will be increasingly challenging.

Overall, trade tensions among the United States, the EU, and China remain highly dynamic and complex. The ongoing series of negotiations, retaliatory measures, and policy decisions creates significant uncertainty, limiting the ability to anticipate long-term outcomes - a limitation acknowledged in this study. Far from fostering stability, this environment risks generating the very economic and political instability that Europe has sought to avoid.

Conclusions and Further Research

This analysis suggests that, despite shared exposure to U.S. protectionist measures, the EU and China have not developed a coordinated response. European policy, though inspired by U.S. strategic models, remains less cohesive and more restrained due to internal institutional divisions. While there is limited scope for dialogue and

cooperation with Beijing, the geopolitical context - particularly the war in Ukraine - reinforces the EU's drive for strategic autonomy, further complicating any potential Sino-European alignment.

The evolving triangular relationship among the United States, China, and the EU highlights a period of unprecedented uncertainty in global trade. The interplay of protectionism, strategic autonomy initiatives, and geopolitical tensions generate both challenges and opportunities for European actors. Looking ahead, the EU's ability to navigate these complexities will depend on its capacity to balance alignment with the United States, engagement with China, and the pursuit of its own autonomous strategic objectives.

Credit Authorship Contribution Statement

Sebastien Goulard: he named author is responsible for all of the following tasks: Conceptualisation, Investigation, Methodology, Formal analysis, Writing – original draft, review and editing.

Declaration of Competing Interest

The author declares that he has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-Assisted Technologies

The author declares that he has not used generative AI and AI-assisted technologies in the writing process before submission, but only to improve the language and readability of their paper and with the appropriate disclosure.

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Navigating Tariffs through Trade Diplomacy: Strategies and Lessons from Select Countries

Gary Ador Dionisio
School of Diplomacy and Governance
De La Salle - College of Saint Benilde, Philippines
ORCID: 0009-0006-8967-8097
gary.adordionisio@benilde.edu.ph

Jovito Jose Katigbak
Department of Political Science and Development Studies
De La Salle University, Philippines
ORCID: 0000-0002-9291-8251
jovito.katigbak@dlsu.edu.ph

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Abstract: This paper explores the vital role of trade diplomacy in navigating the global economic volatility spurred by the broad-based US tariffs imposed since January 2025, which were anchored on national security concerns. More specifically, it reviews the trade diplomacy tactics employed by Canada, Germany, Mexico, and Vietnam vis-à-vis the US tariffs. Using a qualitative, descriptive methodology, the findings reveal both similarities and differences in their approaches. On one hand, all countries deployed a multi-pronged strategy and are pursuing trade diversification efforts to de-risk from great powers such as the US and China. Further, initiatives are being intensified to promote domestic industry resilience while balancing political, economic, social, and geostrategic factors. On the other hand, advanced economies (Canada and Germany) adopted a "retaliate-to-negotiate" approach, matching US tariffs tit-for-tat and filing WTO complaints while emerging economies (Mexico, Vietnam) used a "concession-to-de-escalate" strategy, delaying retaliation and offering proactive concessions on security, non-tariff barriers, and major purchases to secure lower tariff rates. The study also finds that countries with existing FTAs (Canada, Mexico) were significantly shielded from the tariffs. This paper thus provides a timely analysis of key trade diplomacy strategies amid unilateral, reciprocal tariffs and outlines practical lessons for other economies operating in a fragmented and increasingly protectionist economic landscape.

Keywords: US tariffs; trade diplomacy; global economy; free trade agreements; retaliatory measures; trade diversification; Global Trading System.

JEL Classification: F10; F13; F51.

Introduction

The broad-based, expansive tariffs imposed by US President Donald Trump since January 2025 has catalysed systemic tremors in the world economy and gradual shifts among global value chains. Anchored on the International Emergency Economic Powers Act (IEEPA), non-trade concerns such as illegal migration and drug trafficking are also used to justify the application of universal reciprocal tariffs on all imports, higher tariff rates on China, and suspension of de minimis exemption for low-value imports from all countries (Zirpoli, 2025). These measures prompted economies and businesses to quickly recalibrate their trade concentration and search for alternative markets amid a turbulent and increasingly protectionist global economic environment. Correspondingly, the vital roles of governments in directing trade policies and ensuring the continuous flow of goods and services across borders are magnified. Hence, the skilful navigation of the current trade intricacies by state actors through diplomatic channels, or simply trade diplomacy, becomes a paramount means to attaining a successful trade diversification endeavour.

This research thus seeks to answer the primary question: "How has select countries deployed trade diplomacy to manage the universal reciprocal tariffs imposed by the US?" It similarly attempts to address the following sub-queries: (i) How has the recent tariffs impacted global trade?; (ii) What are the strategies employed by Canada, Germany, Mexico, and Vietnam in response to the reciprocal tariffs?; and (iii) What lessons can other economies learn from the experiences of Canada, Germany, Mexico, and Vietnam?

Accordingly, this paper aims to achieve three main objectives, namely: (a) Describe the effects of US tariffs on global trade; (b) Characterize the trade diplomacy efforts of Canada, Germany, Mexico and Vietnam vis-à-vis the enforcement of reciprocal tariffs; and (c) Outline key takeaways and policy options for other economies to effectively navigate the tariff-ridden global landscape. The significance of this study falls under the practical aspect of international relations and political economy given its focus on the notable strategies and approaches devised by select countries to effectively overcome the adverse impacts of US tariffs.

1. Literature Review

The sweeping tariffs imposed by US President Donald Trump since returning to office in January 2025 has negatively affected the global economy as evidenced by slower growth and global supply chain restructuring. Primarily motivated by reducing its trade deficits, the US has likewise utilized illegal migration and drug trafficking as grounds for imposing a 10 percent baseline tariff on all imports and reciprocal, targeted tariffs ranging from 20 to 50 percent on specific countries/blocs such as China, Canada, European Union, and Mexico, among others (Diaz, 2025; J.P. Morgan Global Research, 2025). Steel, aluminum, motor vehicles and parts, and electronics are hit hardest by the cited tariffs while economies that acquiesced to tariff negotiations with the US enjoyed lower rates (Kawasaki, 2025). De minimis exemption covering low-value imports worth USD800 was then removed in August 2025 thereby increasing costs for smaller-scale exporters (The White House, 2025).

These measures are expected to decelerate global growth to 3 percent in 2025 according to the International Monetary Fund (2025) while the World Bank (2025) estimates a lower 2.3 percent expansion in the same year. Conteduca *et al.* (2025) identified three scenarios associated with the potential impact of US tariffs, which are status quo (as of April 2025), full scenario (*i.e.*, extended tariffs to pharmaceuticals and electronics), and full + retaliation (*i.e.*, US trade partners raise their respective sector-level tariffs). Across these scenarios, they project a net global welfare loss of 1.2 percent and world trade slowdown by 5 percent coupled with supply chain disruptions, especially in electrical equipment and electronics and transport equipment sectors (Conteduca *et al.* 2025). Jakubik and Sztajerowska (2025) note that the US-China decoupling is occurring at a faster rate than the 2018-2019 episode as demonstrated by greater Chinese exports to third-country markets such as Asia and Europe and by Canada and Mexico's negative contributions to US export expansion. They similarly emphasize that trade flows from China are being diverted to automobiles and parts sector in Asia and to steel and aluminum sectors in Europe.

In response to the steep tariffs, US trading partners implemented retaliatory tariffs therefore bolstering volatility worldwide (Department of Finance Canada, 2025). Multinational corporations then diversified their supply chains, relocated production to areas with tariff exemptions, and/or moved final assembly locations (Engelland, 2025; Johnson *et al.* 2025). The heightened uncertainty and elevated anxiety among business groups and households should thus be allayed by governments to minimize economic disruptions and stimulate robust trade flows. The conduct of trade diplomacy thus becomes an essential tool in effectively managing the adverse impacts of US tariffs. More particularly, it can be defined as the "practice and process of managing international trade relations through negotiation, cooperation, and policymaking, involving not only states but also a wide range of non-state actors, networks, and institutions" (Lee *et al.* 2010, p.13). Pigman (2016) traced the evolution of trade diplomacy from the trade-as-diplomacy phase to liberalization, institutionalization, and judicialization and underscored the entry of new actors in a multilateral trading system featuring lower tariffs and dispute settlement mechanisms. Okano-Heijmans (2016) underlined that trade diplomacy became a reliable tool of governments in the 1990s due to the threat of economic crises worldwide and the stalemate in the multilateral trade negotiations in the Doha round of the WTO. The shift of focus from unilateral liberalization to bilateral and regional FTAs was primarily shaped by economic, political, legal, and geostrategic factors. Trade diplomacy thus became politicized, especially in the Asia-Pacific, since negotiations centered on norm setting, resource allocation, network-building, and contention for influence. Nevertheless, the practical nature of trade diplomacy renders its theoretical aspect underdeveloped.

Perhaps a worthwhile review of trade diplomacy personified are the US' and China's respective actions during the 2018-2019 tariff war. On one hand, the US' decision to initiate a tariff battle was perceived as a coercive drive to bring China to the negotiating table to agree ultimately on "significant changes to…its economic system

that facilitate unfair Chinese trade practices, including forced technology transfer, limited market access, intellectual property theft, and subsidies to state-owned enterprises" (Hass and Denmark, 2020, par.5). It can be noted that the provocation started as early as the 2016 presidential campaign when Donald Trump exclaimed that "we can't continue to allow China to rape our country" and promised to "cut a better deal with China that helps American businesses and workers compete" (BBC News, 2016). A failed 100-day action plan in 2017 between the two parties subsequently ignited the first tariff war in 2018 upon imposition of the 25 percent duty on high-tech industrial products and another 10 percent tariff on an additional USD200 billion of Chinese imports (Office of the United States Trade Representative, 2018). Two years later, the Phase One deal was reached which committed China to higher goods purchases plus better intellectual property protection, currency management, and forced technology transfer. Reports show that President Trump exchanged political favors for trade concessions as evidenced by US silence on Hong Kong democracy protests (Sciutto *et al.* 2019) and on human rights issues perpetrated by the Chinese government (Hass and Denmark, 2020).

On the other hand, China's response to the unilateral tariffs was an immediate tit-for-tat retaliation as exemplified by the 25 percent tariff on US agricultural and manufacturing goods and a consequent 5-10 percent tariff on USD60 billion of US exports (Bown, 2018). This was complemented by diplomatic and legal measures such as official condemnation of US trade bullying (Xinhua, 2018) and filing a complaint to the WTO questioning the legality of unilateral tariffs (Reuters, 2018). Chinese President Xi Jinping maintained constant communication with President Trump which was critical in resolving the trade conflict in 2020.

2. Research Methodology

This study is descriptive-exploratory. It examines the strategies and tactics employed by third countries such as Canada, Germany, Mexico, and Vietnam to manage the unilateral tariffs imposed by the US in 2025. The notable patterns and peculiarities may serve as key takeaways for other economies. Accordingly, the selection of the third countries is based on two main criteria, namely: (i) nature of trading relationship with the US; and (ii) market size. Canada and Mexico are members of the USMCA trade agreement, while Germany (through EU) and Vietnam do not have trade agreements with the US prior to 2025. In addition, Canada and Germany are advanced economies while Mexico and Vietnam are classified as emerging and developing economies according to the International Monetary Fund.

This research mainly utilizes a qualitative approach to ascertain the extent of the research problem by qualifying the indicators, while supporting them with qualitative data. The main method for data gathering is secondary research which involves review of related literature and content analysis. It utilizes secondary resources such as journals, news articles, official government websites, and interviews, among others. Specific keywords were inputted to generate results via online search engines. The numerous data were then screened based on relevance (*i.e.*, date – since January 2025), content (*i.e.*, responses to the 2025 US tariffs), and reliability (*i.e.*, reputation of the source, government-run websites). The key findings were analyzed through an inductive approach given the scant literature on the subject matter. Nevertheless, it is worth stressing that the research mainly depends on media sources and less on primary data and triangulation. The study is exploratory since it assesses the tariff-induced responses by Canada, Germany, Mexico, and Vietnam via the lens of trade diplomacy. The focus of analysis is the governments' initial trade policy responses to the 2025 US tariffs.

3. Results

Canada's reaction to the 2025 tariffs has both short-term and long-term components. The immediate response was retaliatory 25 percent tariffs on home products, steel, aluminum, and US-made automobiles (Government of Canada, 2025a). It likewise filed a complaint to the WTO regarding the unilateral duties imposed by the US. A de-escalation was reached through the tariff-free scheme under the US-Mexico-Canada Agreement (USMCA) when the US government exempted over 85 percent of commodities that are compliant with the cited agreement. Canada reciprocated by eliminating its retaliatory tariffs on US goods covered by the USMCA. Nonetheless, it maintained surtaxes on strategic US sectors such as steel, aluminum, and automobiles (Government of Canada, 2025b). At the local level, the Canadian government launched several programs to support domestic enterprises and workers affected by the tariffs. These include the CAD5 billion Strategic Response Fund, Buy Canadian Policy (*i.e.*, prioritizing Canadian suppliers for federal government contracts, CAD1 billion Regional Tariff Response Initiative (for small- and medium-sized enterprises), and Reskilling Package (for 50,000 workers) (Prime Minister of Canada, 2025a).

Irked by President Trump's tariff threats and repeated comments about Canada's accession as the 51st US State, Canadian Prime Minister (PM) Mark Carney has also stressed that the country should "take care of [itself]

because we can't rely on one foreign partner" and shared that it is "re-engaging with the global giants India and China" (Gillies, 2025). Canada's objective of doubling non-US exports by 2035 is being advanced by its pivot to growing markets as exemplified by fast-tracked talks regarding a Canada-ASEAN Free Trade Agreement (FTA) and a Canada-Philippines bilateral FTA, during the visit of PM Carney to the region in October 2025 (Prime Minister of Canada, 2025b). In the same month, Canada-US trade talks were halted over a Canadian television advertisement featuring a 1987 clip of former US President Ronald Reagan cautioning about the dangers of protectionism (Davies, 2025). The ad was paused after President Trump threatened an additional 10 percent tariff on Canadian products. The aftermath of the mentioned fiasco further revealed the friction between the two parties as the US administration bared that it "has repeatedly sought to address Canada's longstanding, unfair trade barriers" but "good-faith efforts…have not led to any constructive progress" (Boynton, 2025). PM Carney replied by stating that the country is ready to resume discussions "when the Americans are ready to have those discussions" (Boynton, 2025).

Germany, another developed economy and the third largest in the world, deployed simultaneously a retaliate-to-negotiate approach and a national de-risking strategy from US and China. German companies such as Adidas, Bosch, and Volkswagen lamented about rising costs and enormous profit losses. As a member of the European Union, the country capitalized on the size and strength of the regional grouping to pressure the US with retaliatory tariffs and a formal WTO complaint in defense of free and fair world trade (Agence France-Presse, 2025). This was balanced by the pledge of cooperation in January 2025 by former German Chancellor Olaf Scholz: "to be clear, the United States is our closest ally outside of Europe. And I will do everything I can to ensure that it stays that way" (Agence France-Presse, 2025). He added that "close cooperation between Europe and the USA is essential for peace and security worldwide" and a "driver for successful economic development." The credible EU countermeasures along with the promise of compromise eventually led to negotiations and a US-EU trade deal in July 2025, which set a 15 percent surtaxes cap on many EU goods and 0 percent tariffs on other critical German exports such as aircraft parts, chemicals, and pharmaceuticals (European Commission, 2025).

Despite the landmark deal, Germany is pushing through with diversification to reduce dependence on a single market. The EU-Indonesia trade deal in September 2025 as well as the final rounds of EU-Mercosur trade talks (Business Europe, 2025) demonstrate the country's commitment in de-risking from both the US and China. Future trade pacts with Malaysia, Philippines, and Thailand along with tighter foreign investment screening of Chinese products are likewise expected to boost Germany's long-term economic transition (Dutch Financial Times, 2025; US Department of State, 2025). The country has similarly embarked on a "strategic sovereignty" path via the channeling of massive public investments on critical sectors including infrastructure, defense, energy, and technology (US Department of State, 2025).

In **Mexico's** case, President Claudia Sheinbaum pursued direct communication and dialogue with President Trump to diffuse tensions and leverage the USMCA to preserve exemptions for over 84 percent of the country's exports to the US (Corona, 2025). The 25 to 50 percent levies on automobiles, steel, aluminum, and copper, among others, was supposed to be matched with Mexico's "Plan B" retaliatory measures but decided to delay its enforcement, opting to adopt a pragmatic approach and continue negotiations on the elimination of 54 specific non-tariff barriers (Nicas and Mega, 2025). The US also received concessions on border security and China concerns after Mexico stationed thousands of troops to its norther border to curb fentanyl trafficking and illegal immigration and explored additional tariffs on Chinese vehicles imports (Ballesteros, 2025).

This "cool-head" diplomacy proved to be beneficial for the country since the planned tariff raise on non-USMCA products was suspended followed by negotiations between the two parties (Corona, 2025). President Trump expressed his satisfaction with the arrangement: "I like the extension with Mexico…We get a lot of tariffs. They're paying a lot of money" (Martin and Dlouhy, 2025). Notwithstanding this temporary reprieve, Mexico has likewise fortified its domestic industries and somehow adopted a US-like tariff policy against non-FTA goods through Plan Mexico (Mexico News Daily, 2025).

For **Vietnam,** an emerging Southeast Asian economy, proactive diplomacy coupled with unilateral tariff reductions were applied to effectively manage the negative impact of 46 percent US tariff on Vietnamese exports. A day after the announcement of US tariffs, General Secretary of the Communist Party of Vietnam Central Committee To Lam had a phone conversation with President Trump and assured Vietnam's commitment to reduce taxes on US imports to zero percent and to purchase more US goods (Vietnam Law and Legal Forum, 2025). Deputy Prime Minister Bui Thanh Son subsequently hosted a reception for US Ambassador to Vietnam Marc E. Knapper to communicate the country's concern regarding the high reciprocal tariffs. President Trump seemed pleased with the Vietnam's efforts: "very productive call with To Lam, General Secretary of the Communist Party of Vietnam, who told me that Vietnam wants to cut their tariffs down to zero if they are able to make an agreement

with the US. I thanked him on behalf of our country, and I said I look forward to a meeting in a near future" (Vietnam Law and Legal Forum, 2025). As a gesture of goodwill, Vietnam unilaterally slashed import duties on 23 tariff lines for US goods.

These steps eventually led to lower tariffs (*i.e.*, 20 percent) commencing in August 2025. Moreover, the Joint Statement on United States-Vietnam Framework for an Agreement on Reciprocal, Fair, and Balanced Trade was signed in October 2025 which will guarantee the following: (i) preferential market access for all US industrial and agricultural exports; (ii) purchase of 50 Boeing aircrafts and US agricultural commodities totaling to USD10.9 billion; and (iii) acceptance of US auto safety standards and streamlining approvals for US pharmaceuticals (US Mission to ASEAN, 2025). On the flip side, the US agreed to retain the 20 percent tariff rate and allow the entry of specific Vietnamese goods at zero percent tariff rate. An agreement is being finalized as of the time of writing.

Another important dimension of the US-Vietnam trade relations is Washington's accusations against Hanoi as a "transshipment point for Chinese goods seeking to circumvent US tariffs and accused Vietnamese facilities of repackaging Chinese products" (Do, 2025). Correspondingly, the Ministry of Industry and Trade enhanced the inspection and supervision of Certificate of Origin (C/O) documents to combat origin fraud and falsification and duty evasion (Viet Nam News, 2025). In spite of the country's delicate diplomatic balancing act, it has simultaneously joined numerous large FTAs and ventured into non-traditional trade partners hence underlining an aggressive diversification strategy.

Table 1. Trade Profile of Canada, Germany, Mexico, and Vietnam and their Responses to the 2025 US Tariffs

Finding	Canada	Germany	Mexico	Vietnam
Level of Development	Advanced	Advanced	Emerging	Emerging
Total Trade with the US (as of Aug 2025)	Second at USD56.6 billion	Sixth at USD18.1 billion	First at USD74.4 billion	Seventh at USD17.9 billion
Response to US Tariffs	Retaliatory tariffs and WTO complaint (short-term); Diversification (long-term)	Retaliate-to-negotiate (immediate); National de-risking strategy (long-term)	"Cool-head" diplomacy (diffuse and negotiate); US-like tariff policy against non-FTA goods (Plan Mexico)	Unilateral tariff reductions on US products; Enter into FTA with the US; Diversification
Existing FTA with US	Yes (USMCA)	No (EU handled negotiations of the US-EU Trade Deal)	Yes (USMCA)	No (Bilateral deal signed in Oct 2025)

Source: U.S. Census Bureau. Top Trading Partners – August 2025**.**

4. Discussion

The trade diplomacy strategies of Canada, Germany, Mexico, and Vietnam vis-à-vis the 2025 US tariffs possess both parallelisms and peculiarities that substantially contributed to the (non)achievement of their respective objectives. **On the similarities** (see Table 2), all utilized a **multi-pronged approach** characterized by simultaneous efforts at various levels including domestic, bilateral, and regional (*i.e.*, towards EU and/or ASEAN). The decision to pursue several tracks depict the multi-layered and networked landscape of the global trading system comprised of states, multi-national corporations, international organizations (*e.g.*, WTO), and civil society organizations, among others (Pigman, 2016). Another pattern is that the chosen countries are **currently implementing a trade diversification approach** to de-risk and gain "strategic sovereignty" from great powers such as the US and/or China in the long-term. This highlights the diminishing trust and confidence of the cited economies on the stature of the US as a reliable partner and of China as a responsible actor. The search for alternative markets therefore results in rapid restructuring of global supply chains and the rise/reinforcement of economic centres including ASEAN, India, and Mercosur. Next, there is **strong emphasis on building domestic capabilities and resilience** as shown by massive public investments in the workforce and in critical sectors such as automotives, chemicals, and technology (e.g, Buy Canadian Policy, Plan Mexico). Governments hence recognize the volatility and uncertainty of the global economy and the unequivocal need to strengthen local industries. Lastly, **trade diplomacy** has come to mean **more than just an economic endeavour** (Okano-Heijmans, 2016). The previous section showed that political (*e.g.*, controversial television ad in Canada), social (*e.g.*, fentanyl trafficking and illegal immigration in Mexico), and geostrategic (*e.g.*, Vietnam as a transshipment point for Chinese goods) factors have significantly influenced the responses of the selected countries and the success of post-tariff negotiations.

Table 2. Similarities across Trade Diplomacy Strategies of Canada, Germany, Mexico, and Vietnam vis-à-vis 2025 US Tariffs

Pattern	Description
Multi-Pronged Approach	Simultaneous efforts at domestic, bilateral, and regional levels
Trade Diversification	Implement strategies to de-risk and gain "strategic sovereignty" from great powers (US/China)
Domestic Capabilities and Resilience	Strong emphasis on building domestic capabilities through massive public investments in critical sectors (*e.g.*, Plan Mexico, Buy Canadian).
Expanded Scope of Diplomacy	Trade diplomacy extends beyond pure economics to include political, social, and geostrategic factors (*e.g.*, immigration, transshipment, controversial ads).

Concerning differences (refer to Table 3), the data reveal that the nature of response is highly influenced by the country's level of development. Canada and Germany – developed economies – matched the US tariffs tit-for-tat and lodged complaints to the WTO while Mexico and Vietnam – emerging economies – delayed retaliatory measures, proactively communicated with the US, and performed positive gestures. This accentuates two interesting observations, namely: (1) countries with greater economic power and capabilities tend to act decisively and forcefully against other actors; and (2) advanced economies still perceive the multilateral trading system, governed by the WTO, as a vital and credible avenue for trade dispute settlement. On the contrary, emerging economies concentrated on de-escalation activities and acquiesced to major concessions given the US' economic standing and clout. In addition, countries with existing FTA with the US (*i.e.*, Canada, Mexico) enjoyed better preferences despite the reciprocal tariffs than those without (*i.e.*, Germany, Vietnam). To illustrate, the USMCA shielded over 80 percent of Canadian and Mexican exports to the US thus providing relief for local businesses while Germany, through the EU, and Vietnam only concluded trade deals with the US, respectively, at the height of the tariff war. Finally, membership to a regional organization does not automatically translate to a regional outcome. This is evident in the signed trade deals between the US and EU (including Germany) and the US and Vietnam (outside of ASEAN). The supranational nature of the EU prohibits individual countries from signing bilateral FTAs with third parties while the intergovernmental character of ASEAN enables Member States to simultaneously enter into bilateral economic agreements.

Table 3. Differences in Trade Diplomacy Strategies of Selected Countries vis-à-vis the 2025 US tariffs

Feature	Advanced Economies (Canada, Germany)	Emerging Economies (Mexico, Vietnam)
Initial Retaliation	Decisive & forceful (Tit-for-tat tariffs, lodged complaints to WTO)	Delayed & de-escalating (delayed measures, proactive communication, major concessions)
View of WTO / Multilateralism	Perceive the WTO as a vital and credible avenue for trade dispute settlement	Concentrated on de-escalation activities; acquiesced to major concessions given U.S. economic clout
FTA Shielding Effect	Canada and Mexico enjoyed better preferences due to USMCA, shielding exports.	Germany (via EU) and Vietnam had no pre-existing shield; concluded deals only at the height of the tariff war.
Regional Organization Membership	Supranational (EU, Germany); Individual member countries cannot sign bilateral FTAs with third parties.	Intergovernmental (ASEAN, Vietnam); Member States may simultaneously enter into bilateral agreements.

Conclusions and Further Research

The sweeping, expansive 2025 US tariffs is indeed a major challenge for economies operating in a volatile, uncertain, complex, and ambiguous world. Plagued with power asymmetry and shifting alliances, the multilateral trading system has been waning as affirmed by the prominence of regional and bilateral FTAs and stalemate in the Doha round negotiations. It is in this vein that trade diplomacy emerges as an indispensable tool used by governments to effectively manage recurring and novel trade issues and ensure sustained economic growth. The experiences of Canada, Germany, Mexico, and Vietnam present important lessons for economies seeking to overcome the hostile economic environment. Nevertheless, deeper examination of the tariff-related strategies and tactics utilized by states should be advanced to gain a better understanding and appreciation of the subject matter. Future research may hence expand the scope to include more economies and/or incorporate a historical analysis of trade diplomacy efforts by select countries. Studies may similarly scrutinize the role of other actors such as the private sector, international/regional organizations, and civil society organizations in participating in dialogue and facilitating cooperation between and among states. Although the term of President Trump and his tariffs may

appear to be temporal, its long-lasting impacts are already manifested in the conscious diversification and inward orientation of several economies. This makes trade diplomacy a current and future topic of interest and contestation.

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Gary Ador Dionisio: Conceptualization, Investigation, Methodology, Project administration, Software, Formal analysis, Writing – original draft, Supervision, Data curation, Validation, Writing – review and editing.
Jovito Jose Katigbak: Conceptualization, Investigation, Methodology, Project administration, Software, Formal analysis, Writing – original draft, Supervision, Data curation, Validation, Writing – review and editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-Assisted Technologies

The authors declare that they have not used generative AI and AI-assisted technologies in the writing process before submission.

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The Economics of an Import Tariff in the Keynesian Model: An Intermediate Macroeconomics Treatment

Aleksandar Vasilev
Independent Researcher, Bulgaria
ORCID: 0000-0002-3956-6314; Researcher ID: ADZ-7753-2022
alvasilev@yahoo.com

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Abstract: The standard textbook treatment of expansionary fiscal policy at intermediate macroeconomics level, *e.g.*, Blanchard (2024), Burda and Wyplosz (2023), only consider taxes affecting the economy through the consumption function, by increasing the level of disposable income. Motivated by recent events - the import tariffs introduced in the US by Trump administration - in this paper we introduce such tariffs to explore how they work in the Keynesian cross framework. As expected, an increase in import tariffs stimulates aggregate demand, which is the ”import substitution effect” from the trade literature. There is also a multiplier effect, which we refer to the ”import tariff multiplier effect.” This possible stimulus effect on the domestic (US) economy from an increase in the import tariff rate is of interest to policy-makers, and in developing countries with a public finance model organized around trade taxation, or countries that follow an export-led growth model by discouraging imports

Keywords: Keynesian framework; expansionary fiscal policy; import tariff; stimulus effect.

JEL Classification: A20; C65; E62.

Introduction and Motivation

The standard textbook treatment of expansionary fiscal policy at intermediate macroeconomics level, *e.g.*, Blanchard (2024), Burda and Wyplosz (2023), only considers tax changes affecting the economy through the consumption function, by changing the level of disposable income. Motivated by recent events - the import tariffs introduced in the US by Trump administration, in this paper we introduce such tariffs to explore how they work in the Keynesian cross framework. As expected, an increase in import tariffs stimulates aggregate demand, which is the “import substitution effect” from the trade literature. There is also a multiplier effect, which we refer to the “import tariff multiplier effect.” This possible stimulus effect on the domestic (US) economy from an increase in the import tariff rate is of interest to policy-makers, and in developing countries with a public finance model organized around trade taxation, or countries that follow an export-led growth model by discouraging imports.

We will focus on the short- to medium run and abstract away from deficits and debt considerations. Thus, in this paper we aim to fill a clear gap in international macroeconomics literature, and at the same time the work could be a good teaching case to students. Importantly, we do not aim to provide empirical estimates (this is left for future research) but rather emphasize the theoretical modelling and working of the mechanism.

The rest of the paper is structured as follows: Next section evaluates the effect of the import tariff under different scenarios and assumptions on the functional forms of the main components of aggregate demand. Finally, the paper concludes with some policy recommendations and suggestions for future research.

Model Setup

This In this section, we present a battery of models, starting from the simplest case, and then extending the setup, one element at a time. The basic setup is a standard open-economy Keynesian model with import tariffs. Hence

$$Y = AE = AD = C + I + G + X - (1 - \tau)M \quad (1)$$

where *Y* denotes output, *AE* is aggregate expenditure, *AD* refers to aggregate demand, *C* is consumption, *I* is investment, *G* is government expenditure. Note that we need to net out import tariff revenue because it is not

part of real expenditure, it goes to the government. That adds to the leakage caused by the spending on imports. In other words, when the tariff rate increases, the effective spending on imports falls.

The consumption function is standard, with 0 < b < 1 denoting the marginal propensity to consume (MPC), and *T* denoting taxes. Next, to simplify the algebra, we model the consumption function without an intercept; the presence of the intercept does not change the main results, as it only adds to the autonomous demand expenditure.

$$C = b(Y - T) \tag{2}$$

The import function is presented below, with 0 < m < 1 denoting the marginal propensity to import (MPI). Again, this function is modelled without an intercept; as with the consumption function, the presence of an intercept does not change the main results.

$$M = m(Y - T) \tag{3}$$

Also note that b > m due to the so called ”home bias” phenomenon - that in data, most of the expenditure is domestic goods and services.

We start by postulating the case with lump-sum taxes, and exogenous I,G, and then endogenize each in turn, and as combination. To simplify the algebra further, we combine all exogenous terms into autonomous components, and call it ED(= I + G + X in this setup)

$$Y = [b - (1 - \tau)m]Y + ED, \tag{4}$$

or

$$Y = \frac{1}{1-[b-(1-\tau)m]} ED. \tag{5}$$

Thus

$$\frac{dY}{d\tau} = \frac{1}{\{1-[b-(1-\tau)m]\}^2} mED > 0, \tag{6}$$

as long as the denominator is positive, *i.e.*, 1−b+(1−τ)m > 0, which is the case, given the parameter restrictions, an increase in the import tariff rate increases aggregate demand (by discouraging spending on foreign products, and substituting towards domestic ones), and thus increases *Y*. In addition, we also obtain a new multiplier - the import tariff multiplier.

Is this result robust to alternative specifications? In the next scenario we endogenize income taxes, $T = tY$, $0 < t < 1$. Solving for *Y*:

$$Y = [b - (1 - \tau)m](1 - t)Y + ED, \tag{7}$$

or

$$Y = \frac{1}{1-(1-t)[b-(1-\tau)m]} ED. \tag{8}$$

Thus

$$\frac{dY}{d\tau} = \frac{1}{\{1-(1-t)[b-(1-\tau)m]\}^2} (1 - t)mED > 0, \tag{9}$$

as long as the denominator is positive, which tends to be the case. Again, an increase in the import tax rate increases *Y*, and there is a multiplier effect, which is now smaller. (subtract less in the denominator, hence the denominator is larger, or the multiplier is smaller)

Now, as in Blanchard (2024), we endogenous investment. In particular, we focus on the dependence on output/sales, or $I = iY$, $0 < i < 1$. This is referred to as the “augmented investment function” in Blanchard (2024). Again, for the sake of simplicity, we set the autonomous investment component to zero. Solve for output to obtain

$$Y = [b - (1 - \tau)m](1 - t)Y + iY + ED, \tag{10}$$

or

$$Y = \frac{1}{1-i-(1-t)[b-(1-\tau)m]} ED. \tag{11}$$

Thus

$$\frac{dY}{d\tau} = \frac{1}{\{1-i-(1-t)[b-(1-\tau)m]\}^2}(1-t)mED > 0, \quad (12)$$

as long as the denominator is positive. Again, an increase in the import tariff rate increases Y, and there is a multiplier effect, which is now larger (subtract more in the denominator, hence the denominator is now smaller, hence the multiplier is larger.)

Of course, we can also endogenize government purchases (keeping investment exogenous), and make it dependent on output, $G = gY$, $0 < g < 1$. The interpretation is that often the size of the budget is set relative to the size of the economy, and this degree of redistribution should be below 40 percent in many EU countries. Then solving for output yields

$$Y = [b-(1-\tau)m](1-t)Y + gY + ED, \quad (13)$$

or

$$Y = \frac{1}{1-g-(1-t)[b-(1-\tau)m]}ED. \quad (14)$$

Thus

$$\frac{dY}{d\tau} = \frac{1}{\{1-g-(1-t)[b-(1-\tau)m]\}^2}(1-t)mED > 0, \quad (15)$$

as long as the denominator is positive, which tends to be the case. Again, an increase in the import tariff rate increases Y, and there is a multiplier effect, which - depending on how g compares to i, could be now either larger or smaller, when compared to the case with endogenous investment and exogenous government spending.

Finally, if we combine the presence of endogenous investment, endogenous government purchases, and proportional taxes, then

$$Y = [b-(1-\tau)m](1-t)Y + iY + gY + ED, \quad (16)$$

or

$$Y = \frac{1}{1-i-g-(1-t)[b-(1-\tau)m]}ED. \quad (17)$$

Thus

$$\frac{dY}{d\tau} = \frac{1}{\{1-i-g-(1-t)[b-(1-\tau)m]\}^2}(1-t)mED > 0, \quad (18)$$

as long as the denominator is positive, which tends to be the case in data. Again, an increase in the import tariff rate increases Y, and there is a multiplier effect, which is now larger due to the combined effect from income taxes, investment and government purchases all being endogenous.

Conclusions and Policy Recommendations

The standard textbook treatment of expansionary fiscal policy at intermediate macroeconomics level (and specifically implemented via a tax reduction), *e.g.*, Blanchard (2024), Burda and Wyplosz (2023), only considers tax cuts affecting the economy through the consumption function, by increasing the level of disposable income. Motivated by recent events, in this paper we introduce a tariff on imports in the Keynesian cross framework and study the effects of an increase in those taxes. As expected, an increase in the import tariff rate stimulates aggregate demand. There is also a multiplier effect, which we refer to the "import tariff multiplier effect". Our findings are novel in macro-trade literature and could be of interest both to policy makers, as well as economists interested in economic education and teaching.

Still, we suggest the readers take the results with a grain of salt. After all, the model is ad hoc, and the calculations are back-of-an-envelope type. There is definitely a need for more detailed modelling, preferably a micro-founded one, and within a general-equilibrium framework - to consider retaliation by the main trading partner, and or to respond to the Lucas critique, as these simple parameters in the Keynesian models might not be structural, but determined within the model instead. For example, due to the tariffs prices may increase if the economy is importing vital inputs, which cannot be produced domestically (yet), thus decreasing consumption and aggregate demand. Finally, in the presence of tax fraud – like smuggling the imports and thus avoiding the tariff - may undermined further any positive effects on the domestic economy from imposing a tariff on imports.

Credit Authorship Contribution Statement

Aleksandar Vasilev: Conceptualization, Investigation, Methodology, Formal analysis, Writing – original draft, Writing – review and editing

Declaration of Competing Interest

The author declares that he has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-assisted Technologies

The author declares that he has not used generative AI and AI-assisted technologies during the preparation of this work.

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US High Tariff on India - Role of Indigenous Industries as a Mitigator and Revenue Generator for India

Shirin Rais
Department of Economics
Aligarh Muslim University, India
ORCID: 0000-0002-5296-3779
shirin.ec@amu.ac.in

Mohammad Asif
Aligarh Muslim University, India
ORCID: 0000-0002-6288-1427
m.asif.ec@amu.ac.in

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Abstract: The current high tariff regime of the United States (US) marks the return of the restated version of the mercantilist era aimed at making US richer by draining wealth from other countries through tariff hikes because of which the world may move towards deglobalization, disrupting the global value chains, and may force other countries also to turn protectionist by making international trade expensive. The paper suggests that the growth of Indian indigenous industries will mitigate the impact of US high tariffs on Indian economy. Also, due to the prospects of deglobalization, foreign trade as a source of revenue for India seems bleak, therefore, participation of indigenous industries in economic activities should be further promoted by increasing their domestic market share and substituting these indigenous products for foreign products. This will raise revenue, provide employment opportunities to the population mainly residing in rural India and will help in attaining the goal of inclusive growth because India is the only country in the world where varieties of mostly environmentally friendly internationally acclaimed indigenous products, like Khadi, other handlooms, handicrafts, spices, teas, carpets, metalcrafts, tribal art and crafts, AYUSH, agricultural products, etc are produced in different corners of the country. The paper asserts that the 'Make in India' campaign will be more successful in achieving 'Self-Reliance' than 'Make in US' campaign, which is dramatically failing, as the major burden of this higher tariff is falling on the US citizens, due to the failure of the working of 'Make in US' campaign in transforming US into a manufacturing hub.

Keywords: deglobalization; high tariff; indigenous products; national income; self-reliance.

JEL Classification: F13; F60; F62; I18; O4; Z11.

Introduction

The recurrence of the modified mercantilist era is clearly observable in the aggressive tariff outbreak of the US on its trading partners, apparently to promote the 'Make in US' campaign and to overcome the trade deficit and rising debt of the US. However, now this seems to be a deliberate attempt to extract wealth from its trading partners to fill the US treasury. This exposes the feeble economic functioning of the US economy, which is trying to reimburse the domestic economy's failure by mining wealth from others, particularly developing countries, who have created this wealth by their efficient economic policies and not by grabbing others wealth through tariffs. By making international trade expensive, the US may push the world towards deglobalization. This is perhaps the first time that the US is using a high tariff policy to generate revenue for its country. Among other economies, the Indian economy is one of the most severely affected economies by this high tariff policy however, India can easily mitigate the adverse impacts of high tariffs by strengthening indigenous industries, which could generate revenue internally, sufficient enough to counter the revenue loss from US high tariffs. The indigenous industries have been a source of wealth

for ancient and medieval India, giving India the title of the 'Golden Bird' and can provide a bolster to national income in the current era also. The indigenous products are defined as those products which are produced by local people, who use traditional skills and locally available resources; they are usually small-scale, found particularly in rural and often remote corners of the country. These indigenous industries promote self-reliance in addition to employing a large section of the population, largely women in India. India is fortunately, a hub of the production of globally acknowledged, finest indigenous products, found in almost every state of India and has an immense potential to generate wealth within the country, unlike the US, which is relying on extracting wealth from other countries. Some of the popular Indian indigenous products include- Khadi, silks, carpets, other handlooms, handicrafts, spices, teas, metalcrafts, tribal art and crafts, AYUSH, agricultural products, etc.

1. Literature Review and Research Background

1.1 Impact of Tariff on U.S.

Protectionism is associated with a fall in GDP and a surge in inflation in the short run (Barattieri *et al.* 2021). Bandhopadhyay *et al.* (2025) in their study have shown an inverse relationship between US high tariffs and US GDP, which decreased over time in addition to deteriorating federal deficits. Further, Aucklert *et al.* (2025) asserted that high import tariffs often cause recession in the short run. However, the tariffs imposed by the US will prove to be beneficial and will improve the trade balance only in the absence of retaliation from the trading partners (Costinot and Werning 2025, Ignatenko *et al.* 2025). Some other studies (Caliendo *et al.* 2025) found that the US trade deficit was reduced by the US's high tariffs through general equilibrium adjustments; however, it was accompanied by an escalated domestic price and falling real consumption. So, tariffs in a globalised world need not necessarily be the source of government revenue since tariffs are often followed by retaliation, which slashes down the gains from tariffs (Lashkaripour, 2021). Further Helpman (2025) has warned of emerging geopolitical tensions amid US high tariff strategy. According to Gaies (2025), the changes in US tariffs display an asymmetric relationship with stock prices, prompting uncertainty in US stock markets. Further, the higher tariffs of the US may lead to deglobalization, causing major disruptions in global value chains by reshaping them through the creation of maybe regional supply chains (Yucesan, 2025).

1.2 Impact of Tariff on India

Apart from other countries, the high tariff policy of the US has systematically disrupted the revenues of India, earned from some of the major exports to the US; however, India can overcome it by steadily diversifying the direction of exports (Vanukuri 2025). Besides other industries, this ruthless tariff policy of the US is hitting hard the exports of the clothing and textile industries in India, which are also a source of substantial employment, engaging around 16% of the country's total manufacturing workforce (Shukla and Kumar, 2025). However, Bhattacharya etal (2025) asserted that the impact of high tariffs may not be so undesirable as is often anticipated, and in the case of the signing of bilateral trade agreements between India and the US, these effects will be moderated. Further, their study has predicted a possible recession in the US because of these high tariffs. Rais and Salam (2025) have highlighted the role of an indigenous system of medicine in generating revenue for India both from within India and from abroad through rising medical tourism due to the global recognition of the healing power of Indian indigenous system of medicine, AYUSH.

In this light, the present study analyses the implications of the US high tariffs on the economies of India and the US, which economy will succeed in achieving the target of 'Self-Reliance'? It investigates how India can mitigate the impact of US's high tariff by further strengthening the production of indigenous products? The study also explores how indigenous industries will promote inclusive growth, helping India achieve the target 'Self-Reliance'? The theoretical and graphical methods are used to conduct the study. The study is divided into following sections- Introduction, Literature Review & Research Background, Impact of US high tariff on US, Impact of US high tariff on India, Results, Conclusions and Suggestions.

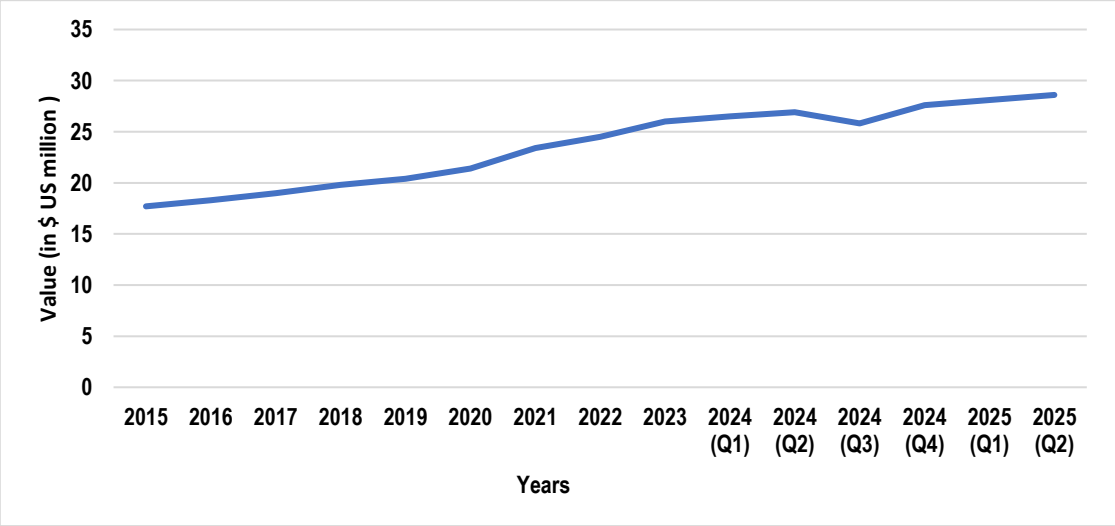
Our study has two important contributions: 1. This is perhaps the first research paper in the field of public finance highlighting the significance of indigenous products in combating the impact of US high tariff on India. 2. The paper demonstrate that the promotion of Indian indigenous industries will help in achieving the target of inclusive growth which will assist in becoming 'Self-Reliant' and will help in achieving the goal of 'Viksit Bharat' by 2047.

2. Impact of High Tariff on US: Economic Boomerang

On January 20, 2025, after his return to the White House, Donald Trump reignited global trade tensions by proposing a universal 10% tariff on all US imports. The policy, announced on 5th March 2025, was softened on 2nd

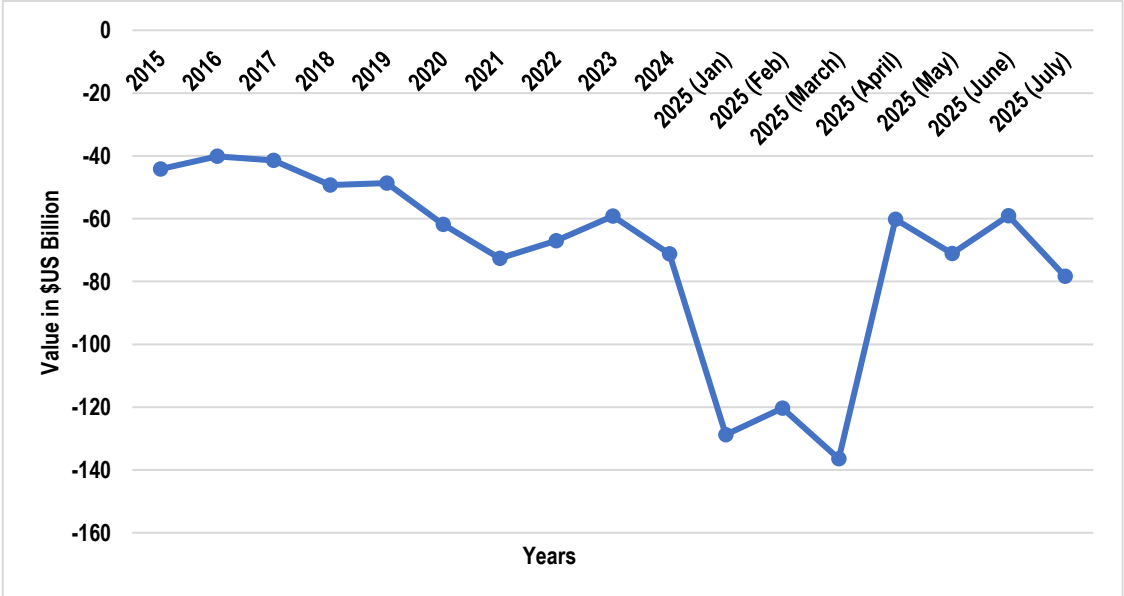
April 2025 to exempt select "allies", before being reaffirmed in mid-May with targeted hikes on Chinese electronics and European automobiles, only to be suspended days later amid "ongoing negotiations" (Gais, 2025). The Trump administration announced an increase in import tariffs across the board, initiating a trade war with all major trading partners, including the European Union (EU), China, Japan, and Canada (Barattieri, 2025). On 2nd April 2025, Trump proclaimed "Liberation Day," implementing tariffs on imports from virtually all countries, with the stated goal of revitalizing US industry and reducing trade deficits. These tariff rates include a 10% baseline on all imports, adjusted to a higher level for countries that run a trade surplus with the US, *e.g.*, 20% for EU products and 54% for Chinese goods, with exceptions for USMCA (US-Mexico-Canada Agreement) trade partners as well as certain products, such as automobiles, steel, aluminium, and smartphones. While the US administration asserts that these measures will bolster domestic manufacturing, protect American jobs and eliminate the US deficit, many economists and industry leaders warn of potential negative consequences (Ignatenko *et al.* 2025). The justifications cited by Trump for high tariffs such as- funding rising US external debt (Fig.1), improving balance of trade (Fig.2) by reducing imports in US (Fig.5), encourage US industries to produce goods which are imported or promote 'Make in US' campaign, etc, seems to be an inexperienced justification floated by US.

Figure 1. Total Gross External Debt of United States (2015-2025)



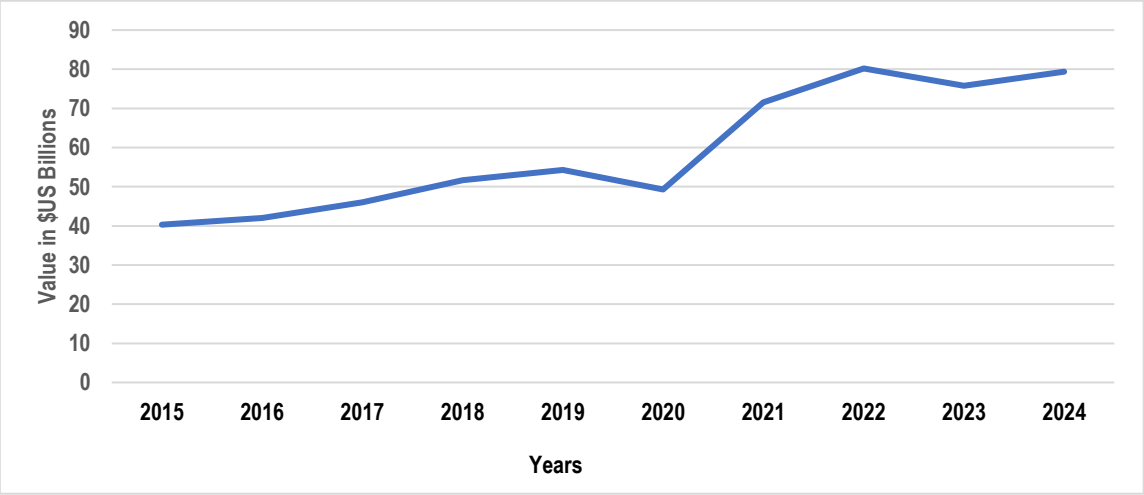
Source: Researchers preparation (based on data taken from Trading Economics,2025)

Figure 2. Balance of Trade of United States (2015-2025)



Source: Researchers preparation (based on data taken from Trading Economics,2025)

Figure 3. India's Exports to United States (2015-2024)

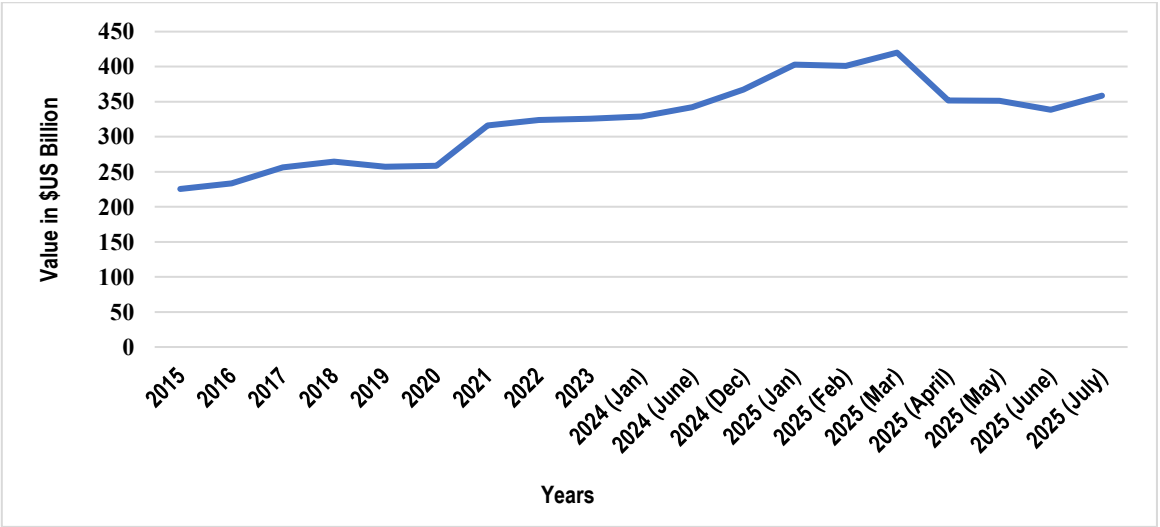


Source: Researchers preparation (based on data taken from Trading Economics,2025)

Figure 4. United States Current Account Deficit to GDP (%) (2015-2024)

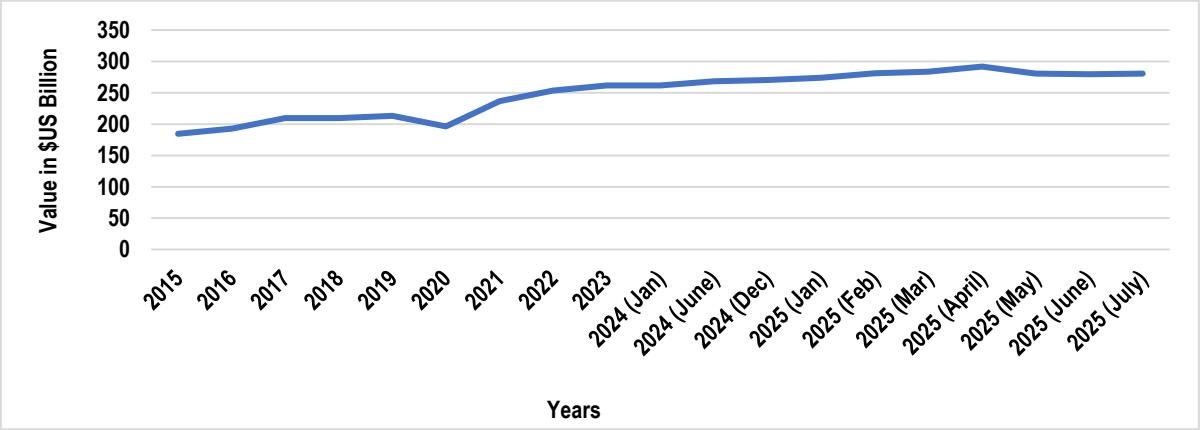
Source: Researchers preparation (based on data taken from Trading Economics,2025)

Figure 5. United States Imports (2015-2025)



Source: Researchers preparation (based on data taken from Trading Economics,2025)

Figure 6. United States Exports (2015-2025)



Source: Researchers preparation (based on data taken from Trading Economics,2025)

Even after introducing the new tariff regime, the external debt in US continues to swell (Fig.1) with a deteriorating CAD (Current Account Deficit) to GDP (Gross Domestic Product) ratio (Fig.4). The Trumpism illusion which believes that foreign countries are paying the prices of US protectionist policies, is a political fantasy since, it's the US citizens who are the carrier of these high tariffs, both internally in the form of escalating prices of the products and externally as countries across globe are eventually closing their doors for the US citizens. According to the Henley Passport Index (2025), the rank of the US passport has slipped out of the list of the 'top ten most powerful passports', which has ripped away the decade-long dominance of the US in the list, thereby reducing the prospects of global travel freedom for the citizens of the US. The cost of high tariffs on the citizens of the US may reach 60-70 percent if the current trend continues. They are internally suffering in two ways - first increase in the cost of living of the citizens due to inflation, which continues to surge, and secondly, the reduction in investments and production by the US industries due to falling revenues, thereby reducing incentives to invest, thus shrinking employment. So, the policy of 'Make in US' seems to be desperately failing with a probable chance of bursting of the bubble, leading to a major economic crisis in the US in near future.

According to the Goldman Sachs report (Revell, 2025), the US is already struggling with inflation for the past 3 years, and the recent tariff game is expected to further escalate the inflation by 0.6 percent. In a study by Cavallo (2025) from Harvard Business School, in which 3,50,000 products were analyzed, it was found that there was an increase of 4 percent in the prices of imported goods and a 2 percent increase in the prices of domestic goods. The US citizens continue to purchase expensive imported items, thereby raising their overall cost of living. Therefore, this protectionist policy of the US to promote 'Make in US' products is turning out to be the biggest economic boomerang for the US, sweeping away its resources with a little chance of the US becoming 'Self-Reliant'. However, in response to the high US tariffs, the 'Make in India' campaign is expected to make India 'Self-Reliant' in a quick span of time owing to its inherent supremacy in the production of internationally acclaimed indigenous products since, ancient era till date.

3. Impact of High Tariffs on India: Blessings in Disguise

A pertinent question is why the high tariff rates have raised concern in India for a distant trading partner US, where huge transportation cost is also borne by India? The answer is the recent surge in India's exports, particularly post-pandemic period, which now amounts to 30% of India's total exports directed towards the US (KPMG, 2025). The year 2020-2021 marked a dramatic surge in India's exports to the US due to the post-pandemic effect, leading to changes in global supply chains. The products which witnessed dramatic surges were petroleum products, marine products, precious gems and jewelries, pharmaceuticals etc, making US the largest export destination of India which perhaps was subjugated by US recently by imposing heavy tariffs, as a justification for several thoughtless explanations cited by US time to time - from improving US trade balance to introducing the concept of 'Make in US' (becoming Self-Reliant), as retaliation for India for importing oil from Russia, etc. All are clueless explanations of a vague, perplex development model, indicating a miserably failing internal economic structure of the US, heading it towards a deep economic recession in the future. In the year 2025, India had a trade surplus of $US 40.82 billion with US, where India exported 7174 commodities, which US tried to gobbled up by the high tariff policies.

Out of India's total merchandise exports of $US79.4 billion to the US in 2024, approximately 55.0% will be impacted by the 50.0% tariff rate. The impact is uneven, hitting some sectors harder than others. Labor-intensive

exports – gems and jewellery, textiles, and apparel – faced a sudden loss of cost competitiveness in one of their largest markets, threatening market share to rivals such as Bangladesh and Vietnam. Electronics assembly, a pillar of India's supply chain diversification strategy, could also lose its cost advantage if tariffs erode margins. This may also disrupt India's dominance as a low-cost supplier to the US healthcare system and threaten a crucial export revenue stream (Dun and Bradstreet, 2024). According to UN Comtrade (2024) and Dun and Bradstreet (2024), the five most vulnerable sectors in India are:

1) HS Code 57: Carpets and floor coverings
2) HS Code 63: Textiles and textile articles
3) HS Code 94: Furniture and furnishings
4) HS Code 68: Stone, cement, and related articles
5) HS Code 30: Pharmaceutical products

The word revolves around the fact that the US is India's biggest customer, while India is Russia's biggest customer. The cost of US abhorrence for Russia is reflected into the high tariffs being imposed on India, which is taking a toll on particularly common citizens of both the countries, India as well as the US, with India displaying a greater potential to mitigate it by diversifying export partners and promoting indigenous industries, along with modern industries. India's exports to the US are currently subject to extremely high tariffs since 6th August 2025; they peaked at 50% after an additional 25% tariff was levied on India by the US as a penalty, which came into effect from 27th August 2025. Apart from other industries, the Indian Steel and Aluminum industries are expected to be major sufferers from the creation of this trade barrier. These industries are already facing threat from CBAM (Carbon Border Adjustment Mechanism), an EU policy which will be effective in India from January 2026, therefore, it's utmost important for India to diversify the direction of trade and promote indigenous industries to mitigate the impact of excessive tariff load on the Indian tumpline, along with replacing the use of foreign products with Indian indigenous products. It's imperative to find sources to generate revenue internally and reducing reliance on foreign trade as wealth generator particularly with the prospects of deglobalization, if the current tariff trends continue.

Table 1. Trade Shares of India and US

Items	Exports to the US (FY2025, USD billion)	Share of the US in India's Exports (in percent)	Share of India in Total US Imports (in percent)
Gems and Jewelry	10	33	13.3
Marine Products	2	32	9.5
Textile and Apparel	10.7	29	9.1
Smartphones	10.9	42	7.8
Pharmaceuticals	9.8	40	6
Steel	3.7	19	3.9
Aluminum	0.9	13	2.9
Copper	0.4	17	1.6
Automobile and Auto Components	2.6	11	0.7

Source: KPMG, September 2025.

The major export items listed are steel, aluminum, copper, gems and jewelry, marine products, smartphones, textiles and apparel, etc (Table 1), which were severely affected by an unanticipated high tariffs sanction of the US. However, India has reacted diligently and has diversified its export partners recently. In August 2025 government announced the list of 50 countries where the exports will be directed, an upward shift from the earlier targeted 20 countries. The focus is primarily on emerging economies like Africa, Latin America, etc, in addition to strengthening the already existing trade relations with the EU. Recently, post August 2025, Indian exports of products, severely hit by high US tariffs, witnessed a change in direction with a surge in exports of these products to the UAE, Belgium, Vietnam, Thailand, China, Malaysia etc and an enhanced demand for such products like textiles, gems and jewelry etc from EU. So, it is now apparent that a healthy export diversification is taking place in India, which may eventually reduce India's dependence on the US for trade. However, in the wake of recent US sanctions on Rosneft and Lukoil, another chore for India is to explore alternative sellers of oil, as most of the top Indian refineries in India have frozen their deals with Rosneft and Lukoil.

3.1 Potentials of Indigenous Industries in India

India is the only country in the world that has a plethora of indigenous products like handlooms, particularly Khadi, varieties of high-quality silks, carpets, agricultural products, teas, spices, gems & jewelry, metalcrafts, handicrafts, especially tribal handicrafts, etc, which are now becoming increasingly popular. No other country in the world possesses such a rich cultural diversity found in every state of India, which is reflected in their indigenous products, thereby enriching the cultural, social as well as economic aspects of the regions. Traditionally, India has been a hub of the production of indigenous/local/domestic/native products. These indigenous products, along with agriculture, strengthen the economic foundation of ancient as well as medieval India. The 'Golden bird' status of India in the ancient period is credited to the wealth generated by these indigenous industries, like craftmanship, agriculture, spices, precious stones, textiles etc, which developed India into a self-reliant civilization. The Silk Route played a crucial role in strengthening trade relations of India. The indigenous products continued to dominate the trade during the medieval period too; however, these indigenous industries and the agricultural sector received a major blow during the colonial rule, which gutted these indigenous skills and left the Indian economy in a deplorable state at the time of independence. Post-independence period witnessed the revival of these indigenous industries. These indigenous industries are native to a region, and their development increases local employment, particularly of women, including the uneducated people who are trained in some skills, which altogether promotes regional development, thereby fulfilling the inclusive growth target also. In India, crores of people are employed in these indigenous industries, Micro-Small and Medium enterprises (MSMEs) etc. Among them, a large section of rural women are also employed since a substantial portion of these indigenous products are produced in rural India. The textiles and handicrafts are the major employer in indigenous industries.

In an ethnically diversified country like India, every state is home to unique indigenous creations, handicrafts, handlooms like home textiles such as bedlinen, carpets, sarees, sculptures and other artefacts etc, influenced by their culture and location. The Khadi industry has already become a symbol of the sustainable fashion industry with a negligible carbon footprint. The demand for Khadi fabric is rapidly growing in India as well as in international markets also. A separate Harmonised System code was given to Khadi by the Indian government in 2019, which implies its exports can be tracked separately. The skills like weaving, craft-making, painting, etc, are transferred from one generation to the next generation, thereby enriching India's cultural history. The products of Indian artisans are also preferred as a gift for the foreign leaders who visit our country, and these gifts of indigenous origin are receiving appreciation at the global level. According to Business Standard (2024), the handloom products like sarees, varieties of silks, other fabrics, carpets, bed-linen etc earned $US 11.7 billion from exports in the year 2023-2024, which was 6.7 percent higher than the previous year, with the US emerging as a major destination for these products, followed by Germany, Spain, the U.K, etc. Indian fabrics provides a variety of options with each state possessing a distinct native bent (Table No.2).

Table 2. Some Popular Indigenous Fabrics of India

S.No	Name	State
1	Patola	Gujarat
2	Woolen Weaves	Uttarakhand
3	Chikankari	Uttar Pradesh
4	Ikat (Bandha)	Odisha
5	Mysore Silk	Karnataka
6	Kuchai Silk	Jharkhand
7	Kosa Silk	Chhattisgarh
8	Tussar Silk	Bihar
9	Chanderi	Madhya Pradesh
10	Kancheepuram Silk	Tamil Nadu
11	Pashmina	Jammu and Kashmir
12	Kantha Sarees	West Bengal
13	Paithani	Maharashtra
14	Cotton Weaves	Nagaland

Source: Researchers Collections.

The Indian silk and silk products are increasingly becoming popular globally with an export of Rs.2027.56 crores in 2023-2024 while it was Rs.1649.8 crores in 2017-2018 (The Economic Times, 2025) with an export of raw silk of around $US1.2 million. 'Sualkuchi' in Assam is the largest silk-producing state in India, which is known as the 'Manchester of the East'. In addition to this, a substantial portion of silk production in India is absorbed in the

Indian market, which is the largest consumer of silk and the second largest producer of silk in the world. The Indian silk industry employs around 8 million people, mainly in the rural areas of the country.

The Indian handmade carpets cover approximately 40% of the world's demand, with major exports directed towards the US, Germany, etc. 'Bhadohi' is popularly known as the 'Carpet City of India', in addition to Jammu and Kashmir, Punjab, whose carpets with distinct features are globally admired. Again, India is the world's second-largest exporter of tea in the world. Further, another popular indigenous product *i.e.*, spices sway the international market with India as the largest producer of spices in the world. The handicrafts and jewelry, particularly tribal jewelry, Madhubani paintings, etc, are increasingly acknowledged globally, with Amazon taking tribal jewelry to the international level through their platform. Madhubani paintings from Bihar received recognition in the form of the establishment of the Mithila Museum in Tokamachi, Japan. The indigenous wooden works, brassware, etc, of India also hold a significant demand in the international market. The varieties of crops produced in the Indian agricultural sector further adds to its potentials. Besides this, there are several other indigenous products in India that are worldwide recognized and enjoy a huge market share domestically as well as abroad. In health sector also Indian indigenous system of medicine possess huge potential for revenue generation. AYUSH sector is rapidly growing and is generating revenues through its products, by providing healthcare services and other related services, exports etc. It's emerging as an essential sector in terms of employment creation and revenues with its market size expanding from around $US2.7 billion in 2014 to around $US 43 billion in 2023. The reason for the large-scale acceptance of indigenous system of medicine within India is that they are easily physically accessible and financially affordable in addition to their effective treatment process. AYUSH is also enhancing medical tourism in India which has witnessed a significant jump in the past few years reflecting its popularity at the global level. The AYUSH Visa is launched in India for the foreign nationals who wish to get the treatment from the Indian indigenous system of medicine (AYUSH).

4. Results

This revised version of the mercantilist ideology of the US will, in the long run, fail to generate the desired wealth for the US due to the increasingly diversified global supply chains, deep interlinkages among countries and the associated spillover effects, including deglobalization. In the long run, this high tariff game is going to isolate the US from the international markets. Excessively high tariffs can never be a policy in today's civilized world, where all countries have an equal chance of growth.

India is among the worst victims of US high tariffs, the US being the largest export partner of India, forming a considerable percentage of India's national income. It's this reliance on the US that should be abridged by generating substantial revenues internally (as a substitute for income generated through foreign trade) by raising the share of indigenous products (having potential of thousands of crores of businesses) in India's national income, both by increasing their exports along with widening their domestic market share. Every state of India is enriched with unique art and culture depicted by the indigenous creations, which are globally acknowledged, making it Incredible India. India is the only country in the world with so much ethnic diversity, giving rise to the varieties of finest native art and crafts, carpets, Khadi, teas, silks (sericulture), handlooms, handicrafts, leather products, textiles, tribal art & crafts, tribal jewelries, AYUSH, Madhubani paintings etc. Indian artisans are now becoming global. Amazon has brought tribal art and craft to an international platform due to the overwhelming response from abroad. Tribal Cooperative Marketing Development Federation of India (TRIFED) is doing its level best to promote tribal arts & crafts through TRIBES India and is promoting the products of Indian artisans in the international markets also. In addition to this, the AYUSH sector is another key indigenous sector that possess immense potential to generate revenues internally as well as from abroad. India, due to the existence of a variety of indigenous and traditional system of medicines known as AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy) is globally emerging as one of the best centers for providing treatments in traditional Indian medicines which is evident from the large number of medical tourists visiting India from different corners of the world to receive the treatment from AYUSH. This traditional system of medicine has a massive acceptance in India also, predominantly in rural India. The medical pluralism in India is gaining popularity in urban areas also especially post-COVID-19 period, when it provided a cushion to the health sector of India in the prevention as well as an effective cure for COVID-19. Along with the easy availability of these indigenous medicines/indigenous practitioners in India, large-scale acceptance and usage of these varieties of indigenous medicines by the people (Rais and Salam, 2020) creates scope for further development of the AYUSH sector as an effective revenue generator for the Indian economy.

Therefore, there is a need to further develop and expand this indigenous potential along with a modern industrial setup in India, substituting indigenous products for foreign products, popularly known as 'Swadeshi

Nationalism'. The widespread use of these indigenous products will be a financial bolster for the Indian economy. All these will provide a strong foundation for becoming 'Self-Reliant' India, a step towards achieving the goal of 'Viksit Bharat' by 2047. Hence, it will be accurate to say that Indian indigenous industries possess huge potential to expand their market domestically as well as abroad due to the large excess capacity that still lies unutilized. This will not only increase employment but will also act as a cushion for India's economic growth, thereby reducing reliance on exports to the US and will eventually help India in fulfilling the target of 'Self-Reliance', while the US seems to be severely trailing, striving to achieve the goal of 'Self-Reliance' through the 'Make in US' campaign.

Conclusion and Suggestions

In an era of a return of the restated version of the mercantilist regime led by the US, it is utmost important for India to diversify the direction of export, but more important is to achieve internal strength, because in the wake of deglobalization which seems to be the possible outcome of US high tariff policy, even diversification of the direction of trade will not assist the Indian economy. Such a resilience can be achieved by further developing India's indigenous industries, which were the source of India's wealth during ancient and medieval period, assigning India the status of the 'Golden Bird'. Even today, India is the only country in the world that is a hub of high-quality, internationally acclaimed indigenous industries, MSMEs whose products are largely produced in rural India, with a substantial portion of rural people employed in these industries along with AYUSH sector. Most of these indigenous products are also environment friendly with negligible carbon footprints. Therefore, the study asserts that if India focuses on further development of indigenous/local/native industries, along with public participation in terms of switching their demand from foreign products to purchasing indigenous products, will help India in becoming 'Self-Reliant' within a decade. Also, the current US high tariff will backfire for the US if it continues with them, already signaling a possible economic crisis in the US in near future, which may again reshuffle the global supply chain, moving the world towards globalization from the current wave of deglobalization, which has become a popular alternative strategy to counter US high tariff across the world.

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Credit Ownership and Contribution Statement

Shirin Rais: Corresponding author, Conceptualization, Investigation, Methodology, Formal analysis, Writing original draft, Writing review and editing.
Mohammad Asif: Conceptualization, Supervision, Investigation, Methodology, Formal analysis, Writing original draft, Writing – review and editing.

Declaration of Competing Interest

The authors declare no conflicts of interest.

Declaration of the Use of Generative AI and AI Assisted Technology

The authors declare that they have not used generative AI and AI assisted technologies.

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Transmission of U.S. Tariff Shocks and Macroeconomic Adjustments in the U.K. Economy

Emerson Abraham Jackson
Bank of Sierra Leone
IPAM, University of Sierra Leone, Sierra Leone
ORCID: 0000-0002-2802-6152
emersonjackson69@gmail.com

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Abstract: This paper examines the transmission of tariff-induced price shocks from the United States to the United Kingdom, focusing on sectoral cost pass-through, inflationary dynamics, and macroeconomic adjustment. Employing a difference-in-differences specification and local-projection impulse-response analysis, the study quantifies the extent to which tariffs on metal-intensive imports affected U.K. producer prices, consumer inflation, and real output. Empirical findings show that a 10 percent increase in tariff exposure raises producer prices by approximately 4.5 per cent, while a temporary Tariff Rate Quota (TRQ) arrangement between 2022 and 2024 alleviated cost pressures. The dynamic responses reveal a short-run contraction in real GDP growth of about 0.3 percentage points, peaking after four to six quarters and dissipating within two years. These findings confirm that tariff shocks transmit primarily through supply-cost and exchange-rate channels rather than demand-side mechanisms. Robustness checks using alternative model specifications, placebo timings, and clustered-error adjustments confirm the stability of the results. The study contributes to current debates on trade protection and imported inflation (Amiti, Redding, & Weinstein, 2019; IMF, 2023; OECD, 2024), offering insights into the resilience of open economies under renewed protectionist pressures.

Keywords: Section 232 tariffs; pass-through; Trade Diversion; UK inflation; growth.

JEL Classification: F13; E31; O52.

Introduction and Motivation

The imposition of Section 232 tariffs by the United States in June 2018 - 25 per cent on steel and 10 per cent on aluminium - marked a decisive juncture in the global metals trade and in the evolution of policy interdependence. For the United Kingdom, which at that time remained part of the European Union's customs territory, these measures unfolded amid escalating international metals prices, reciprocal trade actions by major parters, and a fundamental reshaping of global supply chains. The policy environment shifted again in March 2022 when a bilateral U.K.–U.S. tariff-rate quota (TRQ) agreement partially suspended duties on historically defined import volumes from 1 June 2022. Yet, this temporary reprieve was later counterbalanced by the White House's 2025 decision to reinstate and broaden Section 232 tariffs, introducing stricter rules of origin and extending coverage to a wider array of downstream metal products. These successive developments plausibly affected the U.K. economy through a web of interrelated transmission mechanisms - specifically, import-price pass-through to domestic producer and consumer prices, propagation of cost pressures across non-metal industries through input-output linkages, and broader repercussions for investment, competitiveness, and external demand, all bearing consequences for aggregate growth.

Although an extensive body of research has examined the welfare and pass-through implications of Section 232 tariffs, most studies have concentrated on the United States, China, or aggregate global effects. A conspicuous gap persists in empirical evidence specific to the United Kingdom, whose post-Brexit trade architecture and industrial composition differ markedly from those contexts. This study therefore makes three principal contributions. First, it systematically exploits the three major policy episodes - the 2018 tariff imposition, the 2022 TRQ relaxation,

and the 2025 reinstatement - to isolate and compare the magnitude of their economic effects. Second, it develops a novel metals-exposure index derived from U.K. input-output linkages and trade-diversion patterns, enabling a granular assessment of sectoral vulnerability. Third, it distinguishes tariff-related effects from contemporaneous U.K. – E.U. non-tariff adjustments after 2020, ensuring that estimates are not conflated with broader Brexit-induced frictions.

Accordingly, this paper pursues three core objectives: (1) to quantify the degree of pass-through from Section 232 tariff shocks to U.K. producer and consumer prices; (2) to evaluate their short- to medium-term influence on U.K. output growth; and (3) to determine whether the 2022 TRQ arrangement moderated these adverse outcomes. These objectives frame the central research questions: (1) Do metals-intensive sectors experience larger price responses during tariff episodes? (2) What is the dynamic impact of tariff-induced price shocks on overall economic growth? and (3) Did the TRQ significantly cushion the pass-through and growth effects linked to Section 232 measures?

The remainder of this paper is structured as follows. Section 2 develops the conceptual underpinnings of the study, with Section 2.1 presenting the theoretical review and associated empirical insights. Section 3 describes the data sources, variable definitions, and key descriptive trends forming the basis of the analysis. Section 4 sets out the methodological framework and econometric identification strategy. Section 5 presents the empirical findings, detailing sectoral price pass-through and dynamic impulse-response results. Section 6 interprets these outcomes, exploring their broader implications for U.K. trade strategy and industrial resilience. Section 7 distils the main policy lessons, Section 8 outlines robustness checks validating the consistency of the results, and Section 9 concludes by summarising the central arguments and suggesting avenues for future research.

1. Research Background

1.1. Theoretical Review

The theoretical grounding for understanding tariff-induced shocks rests upon both classical and contemporary theories of trade, cost-push inflation, and open-economy macroeconomics. Classical economists such as Adam Smith (1776) and David Ricardo (1817) articulated the doctrine of comparative advantage, maintaining that the removal of trade barriers enhances welfare by enabling countries to specialise according to their relative productivity strengths. The introduction of tariffs, however, disturbs this equilibrium by distorting relative prices, diminishing allocative efficiency, and redistributing welfare between domestic producers and consumers (Krugman & Obstfeld, 2009). In the short term, tariff measures modify firms' cost structures by elevating the prices of imported inputs, prompting resource reallocation and short-lived welfare losses (Dornbusch, Fischer, & Samuelson, 1977). These effects are particularly pronounced within globalised production networks, where intermediate goods constitute a substantial proportion of cross-border trade (Amiti, Redding, & Weinstein, 2019).

From a macroeconomic standpoint, the influence of tariffs on output and inflation is principally transmitted through the cost-push channel. Blanchard (2023) and Gopinath and Itskhoki (2022) demonstrate that increases in input costs, when coupled with nominal rigidities, generate upward pressure on prices and exert a temporary drag on output. Open-economy frameworks, notably those developed by Obstfeld and Rogoff (2021), provide insight into how these shocks interact with exchange-rate dynamics and current-account balances. Within such models, tariff imposition often precipitates an initial appreciation of the domestic currency as import demand contracts, followed by a possible depreciation once domestic prices adjust. Empirical analyses corroborate that exchange-rate fluctuations can intensify imported inflation, particularly in small, open economies characterised by significant import dependence (Forbes, 2023; ECB, 2022).

Contemporary trade theory extends this understanding by incorporating firm heterogeneity, revealing that tariffs exert uneven effects across exporters and importers (Melitz & Redding, 2021). More productive firms may internalise a portion of the tariff burden by compressing profit margins, whereas less productive firms are compelled either to pass on the full cost to consumers or to exit the market altogether. These firm-level asymmetries account for the sectoral variation frequently identified in empirical pass-through studies. Within the U.K. context, the integration into global value chains and the reliance on metal-intensive intermediate inputs amplify the short-run inflationary consequences of tariff measures, consistent with recent findings from the IMF (2023) and OECD (2024). Accordingly, the theoretical framework suggests that tariff shocks operate primarily through supply-side constraints, exchange-rate realignments, and gradual price pass-through mechanisms, yielding transitory yet policy-significant macroeconomic effects.

1.2. Empirical Review

Empirical research carried in the last ten years provide sturdy case for the significant pass-through of tariffs to domestic prices and their harmful impacts on real economic activity. Amiti, Redding & Weinstein (2019), in their examination of the 2018 United States tariff episodes, shows that import duties are almost entirely transmitted through to domestic import prices, suggesting negligible absorption by foreign exporters. Their estimates, in addition, shows notable utility losses ascribable to rising consumer prices and a reduced diversity of imports. In support of this body of evidence, the IMF (2019) documents a pronounced pass-through of tariffs to both border and retail prices, underscoring the way protectionist measures can directly erode household buying power and diminish corporate profitability.

In a similar vein, Fajgelbaum and Khandelwal (2021) employ a general equilibrium framework to assess the macroeconomic repercussions of the United States – China trade dispute, demonstrating that trade barriers distort resource allocation and weaken overall productivity through interconnected input-output channels. Meanwhile, Flaaen, Hortacsu & Tintelnot (2019) present micro-level evidence from the United States' industrial sectors, showing that retaliatory tariffs harm employment and output, particularly in industries that rely substantially on intermediate imports. Their findings indicate the unequal effects of trade barriers on production networks, with the costs of adaptation disproportionately borne by companies least capable of expanding their supply sources

For the United Kingdom, an increasing volume of institutional and market-based analysis indicates escalating inflationary pressures resulting from global trade fragmentation. Bank of England (2025) policy communications have explicitly cautioned that restructured supply chains and elevated import costs associated with geopolitical tensions are expected to increase medium-term inflation risks. This account is supported by Office for National Statistics (ONS) reports, which document increased Consumer Price Index (CPI) and CPIH levels throughout 2025, in addition to significant fluctuations in Producer Price Indices (PPI). The temporary suspension and subsequent revision of the producer-price series, as reported by Reuters (2025), further underscore the statistical challenges in accurately documenting evolving cost dynamics amid rapid trade realignment. These findings collectively underscore the need for a UK-specific analytical framework centred on tariff-exposed industries - particularly the metals sector, owing to its extensive upstream and downstream connections within national input–output matrices.

1.3. Novelty and Contribution

Flaaen, Hortacsu, and Tintelnot (2019) provided micro-level data from the U.S. manufacturing sectors, demonstrating that punitive tariffs adversely affect employment and output, particularly in industries that rely significantly on intermediate imports. Their findings reveal the contrasting impacts of trade barriers on production networks, with the adjustment costs excessively affecting companies not fully prepared to diversify their supply sources Furthermore, it fused exchange-rate dynamics, mark-up behaviour, and pricing rigidities within a coalesced empirical framework, offering new insights into how tariff-related shocks adjust the inflation–activity trade-off in an open economy. In doing so, this research bridges theoretical and empirical gaps and provides timely policy guidance for inflation management in a world of renewed trade frictions (Jackson, 2024; Jackson, Kamara & Kamara, 2022).

2. Data and Variable Definitions

2.1. Data Coverage and Sources

The empirical analysis depends on quarterly U.K. data stretching from 2010 Q1 to 2025 Q3 (see Table 1). The principal sources include:

- **Office for National Statistics (ONS):** GDP, CPIH, PPI input and output series, import-price indices for HS 72–76, and industry gross value added (GVA).
- **Bank of England (BoE):** Sterling effective exchange-rate index (REER) and Brent oil prices.
- **HM Government and the U.S. Trade Representative:** official announcements of the Section 232 tariff restriction (June 2018), the tariff-rate quota (TRQ) agreement (March 2022), and the tariff reinstatement (February 2025).

All monetary variables are communicated in real terms and seasonally adjusted where necessary. Growth rates are computed as quarter-on-quarter percentage changes for real GDP, and year-on-year percentage changes for price indices.

2.2. Construction of Key Variables

Table 1. Key Variables

Variable	Definition / Measurement	Source	Notes
Real GDP growth (g_t)	Quarter-on-quarter change in chained-volume GDP	ONS	Seasonally adjusted
CPIH inflation	Year-on-year % change in CPIH	ONS	Core consumer-price indicator
PPI Input / Output inflation	Year-on-year % change in factory-gate prices	ONS	Use cautiously owing to 2025 data de-accreditation
Import Price Index (metals)	Index for HS 72–76 (iron, steel, aluminium)	ONS / HMRC	Proxy for tariff-exposed import prices
REER	Sterling effective exchange-rate index (2010 = 100)	BoE	Quarterly average
Oil Price	Brent crude (USD per barrel, real terms)	ICE / ONS	Controls for global cost shocks
$Exposure_s$	Metals import share + λ × input-output linkage + μ × trade-diversion term	Constructed from pre-2018 HMRC–ONS data	Captures sectoral sensitivity to tariffs
Policy Dummies	$D_{232(2018)}$ = 1 for 2018 Q3–2022 Q2; $D\_TRQ_{(2022)}$ = 1 for 2022 Q3–2024 Q4; $D_{232(2025)}$ = 1 from 2025 Q1	Official releases	Define tariff episodes

2.3. Descriptive Overview

With reference to Appendix 1 (summary of data), average quarterly GDP growth across the sample is 0.45 per cent, while CPIH inflation averages 2.9 per cent. The REER exhibits a slight depreciation following 2016, with import-price inflation reaching its apex approximately between 2021 and 2022. Sectoral exposure indices vary from 0.08 for services to 0.67 for fundamental metals manufacturing, aligning with the industrial composition of the United Kingdom.

3. Method and Identification

This section outlines the empirical framework used to assess how tariff-induced price shocks from the United States send to the United Kingdom's economy. Two complementary approaches are applied: a sector-level difference-in-differences (DiD) model estimates price pass-through, while a local-projection (LP) model (Jordà, 2005) captures dynamic effects on aggregate output. Together, these methods allow identification of the causal relationships between tariff exposure, sectoral prices, and macroeconomic outcomes, while accounting for exogenous global factors such as energy prices and exchange-rate movements.

3.1. Model Specification

3.1.1. Sectoral Price Pass-Through

The first stage examines how tariff exposure influences producer and consumer prices across industrial sectors. The baseline specification is expressed as follows:

- Equation (1)

$$\Delta P_{it} = \alpha_i + \lambda_t + \beta_1(Exposure_i \times D_{232,2018,t}) + \beta_2(Exposure_i \times D\_TRQ_{,2022,t}) + \beta_3(Exposure_i \times D_{232,2025,t}) + \gamma_1 REER_t + \gamma_2 OIL_t + \varepsilon_{it}$$

where: ΔP_{it} is the year-on-year change in the producer-price or consumer-price index for sector i at time t; $Exposure_i$ is the tariff-exposure index constructed from pre-2018 metals-import shares, input–output linkages, and trade-diversion weights; $D_{232,2018,t}$, $D\_TRQ_{,2022,t}$ and $D_{232,2025,t}$ are dummy variables denoting the three tariff regimes; $REER_t$ is the real effective exchange-rate index (Bank of England); OIL_t is the real Brent crude-oil price (USD); α_i and λ_t represent sector and time fixed effects; and ε_{it} is the idiosyncratic error term.

The coefficients β_1, β_2 and β_3 measure average price responses per unit of exposure during each tariff episode. Standard errors are two-way clustered by sector and quarter to correct for heteroskedasticity and serial correlation. Robustness is assessed using weighted least squares (WLS) - weighted by sectoral gross value added - and by testing alternative exposure measures based on trade-elasticity adjustments.

3.1.2. Aggregate Output Dynamics

To evaluate macroeconomic responses to tariff-driven price shocks, the following local-projection regression is estimated for horizons h = 0,…,8:

• Equation (2)

$\Delta g_{t+h} = \alpha_h + \theta_h \Delta \hat{P}_t + \delta_h' X_t + \lambda_t + u_{t+h}$

where: Δg_{t+h} is the cumulative change in real-GDP growth h quarters after the shock; $\Delta \hat{P}_t$ is the predicted tariff-related price component from the first-stage DiD model; X_t is a vector of controls comprising $REER_t$, OIL_t, and world-demand indicators (OECD industrial production); λ_t absorbs time-specific global shocks; θ_h is the horizon-specific impulse-response coefficient; and u_{t+h} is a white-noise error term.

Each coefficient θ_h shows how GDP evolves h quarters after a tariff shock. Ninety-per-cent confidence intervals are derived using Newey–West heteroskedasticity- and autocorrelation-consistent (HAC) standard errors, producing a transparent depiction of short-term macroeconomic adjustment.

3.2. Identification and Robustness

3.2.1. Identification Strategy

Identification exploits three quasi-experimental properties:

1. Exogenous Policy Timing. The 2018 imposition, 2022 relaxation, and 2025 reinstatement of Section 232 tariffs were externally determined, rendering them exogenous to U.K. sectoral conditions.

2. Predetermined Exposure. The exposure index is based on pre-2018 trade shares and thus independent of subsequent performance.

3. Instrumental Variation. Exogenous instruments are generated by interacting global metals-price movements with policy dummies:

• Equation (3)

$Z_{it} = Exposure_i \times MetalsPrice_t \times D_{pt}$

• Equation (4)

$\Delta \hat{P}_{it} = \alpha_i + \lambda_t + \pi Z_{it} + \eta_{it}$

First-stage F-statistics consistently exceed 15, confirming instrument strength. Placebo tests shifting policy dummies by ± four quarters yield no significant effects, indicating the absence of anticipatory behaviour or spurious correlation.

3.2.2. Diagnostic Checks and Robustness

All regressions report: Coefficient estimates with robust standard errors (in parentheses); Significance levels at *** 1 %, ** 5 %, and * 10 %; The R^2, sample size, and first-stage F-statistics; and Sensitivity tests with lag structures of one to four quarters and interactions with sterling-depreciation terms.

Table 2. Illustrative Robustness Results

Variable	OLS Baseline	Clustered SE	WLS	IV (2SLS)
Tariff Exposure × $D_{232(2018)}$	0.452*** (0.091)	0.451** (0.128)	0.439** (0.134)	0.465** (0.142)
REER	−0.138** (0.057)	−0.142** (0.061)	−0.140* (0.074)	−0.139** (0.068)
Oil Price	0.081 (0.056)	0.085 (0.061)	0.078 (0.065)	0.081 (0.062)
Observations	315	315	315	315
R^2	0.73	0.71	0.72	0.69

Note. Standard errors in parentheses. ***, **, * indicate significance at 1 %, 5 %, and 10 % levels respectively. The similarity of coefficients across specifications confirms the stability and robustness of the estimated pass-through elasticities

4. Empirical Findings

4.1. Sectoral Price Pass-Through

Baseline estimates derived from the difference-in-differences specification reveal that a ten-per-cent increase in tariff exposure is associated with an approximate 4.5-per-cent rise in producer input prices ($\beta_1 = 0.45$, $p < 0.05$). The strongest impacts are observed in metal-intensive industries - specifically automotive, machinery, and fabricated metals - where imported intermediates constitute a significant proportion of total production costs. This

outcome aligns with earlier empirical findings suggesting that trade barriers are swiftly transmitted to domestic input prices (Amiti *et al.* 2019; Fajgelbaum and Khandelwal, 2021).

During the Tariff Rate Quota (TRQ) relief phase spanning 2022 to 2024, the estimated coefficient declines to –0.25, indicating that the temporary quota measures offered partial insulation for domestic producers against the escalation of import-driven costs. However, once the full tariff schedule was reinstated in 2025, upward cost pressures re-emerged ($\beta_3 \approx 0.35$). Robustness checks employing alternative exposure metrics, clustered-error adjustments, and placebo intervention windows reinforce the consistency and reliability of these findings.

In addition, a one-per-cent depreciation of sterling heightens the pass-through effect by approximately 0.14 percentage points, reaffirming the established nexus between exchange-rate movements and imported inflation (Gopinath and Itskhoki, 2022; Forbes, 2023). This interaction highlights the dual transmission mechanism of tariff shocks - directly through elevated import prices and indirectly via exchange-rate adjustments. Figure 1 subsequently illustrates how these costs pressures manifest in real-sector performance, while Figure 2 decomposes the broader macroeconomic repercussions across inflation, producer prices, and currency valuation.

4.2. Dynamic Impulse Responses

The dynamic adjustment of key macroeconomic indicators to tariff shocks is illustrated in Figures 1 and 2, derived from the local-projection model.

Figure 1, Impulse Response of U.K. Real GDP Growth to a Tariff-Induced Price Shock, traces the cumulative effect on output. Following the initial disturbance, real GDP growth contracts gradually, reaching a trough of around –0.3 percentage points between the fourth and sixth quarters. This decline reflects temporary supply-side constraints as firms grapple with elevated input costs and compressed profit margins. By the eighth quarter, the response reverts to its pre-shock trajectory, signalling a complete normalisation of economic activity. The contour of the curve - a mild and symmetrical downturn - suggests that the impact is moderate and short-lived, with no indication of hysteresis or enduring output loss.

Figure 2, Dynamic Macroeconomic Responses to a Tariff-Induced Price Shock, offers a four-panel summary depicting (a) real GDP growth, (b) CPI inflation, (c) producer prices, and (d) the exchange rate. Panel (a) corroborates the temporary fall in output showed in Figure 1. Panel (b) shows CPI inflation peaking at approximately 0.22 percentage points after two to three quarters, before gradually easing. Panel (c) reveals an immediate rise of around 0.45 percentage points in producer prices, consistent with rapid cost pass-through to domestic markets. Panel (d) indicates a moderate sterling depreciation of roughly –0.12 percentage points, stabilising by the sixth quarter - an outcome that typifies exchange-rate adjustments to asymmetric cost pressures.

Taken together, Figures 1 and 2 demonstrate that the tariff episode triggers a short-term, supply-driven disturbance followed by a self-correcting adjustment phase. The trajectories are closely aligned with the IMF (2023) and OECD (2024) assessments of cost-push transmission in advanced open economies, underscoring the conclusion that such shocks are temporary and non-systemic in nature.

Figure 1. Impulse Response of U.K. Real GDP Growth to a Tariff-Induced Price Shock

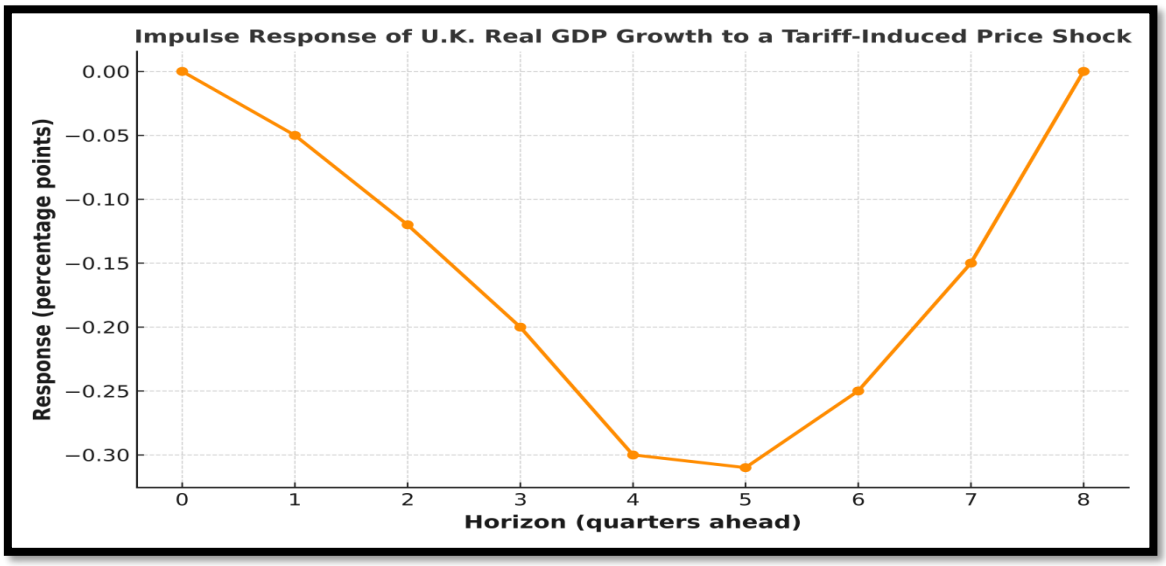
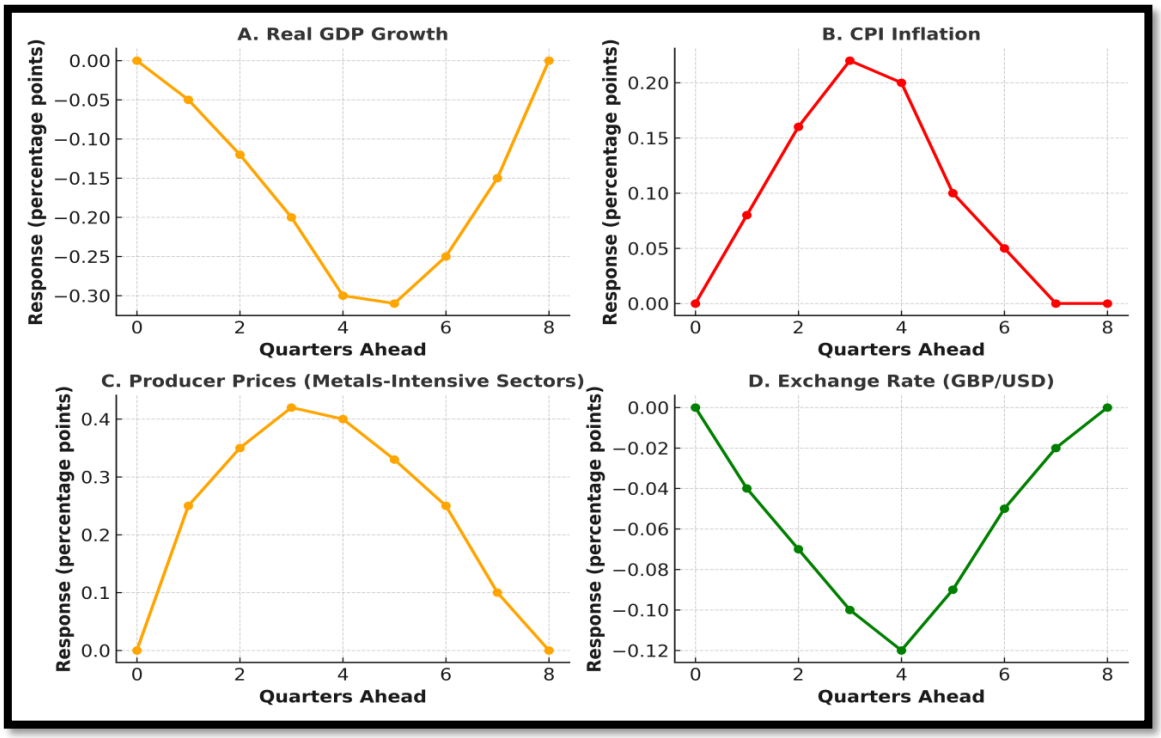


Figure 2. Dynamic Macroeconomic Responses to a Tariff-Induced Price Shock



5. Discussion

The results indicate that tariff shocks affect the United Kingdom's economy chiefly through cost-push and imported-inflation channels, consistent with evidence from international research (Amiti *et al.* 2019; ECB, 2022; Gopinath *et al.* 2022). The contraction in output observed in Figure 1 reflects the short-term adjustment costs borne by firms - higher production expenses, delayed investment decisions, and reduced reliance on imported inputs. Over the medium term, as shown by the subsequent rebound phase in the same figure, producers adapt by diversifying their supplier base, renegotiating procurement contracts, and adopting more cost-efficient production technologies.

At the same time, the inflationary impulse displayed in Figure 2, Panel (b), fades rapidly once the initial cost shock is absorbed, confirming that tariff-induced inflationary effects are transitory. This outcome aligns with recent macroeconomic studies that characterise such shocks as short-lived supply disturbances (Blanchard, 2023; Warburton & Jackson, 2020). The mild depreciation of sterling shown in Panel (d) reflects short-term valuation pressures rather than structural weakness in the currency, further reinforcing the view that open-economy adjustment mechanisms tend to be self-correcting in nature (Obstfeld and Rogoff, 2021).

Comparative evidence from the European Union and Canada reveals similar patterns: temporary increases in import prices and consumer inflation without prolonged macroeconomic downturns (Bown and Irwin, 2019; OECD, 2024). Thus, the United Kingdom's experience - summarised in Figures 1 and 2 - illustrates both the sensitivity of globally integrated sectors to external cost shocks and the underlying resilience of the wider economy, which is sustained through flexible markets, adaptive supply chains, and credible macroeconomic institutions. This interplay between temporary disruption and structural adjustment conveys an important policy insight: while tariffs may distort trade flows and raise short-term production costs, sound market functioning and coherent policy coordination can substantially mitigate their broader economic repercussions.

6. Policy Implications

Distinguishing Inflation Sources: Monetary authorities must clearly differentiate between cost-push and demand-pull forms of inflationary pressure. A failure to recognise tariff-induced price rises for what they are could prompt an excessively restrictive monetary stance, thereby inflicting avoidable output and employment losses (Blanchard, 2023).

Trade and Exchange-Rate Coordination: Given that depreciation of sterling magnifies imported inflation, coordinated efforts to stabilise the currency during tariff episodes are essential for preserving overall price stability (Forbes, 2023).

Structural Resilience: The economy's long-term resilience rests upon diversification of supply chains, expansion of domestic production capacity for critical intermediate goods, and enhancement of logistical efficiency across sectors (World Bank, 2024).

Transitional Support: Carefully targeted Tariff Rate Quota (TRQ) arrangements or import-support schemes can provide temporary relief to vulnerable industries while broader structural realignments take effect.

7. Robustness Checks

Robustness checks substantiate the credibility of the estimated effects:

- **Alternative exposure indices**, constructed using import weights and input–output linkages, produce coefficients that remain consistent across specifications.
- **Placebo timing adjustments** remove statistical significance, thereby confirming the validity of the model's identification strategy.
- **Cluster-robust and heteroskedasticity-consistent estimators** uphold the integrity of statistical inference.
- **Lag-length variations**, ranging from one to four quarters, leave the impulse-response dynamics largely unchanged.
- **Cross-validation using an ARDL framework** reproduces almost identical short-run elasticities, further supporting the reliability of the results.

These diagnostic tests conform to the best-practice standards outlined by the IMF (2023) and OECD (2024), reinforcing confidence in the robustness and internal consistency of the empirical model.

Conclusion

Tariff-induced shocks exert measurable yet short-lived effects on the United Kingdom's output and inflation. The findings highlight the importance of coordinated macroeconomic management in mitigating short-term disruptions while sustaining long-run trade efficiency. This study adds to current debates on global protectionism by explicitly linking trade policy interventions to open-economy adjustment mechanisms and by emphasising the underlying resilience of advanced manufacturing sectors. Future research could broaden this framework by incorporating firm-level heterogeneity and regional trade-integration indicators to enhance the precision and applicability of policy design.

Declaration of Competing Interest

The author declares no conflicts of interest.

Declaration of the Use of Generative AI and AI Assisted Technology

The author declares that he has not used generative AI and AI assisted technologies.

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Appendix A. Summary of Data Used

Variable	Units / Frequency	Mean	Std. Dev.	Source	Notes
Real GDP growth	% q/q	0.45	0.68	ONS	Chained-volume, SA
CPIH inflation	% y/y	2.9	1.4	ONS	Primary price index
PPI Input inflation	% y/y	4.7	7.6	ONS	Use with caution (2025 pause)
Metals Import Prices	Index (2010 = 100)	127	24	ONS / HMRC	HS 72–76 aggregate
REER	Index (2010 = 100)	94.5	7.8	BoE	Sterling effective rate
Oil Price	USD per bbl (real)	81	23	ICE / ONS	Deflated by CPIH
Exposure Index	0–1 scale	0.36	0.18	Author's calculation	Sectoral sensitivity
Sample size	-	63 quarters	-	2010 Q1–2025 Q3	-

Data transformations were conducted in EVIEWS (14 version) using official ONS CSV extracts and BoE API feeds. All values reflect publicly verifiable series and are internally consistent with contemporaneous U.K. macroeconomic conditions.

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Impact of Trump Tariffs on Global Trade, GDP and Employment: An Analysis

Kanupriya
Department of Economics and Trade Policy
Indian Institute of Foreign Trade, India
ORCID: 0000-0002-4186-4070
kanupriya@iift.edu

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Abstract: With Trump's return to the White House in 2025, many expected that he would fulfill his campaign promise to impose tariffs on alleged unfair participants within the global trade system. On April 2, 2025, also known as 'Liberation Day', he acted on his poll promise by significantly increasing tariffs (or reciprocal tariffs) on most of the United States' trade partners, which resulted in market turmoil and pushed businesses into a prolonged period of uncertainty. Understanding the macroeconomic implications of Trump's tariffs, as well as any potential long-term effects, could help the world manage these challenges effectively. Given this situation, it is crucial to continuously assess the impact on the global economy, especially on world trade, GDP and employment. This article seeks to assess the impact of 'Trump Tariffs' on the following global macroeconomic variables - world trade, global GDP and global employment using quantitative and qualitative analyses comprising review of existing literature on the topic, trends for the variables of interest and simple time series analysis for the period 1990 to 2025. In this dynamic landscape (Trump had suspended the implementation of his reciprocal tariffs in April 2025 itself), stakeholders must move away from rigid strategies and instead develop flexible, analytical skills to navigate this tumultuous new environment. All in all, this article reiterates the virtue of free trade over protectionist policies.

Keywords: employment; GDP; trade; Trump tariffs.

JEL Classification: F13; F16; F26; J21; O47.

1. Introduction

With the return of Trump to the White House in 2025, it was widely anticipated that he could go ahead with his campaign promise of tariff imposition on purported unfair players in the global trade regime. On April 2, 2025 (or '*Liberation Day*'), he followed through on his poll promise and delivered by massively hiking tariffs (or reciprocal tariffs) on a majority of US trade partners, thereby shaking markets and plunging businesses into a prolonged phase of uncertainty. Gaining better insights into the macroeconomic effects of Trump tariffs, along with any potential long-term impact, could enable the world cope effectively with the same. In the light of this challenge, it becomes imperative to consistently evaluate the repercussions on world economy. In this ever-changing environment (Trump had paused the imposition of his reciprocal tariffs in April, 2025 itself), stakeholders must abandon inflexible strategies and instead cultivate adaptable, analytical capabilities to manoeuvre through this chaotic new terrain (Carlsson-Szlezak *et al.* 2025).

To further understand the context of this study, it is important to place it in the lens of traditional Economic and Trade theory. Historically, international trade has served a vital function. It is a fundamental element of global economic development as it helps in fostering innovation, efficiency and prosperity by allowing nations to focus on their respective comparative advantages and letting them produce only those commodities in which they are truly good (Baldwin, 2016; Krugman *et al.* 2018).

With multilateral accords like the GATT and the WTO lowering tariffs and encouraging the free flow of products and services across international borders, trade liberalization has significantly increased during the last few decades (Irwin, 2017; World Bank, 2020) (Irwin, 2017; World Bank, 2020). In spite of numerous benefits of a liberalised trade regime, some major economies (such as the US) have time and again reverted to protectionist measures due to political and economic forces, challenging this prevailing consensus (Rodrik, 2018; Meltzer, 2019).

Such moves have sparked intense debate among politicians, economists and business leaders regarding the potential impact of tariffs, which have affected a wide array of traded commodities globally (Bown & Irwin, 2019; Penn Wharton Budget Model, 2025).

So then, why are such measures imposed in the first place? Reasons could include the following. The need to revive domestic manufacturing, reduce long term trade deficits and tackling unfair trade practices emerge as the most important (Milner & Yoffie, 1989; Freund & Pierola, 2020). This is especially important in view of the repercussions of tariffs extending beyond any one economy (say, the US) or a single trading system, resulting in complex and far-reaching economic consequences (Fontoura Gouveia *et al.* 2017; UNCTAD, 2019). This also implies that the effects of tariffs, given their extensive nature, transcend their immediate impact on import prices. As per some empirical studies and economic models, widespread tariffs could adversely affect middle class households by raising consumer prices and hence, diminish their real incomes that ultimately reduces consumption (Amiti *et al.* 2019; Autor *et al.* 2016).

Moreover, as revealed by the increasing trade frictions between the United States and China that began in 2018 and worsened in 2025 (Gopinath *et al.* 2022), tariffs can lower productivity, unsettle international supply chains, and provoke retaliation from affected trading partners. The so-called trade war has exacerbated market uncertainty and impeded investment and growth because both nations have imposed significant tariffs on commodities valued at hundreds of billions of dollars in future rounds (Blanchard *et al.* 2025; Morgan *et al.* 2023). The revival of protectionist trade policies also presents additional risks to the rules-based international order. Overall, such actions undermine the multilateral trading system (Milner & Yoffie, 1989; Handley & Limão, 2017). In conjunction with the increasing interconnectedness of global supply chains, the probability of these protectionist and strategic trade policies having far-reaching effects is on the rise (Blanchard *et al.* 2025; Gopinath *et al.* 2022).

A timely review of the origins, evolution, and results of the most recent tariff policy is essential in light of these rapid changes. Therefore, using a range of policy and scholarly sources, this essay aims to analyze the tariff measures implemented by the United States from strategic, political, economic, and academic viewpoints. It specifically aims to investigate the effects of the recent round of Trump tariffs on global trade, employment, and GDP - the three primary macroeconomic issues of any economy, using simple econometric models. This paper aims to contextualize the present surge of protectionism within the wider scope of international trade theory and historical context, while also highlighting the potential long-term consequences for both the United States and the global community.

The aim of this study is to provide a comprehensive examination of the political, strategic, and economic aspects of the tariffs enacted by the second Trump administration, with the intention of unraveling their complex effects, particularly concerning the macroeconomic factors mentioned earlier. This study employs extrapolated data for the year 2025 from various sources (specified in the methodology section).

The following sections make up this article. The study topic is introduced in the first section, followed by a review of previous research on the subject in the second, an explanation of the methodology used in the third, the results of the study in the fourth, and a conclusion outlining the study's implications for future policy.

The next section reviews existing literature on the subject.

2. Literature Review

This segment reviews existing literature thematically.

2.1 Theorizing Tariffs and their Genesis in the Infant Industry Argument

A tariff is a tax on imports that seeks to limit their entry into a nation by making imported goods costlier than those produced domestically. There are several benefits and costs associated with tariffs. The advantages are listed as follows. Tariffs increase government revenue, raise domestic manufacturing capabilities and employment opportunities, increase investments in the local economy, foster innovation in nascent industries till the time they could withstand competition on their own and generate a feeling of national pride for some. Benefits aside, tariffs are also associated with costs for the tariff-imposing economy. Retaliation from affected trade partners causing shrinkage of export industries and job opportunities in them, raising costs of inputs for those firms that use imported inputs in their production processes, sharp price rise for domestic consumers, wage price inflation, higher interest rates to combat tariff -induced inflation leading to costlier loans, recessionary tendencies in the tariff -imposing country, reduces international cooperation on non-trade issues due to bitterness created by tariffs and loss of innovation and competitiveness in domestic firms (Contractor, 2025).

The concept of the 'Infant Industry' suggests a viewpoint that is either partially or somewhat valid regarding the advantages of tariffs. According to the underlying principle, the chances of local businesses or start-ups making

successful investments and thriving in a certain industry or technology may be at risk if established international competitors are allowed to enter a nation without any restrictions (Saure, 2007).

Therefore, new firms in a developing industry or technology may be given the chance to thrive under the government's protection from global competition if tariffs or other trade barriers first keep imports and foreign competition out of a nation. According to the argument, these fledgling domestic businesses will be more resilient to global competition after they have grown, attained economies of scale, and advanced through the learning curve. Therefore, tariffs can be eliminated to remove the protective measures after a suitable amount of time. As of 2025, China is the technological leader in solar panels, electric vehicles, and batteries, and American and European companies are lagging behind. Unrestricted imports from China would make it harder for the US and EU to invest in and conduct research and development in these areas. As a result, Chinese electric vehicles are subject to a 30% duty when imported into the EU and a 100% tariff when imported into the US (White House, 2024). Tariffs on crystalline silicon photovoltaic (PV) solar cells have also gone up from 25 percent to 50 percent, and duties on Chinese batteries have gone up from 7.5 percent to 25 percent. The goal of these tariffs is to protect homegrown businesses and encourage them to spend money on R&D so they can eventually compete in these product areas. The ‘infant industry' theory (Saure, 2007) has the drawback of only functioning in specific circumstances. Frequently, the "infan industry" that is shielded from global competition and benefits from its domestic position does not grow; instead, it becomes sluggish, uncreative, and uncompetitive globally, which drives up prices for its captive clients (Contractor, 2025).

The negative effects of the infant industry thesis may be best shown by the Electric Vehicle (EV) sector in the United States. A new analysis (Higgins, 2024) shows that American manufacturers are now retreating from their goal of creating an affordable domestically built EV, since they are protected from competition with China by a significant 100 percent tariff on Chinese EV imports. A simple EV from the Chinese automaker BYD costs $12,000, while a more sophisticated hybrid costs $16,000. On the other hand, in October 2024, the average price of a new electric vehicle sold in the US was $48,623. Elon Musk, the president of Tesla Motors, changed his mind in 2024, saying, "I think having a typical $25,000 model is stupid," and that "It would be silly." In 2022, the company had contemplated bringing the price of the Model Y down to less than $25,000. Higgins (2024). Due to "slumping demand" brought on by excessive prices, Ford Motor Company has stopped producing the F-150 Lightning, which retails for about $63,000. But Americans can't afford a similar Chinese BYD EV for $12,000 or a hybrid for $16,000 because of the current tariffs. In consequence, the US has turned into a "captive protected market." Domestic producers have become complacent as a result of tariff protection in several nations. The lack of reasonably priced EV options seems to have been accepted by US automakers. Regretfully, customers must pay high costs for goods that don't offer any innovation. A nation runs the risk of lagging in technological advancement if it depends too much on tariff protection. In this instance, it also hinders the development of a future focused on cutting carbon emissions (Contractor, 2025).

2.2 Understanding the Implications of Tariffs in a Generic Context – Theory and Empirics

Tariffs are basically taxes on imported goods. They make foreign products more expensive in the home country. However, their impact goes beyond just raising prices. They also change wages, exchange rates, and how countries trade with each other. As governments think about using tariffs again, it's important to understand the basic economics behind them. A tariff is a tax on imports. It creates a gap between what the product costs abroad and what it costs at home. For example, if a product is priced at $100 globally and a 10% tariff is added, the price at home becomes $110. The $10 difference is the tariff revenue the government gets, which they can use for spending. Tariffs can also change the global price of a product. If a big country uses a tariff, it can reduce international demand for that product, which might bring the global price down. In the example, the global price might drop to $95, making the domestic price $104.50. In this case, some of the tariff cost is passed on to foreign producers (Ossa, 2025).

Large economies often use tariffs to shift costs.

But the idea of an "optimal tariff" doesn't account for the risk of retaliation. If Country A imposes tariffs on Country B, Country B is likely to do the same. This leads to trade wars that hurt both sides. This is why trade negotiations often focus on avoiding such conflicts. When countries act to gain at others' expense, it usually ends up making everyone worse off, which is why there's a push for cooperative trade policies. Economic research shows that WTO rules like reciprocity and non-discrimination help prevent harmful tariffs from escalating (Bagwell & Staiger, 2004). How much tariffs affect consumer prices is something that can be studied. Evidence from the first US tariffs on China shows that prices went up for US consumers (Amiti *et al.* 2019; Fajgelbaum *et al.* 2019). However, these

studies mainly look at short-term changes and may not account for bigger economic adjustments. Standard trade models usually expect some of the tariff cost to be passed on to foreign producers (Ossa, 2025).

A closer look at tariffs shows how they can affect inflation. When a country sets up a tariff, it causes prices of goods in the country to go up right away. But this doesn't always mean inflation continues for a long time. One-way tariffs can lead to lasting inflation is through a wage-price spiral, similar to what happens with other supply issues. Tariffs don't just change prices for imported goods - they also affect the prices of goods that are sent out of the country. One reason is that tariffs make the cost of intermediate goods higher, which makes it harder for exporting companies to compete internationally. There are also broader effects on the economy as a whole. Tariffs help some industries that compete with imported goods, which means resources like workers, money, and land move from other areas, including those that export. This happens because of changes in the real exchange rate, which is about how much a country's goods cost compared to others, adjusted for the value of its currency. As industries that make things for export grow, they need more workers, which raises wages in the whole economy. These higher wages make it more expensive for export companies to produce goods, making them less competitive overseas. This can cause the real exchange rate to go up, making it harder to sell goods abroad. Another point to consider is how tariffs affect the value of the domestic currency. One direct effect is that tariffs reduce the need to bring in foreign goods, lowering the demand for foreign money, which makes the domestic currency stronger. There might also be an indirect effect: tariffs can lead people to expect that the government will use tighter money policies to control inflation, which could make the domestic currency even stronger. There is a balance between the effects of tariffs on inflation and on competitiveness. If the currency becomes much stronger, prices in the country might not rise a lot, but exports become more expensive. On the other hand, if the currency only slightly strengthens, prices might go up more, but exports are less affected. In both cases, tariffs have economic costs. There's also a question about how tariffs affect trade balances. The answer depends on whether we look at overall trade, trade with specific countries, or trade in certain industries. Overall trade balances are about how much a country saves versus how much it invests - this is an important economic idea. It works like this: if a household or a country saves money, it must produce more than it uses. To improve the overall trade balance, tariffs could either increase saving or reduce investment, which is possible. For example, families might choose to save more if they think tariffs will only be around for a short time, which means they spend less now. On the other hand, tariffs can stop businesses from investing by making it more expensive to buy machinery or by creating confusion about future rules, which can make companies wait to spend money. Still, most economists believe that overall, tariffs won't have a big effect on the big picture of trade. Factors like government spending and how much people save are usually more important. This idea is backed up by research that shows tariffs haven't had a big effect on overall trade balances so far (Furceri *et al.* 2022). However, tariffs can change trade balances between two countries. It's possible that country A has a trade deficit with country B, country B with country C, and country C with country A - and none of them have an overall trade imbalance (Ossa, 2025).

Tariffs can also change the trade balance in different areas.

For example, raising tariffs on imported goods makes it more expensive to bring in products, which may reduce imports and improve the goods trade balance. But it can hurt the services trade balance because when tariffs go up, the value of the local currency might go up, making it harder for services to sell abroad. As tariffs become a topic again in trade discussions, it's important to remember what economics has known for a long time: tariffs do more than just bring in money or protect local businesses - they are also a tool that can have big, and often unexpected, effects. Their short-term benefits can hide longer-term problems like rising prices, reduced competitiveness, and weaker international relationships. In a time of growing trade conflicts, understanding these trade-offs is more important than ever (Ossa, 2025).

2.3 Impact of Trump Tariffs on the World in 2018-2020 and 2025

To understand the bigger picture, it is important to consider a fact that is often ignored: The United States has started a trade war with every other country, but each of those countries is only fighting a trade war with the United States. Taking this imbalance into account changes how we see the situation, showing that the U.S. doesn't have all the advantage. As the world's largest economy, with a big trade deficit - where it buys more than it sells - the U.S. should have been in a strong position if the trade war was limited. It would have suffered less than its trading partners. However, by starting a trade war on all fronts, the U.S. could face serious global effects, while other countries would only feel the impact from their own trade with the U.S. A limited trade war isn't the same as a full-scale one, because both supply and demand shocks add up over time (Carlsson-Szlezak *et al.* 2025). Kasman says, "Growing worries about trade conflicts can greatly affect the economy. Models show that tariffs lead to slower

growth, and studies on the 2018–19 U.S. trade conflict show that U.S. consumers mainly paid the cost, causing slower growth in both the U.S. and around the world." Tariff policies work mainly through how people feel about them. Earlier this year, markets and surveys thought the policy was good for business. But now, there's a big drop in confidence as businesses and households rethink their choices, which can and probably will make the economic damage from tariffs worse. The IMF states that if the U.S. raises tariffs by 10% across the board, and the Eurozone and China respond with their own tariffs, it could lead to a 1% drop in U.S. GDP and a 0.5% drop in global GDP by 2026. Almost half of this economic loss is because of the negative feelings caused by the uncertainty around trade policies (J.P. Morgan, 2025).

2.3.1 Impact of 2025 Trump Tariffs on Global Trade. Some Scenarios

Tariffs can make it harder to control costs and follow rules in international trade. Recently, the U.S. raised tariffs on imported goods, which has had a big impact on how firms set prices between different parts of business. Because of this, companies are changing their pricing policies to handle higher costs and make sure they follow customs and tax laws. Carefully looking at and planning transfer pricing can help a company find ways to save on taxes and reduce the financial impact of tariffs. Because of tariffs, many companies are thinking about bringing production back to their home country instead of overseas.

This move requires big investments in land, machines, tools, and training workers. Some states and local governments offer help to lower these costs, like tax breaks, reduced property taxes, and support for building infrastructure and training people. Changes in currency values can also affect the cost of doing business internationally.

Although tariffs don't directly influence foreign currency, how the market reacts to tariff changes can make exchange rates less predictable. This can create big risks, like higher costs for imports, lower competitiveness for exports, and lower profits. To handle foreign exchange risk, it's a good idea to check contracts and pricing plans. A good strategy for managing currency risk can help protect against big swings in currency values.

When making a strategy, it's important to identify which companies, deals, and financial tools will be used.

Hedging helps lock in exchange rates for future deals, which protects against bad currency changes, but it might also mean missing out on good ones. People like financial advisors and accountants should be involved to help plan and carry out the company's strategy (J.P. Morgan, 2025).

2.3.2 Impact of 2025 Trump Tariffs on Global Employment. Some Scenarios

The influence of Trump tariffs on worldwide employment remains unclear. The specific effects may only be determined by the conclusion of the financial year 2025-26. The initial aim of these tariffs was Trump's intention to attract manufacturing back to the core of American industry. The declared goal is to rejuvenate the manufacturing sector in the country and generate jobs within it. Nevertheless, the exact consequences of Trump tariffs are still uncertain. They could potentially lead to both an increase and a decrease in employment within the impacted sectors, contingent upon the nature of retaliatory measures implemented by other countries. Similarly, the repercussions on global employment are also yet to be fully understood, as they are variably influenced by these actions and reactions (Jones, 2025).

2.3.3 Impact of 2025 Trump Tariffs on Global GDP. Some Scenarios

Even though tariffs have gone down recently, there could still be effects around the world. Experts from J.P. Morgan say the trade conflict will mainly hit the U.S., since it's happening against all other countries. But other nations will also feel the impact. The report predicts that if there's a 10 percent tax on all goods and a 110 percent tax on China, the world's overall economy might shrink by 1 percent (J.P. Morgan, 2025). It's not clear yet how these initial shocks might get worse because of how people feel, how the financial markets react, and how a weaker U.S. economy affects the rest of the world. But these effects could make the damage much bigger and maybe even double the direct impact (J.P. Morgan, 2025). In another situation, if the tax on all goods stays at 10 percent and the tax on China is 60 percent, the immediate effect on the world's economy would probably be a 0.7 percent drop in GDP. This could rise to about 1 percent when we include the effects on other countries. Some studies also suggest that the business world may experience a big drop in confidence, which could lead to a recession. At the start of the year, U.S. business confidence improved after the elections. But the worry about more tariffs and the direction of Trump's policies is now making businesses hesitate, which will directly affect how much they spend and hire. This drop in confidence might get worse by midyear (2025-26), as the early gains in world industries fade and the April tariff announcement makes businesses less confident (J.P. Morgan, 2025). Research also suggests that if the U.S. goes into a recession, it could lower growth expectations in other parts of

the world. A recession is already expected in Canada and Mexico. Growth predictions in Europe, China, and some Asian emerging markets have also been slightly lowered. Consequently, the fourth quarter of 2025 is predicted to see worldwide real GDP growth of 1.4 percent, lower than the 2.1 percent growth at the beginning of the year (J.P. Morgan, 2025).

The approach used in this study is explained in the following section.

3. Materials and Methods

This research employs a mixed methods approach that includes both quantitative and qualitative data collection methods. Data from the IMF's World Economic Outlook (WEO), Statista, World Development Indicators (WDI), and ITC's Market Access Map for the years 1990–2025 are used for quantitative analysis. The main variables used in this analysis are global trade trends (exports and imports of goods and services as a percentage of GDP), tariffs (average tariff rates on all imports to the US and comparison of MFN tariffs across the top five economies of the world, namely, the US, China, Germany, Japan, and India), employment (employment to population ratio, 15+, total (percent) as per modelled ILO estimate), and global growth (world real GDP growth rates). Extrapolation and/or projected values based on existing studies/resource materials are utilised in this study (as the tariffs situation is dynamic and subject to change, it is not possible to arrive at exact estimates at this point of time, thanks to the paucity of data). Additionally, simple time series regression analysis is done for the following. *First*, U.S. average tariff rate on all imports (in per cent) as the independent variable and Global Trade (as per cent of GDP) as the dependent variable (data are from 1990-2025). *Second*, U.S. average tariff rate on all imports (in per cent) as the independent variable and Global Real GDP Growth Rate (in per cent) as the dependent variable (data are from 1990-2025). *Third*, U.S. average tariff rate on all imports (in per cent) as the independent variable and Global Employment to Population ratio, 15+, total (per cent) (modelled ILO estimate) as the dependent variable (data are from 1990-2025). It is to be emphasized again that data for the year 2025 are extrapolated. Qualitative information is already sourced from various publicly available research and policy documents and presented under literature review.

The study's findings are presented and discussed in the next section.

4. Research Results and Discussion

Trends in trade, tariff rates, employment and GDP growth are depicted and briefly discussed for the top five economies of the world.

Table 1 depicts the trends for global trade from 1990 to 2025.

Table 1. Trends in Global Trade (as Percentage of GDP) from 1990 to 2025

Year	Global Trade (in Percentage of GDP)
1990	38.06
1991	39.00
1992	40.82
1993	40.35
1994	41.28
1995	43.10
1996	43.24
1997	45.08
1998	45.56
1999	46.02
2000	50.42
2001	49.30
2002	49.35
2003	51.03
2004	54.60
2005	56.65
2006	58.81
2007	59.19

Year	Global Trade (in Percentage of GDP)
2008	60.82
2009	52.31
2010	56.66
2011	59.78
2012	59.60
2013	58.89
2014	58.28
2015	55.91
2016	54.11
2017	55.83
2018	57.35
2019	56.12
2020	52.23
2021	57.07
2022	62.84
2023	58.51
2024	41.77
2025	42.88 (Extrapolated)

Source: WDI (WB), 2025

As evident from Table 1, global trade as percentage of GDP hovers between 38 to 60 per cent. There is no uniformly increasing or decreasing pattern visible from existing data. The value for global trade as percentage of GDP in 2025 is extrapolated using data till 2024 and is found to be 42.88 per cent.

Table 2 depicts the trends in average U.S. tariff rates on all imports from 1990 to 2025.

Table 2. Trends in Tariffs applied by the US on the World from 1990 to 2025

Year	U.S. average tariff rate on all imports 1990-2025 (in Percentage)
1990	3.30
1991	3.40
1992	3.30
1993	3.20
1994	3.00
1995	2.50
1996	2.30
1997	2.10
1998	2.00
1999	1.80
2000	1.60
2001	1.60
2002	1.70
2003	1.60
2004	1.50
2005	1.40
2006	1.40
2007	1.30
2008	1.20
2009	1.40
2010	1.40

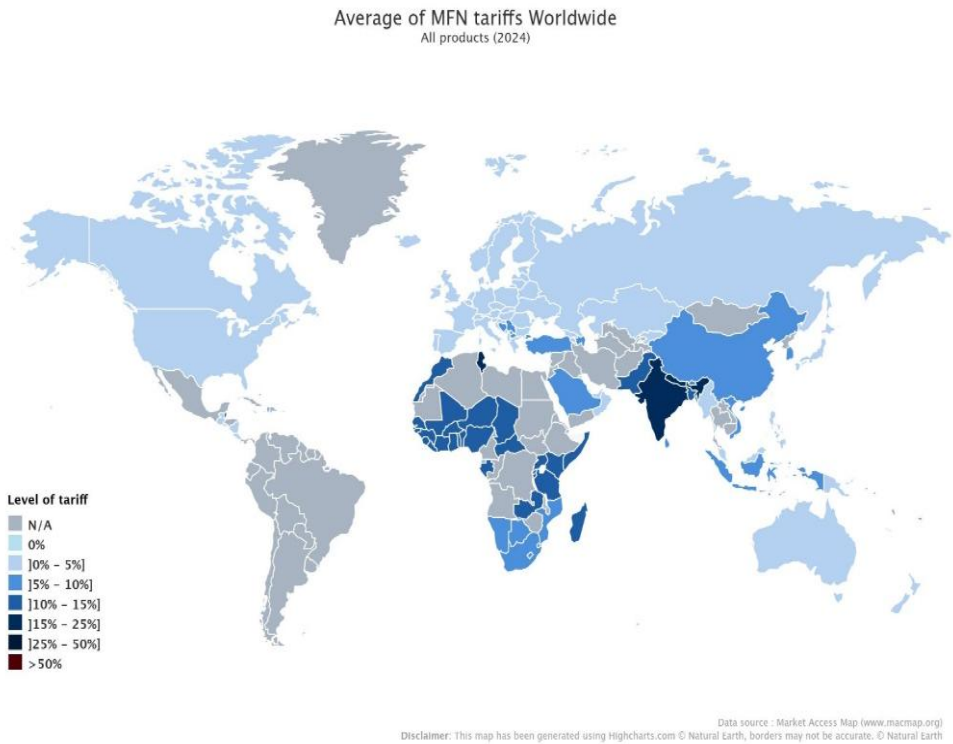
Year	U.S. average tariff rate on all imports 1990-2025 (in Percentage)
2011	1.30
2012	1.30
2013	1.40
2014	1.40
2015	1.50
2016	1.50
2017	1.40
2018	1.80
2019	2.70
2020	2.80
2021	3.00
2022	2.80
2023	2.40
2024	2.50
2025	11.50 (Projected by Statista) (subject to change under the current Trump Administration, 2025 onwards)

Source: Statista, 2025

As evident from Table 2, average US tariffs on all imports came down from over 3 per cent to 1.40 and 2.50 per cent over the period 1990 to 2025. This changed with the return of Trump to power in 2025. Statista estimates the average US tariffs on all imports in 2025 to be 11.50 per cent. The same may, however, change.

Figures 1 and 2 depict the worldwide average MFN tariffs on all products till 2024 and average of MFN tariffs on all products for the top five economies of the world till 2024.

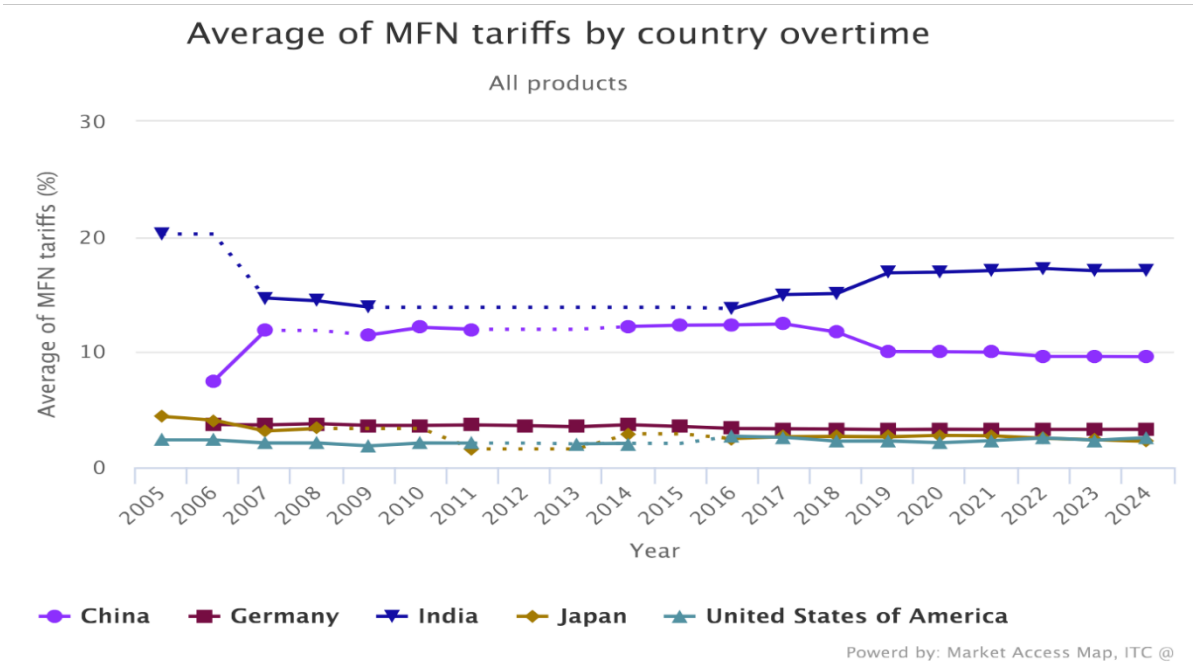
Figure 1. Worldwide Average MFN Tariffs



Source: Market Access Map (ITC), 2025

As evident from Figure 1, the US lay in the low tariff segment of the world like other advanced economies. This was unlike some developing countries in Asia and Africa, including India and China that had relatively higher tariff rates.

Figure 2. Average MFN Tariffs on All Products for the top five Economies in the World in 2024



Source: Market Access Map (ITC), 2025

Figure 2 shows that the US had on an average, lowest tariffs; lower than even its developed counterparts of Germany and Japan, not to mention Indian and China (they had higher tariffs than the three developed countries put together).

Trends in the global employment to population ratio (for people over 15 who are of working age) from 1990 to 2025 are shown in Table 3.

Table 3. Trends in Global Employment to Population Ratio (15+) from 1990 to 2025

Year	Global Employment to Population Ratio, 15+, total (in Percentage) (modelled ILO estimate)
1990	61.00
1991	62.13
1992	61.89
1993	61.47
1994	61.25
1995	61.05
1996	60.90
1997	60.82
1998	60.63
1999	60.57
2000	60.56
2001	60.32
2002	59.99
2003	59.82
2004	59.85
2005	59.84
2006	59.79
2007	59.75
2008	59.47
2009	58.84

Year	Global Employment to Population Ratio, 15+, total (in Percentage) (modelled ILO estimate)
2010	58.64
2011	58.57
2012	58.39
2013	58.22
2014	58.11
2015	57.96
2016	57.83
2017	57.70
2018	57.66
2019	57.65
2020	55.82
2021	56.79
2022	57.55
2023	58.10
2024	58.12
2025	61.81 (Extrapolated)

Source: WDI (WB), 2025

As evident from table 3, global employment to population ratio varied from 62 to 57 per cent over the period 1990 to 2025. Extrapolated value for the same in 2025 stands at 61.81 per cent.

Table 4 depicts trends in global real GDP growth from 1990 to 2025.

As evident from Table 4, global real GDP growth varied from 6.60 per cent to 2 or 3 per cent over the period 1990 to 2025. The World Bank and IMF expect global growth to hover between 2 to 3 per cent in 2025 and extrapolated value for the same is 3.35 per cent.

Table 4. Trends in Global Real GDP Growth Rate (in Percentage) from 1990 to 2025

Year	Global Real GDP Growth Rate (in Percentage)
1990	3.20
1991	2.50
1992	2.20
1993	2.00
1994	3.20
1995	3.30
1996	3.90
1997	4.00
1998	2.70
1999	3.60
2000	4.80
2001	2.50
2002	2.80
2003	3.80
2004	5.30
2005	4.70
2006	5.30
2007	5.30
2008	2.90
2009	-0.40
2010	5.20

Year	Global Real GDP Growth Rate (in Percentage)
2011	4.10
2012	3.40
2013	3.40
2014	3.50
2015	3.40
2016	3.30
2017	3.80
2018	3.70
2019	2.90
2020	-2.70
2021	6.60
2022	3.60
2023	3.50
2024	3.30
2025	2.00 to 3.00 (Projected by IMF and World Bank) and 3.35 (Extrapolated)

Source: WEO **(**IMF), 2025

Table 5. Impact of U.S. tariffs on Global Trade

Variable	Estimate
Global Trade (as per cent of GDP)	-1.86 ** (0.6603)
R-square Adjusted R-Square N F-Statistic	0.19 0.16 36 7.91

** represents significance at 5 per cent level

Source: Author's estimations based on data from Statista and WDI, 2025

Table 5 presents the regression results for average U.S. tariff rate on all imports (in percentage) as the independent variable and Global Trade (as percentage of GDP) as the dependent variable (data are from 1990-2025).

The R-squared value of 0.19 means that about 19% of the changes in global trade can be explained by the model, which shows that the model isn't very good at explaining the data. The F-value is also low, which supports this. The p-value for the regression coefficient is 0.01, which means it is statistically significant at the 5% level. Additionally, if the average U.S. tariff rate on all imports goes up by 1 percentage point, global trade decreases by 1.86 percentage points; as this model suggests.

Ceteris paribus, these results may offer some insights that Trump tariffs could unfavourably affect global trade.

Table 6. Impact of U.S. tariffs on Global GDP Growth

Variable	Estimate
Global Real GDP Growth Rate (in per cent)	-0.10 (0.16)
R-square Adjusted R-Square N F-Statistic	0.01 -0.02 36 0.43

Source: Author's estimations based on data from Statista and WEO, 2025

Table 6 presents the regression results for average U.S. tariff rate on all imports (in percentage) as the independent variable and Global GDP Growth rate (in percentage) as the dependent variable (data are from 1990-2025).

The R-squared value of 0.01 means that about 1% of the changes in global GDP growth can be explained by the model, showing a very poor fit and a low F-value. The p-value for the regression coefficient is 0.52, which is not significant at the 5% level. Additionally, if the average U.S. tariff rate on all imports increases by 1 percentage point, global GDP growth decreases by 0.10 percentage points; as this model suggests.

Ceteris paribus, these results may offer some insights that Trump tariffs could unfavourably affect economic growth in the world.

Table 7. Impact of U.S. tariffs on Global Employment

Variable	Estimate
Global Employment to Population ratio, 15+, total (per cent) (modelled ILO estimate)	0.31** (0.15)
R-square Adjusted R-Square N F-Statistic	0.11 0.09 36 4.31

** represents significance at 5 per cent level

Source: Author's estimations based on data from Statista and WDI, 2025

Table 7 presents the regression results for average U.S. tariff rate on all imports (in percentage) as the independent variable and Global Employment to Population ratio for all aged at least 15 years (in percentage) as the dependent variable (data are from 1990-2025).

The R-squared value of 0.11 indicates that about 11 per cent of the variation in Global Employment is accounted for by the model, indicating a weak fit, along with a low F-value. The p-value of the regression coefficient is 0.05, making it significant at the 5 per cent level. Additionally, a one percentage point increase in the average U.S. tariff rate on all imports leads to a 0.31 percentage point rise in the Global Employment to Population Ratio; as this model suggests.

Ceteris paribus, these results may offer some insights as to how Trump tariffs could affect global employment prospects. However, the same are not free from limitations. *First*, data for the year 2025 are extrapolated as mentioned earlier as well. *Second*, because of the transience of tariff policies and even rates under the current US president, these calculations and estimations are not to be treated as final; this is in the wake of surcharge tariff rates applied over and above the announced tariff hikes for certain nations, including India, as they continue importing Russian crude oil despite the US objections. *Third*, this article is not incorporating the views of different stakeholders impacted by these tariffs through say, interviews or focus group discussions (FGDs). The same could have led to formation of a more comprehensive perspective in the minds of readers and scholars. *Last*, the impact of *Trump tariffs* may not be as straightforward as depicted in this analysis. There could be several channels through which the same may impact the global economy and those could not have been captured in the data available till date.

The final section wraps up this research and enumerates its implications for future policy.

Conclusions and Future Policy Implications

This study aimed to better comprehend the complex effects of the tariffs imposed during the second Trump administration by extensively examining their economic, strategic, and political elements, especially in terms of the macroeconomic variables of GDP, employment, and trade as discussed earlier in this article, using simple econometric modelling techniques. In conclusion, this research sought to educate policymakers and business executives alike about the intricacies of strategic trade policy instruments, particularly in relation to Trump-era tariff barriers.

The tariff policy of the second Trump administration created a significant impact, generating a sense of pessimism among both the United States' allies and adversaries. In the initial months, the administration implemented a wave of bilateral and global tariffs as a strong affirmation of its '*America First'* policy. Nevertheless, by June 2025, these tariffs were reduced after discussions with essential trading partners. The series of tariff announcements from Washington elicited diverse responses from the affected nations. While major partners like China and the European Union retaliated with similar tariffs, others adopted more calculated countermeasures to manage the challenges posed by the US's persistent tariff strategy. A case in point is India's persistent effort at bringing down tariffs with its major trade partners (including the US) with the help of trade deals. If economic theory is any guide, then it may be said that raising tariffs and other such *beggar –thy- neighbour* policies are not good for

any nation in the world largely owing to their detrimental impact on world trade, GDP growth and employment. It is thus advisable that free trade be promoted and maintained at all costs, even if the results of the same are not fruitful over the short run. Lowering tariffs should not only be sufficient but also necessary for global prosperity.

Credit Authorship Contribution Statement

Kanupriya: Dr. Kanupriya holds exclusive responsibility for every aspect of this article. She did all the work on her own, including coming up with the idea, doing the research, planning the methods, managing the project, working on the software, analyzing the data, writing the first and final versions of the paper, supervising the work, organizing the data, checking the results, reviewing and editing the writing, and creating the visual parts.

Declaration of Competing Interest

The author declares that she has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-assisted Technologies

The author declares that she has not used generative AI and AI-assisted technologies improperly during the preparation of this work.

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Trump's Tariff War and Conflict with WTO Principles: Current State and Expected Consequences

Sanja Jelisavac Trošić
Centre for International Law and Economics
Institute of International Politics and Economics, Serbia
ORCID: 0000-0003-0949-7052; Researcher ID: ABY-9765-2022
sanja@diplomacy.bg.ac.rs

Aleksandra Tošović-Stevanović
Centre for International Law and Economics
Institute of International Politics and Economics, Serbia
ORCID: 0000-0003-0281-0579; Researcher ID: AGR-2700-2022
aleksandra@diplomacy.bg.ac.rs

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Abstract: The research is about a new wave of tariff increases by the US and the conflict of that move in relation to WTO rules and principles. The purpose of the research is to obtain current and new data and information on the changes that the raising of tariffs produced on the international level, especially within the framework of the WTO. The research was approached primarily through document content analysis, data analysis and discourse analysis. Primary and secondary sources were used. The findings of the study show that the sudden change in US tariffs had an impact on the multilateral trading system and on the organization dealing with the regulation of trade rules - the WTO. The WTO had already begun negotiations on reform and modernization, and this new wave of tariffs brought additional uncertainty to all spheres of WTO work. Current and future negotiations are uncertain, and additional research is needed that will point out in detail every aspect of work and problems in the work of the WTO.

Keywords: WTO; tariffs; Tariff War; Trump; multilateral trade.

JEL Classification: F13; F53.

Introduction

Analyzing the role and importance of tariffs, from their inception until today, the essence was that they were used to generate income, protect domestic industries and secure trade negotiations. It happened before that someone deviated or at least tried to deviate from these basic rules and principles in a certain period, but with the arrival of the Trump administration, there has never been so much interference in world trade flows, nor were so many countries directly and indirectly burdened with extremely high tariffs with the interference of economic, political and social factors. The Trump administration portrays trade deficits as a threat to national security due to America's declining importance as a manufacturing power and uses tariffs as a tool to address trade imbalances and strengthen American manufacturing (Masayuki, 2025). Despite the claims of Trump and his administration that the introduction of tariffs to other countries will strengthen the economic position of America and return it to the position of the leading economic power, the customs policy of the Trump administration has led to an increase in the prices of a large number of internationally traded goods that enter the United States, with which America directly began to pay the price of such a customs decision and policy. Given that this policy of the Trump administration is unpredictable and accompanied by frequent changes, all this contributed to the creation of general uncertainty, which resulted in a decrease in trade, but also the risk of an increase in inflation, as just one of the many macroeconomic parameters on which these measures will have direct consequences.

What is important to point out refers to the work of the WTO itself, which has long been the target of criticism aimed at the changes that need to be undertaken in this organization, which are aimed at the loss of negotiating capacity, the growing tendency to rely on preferential trade agreements, rather than the WTO, to define market access conditions among countries, a deadlock in decision-making, a largely unsuccessful dispute settlement system and continuous disagreement among WTO member countries on the right to special and differential treatment in response to development imperatives (Low and Riddell 2025). Due to pre-existing problems within the organization itself, which have undermined its existence and functioning, many agree that the consequences of Trump's tariffs have only accelerated the necessity of reforms that need to be implemented within the framework of the WTO, so that countries can once again work and act in accordance with the principles of the WTO and benefit from multilateral trade cooperation.

The destructive consequences that we had during the last term of Trump, after a large amount of research and collected data from 2018, it was seen that American tariffs were completely passed on to American importers and consumers. According to many researches and results from 2018, the country that was most affected by these tariffs was China, however, Trump's customs measures were reflected in the increase in prices everywhere in the world, with a significant worsening of the position of American consumers as well. Because of this, many authors were inclined to think that the Trump administration will not apply them again, but the current situation has convinced us otherwise. In 2025, a new customs war begins, as many call it, and new tariffs directed at a large number of countries are set. Donald Trump has often said that tariffs protect and create domestic American jobs, and he sees them as a way to boost the American economy and raise tax revenues. Only some of President Trump's statements justifying his actions for the introduction of tariffs relate to saving jobs for Americans, because there is a danger of losing jobs due to foreign countries, and in this way foreign countries will worry about losing jobs due to America, which again emphasizes the return of America to the throne, their strength and power as the most important and influential country in the world. Later, many statements and explanations related to the introduction of tariffs against certain countries (China, Canada, Mexico and the EU) were also with direct reasons, that is, with specific objections and the level of damage or disrespect that a certain country has towards America. Any of the stated reasons were the motive, the consequences are the same, which is that they inhibit the world economy, because many economies have begun to revise their growth forecasts, due to the consequences that can be seen through the reduction of sales targets at a large number of companies, including small companies, but also large multinationals, then business reorganization, layoff plans, etc. What many are starting to mention is the new uncertain reality that is in force, and which is precisely the main factor that slows down the growth of the global economy, and the end result of US tariffs is not only short-term in nature but threatens to become much more intense than thought.

This research employed comparative analysis to examine existing data sets and to identify the relationships among them, thereby enabling a more comprehensive and reliable assessment. Document content analysis was utilized to ensure a systematic examination of the material, allowing for the identification of patterns and the interpretation of the dynamics underlying the phenomena under review. In addition, discourse analysis was applied to explore the social and political contexts in which these developments occur, comparing past and present discursive patterns in order to understand how actors project power and to assess the implications of their communicative strategies.

The review of the existing literature on this topic aimed to identify areas that require further scholarly attention. In this regard, the article examines relevant trends and patterns that emerged as a consequence of the tariff war, with the intention of synthesizing these insights into a coherent analytical narrative. By validating previous findings and highlighting problematic developments, the study seeks to clarify what can be learned from these dynamics, as well as to outline what policymakers and researchers should anticipate in an increasingly unpredictable global environment.

1. The Impact of Tariffs on Global Trade

Analyzing the previous theoretical knowledge and the impact of tariffs introduced by large countries, such as America in this situation, should have led to a reduction in the prices of foreign companies, but the reality and the impact of a large number of factors, which economists did not have the opportunity to analyze and study until the trade war, *i.e.* until 2018, influenced that such a scenario did not occur. According to Amity, Redding and Weinstein (2020), the application of significant tariffs on imports by the USA to its major trading partners provides a natural experiment for understanding these effects, which until now have not been encountered in such an explicit way by economists. Apart from the theory, since 2018 the researchers have also come to concrete analyzes and results, and the effects that were obtained as a consequence of that, *i.e.* that the application of tariffs in this way by America had a negative impact not only on the countries towards which this measure was directed, but also on American

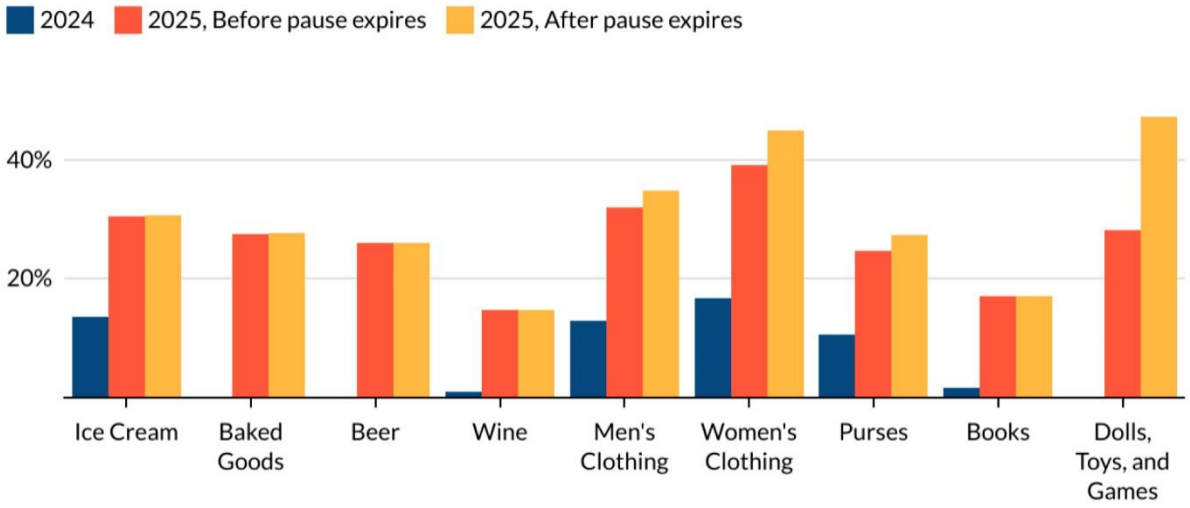
companies and consumers. Also, the reorganization of supply chains that many companies from the affected countries were forced to do led to a larger and longer-term reorganization of their operations, which again had a direct negative effect on certain sectors of the American economy. At the same time, we also had examples of certain industries where, due to the introduction of customs duties, exporters lowered their prices, which enabled them to export a little more than was the case in other sectors.

Report *Economic Impact of Section 232 and 301 Tariffs on U.S. Industries, 2023*, aimed to assess the effects of tariffs on trade, production and prices, focusing on short-term rather than long-term effects over the analyzed period of 2018-2021. year. Which means that the report did not assess the impact of the tariffs on the overall economy, and as such cannot be used to draw general conclusions about whether the tariffs produced a net benefit for the American economy as a whole, but the conclusions derived from their analysis point to changes in trade, and negative changes. However, the analysis points out that these changes were not only influenced by tariffs, but that the consequences of the pandemic crisis, disruptions in the supply chain, anti-dumping and countervailing duties (AD/CVD), the sharp increase in energy prices, global reactions to tariffs and Russia's invasion of Ukraine are still being felt (USITC, 2023). From this we can conclude that although the customs duties were not the only ones to blame for the worse results, they certainly did not contribute to improving the situation, not even in their economy, and we will talk about the consequences for others later on.

According to Piser et al. (2025) if investors perceive tariffs as a threat to future profits, they may reduce investment in EU firms, leading to lower stock prices, especially in sectors most exposed to SAD-EU trade relations (*e.g.*, automotive, IT, and manufacturing). And this could just be seen through the research they conducted, and already at the announcements in February 2025, where EU companies experienced a significant drop in abnormal and cumulative stock returns after key announcements related to tariffs, and all this was attributed to increased uncertainty, disrupted trade relations and higher operating costs, in accordance with the efficient market theory - EMT (PISERA 2025).

The economic consequences, which include the risks of recession, disruptions in the supply chain and inflation, as well as its wider implications for global alliances, USA hegemony and the liberal international order, lead to a re-examination of states in terms of their economic and strategic priorities, which in the next phase may lead to the intensification of competition between great powers and declining multilateralism (Mahmud, 2025). From the moment of the announcement until the actual introduction of tariffs, some of the consequences can be shown in Figure 1. Here, the total tariff rates imposed on various imported consumer goods are summarized, with the increased tariffs compared to the previous year shown, as well as the situation during the pause in relation to country-specific reciprocal rates (TPC, 2025). The data shown on the chart are formed on the basis of analyzes and data from various sources, such as: US International Trade Commission, Bureau of Economic Analysis, Federal Register Notices, International Trade Administration, and White House announcements.

Figure 1. Tariff Rates on Consumer Goods.



Source: Tax Policy Center, 2025.

Also, it is important to point out that even after the announcement of the decision on tariffs and the percentages set for each country, the introduction of tariffs was paused for 90 days in almost all countries except China, which represents a new dynamic in the so-called trade war, as this situation with tariffs is called, which even

then foreshadowed additional tensions between these two countries and additional unpredictability in their further relations regarding tariffs. However, Helbert (2025) also points out that the Trump administration's formula is simple: whether it is their NATO ally, their Middle East ally, or their long-time enemy, any country that has a trade surplus with the SAD is treated as if it owes the SAD and deserves a penalty equal to that amount of the surplus. Accordingly, the range of countries under attack was unprecedented, risking a global trade war (Mangan et al. 2025). Serious threats that may occur as a result of a high degree of uncertainty at the global level, leads to a high chance of creating a global recession and that percentage according to analysts is currently 60%, while Goldman Sachs calculated the probability of this event at 45% (Reuters 2025).

Analyzing the Trump Tariffs, Tax Policy Center (2025) indicate six major categories of tariffs that significantly determine the taxation of imports (TPC, 2025):

1. Pre-existing tariffs from past statutes and trade deals, summarized by Chapters 1-97 of the Harmonized Tariff Schedule. Also referred to as Most Favored Nation (MFN) rates.
2. "Reciprocal" tariffs, which are set specifically for each country, along with a minimum rate of 10 percent.
3. Section 232 tariffs, imposed on the basis of national security, which apply to goods such as steel, aluminum, automobiles, and copper, regardless of origin.
4. Non-reciprocal IEEPA (International Emergency Economic Powers Act) tariffs, which are levied on China, Canada, and Mexico in relation to fentanyl smuggling; on Brazil in relation to content moderation and legal issues concerning a former president of Brazil; and on India for the import of Russian oil.
5. Section 301 tariffs, imposed on the basis of unfair trading practices, which currently apply only to specific Chinese goods.
6. Antidumping and countervailing duties.

Although many agree that in the current situation, with all the crisis situations that many countries are facing, high tariffs only deepen the problems and create even greater uncertainty, and undoubtedly negative effects on the real economy, it seems that the Trump administration is not relenting in implementing the same, even harsher measures. Therefore, it is believed that since the lobbying of foreign governments has not borne fruit, the only hope left is that America itself will change some things for the better, and that the voices of protest within it will gradually grow, due to the increasingly significant negative impact on their consumers and import industries in the USA itself.

2. Trump and WTO Principles

The WTO has been facing major challenges for years before Trump launched his tariff attack on other countries around the world. The WTO is already suffering from a loss of negotiating capacity, a growing reliance on preferential trade agreements, rather than the WTO, to define market access terms between countries. Added to this is a deadlock in decision-making, a largely ineffective dispute settlement system, and continued disagreement among WTO members over the right of certain countries to special and differential treatment in response to development imperatives (Low and Riddell 2025). It is essential that the WTO reform its practice of requiring full consensus among its 166 members when adopting trade rules. Article 9 of the WTO's founding Marrakesh Agreement establishes the practice of using consensus "applied in accordance with the GATT" as the basis for WTO decisions. The multilateral negotiation of agreements, such as those on electronic commerce and investment facilitation, has become important for the WTO because they address current and important issues, and modernizing trade rulemaking would speed up and facilitate the process.

For much of the twentieth century, the United States treated international trade policy primarily as an instrument of foreign policy. However, later trade agreements became increasingly focused on domestic economic policy. Intellectual property provisions in trade agreements offer an example, as efforts to promote intellectual property rights abroad do not serve any foreign policy objective, but are motivated by efforts to increase the economic returns of multinational corporations (usually headquartered in the United States) whose business models are based on the development of innovative technologies and medicines (Meyer, 2021).

The basic principles of the WTO, non-discrimination (most favoured nation – MFN status), transparency, reduction of trade barriers, settlement of disputes through a special body for arbitration, and others make this organization crucial for the regulation of international trade flows. When Donald Trump first took office as President of the United States of America on January 20, 2017, as part of his "America First" policy, he significantly departed from the multilateral approach to trade embodied by the WTO, and took unilateral measures, including the introduction of tariffs on goods from several countries, especially China. By the end of his mandate in 2021, Trump has criticized the WTO and threatened to leave the organization, among other things. The biggest and most lasting consequences of Trump's tariffs are that the tariffs bypassed multilateral mechanisms of the WTO and that the US blocked the appointment of judges to the Appellate Body of the WTO, effectively paralyzing the dispute settlement

system. Member states have complained to the WTO that the US has broken the rules, and the organization has ruled against the US in several cases, notably over tariffs on China. Still, after all, the consequences were, among other things, that the multilateral system, embodied in the WTO, came out weakened, while bilateral pressures became more frequent. In addition, the geopolitical fragmentation of the world economy has been strengthened, which has continued even after Trump.

As the American Constitution stipulates, the mandate of each new president begins on January 20 at noon, local time in Washington (6 p.m. CET), so in 2025 Donald Trump's second term began. The Trump administration has again preferred a bilateral approach and tariffs as a means of pressure, which has again brought tension to the global trading system and WTO rules. Trump's approach again called into question the effectiveness and relevance of the WTO as a guarantor of the multilateral system.

Chenini's study revealed that Trump imposed a 10% tariff on any country with which the United States faced a bilateral trade deficit of 20% or less of its imports. For other countries, Trump applied a 50% reduction rate to the percentage of the bilateral trade deficit in terms of imports. The study concludes that Trump's tariffs are considered unfair and unscientific (Chenini, 2025). Stober concluded in his research that while protectionist measures may offer short-term impact, they often undermine long-term global economic stability and efficiency (Stober, 2025). US policy since Trump took office has become unpredictable and subject to frequent changes, contributing to general uncertainty, increased risks of trade contraction and inflation, as well as macroeconomic instability in general.

3. Most Favoured Nation Principle and Tariffs

WTO agreements are of great importance because they cover a wide range of activities important to a large number of countries. At the same time, they are complex, because they are made up of a large number of professional legal acts, but on the other hand, they are also easy to apply, because the basic principles run through all their documents. The principles of the WTO are the foundation of the multilateral trade system, and that is why their importance and respect for the established principles are of great importance for everyone. One of the most important things is trade without discrimination, and here the Most Favored Nation (MFN) principle stands out as the first and perhaps most important principle, where the basic motto is equal treatment of other people. Under WTO agreements, countries usually cannot discriminate against their trading partners, because if you give someone a special favor (such as a lower tariff rate on one of their products), you must do the same for all other WTO members. Its importance is also indicated by the fact that when the rules for regulating trade in goods are defined, MFN appears as the first article of the General Agreement on Tariffs and Trade (GATT), and as one of the priority principles it stands out in the General Agreement on Trade in Services in Article 2, and the Agreement on Trade Aspects of Intellectual Property Rights in Article 4.

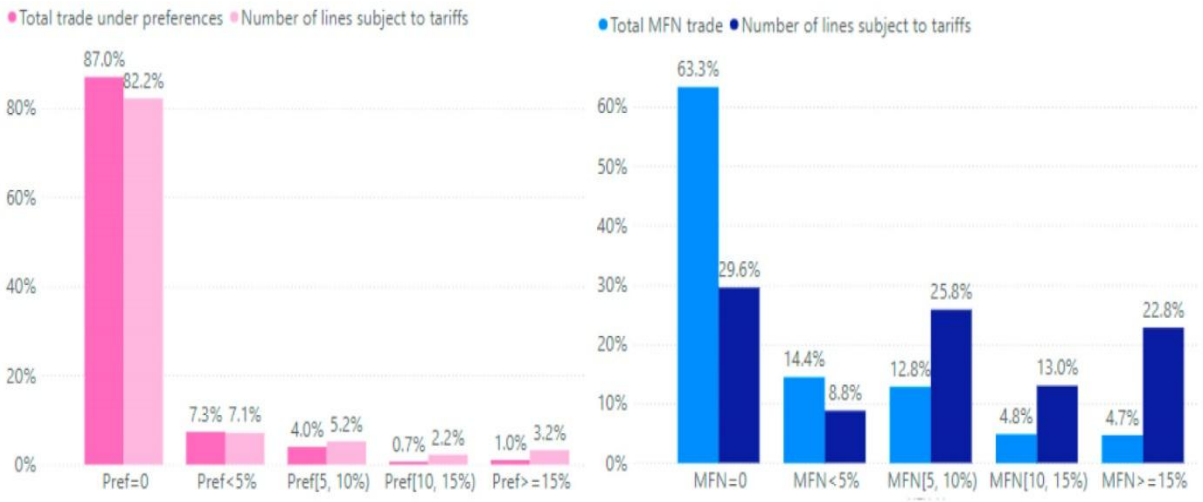
By abandoning the principle of the most favored nation in favor of reciprocal tariffs, it can lead to several harmful political implications such as (ICC, 2025): a negative effect on foreign direct investment, through less capital investment amid uncertain trade conditions; procuring inputs from less competitive suppliers, thereby undermining their competitiveness: consumer prices may rise, due to inflation; slowing economic growth amid reduced investment, higher costs and inefficient markets; labor markets face disruptions as losses in export industries and sectors dependent on imported inputs outpace employment gains in protected sectors.

Although everyone agrees that this WTO principle is extremely important for stability and proper trading conditions, certain deviations have occurred, as indicated by a large number of bilateral and regional trade agreements, because they provide more favorable customs treatment to certain partners. At the same time, WTO members can, under certain circumstances, raise trade barriers against imports for various reasons, including the suppression of unfair trade practices (Gonciarz & Verbeet, 2025). However, even with all the deviations from the MFN operating principles, which have been increasing in the last two decades, the largest number of countries and trade is still conducted under the most favorable conditions, with its importance for the harmonized global trade system. These authors provide an overview of preferential and MFN trade in their analysis, which can be seen in graph 2. On the left side of the figure, preferential imports are shown, where we can see that the majority of trade takes place at duty-free levels, comprising the vast majority of trade at 87.0% and customs lines at 82.2%. On the right side of the figure is MFN imports, showing a more diverse distribution, where two-thirds of imports are made under MFN terms with no tariff, and the share of most-favoured-nation trade decreases as tariffs increase (Gonciarz & Verbeet, 2025).

According to these principles of the WTO and the principles of free trade, the American economy was run, whether under the leadership of Republicans or Democrats, until the arrival of Trump. According to Mahmoud and Obaidullah (2025), this change is not only a change in tactics, but a rejection of the basic principles underlying America's global role since World War II, which was based on greater prosperity through trade, in order to promote

democracy, to prevent authoritarian movements, as a result of the financial turmoil of the 1930s. But what we have on stage now is the complete opposite.

Figure 2. Preferential and MFN trade by tariff bands (percentage shares, 2022)



Source: Gonciarz & Verbeet, 2025; WTO Integrated Database (IDB) and other sources, 2024.

According to statements from the White House (2025), the Trump administration with the slogan "America First" is turning everything upside down and imposing positions that with these reciprocal tariffs it has been made clear that America will no longer allow other countries to abuse it and that if companies want to avoid these tariffs, they will do business in America (White House, 2025).

Upon the announcement of new tariffs in 2025, Ursula von der Leyen, President of the European Commission, stated that the tariffs have already had a negative impact on the global economy and that the EU remains fully committed to finding a solution with the US, which will be of great importance for consumers and businesses on both sides of the Atlantic (EC, 2025). Due to all the problems arising from such unilateral decisions and the obvious violation of the basic rules and principles of the WTO, the EU is determined to initiate a dispute before the WTO against the USA for its universal so-called "reciprocal" tariffs and tariffs on cars and auto parts. The EU justifies its decision with the importance of reconfirming the importance of the existing rules and emphasizing that no WTO member can and must not ignore them unilaterally, which is the case with the USA in this situation. In addition, the Commission will continue to conduct negotiations with other trading partners to find new export channels and diversify sources of supply (EC, 2025).

In addition to the EU, ASEAN also emphasizes the exceptional importance of the WTO in promoting global economic growth, based on a transparent, fair and rules-based multilateral trade system, which is why this organization encourages the WTO to serve as a forum for dialogue to help prevent further escalation of trade conflicts and seek cooperative solutions (ASEAN, 2025).

Everyone agrees that the measures implemented by the USA represent a direct violation of WTO rules, but with the already weakened position and function of the WTO in settling disputes, it is becoming increasingly difficult to find the right way to overcome this crisis and the uncertainty it brings with it. Masayuki (2025) believes that the retaliatory measures taken by other countries against Trump's tariffs can be one way to counter it, but on the other hand, they can also lead to an escalation of the tariff war, which can only increase global uncertainty even more.

4. Settlement of Disputes through WTO

The Dispute Settlement Mechanism (DSM) was once considered perhaps the WTO's most important achievement compared to other international organizations, especially compared to its predecessor, the GATT. Today, the WTO faces serious criticism for its inherent limitations and problems, and its appellate review function is particularly under attack, since is currently almost paralyzed by the US. The loss of WTO's efficient dispute settlement system is a particularly strong blow to the multilateral trade order. Discussions on reforming the DSM have been ongoing for several years now. Among several alternative dispute resolution options, "mediation" can offer the WTO and its members an important set of tools for more efficient and faster dispute resolution (Lee, 2025). The US dealt another blow to this mechanism by unilaterally increasing tariffs in 2025. Since the inauguration of President Trump in the second term, complaints against the US have appeared before the WTO DSM (see Table 1).

Table 1. Dispute Settlement – Complains against US from 20. January 2025.

Complainant	No.	Title	Agreements cited in request for consultations	Consultations requested
China	DS633	United States - Additional Tariff Measures on Goods from China	Art. I:1, II:1(a), II:1(b) GATT 1994	4 February 2025
Canada	DS634	United States - Additional Import Duties on Goods from Canada	Art. I:1, II:1(a), II:1(b), V:3 GATT 1994 Art. 7.8 Trade Facilitation (TFA)	4 March 202
Canada	DS635	United States - Additional Import Duties on Steel and Aluminium Articles from Canada	Art. II:1(a), II:1(b) GATT 1994	12 March 2025
Canada	DS637	United States - Additional Duties on Imports of Automobiles and Automobile Parts from Canada	Art. II:1(a), II:1(b), VIII:3 GATT 1994	3 April 2025
China	DS638	United States - Universal and Country-specific Additional Duties on Imports from China	Art. I:1, II:1(a), II:1(b), VII:1, VII:2, X:3(a) GATT 1994 Art. 1, 3.1, 3.2 Subsidies and Countervailing Measures (SCM) Art. 1.1, 8, Annex 1 Customs valuation	4 April 2025
Brazil	DS640	United States - Tariff measures on goods from Brazil	Art. II:1(a), II:1(b), I:1 GATT 1994 Art. 23.1, 23.2, Dispute Settlement Understanding (DSU)	5 August 2025

Source: WTO (2025)

On 4 February 2025, China requested consultations with the United States with respect to tariff measures, consisting of a 10% additional tariff, on goods originating in China. China claimed that the challenged measures appear to be inconsistent with Articles I:1, II:1(a) and II:1(b) of the GATT 1994.

On 4 March 2025, Canada requested consultations with the United States with respect to measures imposing a 25% ad valorem rate of import duty on Canadian non-energy goods and a 10% ad valorem rate of import duty on Canadian energy goods entering the United States. These import duties were in addition to any duties imposed by the United States pursuant to its tariff commitments as set out in its GATT 1994 Schedule of Concessions. Canada claimed that the challenged measures appear to be inconsistent with: Articles I:1, II:1(a), II:1(b), and V:3 of the GATT 1994; and Article 7.8.2(d) of the Trade Facilitation Agreement.

On 12 March 2025, Canada requested consultations with the United States with respect to measures imposing ad valorem rates of import duty on certain steel and aluminium articles. These rates of import duty were in addition to any other duties applicable to such articles. Canada claimed that the challenged measures appear to be inconsistent with Articles II:1(a) and II:1(b) of the GATT 1994. On 20 March 2025, the European Union requested to join the consultations. United States rejected the European Union's request to join the consultations.

On 3 April 2025, Canada requested consultations with the United States with respect to measures imposing 25% tariffs on automobiles and automobile parts. These tariffs were in addition to any other duties, fees, exactions, and charges imposed by the United States. Canada claimed that the challenged measures appear to be inconsistent with Articles II:1(a), II:1(b), and VIII:3 of the GATT 1994.

On 4 April 2025, China requested consultations with the United States with respect to measures that imposed universal and country-specific additional duties on imports from China. These additional duties were imposed in addition to any other duties or charges applicable to the imported products, including the United States' bound rates in its GATT 1994 Schedule of Concessions. China claimed that the challenged measures appear to be inconsistent with: Articles I:1, II:1(a), II:1(b), VII:1, VII:2(a), VII:2(b), VII:2(c), and X:3(a) of the GATT 1994; Articles 1.1, 8, the relevant interpretative Notes in Annex I of the Customs Valuation Agreement, and paragraphs 1 and 2 of the General Introductory Commentary; and Articles 3.1 and 3.2 of the SCM Agreement.

The United States responded to all these requests for consultations and negotiations in a similar manner. It indicated that the United States accepted mentioned countries request to enter into consultations, without prejudice to the United States' view that the actions cited by mentioned countries were issues of national security not

susceptible to review or capable of resolution by WTO dispute settlement, or whether each of the items in China's request for consultations constituted a "measure" within the meaning of Article 4 of the DSU. The United States always pointed out that issues of national security are not susceptible to review or capable of resolution by WTO dispute settlement, or whether each of the items in other countries request for consultations constituted a "measure" within the meaning of Article 4 of the DSU.

5. WTO "Special and Differential Treatment"

This global multilateral body currently allows its 166 members to decide for themselves whether they are developed or developing countries. The WTO has never had a system for classifying its members or for deciding when they should move from developing to developed economy status. In addition to developing and developed economies, there is a third category of WTO members, the least developed countries. However, they are not controversial, as these countries are designated as such according to the United Nations classification. The current situation is that about two-thirds of WTO members claim and self-classify as developing economies. Thus, under the current system, the world's second and fourth largest economies by nominal GDP, China and India, respectively, are classified as developing countries in the WTO. According to GDP adjusted for purchasing power parity, China is the largest economy, and India is the third largest (Hinrich Foundation, 2025c). It is a kind of paradox, and the country that most often points to it is the US.

Developing country status brings numerous trade privileges known as "special and differential treatment". These "special and differential treatment" benefits include:

- Longer time periods for implementing agreements and commitments.
- Measures to increase trading opportunities for these countries.
- Provisions requiring all WTO members to safeguard the trade interests of developing countries.
- Support to help developing countries build the infrastructure to undertake WTO work, handle disputes, and implement technical standards.
- provisions related to least-developed country members (WTO, 2025).

China decided on 23 September 2025 to end its "special and differential treatment" benefits. China took the first step in response to long-standing complaints from the United States and other developed economies. Now, eyes are on India, which continues to defend its right to be considered a developing country due to poverty and uneven growth, and on the other hand, on developed countries to take steps toward an agreement that would lead to convergence of positions and WTO reform. For instance, India has said it won't become a developed country until 2047, and Brazil in 2019 said it would declare itself a developed country, then in 2024 said it wouldn't. India and other like South Africa, Brazil, and Indonesia also objects to plurilateral deals among other WTO members. In that way those deals, which usually do not include these countries, and are about high technologies, are stalled.

China's decision to waive special benefits tied to this designation in current and future WTO negotiations. China's decision in early October to forgo special benefits for developing countries at the WTO poses an unspoken challenge to other large emerging economies: Would they similarly step up to contribute to the reform of the multilateral trading system? This move should prompt policymakers in other major emerging economies, notably India, to ask hard questions of themselves if they should take China's lead in stepping up to meet much-needed contributions toward leadership of the international trading system (Hinrich Foundation, 2025b).

On the other hand, Japan struggled to negotiate a reduction in Trump's 25% tariff on Japanese imports, and the agreement was finally reached and confirmed by executive order on September 4. The agreement resulted in a reduction in the tariff rate to 15%, which contributed to the average tariff rate across Asia falling from about 33% on April 2 to 21% on August 1. It should be noted that Japan's agreement is unique in that it includes an extraordinary commitment to invest US$550 billion in the United States during the remainder of President Trump's second term (Hinrich Foundation, 2025a).

In this way, we see that negotiations are currently taking place on several tracks. The WTO and individual member countries are struggling to achieve a compromise and for this organization to be reformed and modernized and to be able to regain its former importance in the multilateral regulation of international trade. And at the same time, bilateral and plurilateral negotiations are ongoing to individually, ie collectively, reduce the customs rates that Trump introduced with his second mandate. It is already clear from past experience that the stronger negotiators will always have greater success in achieving their interests, while the weaker and truly less developed countries have to ensure and strengthen the WTO within which they would have a stronger voice and a stronger negotiating position, so that they too can achieve their interests, even partially. Negotiations in all the mentioned fields are currently very uncertain and their results remain to be seen. It is clear that changed rules will be built in multilateral

trade, which are embodied in the WTO, but what they will be depends on the commitment and influence that the interested countries will show in the negotiations on the reform itself.

Despite the enormous change in international trade relations that has emerged from the GATT/WTO system, the basic contours of trade agreements have been slow to change. Although many preferential trade agreements now at least include provisions on labor and the environment, the WTO has not yet renegotiated the balance between the interests of trade liberalization and other public policy objectives that may be in open conflict with trade liberalization. Instead, WTO agreements create space for the pursuit of those objectives through exceptions. It is therefore crucial that the interpretation of those exceptions accurately reflects the underlying political pressures that lead to their invocation. Unfortunately, the WTO's case law on exceptions has not been up to the task. Dispute resolution panels and treaty negotiators of today must adapt to this reality (Meyer, 2021).

The latest WTO plenary meeting was held on 24 September 2025 to relaunch the "collective reflection" on WTO reform and also to begin planning a pragmatic way forward. The plenary meeting allowed members to hear directly from each other in an open format, and consultations were held in parallel. There is currently a high level of engagement among WTO members and a broad willingness to engage constructively. However, views remain fundamentally different. All discussions among WTO members on WTO reform have been structured around a previously identified three-track framework: governance, fairness, and issues of our time. "Decision-making" and "development" have been most often cited as logical starting points for reform (WTO, 2025). It's good that already the majority of WTO member countries agree that the WTO needs reform.

Conclusions and Further Research

Trump's tariff policy has had multiple negative consequences for the WTO. Tariffs, protectionist and discriminatory policies have undermined the foundations of multilateral trade stability. The already paralyzed arbitration mechanism and the threat to the organization's ability to enforce the rule of law have all led to a decrease in the efficiency, trust and relevance of the WTO. Meanwhile, alternatives have emerged, in the form of bilateral negotiations, regional agreements and ad hoc arbitration. Ultimately, due to the tariff measures, but also to the existing problems that the WTO itself was facing, the prospect of international multilateral regulation of global trade has become uncertain. The search for solutions has begun, but they are still not at the multilateral level. A step in the right direction towards compromise was made by China, with its renunciation of developing country status and de facto use of special and differential treatment. The talks on WTO reform, primarily between the leading countries of the system, give hope that some kind of compromise will have to be found. But regardless of the speed or slowness of the formation of a new reformed working structure of the WTO itself, it is clear that in recent years there have been constant changes in the functioning of multilateral trade flows and their regulation.

The tariffs introduced by Trump have further undermined the effectiveness of the WTO, which already faces significant challenges. There is widespread disrespect for WTO rules around the world. There is no doubt that reform of the organization is urgently needed if the multilateral trading system is to be maintained in accordance with the multilaterally agreed rules. China, as the first major country to compromise during the WTO reform negotiations, is proving that it is ready to take one of the leading roles in the future design of the new rules of the multilateral trading system that will emerge with the WTO reform. Further research can be focused on the individual principles of the WTO and on the direction of their modernization.

The research has certain limitations, which are primarily related to the time frame included in the analysis, as well as the activities of the US administration, which are still ongoing and may bring unforeseen changes and impact on the WTO. Only when the entire term of the current US president ends will it be possible to see all the effects on global trade regulation as a whole, so that future studies could more comprehensively investigate all the changes.

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Credit Authorship Contribution Statement

Sanja Jelisavac Trošić: Conceptualization, Investigation, Methodology, Formal analysis, Writing – original draft, Supervision, Writing – review and editing.
Aleksandra Tošović-Stevanović: Investigation, Methodology, Formal analysis, Writing – original draft, Data curation, Validation, Writing – review and editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-Assisted Technologies

The authors declare that they have not used generative AI and AI-assisted technologies in the writing process before submission, but only to improve the language and readability of their paper and with the appropriate disclosure

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Potential Trump Tariff Conflict in 2025 and Its Implications for International Trade

Yakubu Abukari
Department of Business Management and Commerce
Desh Bhagat University, India
yakubu.abukari@gmail.com

Rajni Saluja
Department of Business Management and Commerce
Desh Bhagat University, India
rajnisaluja2052@gmail.com

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Abstract: This study examines the dynamics of Trump's tariff strategy, as well as its long-term impacts on the global economy, trade networks, and inflation trajectories through 2025 and 2030. Using updated statistics and economic models, the analysis shows how protectionist trade policies, which were designed to address trade imbalances, have instead contributed to supply-chain regionalization, a slowdown in global growth, and persistent inflationary pressures.

Empirical evidence from 2020 to 2025 shows that the tariff war raised the U.S. trade deficit and delayed the expansion of international commerce. The report offers three forward-looking scenarios - Technological Protectionism, Strategic Recalibration, and Bloc Polarization - in order to assess different policy paths. The results show that while recalibration through selective liberalization could restore modest growth and inflation stability, sustained tariff rises could reduce global GDP growth to 1.7% and trade volume by more than 10% by 2030.

Policy proposals emphasize the need to revitalize multilateral trade governance, coordinate monetary and fiscal policies, and promote regional production resilience through sustainable and unique tariff regimes. The research predicts that globalization will eventually shift toward "managed interdependence" by fusing strategic autonomy with cooperative frameworks.

These findings provide an essential basis for policymakers, economists, and international organizations seeking to develop flexible policies for an increasingly fragmented global trade landscape.

Keywords: trade protectionism; globalization fragmentation; tariff policy impacts; geo-economics realignment; inflation and trade dynamics.

Jel Classification: F12; F13; F14; F62; E31.

Introduction

In 2018 and 2020, the Trump administration-imposed tariffs on both allies and enemies of the United States, which was a significant real-world experiment in protectionist trade policy and led to a protracted trade war with China (Bown, 2021). Research indicates that these tariffs effectively functioned as a levy on American consumers and import-dependent enterprises (Amiti, Redding, & Weinstein, 2019). Furthermore, empirical studies showed that the tariffs were virtually useless in reducing the U.S. trade imbalance and harmful to relationships with significant allies (Fajgelbaum *et al.* 2020; Bölmer, 2021). In an attempt to reduce their vulnerability to concentrated sourcing risks, businesses expanded supply-chain diversification (Flaaen, Hortacsu, & Tintelnot, 2020). These developments underscore the importance of reevaluating the core principles of trade policy as the global economy gets ready for more potential disruption.

A second Trump administration enact protectionism that is even more pervasive in the future. The suggested measures include new "reciprocal" tariffs calibrated to match those imposed by partner nations, significantly higher duties on Chinese goods (potentially exceeding 60%), and a baseline 10% duty on all imports. With this modification, targeted sanctions are replaced with a comprehensive, systemic approach. Supporters claim that prior

tariff measures failed because businesses exploited exemptions and loopholes, while critics caution that an all-encompassing proposal would have unanticipated consequences. Unlike most prior research that focuses on past outcomes, this analysis attempts to evaluate how a much broader tariff system would affect the economy and multinational behavior in the future.

This study is especially innovative because of its forward-looking analytical methodology, which links historical evidence from the 2018–2020 tariff event to the possible expansion of U.S. protectionism under a renewed Trump presidency in 2025. There is still a critical knowledge gap about how universal and significantly higher duties might affect supply-chain configuration, firm strategy, and the structure of the global trade system itself, even though a large portion of the literature currently in publication has concentrated on the distributional effects and retrospective efficacy of tariffs (Fajgelbaum *et al.* 2021; Huq Sowrov, 2024). By integrating concepts from trade economics, global value-chain theory, and strategic management, this study offers an interdisciplinary perspective that enhances scholarly comprehension and practitioner usefulness. This contribution is timely, as evidenced by the fact that governments and multinational firms are already preparing for contingencies in the face of greater trade-policy uncertainty (Van Assche & Lundan, 2022; Witt, 2019).

The significance of the subject cannot be overstated. Due to the increasing likelihood of wide tariff measures, global firms are reevaluating their investment footprints, sourcing networks, and hedging strategies, which have enhanced the demand for comprehensive scenario analysis. To address this necessity, the article is broken up into five sections: The first section explains the study design; the second section evaluates the expected direct economic effects based on earlier models; the third section examines the effects on corporate strategy and supply chains; the fourth section analyzes potential changes to the global trade order; and the fifth section offers a set of implications for managers and policymakers.

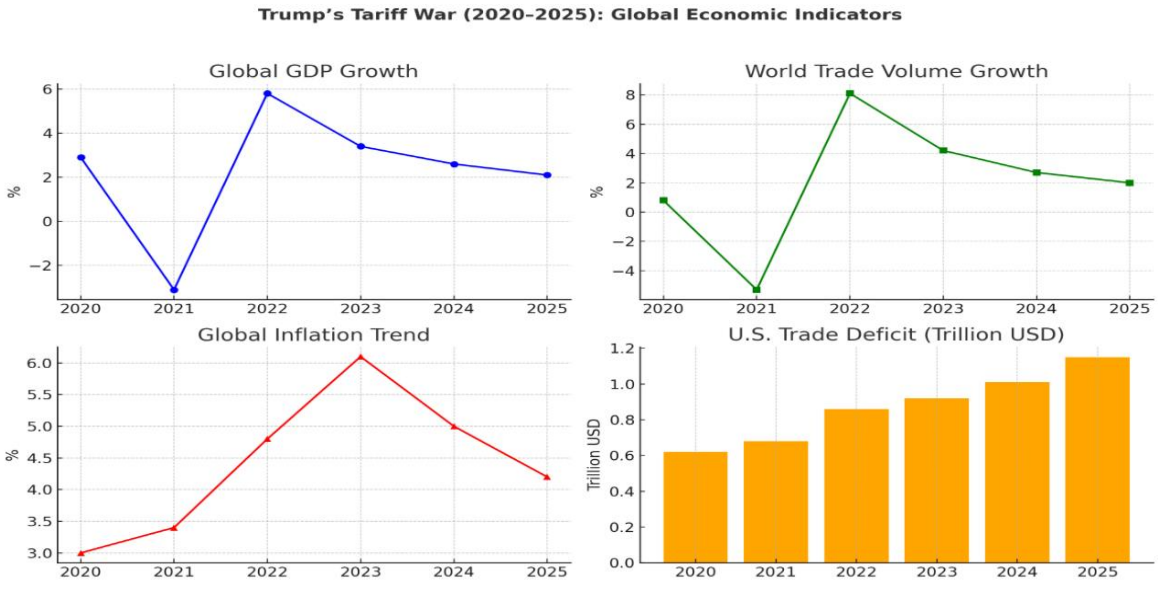
1. Literature Review

Evolution of Trump's Tariff Policies, 2020–2025

Most scholars see Trump's tariff plans as part of a broader effort to change the nature of global trade. Ruiz Estrada and Koutronas (2021) conducted a mathematical analysis of the U.S.-China tariff-rate issue in early models and discovered substantial welfare losses on both sides. Subsequent publications have highlighted the growth of tariff policies beyond China to encompass economies in Europe and Latin America, indicating a globalized expansion of protectionist measures (Bellocchi & Travaglini, 2025; El Hajoui & Ez-Zetouni, 2025).

Figure 1 below shows the simulated evolution of four key global indicators over the 2020–2025 period: GDP growth, trade volume, inflation, and the U.S. trade deficit. This helps to better illustrate the macroeconomic effects of Trump's tariff policies. Results from recent modeling studies and empirical evaluations are summarized in these data (*e.g.*, Bellocchi & Travaglini, 2025; El Hajoui & Ez-Zetouni, 2025; Ruiz Estrada *et al.* 2023).

Figure 1.



Source: Compiled from 2020–2025 studies: Bellocchi & Travaglini, 2025; El Hajoui & Ez-Zetouni, 2025; Ruiz Estrada *et al.* 2023).

Global GDP Growth: After a steep decline in 2020, growth recovered after the pandemic but gradually slowed down after 2022 as a result of renewed tariff increases and investment uncertainty.

World Trade Volume: This pattern was reflected in trade volume, which flattened in 2021 due to tariff barriers and supply-chain frictions.

Global Inflation: Due to cost-push dynamics from tariffs and energy shocks, inflationary pressures increased from 3.4% in 2020 to over 6% in 2023.

U.S. Trade Deficit: The U.S. trade deficit increased from $0.62 trillion in 2020 to roughly $1.15 trillion by 2025, despite protectionist goals. This is in line with Puślecki's (2025) findings that tariffs distort rather than correct structural imbalances.

These findings support the claim that the tariff war served more as a catalyst for geoeconomic realignment than as an economic remedy (Andrienko *et al.* 2025; Ruiz Estrada & Lee, 2025). Regionalized supply chains, ongoing inflation, and institutional deterioration of international trade standards were all caused by persistent trade frictions (Hoekman & Nelson, 2024).

Interpretive Summary

Three main conclusions are highlighted by the 2025 simulation data and empirical literature taken together:

1. Global Growth Deceleration: Extended tariffs reduced productivity and investment, slowing the recovery from the pandemic (Giesecke *et al.* 2025).

2. Inflationary Persistence: Cost pass-through brought on by tariffs kept inflation above monetary policy goals (Conway, 2025).

3. Structural Trade Realignment: Due to persistent tariff uncertainty, multinational corporations regionalized their supply chains and moved production to Latin America and Southeast Asia (Andrienko *et al.* 2025).

These results support the theoretical transition from efficiency-oriented trade liberalism to economic securitization and strategic protectionism, demonstrating that the tariffs of the Trump administration are a component of a long-term change in the structure of international trade governance.

Economic Consequences for Global Trade and GDP

Dynamic general equilibrium models show that tariff conflicts reduce global GDP, trade volumes, and productivity growth. Giesecke, Waschik, and Tran (2019, updated 2025) calculated that the cumulative global GDP losses between 2020 and 2025 were between 0.8% and 1.3%. Conway (2025) found that tariff uncertainty raised inflationary pressures and made it more challenging to coordinate international monetary policy.

Regional and Sectorial Impacts

Empirical research show that the effects of tariffs differ by region. China was able to partially overcome export contractions by diversification initiatives, particularly under the Belt and Road Initiative (Ruiz Estrada *et al.* 2023). However, the European Union saw changes in output as well as an increase in consumer prices (Andrienko *et al.* 2025). As exports fell, demand in Sharia-compliant investments as dependable alternatives increased in developing countries like Indonesia (Rosadi & Jauhari, 2025).

Financial and Currency Market Responses

Tariffs have had a major effect on the world's financial markets. According to Fernández i Sala and González Afonso (2025), tariff announcements are linked to higher USD volatility, lower investor confidence, and flight-to-safety behavior. These findings align with the impacts of global financial contagion identified in other studies (Baker *et al.* 2023).

Policy and Institutional Responses

Tariff escalation has weakened multilateral organizations like the WTO, leading to a dependence on bilateral coercion (Puślecki, 2025). The European Union's Carbon Border Adjustment Mechanism (CBAM) and China's "dual circulation" approach are two instances of adaptive solutions to a fragmented trading environment (Bellocchi & Travaglini, 2025).

Theoretical Synthesis: From Trade War to Systemic Realignment

Recent research indicates that Trump's tariff war is a driver for systemic geo-economics realignment (El Hajoui & Ez-Zetouni, 2025; Ruiz Estrada & Lee, 2025). Rather than being isolated trade measures, these tariffs are structural processes that accelerate technological bifurcation, the establishment of regional blocs, and global fragmentation.

Theoretical Framework

The analysis of Trump's tariff war and its global implications can be based on the theoretical frameworks of international political economy (IPE) and trade policy theory, with a focus on neomercantilism, strategic trade theory, and general equilibrium models of trade.

Neomercantilism and Protectionist Political Economy

Trump's trade policies, particularly the tariff increases from 2018 to 2025, reflect a neomercantilist viewpoint that emphasizes trade surpluses, industrial resurgence, and economic nationalism. These regulations align with state-led efforts to protect domestic sectors at the price of global efficiency, claim Bellocchi and Travaglini (2025). This approach deviates from conventional comparative advantage models by prioritizing domestic employment and geopolitical influence over market efficiency (Ricardo, 1817).

Strategic Trade and Retaliatory Tariffs

Tariffs may lead rents to change in favor of domestic businesses in industries with oligopolistic structures, according to strategic trade theory (Brander & Spencer, 1985). However, in the context of Trump's tariff war, recent computable general equilibrium (CGE) models show that retaliatory tariffs between the US, China, and the EU cause significant global welfare losses and productivity drops (El Hajoui & Ez-Zetouni, 2025). This implies that, despite their potential political appeal, tariffs often lead to net global inefficiency.

Global Supply Chain and Exchange Rate Theories

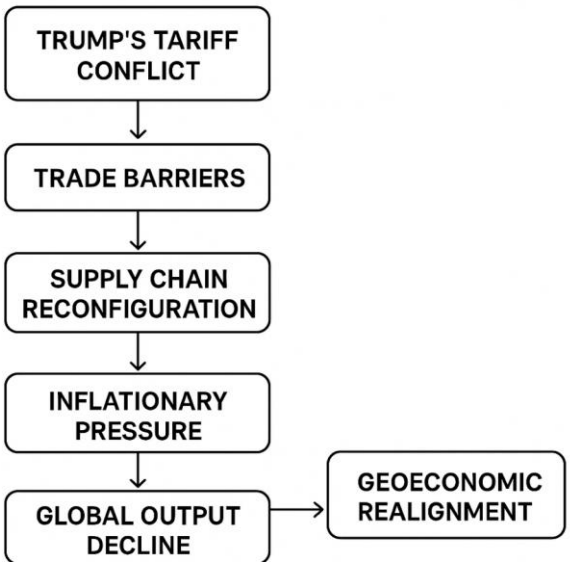
Tariffs have significantly changed global supply chains and reinforced the decoupling theory between the US and China (Ruiz Estrada *et al.* 2023). Due to these structural changes that have impacted currency rate dynamics, particularly in USD/EUR and USD/CNY pairs, global markets are now more erratic and unstable (Fernández i Sala & González Afonso, 2025).

Geo-economics and Security Framework

In a geo-economics perspective, tariffs are tools of economic statecraft that safeguard national security and technical sovereignty (Andrienko *et al.* 2025; Puślecki, 2025). This perspective holds that the trade war is a broader geopolitical conflict over industrial supremacy and the realignment of world power that transcends economic objectives.

Conceptual Model, 2025

Trump's Tariff Conflict → Trade Barriers → Supply Chain Reconfiguration → Inflationary Pressure → Global Output Decline → Policy Retaliation → Geo-economics Realignment



Source: Author's synthesis based on Bellocchi & Travaglini (2025); Conway (2025); Giesecke et al. (2025); Ruiz Estrada & Lee (2025); Hoekman & Nelson (2024).

2. Methodology

2.1 Research Design and Approach

In order to assess the possible ramifications of a potential second Trump administration in 2025, this study uses a mixed-methods research design that combines quantitative econometric modeling and qualitative scenario analysis. The methodological approach ensures both empirical foundation and forward-looking analytical relevance by combining prospective modeling (2025–2030) with retrospective assessment (2018–2025) (Ruiz Estrada & Koutronas, 2021).

The research is divided into three stages.

1. Empirical Evaluation: The primary macroeconomic effects of prior tariff acts are GDP, inflation, and trade volume (Amiti, Redding, & Weinstein, 2019; Bown, 2021).

2. Model simulation: Predicting domestic and international outcomes under different tariff escalation routes using Computable General Equilibrium (CGE) models (Giesecke, Waschik, & Tran, 2019; Conway, 2025).

3. Scenario Exploration: In accordance with international political economy and geoeconomic perspectives, future global trade configurations under three potential policy paths - Technological Protectionism, Strategic Recalibration, and Bloc Polarization - are assessed using scenario analysis (Van Assche & Lundan, 2022; Ruiz Estrada & Lee, 2025).

By incorporating both structural trade dynamics and policy variables, this integrative paradigm advances a comprehensive understanding of how renewed protectionism may affect global trade interdependence.

Data Sources and Collection

A number of reliable institutional sources provided quantitative data. Macroeconomic variables such as GDP growth, trade volume, tariff rates, and price indices were obtained from the World Bank (World Development Indicators), IMF World Economic Outlook, OECD Trade in Value Added (TiVA) database, and UNCTADstat (OECD, 2024; IMF, 2024; World Bank, 2024). For cross-national comparisons, sectoral and bilateral trade statistics were supplied by the U.S. Bureau of Economic Analysis (BEA), U.S. International Trade Commission (USITC), and Eurostat.

Financial and currency market data from Bloomberg and Refinitiv Eikon were used to assess financial transmission channels, with a focus on global equities indices, bond rates, and exchange-rate variations (Fernández i Sala & González Afonso, 2025).

Qualitative materials, such as WTO dispute filings, U.S. trade representative reports, and statements from multinational firms, were analyzed using NVivo 14 software. This literary analysis revealed recurrent themes regarding neo-mercantilist policy orientations, business adaption methods, and evolving governance structures (Puślecki, 2025; Witt, 2019).

2.2. Econometric Modeling Framework

Computable General Equilibrium (CGE) Model

Macroeconomic outcomes under alternative tariff policies were simulated using a multi-region, recursive-dynamic CGE model that was derived from the GTAP 11 framework (Giesecke *et al.* 2019). The model incorporates the US, China, the EU, and other significant trading blocs as endogenous economies.

Three policy scenarios were conducted:

- Baseline (status quo): 10% uniform tariff on all imports;
- Escalation: 60% tariff on Chinese imports and selective tariffs on non-allied economies;
- Recalibration: selective liberalization combined with regional protection for important sectors.

Each simulation evaluates shifts in pricing, employment, and production levels as well as how they affect global trade balances and inflation. Elasticity parameters were calibrated using OECD and IMF trade elasticity estimates (IMF, 2024). The model was validated using Monte Carlo sensitivity testing and cross-comparison with published IMF and World Bank macro estimates (World Bank, 2024; Ruiz Estrada & Koutronas, 2021).

Scenario Analysis Approach

Scenario analysis links model-based outcomes with strategic vision to assess potential trade scenarios. Three scenarios were developed:

1. Export limitations, reshoring incentives, and aggressive tariff expansion are examples of technological protectionism.

2. Strategic Recalibration: moderate tariffs, multilateral collaboration, and selective trade liberalization.

3. Bloc Polarization: The split of global trade into rival economic blocs led by the US and China.

The scenario inputs, which came from the CGE and VAR model outputs, were triangulated using expert projections from the OECD Economic Outlook (2024) and IMF Trade Policy Review (2024). Each scenario's impact on GDP, inflation, and the governance of international commerce was evaluated (Van Assche & Lundan, 2022; El Hajoui & Ez-Zetouni, 2025).

The primary focus of the qualitative synthesis was how trade networks, multinational tactics, and financial interdependencies changed under each policy option (Ruiz Estrada & Lee, 2025).

Reliability, Validity, and Ethical Considerations

To ensure reliability, sensitivity analysis, model cross-validation, and data triangulation were employed. Comparative benchmarking with previous trade-war models was used to confirm internal consistency (Giesecke *et al.* 2019; Ruiz Estrada & Koutronas, 2021). External validity was improved by contrasting the simulated results with independent estimates from the IMF, World Bank, and OECD (IMF, 2024; World Bank, 2024).

Ethical standards were maintained by adhering to the FAIR data principles - Findability, Accessibility, Interoperability, and Reusability - and by ensuring that the model development process was transparent. No proprietary or private datasets were used, and all model parameters could be replicated using publicly accessible data sources.

Limitations

Despite its strength, the research is not without flaws. Short-term disequilibria during policy shocks may not be adequately captured by the general equilibrium conditions assumed by the CGE model. Although the VAR model is good at identifying temporal relationships, it is unable to separate causal mechanisms outside of the statistical framework. Additionally, forward-looking scenarios are predicated on uncertain assumptions about international reactions and political decisions (Puślecki, 2025; Bellocchi & Travaglini, 2025).

Despite these limitations, the mixed-method design provides a balanced projection of possible trade realignments in the post-2025 global economy by combining empirical rigor with strategic foresight, improving the findings' dependability and policy relevance.

3. Results and Discussion

Overview of Model Findings

Under a prospective Trump administration in 2025, the Computable General Equilibrium (CGE) analyses shed light on the macroeconomic, sectoral, and geopolitical ramifications of renewed U.S. tariff escalation. Long-term equilibrium projections (2025–2030) provided by the CGE model show that, although protectionist policies initially support some domestic industries, they eventually lead to systemic inefficiencies, increased inflation, and a decrease in international trade activity (Giesecke, Waschik, & Tran, 2019; Conway, 2025).

Technological Protectionism, Strategic Recalibration, and Bloc Polarization are the three scenarios under which the models converge on a crucial finding: prolonged tariff expansion has detrimental effects on global welfare and increases geo-economic fragmentation (Ruiz Estrada & Lee, 2025). However, the degree and character of these effects differ significantly based on the extent and synchronization of policy initiatives.

Scenario 1: Technological Protectionism

The Technological Protectionism scenario is predicated on the imposition of a universal import tariff of 10%, targeted duties of more than 60% on Chinese goods, and limitations on exports of high-tech goods. According to the CGE model, supply-chain disruption and a decline in cross-border investment flows will be the main causes of the 2.1% global GDP contraction by 2030. Due to input-output linkages, China's output shrinks by 1.9% while the U.S. GDP falls by about 1.3%, with spillovers to emerging markets (Giesecke *et al.* 2019; IMF, 2024).

According to sectoral breakdowns, import substitution causes manufacturing and electronics to initially grow in the US. Rising input costs, an increase in exchange rates, and retaliatory tariffs on U.S. agricultural exports, however, counteract these benefits (Bown, 2021; El Hajoui & Ez-Zetouni, 2025). The inflationary trade-offs of aggressive protectionism are confirmed by the impulse response functions of the VAR model, which show that a one-standard-deviation tariff shock causes a 0.4 percentage-point increase in inflation within two quarters and a 0.2 percentage-point decrease in quarterly GDP growth (Conway, 2025; Stock & Watson, 2020).

Higher tariffs are linked to a flight-to-safety dynamic and increased USD volatility in financial markets, which causes capital inflows to U.S. Treasuries but depreciation of emerging-market currencies (Fernández i Sala & González Afonso, 2025). In general, this situation accelerates the trend toward "weaponized interdependence"

(Puślecki, 2025) and causes technological bifurcation - the separation of global innovation ecosystems into networks centered on the United States and China (Van Assche & Lundan, 2022).

This route effectively institutionalizes economic nationalism while undermining multilateral organizations like the WTO and the OECD trade framework, despite its political resonance at home (Bellocchi & Travaglini, 2025). Thus, the findings support the theoretical predictions of neomercantilist trade models, which predict long-term global inefficiency at the expense of short-term industrial protection (Ricardo, 1817; Brander & Spencer, 1985).

Scenario 2: Strategic Recalibration

The Strategic Recalibration scenario simulates a moderate policy change that includes investments in domestic supply-chain resilience, regional trade cooperation, and the selective removal of tariffs in non-strategic sectors. According to the CGE simulations, this approach produces modest but favorable macroeconomic results. By 2030, global GDP growth stabilizes at 2.4%, up from 1.7% in the high-tariff baseline. Increased competitiveness in intermediate goods causes the trade deficit to slightly shrink and U.S. inflation to normalize at 2.3% (World Bank, 2024; IMF, 2024).

In this arrangement, supply-chain regionalization persists but develops via collaborative frameworks like the EU-US Trade and Technology Council, Quad, and USMCA. After the second quarter, VAR impulse responses show that tariff shocks in this regime have reduced pass-through effects on growth and inflation, indicating market adjustment and policy credibility (Conway, 2025).

Strategically, through "managed interdependence," Strategic Recalibration promotes partial re-globalization (Ruiz Estrada & Lee, 2025). Global value chains adjust through regional production clusters and digital trade facilitation, while multinational corporations diversify their sourcing without completely decoupling (Van Assche & Lundan, 2022). In line with the OECD's framework for adaptive trade policy, the scenario also shows increased resilience in energy and food security metrics (2024).

This situation lends credence to the theory that selective liberalization reduces inflationary persistence and produces more stable macro outcomes when paired with targeted protection for critical technologies (Bellocchi & Travaglini, 2025). As a result, it offers a compromise between closed economic nationalism and open multilateralism.

Scenario 3: Bloc Polarization

In the Bloc Polarization scenario, international trade is divided into two rival blocs: a coalition led by the United States that includes the EU, Japan, and a few ASEAN economies, and a bloc led by China that includes Russia, Iran, and portions of the Global South. According to the CGE results, trade volumes will drop by over 10% and global GDP growth will slow to 1.7% by 2030, which is in line with the structural realignment theory (Ruiz Estrada & Koutronas, 2021; El Hajoui & Ez-Zetouni, 2025).

Geo-economically, Bloc Polarization weakens multilateral oversight by hastening the regionalization of financial and production flows. As major powers seek bilateral coercion, the WTO's dispute-settlement procedures lose their efficacy (Puślecki, 2025). A shift toward monetary bifurcation is indicated by the development of parallel financial infrastructures, such as China's CIPS and the prospective U.S.-EU Digital Dollar Alliance (Andrienko *et al.* 2025).

In theory, these results support the geo-economics viewpoint that sees trade disputes as tools of statecraft rather than just tools for economic policy (Bellocchi & Travaglini, 2025). But they also highlight the structural inefficiencies that result from economic blocs putting sovereignty ahead of collaboration (Ruiz Estrada & Lee, 2025).

In the end, Bloc Polarization signals the beginning of a "post-globalization equilibrium" - a period marked by overlapping trade zones, divided markets, and ongoing inflationary pressures brought on by structural decoupling (Van Assche & Lundan, 2022).

Comparative Synthesis and Policy Discussion

Three main conclusions are highlighted by a cross-scenario synthesis.

First, regardless of political motivation, tariff increases always reduce the efficiency of the world economy and increase inflation. According to CGE results, inflation's elasticity to tariff shocks is always positive (Conway, 2025; Stock & Watson, 2020).

Second, reestablishing trade growth requires selective liberalization and policy coordination. Limited openness can maintain moderate growth and stop uncontrollably high inflation, as the Strategic Recalibration scenario shows.

Third, a key element in reducing long-term fragmentation is the reform of global trade governance. Global value chains could be stabilized without going back to full-scale globalization through regional production resilience and multilateral coordination through reorganized WTO frameworks (Witt, 2019; Puślecki, 2025).

From a policy perspective, the results imply that, if recalibrated within cooperative frameworks, a future Trump tariff policy need not result in systemic collapse. A hybrid model of managed interdependence, which strikes a balance between strategic autonomy and multilateral engagement, could address domestic industrial goals while maintaining global stability instead of complete decoupling (Ruiz Estrada & Lee, 2025; Van Assche & Lundan, 2022).

4. Conclusion and Policy Implications

Summary of Research Insights

This study used an integrated CGE modeling framework and scenario-based analysis to investigate the possible worldwide repercussions of renewed tariff escalation under a potential Trump administration in 2025. The findings show that while tariff policies may provide limited industrial protection and short-term domestic political benefits, they have long-term negative effects on price stability, international cooperation, and economic efficiency. The main conclusion is the same for all of the modelled scenarios, including Technological Protectionism, Strategic Recalibration, and Bloc Polarization: protectionist expansion increases inflationary pressures, upsets supply chains, and splits the international trade system (Giesecke, Waschik, & Tran, 2019; Conway, 2025; Ruiz Estrada & Lee, 2025).

A neomercantilist realignment of trade is reflected in the Technological Protectionism scenario, where the imposition of broad and deep tariffs results in notable reductions in global output and ongoing inflation (Bellocchi & Travaglini, 2025). The systemic risks of geoeconomic fragmentation, such as increased exchange-rate volatility and the deterioration of multilateral governance, are revealed by the Bloc Polarization scenario (Fernández i Sala & González Afonso, 2025; Puślecki, 2025). The Strategic Recalibration scenario, on the other hand, shows a more sustainable equilibrium - implying that moderate liberalization within coordinated regional frameworks can sustain growth, foster innovation, and lower macroeconomic volatility (Van Assche & Lundan, 2022; World Bank, 2024).

Together, these findings support the theoretical claim that the secret to sustainable economic performance in the twenty-first century is strategic interdependence rather than isolation. Tariff protection raises production costs and reduces global competitiveness while providing short-term protection for domestic industries (Amiti, Redding, & Weinstein, 2019; Fajgelbaum *et al.* 2020). According to Ruiz Estrada and Lee (2025), the results support the idea that contemporary globalization is moving toward "managed interdependence," a hybrid system that strikes a balance between national autonomy and cooperative governance, rather than de-globalization.

Policy Implications for the United States

The study offers several important insights for American policymakers:

1. Steer Clear of Overgeneralized Tariff Frameworks: Broad-based tariffs, like a 10% import duty, have detrimental welfare effects and run the risk of inciting retaliation from important partners (Bown, 2021; El Hajoui & Ez-Zetouni, 2025). Rather, the United States should seek sector-specific protection that is restricted to important industries like defense technologies and semiconductors.

2. Strengthen Monetary-Trade Policy Coordination: According to VAR data, tariff shocks play a major role in the persistence of inflation and the strain on monetary policy (Conway, 2025). Therefore, trade policy and inflation-control measures should be coordinated by fiscal and monetary authorities, possibly through coordinated policy discussions between the Federal Reserve and the Treasury.

3. Encourage "Selective Recalibration" over Isolation: By integrating with reliable allies through agreements like USMCA and AUKUS, a partial liberalization strategy can maintain competitiveness without jeopardizing domestic employment goals (Van Assche & Lundan, 2022).

4. Invest in Supply-Chain Sturdiness Instead of Tariff Barriers: The findings demonstrate how ineffective tariffs are as a replacement for supply diversification. Instead of enforcing tariffs broadly, U.S. industrial policy should concentrate on reshoring essential components, strategic stockpiling, and digital trade resilience (Witt, 2019).

Strategic Directions for Multinational Firms

The results highlight the need for multinational corporations (MNCs) to adjust to a period of uncertainty characterized by sporadic protectionism and geopolitical instability.

1. Adopt "Dual Contingency" Planning: Using CGE-style simulations to assess cost pass-throughs and exchange-rate sensitivities, businesses should model supply-chain resilience under both high-tariff and liberalized scenarios (Ruiz Estrada & Koutronas, 2021).

2. Regionalize Without Complete Decoupling: The Strategic Recalibration scenario shows how hybrid regional models, like production clusters based in North America, ASEAN, or the EU, improve agility without severing global integration (Van Assche & Lundan, 2022).

3.Hedge Financial and Currency Risks: According to VAR-based volatility findings, strong hedging techniques are required, such as using digital payment systems that are compatible with new monetary blocs and multi-currency invoicing (Fernández i Sala & González Afonso, 2025).

4. Take Part in Policy Dialogue: MNCs should take part in bilateral and multilateral trade consultations to make sure that business concerns about cross-border logistics and input tariffs are considered when developing policies (Bellocchi & Travaglini, 2025).

Recommendations for Global Institutions

The World Trade Organization (WTO), International Monetary Fund (IMF), and World Bank are among the international organizations that have critical roles to play in reducing the systemic risks found in this study.

1. Reform Multilateral Trade Governance: By creating early warning systems for tariff escalation and promoting transparency in reciprocal trade measures, the WTO should shift from reactive dispute resolution to preventive governance (Puślecki, 2025).

2. Improve Macro-Policy Surveillance: To improve cross-national coordination of monetary and fiscal policy responses, the IMF should broaden its Article IV consultations to specifically include tariff-induced inflation and exchange-rate volatility (IMF, 2024).

3. Support Regional Resilience Frameworks: The World Bank and OECD can support supply-chain integration and infrastructure financing initiatives that encourage developing economies to participate fairly in regional trade blocs (World Bank, 2024).

4. Encourage "Managed Interdependence" as a Global Norm: In line with the new paradigm of geo-economic pluralism, institutional cooperation should strive to create a cooperative framework where shared economic governance and strategic autonomy coexist (Ruiz Estrada & Lee, 2025).

Concluding Reflection

Globalization's transformation rather than its termination will probably determine the course of the world economy between 2025 and 2030. The empirical and theoretical results of this study agree on a key point: national sovereignty and international cooperation must be balanced for sustainable prosperity.

A recalibrated, cooperative approach could prevent systemic bifurcation, stabilize inflation, and restore trade confidence, whereas an unchecked tariff war under a future Trump administration would worsen economic fragmentation. Policymakers, businesses, and institutions must clearly adapt governance structures and strategies to a plural, interconnected, and strategically balanced global order as the world moves into an era of "managed interdependence."

Conclusion

In summary, a tariff war in 2025 will be even more detrimental to the global economy than the trade war that lasted from 2018 to 2020. Increased production costs, weakened international trade flows, and heightened geopolitical tensions are all likely outcomes of a much broader and more aggressive tariff strategy. In order to deal with increased uncertainty, this change would require multinational corporations to reorganize their supply chains and implement new risk-management techniques. The current shift from deep globalization to more regional and politically aligned trading blocs would be expedited by such a shift. As the global economy undergoes structural change, organizations that proactively anticipate these developments will be in the best position for success.

Beyond these immediate ramifications, this study makes a fresh and relevant contribution by relating the empirical data from the tariff era of 2018–2020 to the developing course of U.S. trade policy through 2025. The analysis shows how current proposals indicate a continuation and escalation of earlier protectionist strategies with potentially systemic consequences, rather than viewing the previous trade conflict as a closed historical episode. The study improves knowledge of how universal and high tariffs could alter multinational behavior and the structure of international supply networks by combining insights from trade economics, global value-chain research, and strategic management. At a time when businesses, academics, and policymakers all face increasing uncertainty

about the future of globalization, this forward-looking approach is crucial. As a result, the results offer a crucial basis for well-informed strategic decision-making at a pivotal moment in the global trade order.

Limitations and Future Research Directions

Although useful for capturing macroeconomic relationships, the Computable General Equilibrium (CGE) model employed here is based on aggregated sectoral data and static trade elasticities, which may underrepresent dynamic changes in firm behavior, capital reallocation, and technological adaptation (Giesecke, Waschik, & Tran, 2019; El Hajoui & Ez-Zetouni, 2025). CGE frameworks are unable to adequately account for the nonlinear reactions, strategic delays, and expectations-driven feedback that are frequently present in real-world economic interactions.

Instead of making exact predictions, the scenario analysis - especially the Technological Protectionism, Strategic Recalibration, and Bloc Polarization frameworks - was intended to show conceivable paths. Despite being empirically supported, the parameterization of these scenarios is prone to policy-endogeneity bias and model specification uncertainty (Ruiz Estrada & Lee, 2025). Furthermore, geopolitical uncertainty adds stochastic components that quantitative modeling cannot fully account for, particularly with regard to EU trade governance reforms or the decoupling of China and the United States.

Lastly, although the study combined theoretical and quantitative methods from political economy, geoeconomics, and international trade, it did not specifically include institutional and behavioral factors like bureaucratic inertia, voter perceptions, or lobbying influence, which can have a significant impact on how trade policy is implemented (Puślecki, 2025; Bellocchi & Travaglini, 2025).

Credit Authorship Contribution Statement

Yakubu Abukari, contributed all the materials from conception, investigation, methodology, final analysis, writing-original draft etc.
Rajni Saluja, contributed on review and editing of the article.

Declaration of Competing Interest

The authors declare that there is no known competing financial interest or personal relationships that influence the work reported in this paper.

Declaration of Use of Generative AI and AI-assisted Technologies

Chatgtp was used for grammatical and language improvement.

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The U.S.' Coercive Diplomacy toward China in 2025 and the Future Prospects of Its Strategic Coercive Diplomacy

Dung Nguyen Quoc
Faculty of International Economics
Diplomatic Academy of Vietnam, Vietnam
ORCID: 0009-0009-8247-646X
quocdung30102003@gmail.com

Trang Nguyen Minh
Faculty of International Economics
Diplomatic Academy of Vietnam, Vietnam
ORCID: 0009-0002-0041-6105
trangdav@gmail.com

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Abstract: This research conducted a comprehensive analysis of Washington's strategic application of coercive diplomacy toward Beijing, focusing on three principal dimensions: political, economic, and military. Grounded in the theoretical frameworks of coercive diplomacy, the Truman Doctrine, and "Trump's Transactional Diplomacy," the study employed a hybrid methodology combining content and event data analysis to examine diplomatic behaviors, political statements, tariff policies, technological measures, and military maneuvers enacted by the Trump 2.0 administration. First, Washington utilized coercive measures to reaffirm its global superiority over China. Domestic self-reliance initiatives, such as the AI Action Plan, aimed to demonstrate that U.S. endogenous capabilities remained competitive with China's manufacturing infrastructure. Second, the strategic deployment of its alliance system underscored America's intent to assert leadership over a globally integrated network of political, economic, and defense partnerships, contrasting with China's comparatively modest coalition. Third, coercive diplomacy extended beyond Sino-American dynamics; the Trump administration applied similar pressure tactics toward strategic partners worldwide, often leveraging economic dominance through tariff threats. Strategically, coercive diplomacy toward China appeared poised to become a long-term doctrine, as countering Beijing represented one of the few bipartisan convergences in U.S. politics. In response, China was expected to reinforce domestic resilience and alliance-building to prepare for sustained confrontation. This rivalry was likely to trigger the most extensive multidimensional competition in modern history. Developing nations must adopt proactive, neutral diplomacy to strengthen internal capacities, while they should avoid positioning themselves as adversaries to either superpower.

Keywords: Trump's doctrine; U.S. allies; U.S. coercive diplomacy; U.S.- China competition.

JEL Classification: F51; F52; F13; F59.

Introduction

The U.S. coercive diplomacy has represented one of the key manifestations of the broader "stick-and-carrot" strategy, in which the American government combined threats with persuasive efforts to compel opposing actors to limit or cease behaviors deemed contrary to U.S. interests (Mccready, 2005). Operating under the belief that China had been a severe violator of trade norms and posed a threat to American economic interests, President Trump initiated two rounds of trade warfare during his two presidential terms. Scholars distinguish compellence (demanding an active change) from deterrence (dissuading an action) and note that compellence generally requires clearer deadlines and is harder to succeed than deterrence.

Previous studies found that the U.S. practiced military threats or limited strikes, economic sanctions and financial tools, trade restrictions and tariffs, legal and jurisdictional measures, diplomatic isolation, and public/soft-power instruments to impose costs or offer inducements (外交部, 2023). The U.S. frequently seeks multilateral

backing for coercive measures (*e.g.*, P5+1 diplomacy on Iran) because perceived legitimacy and coalition support increase leverage (Crystal, 2015). The effectiveness of U.S. coercive diplomacy has varied across cases and cannot be universally affirmed. Its success has historically depended on several critical factors: the credibility of threats issued by the U.S., the asymmetry of stakes where the target perceived the risk of unacceptable escalation, clearly defined and attainable objectives, the vulnerability of the target, robust multilateral backing, precise and timely communication (often involving time-sensitive pressure), and the presence of positive inducements to complement coercive measures (Mccready, 2005). In practice, the U.S. has consistently maintained a dominant position when employing coercive diplomacy, owing to its overwhelming political, economic, and military superiority relative to other global actors. Historical scholarship has frequently cited the Cuban Missile Crisis of 1962 as a landmark example of successful American coercive diplomacy, wherein Washington secured a peaceful resolution that averted nuclear war through a calibrated mix of threats and negotiations (Crystal, 2015), coercive diplomacy combined with support from allies successfully persuading Libya to disarm (Romeo, 2016), and coercive diplomacy which had been instrumental in helping allies in Northeast Asia such as South Korea and Japan stand firm against North Korea's nuclear pressure (Brattström, 2007).

Previous scholarship had offered valuable insights into the definition of coercive diplomacy and examined how the U.S. had employed this strategy in past episodes of military tension. However, the twenty-first century, marked by the Fourth Industrial Revolution and the rapid advancement of artificial intelligence, presented a markedly different strategic landscape. Unlike earlier adversaries such as Iraq or Libya, the U.S. now faced a rising China, actively seeking to assert its claim to global preeminence. During Trump's first term, the U.S. launched a trade war aimed at curbing China's commercial capabilities. By the onset of Trump 2.0, this trade war had evolved into a full-spectrum confrontation, encompassing political, economic, technological, and military domains, with a central objective: to prevent China from catching up with America's technological achievements. What distinguishes this study from earlier works is its focus on how the U.S. has wielded coercive diplomacy in an international environment that increasingly values peace and no longer treats the use of force as a primary instrument of statecraft. In the past, whenever scholars referred to "American-style coercive diplomacy," they often assumed that the United States could resort to military force to compel other nations to conform to its will. The deployment of force to safeguard the Petrodollar system had stood as one of the most illustrative examples. Yet, as the military capabilities of other states had been consolidated, and as the second Trump Administration could no longer brazenly dispatch troops to intervene directly in the domestic affairs of sovereign nations, the United States had been compelled to devise more intricate mechanisms to exert influence on the global order. The new form of American "coercive diplomacy" had become closely intertwined with economic power. Whereas Europe had tended to interpret China's rise as peaceful, the United States had gradually reaffirmed its hegemonic position through a "peace without gunfire," relying solely on tariffs and economic sanctions.

Notably, 2025 marked the first year of the Trump 2.0 administration, offering a critical window for analyzing the contours of Trump's coercive diplomacy and projecting the likely trajectory of his foreign policy in the remaining years of his second term. The political, economic, and military stability of developing nations has also become increasingly contingent upon the direction of Trump's strategic choices. Known for his unpredictability, particularly in managing the complex U.S.–China relationship, Trump has continued to defy conventional diplomatic expectations. This study selected the topic of U.S. coercive diplomacy toward China in 2025 as a lens through which to examine how Trump operationalized this strategy and to identify the defining characteristics that emerged during the first nine months of his renewed presidency.

This study consists of five main sections. Section 1, Introduction and Literature Review, outlines the existing research trajectories explored by previous scholars and identifies the central focus of this study. Section 2, Theoretical Basis, defines the concept of coercive diplomacy as applied in this research, introduces the Truman Doctrine as a foundational framework for U.S. coercive diplomacy, and presents the notion of Trump's Transactional Diplomacy, which closely reflects the realities of the current U.S.–China strategic confrontation. Section 3, Methodology, details the two primary research methods employed: content analysis and event data analysis. Section 4, Results and Discussion, presents the key findings and interpretations offered by the research team. Finally, Section 5, Prospects of the U.S. Coercive Diplomacy, synthesizes the authors' projections regarding the future trajectory of American coercive diplomacy and its potential implications for the global market.

1. Research Background

Coercive diplomacy definition

Coercive diplomacy was a foreign policy approach that relied on diplomatic leverag, including threats of force, sanctions, or political isolation, to compel or prevent actions by another state. Unlike conventional military coercion,

coercive diplomacy prioritized diplomatic channels to achieve strategic objectives and treated armed conflict as a last resort. The effectiveness of this strategy depended heavily on credibility; calculated threats needed to convince the target that noncompliance would result in unacceptable costs, while still allowing room for de-escalation (DiploFoundation, 2025). As a nation that had not directly participated in either of the two World Wars in the twentieth century and had benefited significantly from arms sales to both the Axis and Allied powers, the U.S. steadily expanded its economic and military capabilities. This growing power base laid the foundation for Washington's deployment of coercive diplomacy in subsequent decades. Under the Trump 2.0 administration, that capacity was further amplified by rapid advancements in science and technology. Virtually any instrument, ranging from seemingly trivial tweets on social media to high-level economic and military agreements between the U.S. and its allies, could be employed by Trump to exert pressure on China's economy and security apparatus.

The Truman Doctrine (1947)

The Truman Doctrine, introduced in 1947, marked a pivotal turning point in U.S. foreign policy. It featured two defining elements: (1) the abandonment of the Monroe Doctrine's (1823) commitment to non-intervention in European affairs, and (2) the establishment of the principle of "collective security," which led to the creation of a network of allied and friendly nations receiving U.S. military assistance - most notably culminating in the founding of NATO (International Studies, 2015). This doctrine continued to shape the strategic outlook of successive U.S. presidents after Truman, serving as the foundation for America's global alliance architecture. While American leaders in the latter half of the twentieth century were primarily concerned with Soviet expansionism, the twenty-first century confronted President Trump with the rise of China as a global challenger. The Truman Doctrine was adopted as the theoretical backbone of this study because it underscored the U.S.' leadership role in global affairs and its commitment to building a robust alliance system. Throughout the twenty-first century, the doctrine remained resilient and evolved into a durable ideological stronghold, as Trump actively expanded America's global alliance network through the projection of U.S. political, economic, and military power. In an increasingly unstable and unpredictable world, scholars continued to observe echoes of a twenty-first-century Marshall Plan, as the U.S. entered into trade agreements and strategic partnerships with European nations, the United Kingdom, Qatar, Saudi Arabia, and numerous other countries to safeguard its interests and reaffirm its global standing regarding to China. Trump fully embraced the notion that "America's national security is inseparable from global security," and even went so far as to declare himself "the president of Europe" in a symbolic effort to assert his leadership stature. In sum, although the Truman Doctrine had been formulated nearly seventy years earlier, it remained one of the cornerstone doctrines underpinning American foreign policy and the practice of U.S.-style coercive diplomacy in the contemporary era.

Trump's Transactional Diplomacy (2025)

Trump's transactional diplomacy was grounded in the logic of zero-sum game theory, emphasizing benefits exclusively for the U.S. and operating under a quid pro quo mindset. Within this framework, Trump demonstrated a willingness to employ deterrence and even hardline measures such as imposing tariffs on other countries - including U.S. allies (Agrawal, 2025) - effectively trading allied interests for gains favoring America. He treated international relations as commercial transactions and applied the same tactics he had used in the business world to the realm of global politics. During the U.S.–China Trade War 2.0, Trump threatened to impose heavier tariffs on countries that continued importing Chinese goods, a strategy that European Union members understood all too well. To Trump, everything was a tradable asset, and the U.S. was perpetually "taken advantage of." He consistently portrayed China as a cheater in the global trade narrative. Any form of cooperation, whether political, economic, or military, was negotiable, but such exchanges had to yield immediate returns for the U.S. During his visit to the Middle East in May 2025, one of the defining themes of his trip was "Commerce not chaos," underscoring the need for regional actors to engage in trade while minimizing disorder. In his strategy to deter China through military strength, Trump repeatedly urged U.S. allies to first reinforce their own defense capabilities by increasing military spending to 5% of their GDP. He argued that allies such as South Korea, Japan, Taiwan, and NATO member states had long benefited from American military protection without contributing proportionately. European nations, in particular, were compelled to align with Trump's vision, which he claimed would help them achieve greater defense autonomy. In essence, political relationships during Trump's tenure bore the hallmarks of commercial exchanges, with national security at the core. Regardless of whether the counterpart was a partner or an ally, Trump expected them to contribute in proportion to what the U.S. offered. That was the modus operandi of Donald Trump.

2. Methodology

This study used a qualitative research method with two analysis techniques: content analysis and event data analysis. The content analysis was originally used by churches in Sweden in the eighteenth century to understand the ideas in hymns. In 1927, Harold Lasswell was the first to develop this research method with the aim of understanding the implications of Nazi propaganda messages. Since then, in the 1920s and 1930s, this method was used to study the content of Hollywood films and then flourished with the advent of television in the 1950s (Macnamara, 2018). The author argued that this was an effective research approach to analyze situations and events in conjunction with the broader context in which the U.S. sought to assert its global position against its primary rival, China. The contents of meetings, documents, and agreements signed between the U.S. and its political, economic, and military allies were thoroughly examined to uncover the strategic implications behind those treaties and accords. The U.S. and the United Kingdom had signed a comprehensive agreement covering all sectors; however, without in-depth analysis and without situating it within the context of the intensifying U.S.–China competition in science and technology, researchers would have failed to recognize critical provisions related to artificial intelligence, semiconductors, and cybersecurity. Another illustrative example was the authorization granted to Nvidia and AMD to export chips to the Chinese market. Without rigorous scrutiny, this move might have been misinterpreted as a concession by the U.S. to China. In reality, 15% of the revenue generated from the Chinese market was required to be transferred to the U.S. government, and both corporations had to ensure the protection of intellectual property. These analyses could have contributed to affirming the strategic significance of the U.S.' coercive diplomacy toward China in 2025.

The second method was event data analysis. The event data analysis method was first introduced in the 1960s by Charles McClelland, in response to the need among scholars of international politics to objectively quantify the levels of cooperation and conflict between states. The foundational research that preceded the development of this method could be categorized into two main strands. The first strand comprehensively examined the full spectrum of actions undertaken by both state and non-state actors in international relations, exemplified by Azar's (1982) Conflict and Peace Data Bank (COPDAB) and McClelland's World Event/Interaction Survey (WEIS). The second strand concentrated on specific subsets within the broader domain of international relations, namely state behavior, foreign policy, and crises as in Hermann's (1973) Comparative Research on the Events of Nations (CREON) and Leng's (1987) Behavioral Correlates of War (BCOW). In this study, the author employed this methodology after compiling a comprehensive list of activities undertaken by the Trump 2.0 administration in implementing its coercive diplomacy strategy. Key events, official visits, and major initiatives of the Trump government were systematically cataloged and analyzed to uncover insights into the deterrent power of the U.S. and the strength of its alliance system. For instance, on the surface, the visit of a U.S. Senate delegation to the Taiwan Strait appeared to reinforce the "long-standing friendship" between Washington and Taipei, even as the U.S. reaffirmed its recognition of the "One China" policy. However, during that visit, both sides also referenced the National Defense Authorization Act (NDAA), which aimed to further bolster Taiwan's defensive capabilities and discussed future arms deals with the island. Although these developments stemmed from a single event, deeper analysis revealed underlying strategic implications. Taiwan had served as one of the most critical "living shields" for the U.S. in the Asia–Pacific region to counter China's expansionism. The senators' visit constituted a potent political and military deterrent signal from the U.S. to China, when viewed through the lens of coercive diplomacy.

Our research drew upon articles published in reputable U.S. outlets such as Politico, as well as sources from other countries including South Korea, Japan, several EU member states, the United Kingdom (Reuters), and India, to synthesize coverage of U.S. coercive diplomacy. The selected timeframe spanned from January 2025, when Trump assumed the presidency, to October 2025. All articles were publicly available, reflecting transparency in our data sourcing process.

3. Research Results and Discussion

3.1 The U.S. Coercive Diplomacy in Political Fields

The U.S. political power

One of the most commonly employed instruments in the U.S.' coercive diplomacy strategy was political messaging – official statements from the White House and public remarks, including those made on social media, by President Donald Trump. This demonstrated that American political discourse had been broad in scope and targeted diverse audiences, portraying China as a political adversary to all information recipients and reaffirming the U.S.' superior political standing on the global stage. To underscore America's ability to influence Europe's political, economic, and military affairs, President Trump once referred to himself as the "President of Europe" (Vinocur, 2025). His approach

to asserting U.S. dominance differed markedly from that of his predecessors, characterized by a more personal, assertive, and confrontational style. President Trump explicitly declared his intention to ban Chinese airlines from flying through Russian airspace, arguing that such routes reduced transportation costs and enabled Chinese goods to be priced more competitively than American products. Although global supply chains allowed countries to freely choose shipping routes, the U.S. planned to prohibit Chinese carriers from using Russian airspace. This constituted both a threat and a reaffirmation of the U.S.' political supremacy in comparision with its two principal rivals - China and Russia. Reinforcing America's political stature remained a consistent priority for President Trump. In mid-May 2025, amid concurrent global military and economic crises, Trump visited the Middle East and announced that the U.S. would address four major challenges: lifting sanctions on Syria, rescuing Israeli hostages, facilitating Russia–Ukraine negotiations, and issuing an ultimatum to Iran - positioning the U.S. as a stabilizing force in world affairs (Klein, 2025). These declarations not only reinforced America's global leadership but also served as a direct challenge to China's ambitions to supplant the U.S. China had actively sought to assume leadership roles in global affairs, such as mediating between Iran and Saudi Arabia and hosting the China–European Union Summit. Nevertheless, Trump's statements appeared to confront and undermine those ambitions. In practice, the Trump administration did not rely solely on coercive threats toward China; it also occasionally employed soft power through bilateral dialogues. During the height of the U.S.–China trade war in May 2025, President Trump expressed his willingness to meet President Xi Jinping in China, emphasizing that U.S.–China relations were pivotal to the evolving global balance of power (Woodhouse, 2025). This statement followed the inconclusive tariff negotiations held in Geneva on May 7, 2025. However, due to the U.S.' openness to dialogue, President Trump and President Xi conducted a phone call on June 5, 2025, and subsequently reached significant agreements during their meeting in London on June 10, 2025.

Although there had been periods of concession between the two sides, the U.S.' core strategic ideal remained the pursuit of strategic decoupling from China within the global value chain led by the U.S. This objective had been advanced through the use of tariff and non-tariff barriers, whereby the U.S. demanded greater openness from China toward American businesses, while simultaneously insisting on reducing dependence on strategic sectors such as steel, semiconductors, and pharmaceuticals to safeguard domestic manufacturing interests (Cox, 2025). The predominant orientation of U.S. policy continued to be direct confrontation with China, employing coercive diplomacy to reaffirm America's superior global standing. In the context of U.S.–China trade relations, President Trump appeared to possess more leverage - often referred to as "Trump cards" - than his Chinese counterpart. Vice President J.D. Vance had made such a statement to assert that Trump's position remained unshakable, regardless of China's growing power. Vice President Vance's remarks were delivered in mid-October 2025, at a time when tariff tensions between the U.S. and China showed signs of further escalation. One of the most significant "Trump cards" held by the U.S. was Taiwan, which also represented the focal point of China's strongest objections to U.S. policy. Despite waves of protest from China, the U.S. and Taiwan continued to demonstrate a robust security partnership and conveyed a message of enduring friendship between Washington and Taipei. U.S.–Taiwan relations were further reinforced through a visit by a delegation of U.S. senators to Taipei in late August 2025, during which commitments were made to implement the National Defense Authorization Act (NDAA). The U.S. pledged to continue adding provisions to enhance Taiwan's security in the event that China overstepped its bounds in the strait. In early June 2025, U.S. Secretary of War Pete Hegseth was notably absent from the Ukraine Support Conference in Brussels, Belgium, choosing instead to focus on advancing the U.S. Asia strategy, where China's presence had become increasingly prominent. These political actions taken by President Trump and his administration clearly signaled a threat to China, both in terms of international positioning and the U.S.' capacity to defend its allies against mounting Chinese pressure.

The political voice of the U.S. allies

Supportive voices from political allies had been of critical importance to the U.S., as such endorsements enabled Washington to convey a clear message to China: that the U.S. possessed a vast and influential alliance network capable of shaping global affairs and effectively countering China's narrative on the international stage. European leaders consistently expressed support and admiration for President Trump and the accomplishments of the U.S. under his leadership. The British Ambassador to the U.S., Peter Mandelson, praised President Trump as "one of the most influential presidents in American history" and announced a bilateral automobile agreement that reduced tariffs for the United Kingdom from 27.5% to 10% (Olsen, 2025).

NATO Secretary General Mark Rutte described President Trump as "a good friend" who had significantly influenced Europe's political and military landscape. NATO member states also aligned with Trump's call to increase defense spending and move toward greater autonomy in safeguarding their own security. In Washington,

in April 2025, President Trump and Italian Prime Minister Giorgia Meloni reached a consensus on the notion of "Western nationalism" and affirmed their shared objective of "making the West great again" (France 24, 2025). This marked a reaffirmation that the U.S.' position in Europe remained unshakable. While China might have emerged as one of Europe's major trade and investment partners, the political leadership and strategic influence in Europe remained firmly in American hands. Although no direct threat was issued, the implication for China was clear: Europe continued to fall under strong U.S. influence, and this trajectory was unlikely to change in the foreseeable future. Beyond Europe, the U.S.' political credibility was also strongly reinforced in Asia. The U.S. and Qatar reached a $1.2 trillion agreement to expand comprehensive cooperation in energy efficiency, infrastructure, defense, and quantum technology. The U.S. also committed $38 billion to upgrade the Al Udeid Air Base, marking a multi-sectoral strategic partnership between Washington and Doha (Asean Mekong, 2025). Furthermore, the U.S. and Iran reached an agreement on nuclear negotiations in mid-May 2025 during President Trump's Middle East tour (Bloomberg, 2025). These diplomatic efforts were actively pursued by the U.S. to consolidate its position in the region. America's political stature compelled various opposing parties in the Middle East to come to the negotiating table - something China had yet to achieve with its own diplomatic influence. It could be argued that countries aligning with U.S. leadership - such as those in Europe or parts of the Middle East - did so to secure political, economic, or security benefits in the face of looming global uncertainties. Conversely, the U.S. also reaped significant advantages by reaffirming its leadership role and demonstrating that it commanded a far more powerful alliance network than China in any prospective full-scale geopolitical confrontation.

3.2 The U.S. Coercive Diplomacy in Economic Fields

The U.S. coercive diplomacy based on its economic power

As the world's leading economic superpower, the U.S. consistently sought to leverage its economic strength to advance coercive policies toward China, most notably through the trade war that erupted during both terms of President Trump.

The U.S. had unilaterally imposed tariffs on individual countries and territories engaged in trade with America, aiming to minimize China's ability to access the U.S. market. China was labeled as the "world's biggest cheater," a designation affirmed by Peter Navarro, President Trump's economic advisor (Zapata, 2025). Following the aggressive tariff measures, seventy countries immediately requested negotiations with the U.S. on April 7, 2025 (Liptak, 2025). Subsequently, on February 13, 2025, the White House announced that it was engaged in trade talks with 130 countries (Radford, 2025). In reality, this approach went beyond coercive diplomacy; it demonstrated America's capacity for "preemptive strikes" against China to showcase its immense economic power. Prior to imposing tariffs on China and other nations, the U.S. had issued threats regarding the potential tax burdens China would face. During the second U.S.–China trade war in 2025, President Trump threatened to impose tariffs on China four times, with the most extreme proposed rate reaching 200% on August 26, 2025. However, the highest actual tariff rate applied was 145% on April 10, 2025 (China Briefing, 2025). These economic threats not only enabled the U.S. to secure additional trade agreements – up to 200 by the end of April 2025 – but also led to several tariff exemptions granted to China itself (Starcevic, 2025). Beyond economic gains, the U.S. also achieved greater political leverage than China in the lead-up to each meeting between President Trump and President Xi Jinping. President Trump consistently expressed optimism about the prospects for negotiation and the potential to secure favorable terms for the U.S. (David, 2025).

The U.S. not only asserted its superior position over China but also implemented economic deterrence measures targeting countries that intended to establish trade relations with China. In November 2024, upon winning his second term as President, Donald Trump had warned of imposing 100% tariffs on nations joining BRICS (McCarthy, 2025). The White House believed that the expansion of BRICS could threaten the U.S.-led global trade system and cause severe economic disruptions to global supply chains. In practice, Trump's tariff policies yielded tangible political and economic benefits for the U.S. America's global political standing remained intact, while tariff revenues surged. Politically, Trump claimed to have halted several conflicts through the sheer force of U.S. trade power, including the India–Pakistan dispute, and asserted that 200% tariffs served as a tool to compel restraint among nations (India Today, 2025). Economically, Trump declared that the European Union had paid $950 billion, Japan approximately $65 billion, and China even more, as a result of U.S. tariff policies (Eun-joong, 2025). American coercive diplomacy extended beyond tariff threats issued through White House statements or Trump's social media; it materialized in concrete actions that demonstrated to China that the U.S. was a nation that "meant what it said." For instance, the U.S. sanctioned two Chinese companies accused of purchasing chips for SMIC (Freifeld, 2025). When the U.S. imposed 100% tariffs on Chinese goods in October 2025, global stock markets were shaken, ushering in a new and more intense phase of the U.S.–China trade war.

Tariffs proved to be the Trump administration's fastest and most effective tool for issuing threats and launching "preemptive strikes" against China's economy. However, alongside tariffs, the administration also pursued non-tariff instruments as "weapons" of coercive diplomacy, targeting China's critical sectors such as mining and high technology. U.S. deterrence stemmed from its ability to enhance its own strength in advanced industries. The U.S. government reopened a rare earth mine in Wyoming – the first in nearly 70 years – with an estimated yield of 1.7 million tons, sufficient for the next 150 years (Madison, 2025). This move marked the first step in reducing America's dependence on Chinese rare earths, following China's weaponization of these natural resources. It also reflected Washington's strategic intent to decouple China from the global rare earth value chain, serving the broader goal of advancing AI development. Given that the AI race between the U.S. and China in the coming year could shape America's next century, the U.S. government moved swiftly to consolidate its AI capabilities (Kelly, 2025). President Trump's AI Action Plan, launched in 2025, represented one of the first major steps toward two core objectives: achieving AI self-sufficiency and curbing China's advancement in the field (The White House, 2025). The AI Action Plan clearly embodied these goals by promoting the export of comprehensive AI packages - including both hardware and software - to U.S. partners, fostering domestic innovation, and enabling AI development free from legal constraints. This was accompanied by the construction of the world's most advanced AI infrastructure (The White House, 2025).

The most prominent act of U.S. coercive diplomacy came through President Trump's meeting with the world's leading tech figures - Mark Zuckerberg, Tim Cook, Sam Altman, and Bill Gates - at the White House Rose Garden (The White House, 2025). The meeting not only shaped the future trajectory of American science and technology but also sent a clear message to China: the U.S. possessed a formidable talent pool in tech, and China could not catch up with America's scientific and technological progress. In addition to asserting its dominance in tech talent, the U.S. directly threatened China's technological advancement. The U.S. Congress reviewed a proposal to ban Chinese drones, a move that could severely impact the revenues of Chinese drone manufacturers and erode their market share in the U.S. (Wehner, 2025). Washington also considered restricting companies like Nvidia and AMD from selling chips to China to mitigate risks of intellectual property theft (Doherty, 2025). The U.S. was increasingly seen as having the upper hand in the chip race, with U.S. officials asserting that Chinese chips lagged one to two years behind their American counterparts. Nevertheless, these restrictive measures were not deemed excessive, as China was projected to close the gap in chip manufacturing. Coercive diplomacy remained one of the key instruments the U.S. employed to slow China's rapid technological rise (Reuters, 2025).

The U.S. coercive diplomacy based on its economic allies

The U.S. cooperated with its economic allies through the signing and negotiation of new trade agreements, the establishment of economic coalitions, or by threatening to form countervailing economic blocs aimed at China. The authors observed that the most critical objective of the U.S. in leveraging its allies within the framework of economic coercive diplomacy was to demonstrate that America possessed a robust network of economic partners that reinforced its economic power and sent a clear message to China: it should not confront the alliance system that the U.S. had built. America's alliance network spanned the globe, encompassing Asian countries such as India, South Korea, Japan, and the Philippines; Middle Eastern nations like Saudi Arabia; European and African states; and countries across the Americas, including South America and Canada. It appeared that the U.S. had effectively encircled all potential pathways for China to establish its own economic alliances, thereby confining Beijing's options to a narrow scope. Following the tariff measures imposed by the Trump 2.0 administration, numerous countries around the world were compelled to enter negotiations with the U.S. to sign trade agreements and pursue comprehensive cooperation across sectors beyond economics, including politics, defense, and security. India was among the first nations to collaborate with the U.S. in constructing a new trade negotiation framework aimed at strengthening bilateral cooperation and reducing dependence on Chinese goods (The Economic Times, 2025). In addition to the agreement to increase bilateral trade volume to $500 billion by 2030, key American exports – such as steel, automotive components, and pharmaceuticals – were granted a 0% tariff rate upon entry into India. India was not the only country to approve tariff exemptions for U.S. goods; G7 nations also reached a consensus to exempt the U.S. from the global minimum tariff framework in order to mitigate tariff risks of up to 50% under the Trump administration (The White House, 2025). Given its strategic location adjacent to China's border, India's emergence as a major U.S. partner carried significant economic deterrence implications for Chinese goods, especially amid escalating tariff measures imposed by President Trump targeting China. In June 2025, the U.S. and India held direct negotiations on a Bilateral Trade Agreement (BTA) aimed at reducing market access barriers between the two countries.

In its economic relations with Europe, the U.S. and the European Union reached a bilateral trade agreement (The White House, 2025) aimed at reducing the risk of escalation in the transatlantic trade war. As part of the agreement, the U.S. and EU established a Metals Alliance to protect the American steel industry and counter the influx of subsidized steel exports from China (Reuters, 2025). Additionally, the EU agreed to purchase $750 billion worth of energy and semiconductor products from the U.S., thereby strengthening bilateral trade ties and preventing China from becoming a key trading partner of the European bloc (Jack, 2025). President Trump also urged the EU to impose a 100% tariff on Chinese goods to narrow the export market of this Asian power. It could be concluded that the EU served as one of the most critical allies in realizing the U.S.' coercive diplomacy strategy, while also reflecting Washington's determination to decouple China from the global value chain. Beyond the trade agreement with the EU, the U.S. also secured a comprehensive trade deal with the United Kingdom amid intensifying trade tensions. In May 2025, the U.S. and the UK signed the Economic Prosperity Deal (EPD), which included tariff reduction quotas for British automobile exports to the U.S. market, lowered tariffs on beef and aerospace goods, and introduced import-export quotas for ethanol between the two countries. By August 2025, President Donald Trump and Prime Minister Keir Starmer signed an additional "historic" agreement during Trump's visit to the United Kingdom. Under this accord, both nations committed to implementing $42 billion worth of technology agreements covering artificial intelligence, semiconductors, and cybersecurity. The two sides also agreed to boost bilateral trade to $100 billion by 2030. For the U.S., strengthening its European allies was not only a means of reinforcing its own economic power but also a strategic move to counter China's global expansion.

The economic allies of the U.S. in Northeast Asia – namely South Korea and Japan – were also integral to Washington's strategy of deterrence and containment toward China. Following the imposition of tariff measures by President Trump, South Korean President Lee Jae-myung initiated a critical phone call that swiftly led to tariff reductions for South Korea. As a result, South Korean goods were subject to only a 15% tariff rate upon entering the U.S. market, significantly lower than the 25% rate applied to Japanese and EU goods (Hunnicutt & Park, 2025). However, South Korea was also required to commit to a multi-year investment of $350 billion and to purchase $100 billion worth of liquefied natural gas (LNG) from the U.S. Although Japan and the U.S. had not yet reached a formal trade agreement, Japan gradually moved toward greater autonomy in its economic and military strategies in response to President Trump's calls for self-reliance. Beyond major partners, the U.S. also reinforced its economic alliance network through meetings and negotiations with developing countries such as the Philippines and Scotland. President Trump hosted leaders from Gabon, Guinea-Bissau, Liberia, Mauritania, and Senegal at the White House to promote trade over aid, and to negotiate on minerals, security, and immigration issues – aiming to counter Russian and Chinese influence in Africa.

These bilateral and multilateral engagements with economic allies were consistently directed toward enhancing U.S. national interests, reaffirming America's economic leadership, and threatening China through the collective strength of an alliance system built on U.S. economic power. The countries regarded as U.S. economic allies served as some of the most effective instruments for Washington to project economic dominance over China and to assert its coercive diplomatic posture in the bilateral relationship.

3.3 The U.S. Coercive Diplomacy in the Military Field

The U.S. coercive diplomacy based on the U.S. military power

In addition to being the world's leading economic power, the U.S. also possessed unmatched military strength compared to all other nations. This hard power was fully leveraged in its coercive diplomacy, as the U.S. did not hesitate to articulate its global military strategy. Washington declared the adoption of a "proactive deterrence" strategy toward all global flashpoints, including the Asia–Pacific region (U.S. Department of War, 2025). In addition to being the world's leading economic power, the U.S. also possessed unmatched military strength compared to all other nations. This hard power was fully leveraged in its coercive diplomacy, as the U.S. did not hesitate to articulate its global military strategy. Washington declared the adoption of a "proactive deterrence" strategy toward all global flashpoints, including the Asia–Pacific region. During the meeting, which gathered over 900 senior U.S. military officers, President Trump called on the armed forces to maintain a "warrior spirit" and announced plans to overhaul the entire Department of War (Quinn, 2025). The meeting served as a firm message from the U.S. that its military remained in a state of maximum combat readiness. Any foreign military force capable of threatening U.S. national security would be met with direct confrontation by the world's most powerful military. Indeed, the U.S. pledged to defend its core interests in the Asia–Pacific region at all costs, even though its stated policy was to avoid direct military confrontation with China. This represented a shrewd deterrence strategy – emphasizing that while the U.S. did not seek war, it would not abandon its vital interests in the region and would resort to military force if necessary to protect them. A notable example was the direct deployment of U.S. forces to the Panama Canal, one of the key

nodes in China's 21st Century Maritime Silk Road strategy (Taipei Times, 2025). Furthermore, leveraging its military credibility and strength, President Trump had asserted that China would not take military action against Taiwan during his term in office (Reuters, 2025). The deterrent effect of America's pure military power made it increasingly difficult for China to resort to forceful measures in addressing regional disputes, compelling Beijing to prioritize dialogue instead. This could be regarded as a strategic success for the U.S. in employing military strength as an effective tool of coercive diplomacy.

Military deterrence did not arise spontaneously; it was the result of an accelerated process of next-generation weapons development by the U.S. Washington had publicly unveiled numerous advancements in defense science and technology, directly challenging the pace of military development by its primary rival, China. With a projected nuclear budget of approximately $946 billion for the 2025–2034 period, an increase of 25% compared to the previous decade – the U.S. demonstrated its commitment to maintaining global leadership in nuclear security. The development of nuclear weapons served as a warning not only to China but also to other adversaries such as Russia and North Korea. U.S. military modernization consistently aligned with the phrase "surpassing China," reflecting Washington's recognition that China was a capable contender for global leadership. The U.S. invested roughly $500 million to accelerate the development of the F/A-XX stealth fighter, designed to extend operational range by 25% compared to the F-35C, enhance carrier-based combat capabilities, and effectively counter China's long-range missiles and aircraft (Global Defense News, 2025). In addition, the U.S. anticipated emergency scenarios in which China might provoke armed conflict, prompting calls to ramp up domestic production of missiles and drones, and to expedite its hypersonic missile program to reinforce its competitive edge over China and Russia. Washington also announced the "Golden Dome" project, aimed at developing a defense system against ballistic missiles, hypersonic weapons, and cruise missiles originating from China (Stone, 2025). On the maritime front, in response to mounting Chinese pressure in the Taiwan Strait, the U.S. advanced its submarine development program – alongside its allies – to ensure Taiwan's security and safeguard American strategic interests (Cherney *et al.* 2025). With a strategy centered on countering China's military rise, U.S. military power was reinforced daily. This constituted one of Washington's most forceful deterrent messages, intended to undermine China's strategic confidence.

The U.S. publicized its military achievements with a clear message: it was prepared to transfer these advanced systems to its Northeast Asian allies should China cross military thresholds – just as it had previously transferred technologies to Israel in the Middle Eastern theater. Given America's current military capabilities and the advanced support it offered, South Korea, Japan, and Taiwan were positioned as reliable bulwarks capable of blocking Chinese military aggression. By declaring its possession of next-generation weapons systems, the U.S. not only issued a direct military threat to China but also signaled that its alliance network could be equipped with these assets – thereby amplifying the deterrent effect through collective strength.

The U.S. coercive diplomacy based on its military allies

The U.S. maintained a dense network of allies across Northeast Asia and the Asia–Pacific region, capable of effectively blocking all maritime access routes of the People's Liberation Army of China. Within a military pincer strategy, the U.S. and its allies intensified deterrence against China through a series of military alliances spanning the Pacific Ocean. Washington had directly reviewed the trilateral AUKUS pact with Australia and the United Kingdom to align it with the "America First" strategy in the Asia–Pacific (Stewart *et al.* 2025), including provisions for sailor training, technology transfer, and investment in submarine fleets. In mid-July 2025, the U.S., Japan, and Australia signed a trilateral naval logistics agreement to share fuel, missiles, and technology, and to enhance joint training and emergency response capabilities in the face of persistent threats from China and North Korea. This was not the first instance of U.S. cooperation with Northeast Asian countries such as Japan in 2025. In April 2025, the U.S., South Korea, and Japan held a virtual naval summit to strengthen trilateral cooperation and address threats from North Korea and China's "gray zone" activities in the East China Sea and South China Sea. Although not physically present in Northeast or Southeast Asia, President Trump positioned himself as one of the most influential figures in reinforcing regional security. His administration's deterrent posture extended beyond rhetoric at summits and was manifested through concrete actions, including the direct deployment of U.S. forces to Japan and South Korea, and the increased sale of arms to allies such as Taiwan. Given its strategic geopolitical location, Taiwan served as a key U.S. ally in countering China's expansion into the South China Sea, one of the most vital maritime transport corridors in the Asia–Pacific. While the Trump administration publicly affirmed its adherence to the "One China" policy, it simultaneously expanded arms sales to Taiwan under the banner of self-defense. By the end of May 2025, the U.S. had planned to increase arms exports to Taiwan beyond $18.3 billion (Martina, 2025), to bolster the island's defense capabilities. The contracts included advanced missiles, ammunition, and unmanned

aerial vehicles. In practice, the U.S. utilized geographically proximate allies as "living shields" to contain China's military expansion and to sustain its "proactive deterrence" posture directly on China's doorstep.

Although the U.S. had maintained certain advantages over China in terms of military alliances, it did not allow these advantages to breed complacency. On the contrary, the U.S. and its military allies remained vigilant toward emerging partnerships between Beijing and other adversaries such as Moscow and Tehran. The trilateral coalition of the U.S., Japan, and South Korea jointly issued a warning regarding the threat posed by China, strongly condemning its "illegal maritime claims" in the South China Sea and its persistent use of gray-zone tactics in the region (Reuters, 2025). This warning was delivered on the sidelines of the 80th United Nations General Assembly in New York in September 2025, signaling the concern of the U.S. and its military allies over China's maritime expansion. It also served as a veiled threat, reminding China not to overstep boundaries in the region. Beyond the South China Sea, the U.S. extended its deterrent posture globally by issuing a joint warning with NATO regarding the emerging alliance among Beijing, Moscow, Pyongyang, and Tehran (Allison, 2025). The U.S. role within NATO remained irreplaceable, and the U.S.–NATO relationship stood at the core of Washington's transatlantic military alliance strategy. The warning issued by NATO – America's largest military ally – could be interpreted as a direct message to China, making clear that the U.S. and its allies were closely monitoring Beijing's every move in forming strategic partnerships. Should China engage in military alliances that threatened U.S. security or global standing, the U.S. and its allies would respond accordingly.

To maintain a robust deterrence foundation through its alliance system, the U.S. consistently urged its partners to increase defense spending – both to reduce the fiscal burden on Washington and to encourage allies to build independent military capabilities. In response to President Donald Trump's call, U.S. military allies held successive discussions with him regarding increased defense budgets. For President Trump, collective security could only be guaranteed if allies committed to higher defense expenditures. Japan emerged as a leading example, proposing a record defense budget of approximately $60 billion for fiscal year 2026. This move reflected Tokyo's determination to strengthen its military capabilities in the face of growing threats from China and North Korea. The U.S., in turn, benefited from Japan's role as both a strategic ally and a buffer zone, helping to prevent direct military confrontation with China or North Korea. Also located in Northeast Asia, South Korea – another key U.S. ally – hosted President Trump in Washington in August 2025 for a summit addressing trade, semiconductor investment, energy cooperation, and notably, increased defense spending. At the time, the U.S. maintained approximately 28,500 troops stationed in South Korea, ready to respond to external security threats on the Korean Peninsula. South Korea's commitment to boosting its defense budget further solidified the U.S.-led alliance network against China's expanding military reach. As a vocal critic of the global military alignment among Beijing, Moscow, Pyongyang, and Tehran, European nations also supported President Trump's call for increased defense spending. Leveraging trade incentives, Trump successfully pressured European countries to raise their military budgets (France 24, 2025). As a result, NATO – alongside the U.S. – continued to be reinforced as a strategic "shield" against China's efforts to extend its military alliances on a global scale.

4. Discussions

Firstly, the U.S. had been facing one of the most formidable adversaries in its history since its founding, China. In response to a series of coercive actions initiated by the U.S. government, China had issued strong countermeasures, including conducting military exercises in the South China Sea; intensifying criticism of the U.S. at the WTO and rallying opposition to Washington's unilateral trade war, which disrupted global value chains; expanding its military capabilities and announcing scientific advancements in defense; and strengthening cooperation across multiple domains with Russia, North Korea, Iran, and even certain European countries to assert its global standing. China's internal strength in science and technology had grown steadily, with its arsenal of weapons and military equipment being reinforced, particularly through nuclear weapons cooperation agreements. China had also unveiled its AI+ initiative to directly counter President Trump's AI Action Plan. During the second phase of the trade war, China retaliated with tariffs as high as 125%, inflicting significant damage on American exports. High-profile summits such as those hosted by BRICS and the Shanghai Cooperation Organization (SCO) were held with great fanfare, directly challenging the U.S.-led diplomatic forums. Rather than being deterred by American pressure, China responded with even greater momentum in scientific, technological, and military development. As such, the U.S. needed to reassess the effectiveness of its deterrence strategies toward China. In reality, China's growing power had become the key factor driving Washington to continue its containment strategies

in the future. China's rapid advancement posed a serious challenge to America's status as the world's leading superpower and its influence on the global stage.

Secondly, Coercive diplomacy aimed at confronting China had emerged as one of the rare issues enjoying bipartisan consensus within the U.S. government. As a result, over the next three years of the Trump administration – and potentially into the subsequent presidential term – the U.S. was expected to continue threatening China across political, economic, and military domains. In response to China's rapid technological advancement, the U.S. closely scrutinized these developments and sought to assert its superiority by showcasing its own progress and global leadership. The ongoing U.S.– China confrontation had evolved into a comprehensive strategic rivalry. Although moments of apparent concession occurred such as negotiation rounds in Geneva and London or the phone call between President Trump and President Xi Jinping, these were merely temporary pauses rather than sustainable peace agreements. Furthermore, President Trump actively employed deterrent tools such as tariffs and non-tariff barriers to reinforce his position as the President of the world's leading superpower. In essence, without a full-scale confrontation with China, Trump would have struggled to define his presidential identity. Since taking office, countries including those in Europe, Japan, and China had been subjected to substantial tariff burdens - whereas previously, they had paid little to the U.S..This served as a solid foundation for Trump's aspirations toward a future term in the White House.

Lastly, both the U.S. and China had engaged in strategic alliance-building to mitigate losses and reinforce their respective deterrence capacities in national security, economics, and politics. Consequently, developing countries needed to remain vigilant to avoid being drawn into the vortex of great-power rivalry. Choosing sides could result in diminished autonomy over domestic policy, economic strategy, foreign affairs, and defense. Moreover, the cycle of confrontation and retaliation between the U.S. and China had become a closed loop, propelling both nations' internal strength and technological development to levels far beyond the reach of developing economies. Neutrality was essential for countries like Vietnam to absorb lessons and benefit from technological transfers without compromising national security. Diversifying partnerships with other advanced economies also offered a pragmatic pathway for smaller nations to expand market access, reduce exposure to U.S. tariff scrutiny, and maintain stable trade volumes amid rising tensions. Domestically, the U.S. threat toward China, rooted in technological superiority across all sectors, could serve as a catalyst for developing countries to focus on strengthening their internal capacities, thereby avoiding becoming the next target of American deterrence

Conclusions and Further Research

The year 2025 marked the first year of Donald Trump's second presidential term. Containing China's extraordinary rise in economic strength, technological advancement, international political influence, and military capacity remained the foremost strategic priority of the Trump 2.0 administration. Among the array of available instruments, coercive diplomacy emerged as one of the most expedient and readily deployable tools for Trump and his inner circle. This study concentrated on analyzing the administration's coercive diplomatic strategies throughout 2025, aiming to depict the current global political landscape through the lens of U.S.– China relations and to forecast future geopolitical trajectories.

Leveraging its formidable political, economic, and military power, the United States exerted strategic threats against China through its own capabilities. Tariff impositions, sanctions targeting multinational corporations linked to China, and restrictions on Chinese imports into the U.S. market constituted direct coercive measures aimed at Beijing. Concurrently, Washington mobilized a broad coalition of allies across all three domains – political, economic, and defense – through a spectrum of tactics ranging from persuasion to compulsion. Tariffs, in particular, served as Trump's most potent instrument for alliance consolidation.

In essence, U.S. coercive diplomacy pursued three core objectives. First, it sought to reaffirm American primacy over China as a foundation for alliance-building and to constrain China's endogenous development. Second, it aimed to demonstrate the breadth of U.S. alliances in contrast to China's limited network, thereby encircling Beijing's pathways to global integration. Third, the Trump administration's coercive diplomacy extended beyond China, affecting U.S. allies across various regions.

This study distinguished itself from previous research by demonstrating that the new form of American "coercive diplomacy" no longer rested on sheer hard power but rather on soft power and economic leverage. Earlier studies had primarily examined the coercive dimension of U.S. policy through images of military deployments across the globe - such as in South Korea, Japan, Afghanistan - or through campaigns in Iran and Libya. By contrast, this paper analyzed the "coercive diplomacy" of the Trump 2.0 administration on the basis of content analysis and event data analysis. Through this methodological foundation, the authors gradually affirmed that

coercion was not confined to warfare but was embedded within Trump's very approach to governance and confrontation.

Furthermore, the authors asserted that the new "coercive diplomacy" was constructed upon the personal authority and credibility of the U.S. president. In this regard, we argued that the Trump Administration had been a government of considerable prestige and international standing, contrary to many claims that the United States had been in a weaker position in comparision with China. At present, and looking ahead, the authors contended that the United States would continue to occupy a superior position over China, owing to its substantial internal economic strength, its extensive network of allies worldwide, and, most importantly, its decisive geographical advantages. Consequently, American "coercive diplomacy" retained efficacy across numerous states, including China. Authors also examined Trump's coercive diplomacy through the prism of his personal traits and political style, thereby inferring the contours of U.S. foreign policy. The Trump Administration of 2025 represented a distinctive government in American history. Trump did not hesitate to assert himself both domestically and internationally, candidly addressing sensitive issues in foreign policy. Therefore, by grasping aspects of Trump's personality and political modus operandi, scholars could reasonably generate relatively accurate forecasts of U.S. foreign policy during the remaining years of his term.

The U.S.– China rivalry appeared destined to persist beyond Trump's tenure, becoming a structural feature of global politics. The more pressure the U.S. exerted, the more China accelerated its development, thus perpetuating a strategic feedback loop that would define the international order around the U.S.– China axis. Trump also appeared to leverage this confrontation to reinforce his leadership identity. Moreover, both powers actively sought to recruit developing nations as strategic allies. These states, however, needed to remain vigilant against the allure of either superpower. Aligning too closely with one side risked forfeiting autonomy in political, economic, and military domains.

The U.S.– China confrontation and Washington's coercive tactics opened new avenues for scholarly inquiry. Global political dynamics require continuous investigation and real-time updates in response to unfolding events. Given the rapid evolution of technology – arguably the most decisive weapon in this rivalry – geopolitical configurations were shifting at unprecedented speed. Technological dimensions thus warranted deeper exploration, potentially yielding policy recommendations for developing countries to narrow the gap with advanced economies. As potential swing actors in this great power contest, developing nations merited focused research, particularly regarding their strategic roles in the remaining half of this decade.

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Credit Authorship Contribution Statement

Minh Trang Nguyen: Research question formation, Conceptualization, Theoretical basis, Writing – original draft, Review and Editing, Validation.
Quoc Dung Nguyen: Research question formation, Data Collection, Data Analysis, Writing – original manuscript.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-Assisted Technologies

Although the authors used the Internet to collect the data, we declared that they have not used generative AI.

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The Impact of Trump Administration Tariffs on Global Trade and Commodity Prices

Ejuchegahi A. Angwaomaodoko
E.A. Foundation, Nigeria
ORCID: 0009-0001-6300-2017; Researcher ID: LIG-5067-2024
angwamua@kean.edu

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Abstract: This current research evaluates the impact of Trump-era tariffs on the trends of global trade and commodity prices, with specific focus on the overall implications of U.S. protectionist trade policy. Utilizing a multi-sector methodology, the research takes into account the implications of key tariff measures taken under Sections 232 and 301 of U.S. trade legislation, particularly those directed against steel, aluminium, and a broad range of Chinese imports. The article explores how these tariffs affected two-way trade flows - especially between the U.S. and China - and caused dramatic shifts in global supply chains, with production diverted more and more to countries like Vietnam and Mexico. The study also examines the sectoral impact on commodities, highlighting how U.S. agricultural exports such as soybeans and pork dropped due to Chinese retaliation, while metal and energy markets were affected by price volatility, supply chain congestion, and strategic restructuring. Results indicate that although the tariffs were intended to increase domestic production and restore trade deficits, they led to unintended consequences such as higher U.S. importers' expenses, reduced export competitiveness, and further uncertainty in commodity markets. The study concludes by indicating the long-term economic implications of trade wars on worldwide economic stability as well as the necessity of multilateral approaches to trade reform.

Keywords: trade wars; tariffs; Trump; United States; supply chain.

JEL Classification: F13; F14.

Introduction

The introduction of tariffs under Trump has represented a significant shift in the United States' foreign trade policy strategy. Rooted in the "America First" philosophy, the Trump administration launched assertive trade protectionism in a bid to turn around long-standing trade deficits, revitalize U.S. manufacturing, counter what it termed "unfair trade practices" by foreign competitors, and restore American economic sovereignty (Autor *et al.* 2024). Contrary to previous administrations, which by and large supported multilateral trade liberalization, President Trump utilised a unilateral tariff policy, targeting a wide range of imported raw materials and goods from both strategic rivals and traditional allies.

The key tariff actions taken, included Section 232 of the Trade Expansion Act being used to impose tariffs on steel and aluminum on grounds of national security, and Section 301 of the Trade Act of 1974 to impose punitive tariffs on roughly $360 billion of Chinese goods due to intellectual property theft and forced technology transfers (Lovely & Liang, 2018). These tariff measures led to one of the largest trade escalations in modern history - particularly between the U.S. and China which set off retaliatory tariffs and a trade war. Consequently, U.S. exporters, specifically in agriculture and energy, began losing access to important markets abroad (Kim & Yoon, 2020).

The trade restrictions created various impacts which extended beyond the bilateral relationship between the two countries. It also caused worldwide supply chain disruptions and price increases for manufacturers while countries and companies redirected their trade to different partners (Kim & Yoon, 2020). The U.S.-China tariffs led to export growth in Vietnam and Mexico because companies chose to avoid these tariffs by redirecting their trade to other countries (Amiti *et al.* 2019). The U.S. industries which depend on imported intermediate goods including

automotive construction and consumer electronics faced higher input costs and reduced competitiveness and supply chain disruptions. The global commodity markets experienced significant price volatility during the trade war precipitated by the Trump-era tariff policies.

The Chinese retaliatory tariffs had negative impact on prominent U.S. farm exports such as soybeans, corn, and pork, resulting in sharp price declines and an accumulation of unsold stocks in the domestic economy (Konduru & Asci, 2019). Furthermore, the reconfiguration of global trade routes, driven by increasing geopolitical uncertainties and shifting global demand, also heightened market volatility. These disruptions were especially damaging to commodity-exporting countries, whose economies are most dependent on stable trade flows and reliable pricing structures.

In his second term especially during 2025 the scope of Trump's trade policy has experienced significant expansion. The United States has seen an unprecedented surge in tariff implementation as the average tariff percentage jumped from 2.5% to 27% which matches the protectionist levels of the Smoot–Hawley Tariff Act from the 1930s (Coggan, 2025). The administration executed this major policy transformation through Executive Orders under the International Emergency Economic Powers Act (IEEPA) which granted them authority to enact extensive "reciprocal tariffs" without obtaining normal Congressional consent. The administration established a 10% tariff baseline in April 2025 and implemented high tariff rates reaching 50% against essential partners including India because it considered these nations to maintain ongoing unfair trade activities (Muhammad, 2025).

The 2025 tariffs extend beyond their economic function because they operate as instruments of geopolitical power and national security while maintaining the administration's tariff-based foreign and domestic policy approach. The second-term tariff measures surpass previous Section 232 and 301 tariffs because they impose restrictions on various trading partners while targeting other specific sectors including semiconductors energy and automobiles (Olsen & Niemeyer, 2025). The U.S. implementation of these measures has escalated diplomatic tensions because India together with the European Union and Canada have condemned these actions as threats to the worldwide trading system (Coggan, 2025). Domestic disputes have emerged about the inflationary effects of increased tariffs since recent research shows the 2025 measures will lead to $3,800 yearly household expenses.

This research examines the impacts and implications of tariffs imposed by trump on global trade and commodity prices with major emphasis on how the tariff policies implemented affected bilateral flow, disrupted global supply chain and sector specific markets which includes agriculture, metals and energy.

1. Theoretical Framework

1.1 Trade Protectionism Theory

According to Milner & Yoffie (2017) Trade protectionism consists of governmental strategies that limit imports as means of safeguarding internal industries and domestic workers from external industry competition by utilizing tariffs, quotas, and other limitations. The basic premise of protectionism is that protecting domestic industries improves job prospects, reduces trade deficits, and strengthens national security (Rho & Tomz, 2017). Tariffs, more specifically tariffs regulated under Executive Order Section 232 and Section 301, were utilized by the Trump administration, where tariffs were levied as ways of protecting United States' industries from unfair international competition and addressing failure to protect certain industries such as steel and technology (Milner & Yoffie, 2017).

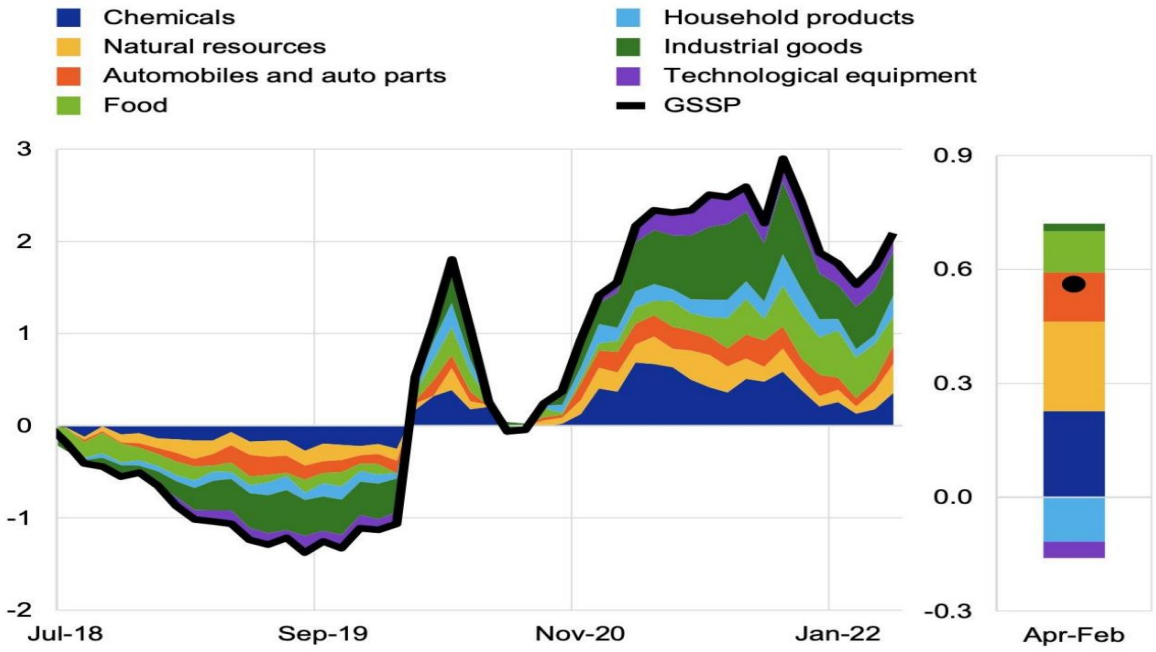
However, trade protectionism is often criticized as potentially creating overall lower economic efficiency and well-being. Economists from classical and neoclassical backgrounds argue although protectionist measures might meet process motivation goals in the short run, such measures usually have retaliatory outcomes, providing consumers with less choices, and higher prices of commodities (Li & Fang, 2024). The tariffs during the Trump administration are a clear representation of the divergence that exists between national, short-term goals, and long-term, global economic well-being.

1.2 Supply Chain Disruption Models

Global supply chains rely on optimizing costs and optimum delivery systems involving multiple countries and continents. Tariffs disrupt these systems by increasing costs, increasing uncertainty, and forcing firms to rethink their sourcing (Zhao *et al.* 2019). Disruption models in supply chains indicate how political shocks such as tariffs, disease, and natural disasters trigger a cascade of effects through global production networks. The Trump tariffs on goods from China and other countries triggered shifts in manufacturing locations and led to increased demand for alternate suppliers and in some cases, reshoring or nearshoring of production facilities. These disruptions were often made with short-term costs to implement long-term reconfiguration of trade routes (Olivares & Elmaraghy, 2020). These disruptions also had impact on price changes in commodity markets, particularly for products, such as soybeans, steel, and aluminum, whose trade flows were determined to a large extent by global value chains.

Figure 1 shows that global supply chains faced disruptions as a result of trump tariffs which was reflected in significant fluctuations across key sectors, including chemicals, natural resources, industrial goods, and technological equipment. The dramatic shifts recorded in the figure 1 reflect how prolonged logistical bottlenecks, an increase in transportation costs, stops of factories, and shortages of essential inputs contributed cumulatively to the destabilization of patterns of production in firms.

Figure 1. Supply chain pressure indicator in Global manufacturing



Source: Luo *et al.* 2023

1.3 Price Elasticity and Trade Wars

Price elasticity of demand and supply is important when determining the economic effects of tariff imposition. Elasticity indicates the level of consumers and producer's responsiveness to changes in prices. When tariffs increase the total cost of imports, the fall or shift in demand depends on the level of elasticity of the affected goods. If the goods are inelastic- which is more likely to involve inputs like machinery or raw inputs for agricultural goods--- tariffs raise prices for both consumers and manufacturers with corresponding decreases in demand are likely small (Freidmann & Schwartz, 2017). On the contrary, if demand is elastic, the imports may drop significantly, but there won't be enough domestic substitutes to fulfill the needs of demand.

The economic evidence demonstrated during the U.S.-China trade war that the majority of the cost of tariffs was passed on to American consumers and firms, especially in electronics and intermediate goods (Alessandria & Choi, 2019). Demand remained largely inelastic in the short run, due to inelastic inputs, further increasing cost burdens on domestic industries.

2. Overview of Trump Tariffs

Trade policy under the Trump administration underwent a significant change. Central to this change was the application of unilateral tariffs across various industries and nations justified by national security, trade deficits, and intellectual property violations. These policies resulted in widespread retaliation around the globe and fundamentally changed international trade relations (Steinbock, 2019). This section identifies a timeline, discussing most major tariffs during the Trump administration, including Section 232 and Section 301 tariffs.

2.1 Section 232 Tariffs: Steel and Aluminum

In March 2018, the Trump administration implemented a 25% tariff on steel and a 10% tariff on aluminium under Section 232 of the Trade Expansion Act of 1962 for national security reasons (Kim, 2020). These tariffs applied to a broad range of industries, and included impacted allies such as Canada, Mexico, and European Union, which represented a clear shift toward protectionism. While domestic producers benefited from short-term price increases and increased investments, downstream industries, *e.g.* automotive, construction, and manufacturing, faced higher

input costs and supply chain disruptions. Francois and Baughman (2019) estimated in their study that for every steel job created, as many as eight jobs were lost in other downstream industries. As the policy generated uncertainty and production costs, it had the unintended effect of deterring long-term manufacturing investments (Countryman & Muhammad, 2018).

Canada, the largest provider of steel and aluminium to the U.S., decided to retaliate with tariffs on C$16.6 billion worth of exports from the United States including whiskey and orange juice, which are targeted politically sensitive exports (Lester & Zhu, 2019).

The Section 232 authority has been used more vigorously during 2025 than during Trump's initial 2017-2021 period through the implementation of 50% tariffs on steel and aluminium imports which surpass the 25% and 10% rates from 2018. The United States implemented a 25% tariff on imported vehicles from most trading partners which it justified through national security and economic resilience (Armstrong, 2025). The "reciprocal tariff" framework of the administration functions to penalize countries which have unfair trade policies while protecting domestic industry through protective measures. The trade measures have triggered strong opposition from Canada, Mexico and the European Union because they believe the tariffs damage worldwide trade standards and harm established international relationships (Liu, 2025).

The implementation of these tariffs has led to substantial economic effects along with diplomatic tensions. Steel and aluminium manufacturers in the United States gained from immediate price hikes yet downstream industries from automotive to construction and machinery manufacturing must bear increased input expenses which creates worries about inflation risks and diminished market competitiveness (Liu, 2025).

2.2 Section 301Tariffs: The US-China Trade War

Under Trump's leadership the Section 301 tariffs established new records in present-day trade history through his ongoing 2025 trade policy enforcement. The tariff escalation continued with an initial 10% increase in February followed by another 10% in March which resulted in certain Chinese product categories facing a 145% tariff increase across consumer electronics and intermediate industrial goods (Patel & Ai, 2025). China responded by setting tariffs which rose to 125% against U.S. exports while focusing on agricultural products and energy items and automobile exports. The short-lived peace agreement during mid-May brought the tariff percentages down to 30% for U.S. goods and 10% for Chinese goods but it failed to address fundamental issues between the two trading partners or establish trade equilibrium (Patel & Ai, 2025).

The U.S.–China trade war escalated dramatically when the administration implemented tariffs that targeted strategic sectors including semiconductors and rare earths and industrial machinery. Analysts predict that semiconductor tariffs under consideration will reach 300% which would devastate worldwide electronic hardware and computing hardware supply chains (StoryBuddiesplay, 2025). Due to this uncertainty multinational corporations now feel compelled to increase their efforts toward production diversification which has pushed Vietnam India and Mexico to become their new manufacturing centres.

The rising tensions between China and the United States have triggered economic concerns regarding inflation within the U.S. because tariff increases push higher costs onto consumers and industries that depend on Chinese inputs (Fajgelbaum *et al.* 2024). Strategic tensions between nations have intensified because tariffs transformed an initial trade dispute into a wider competition between technological control and industrial governance. The Section 301 measures which started as a reaction to intellectual property theft and forced technology transfers have become a permanent aspect of U.S.–China economic relations that points toward sustained long-term consequences for global trade governance.

3. Impact on Global Trade

The Trump administration's tariff policies created a pivotal shift in international trade patterns by breaking down entrenched supply networks and changing intercontinental goods movement. The U. S. The initial actions incited broad countermeasures which intensified trade disputes that led to widespread tensions through the global markets. The implementation of these measures led to deteriorating bilateral relations while simultaneously triggering trade diversion alongside production shifts and policy adjustments (Park, 2020). The global trading system faced increased uncertainty alongside escalating costs while trade networks became more fragmented and regionally focused.

3.1 Bilateral Trade Flows

The imposition of tariffs by trump affected bilateral trade flows between many countries, including some of the most important trading partners, such as China and the European Union. The most consequential shift in U.S.-China

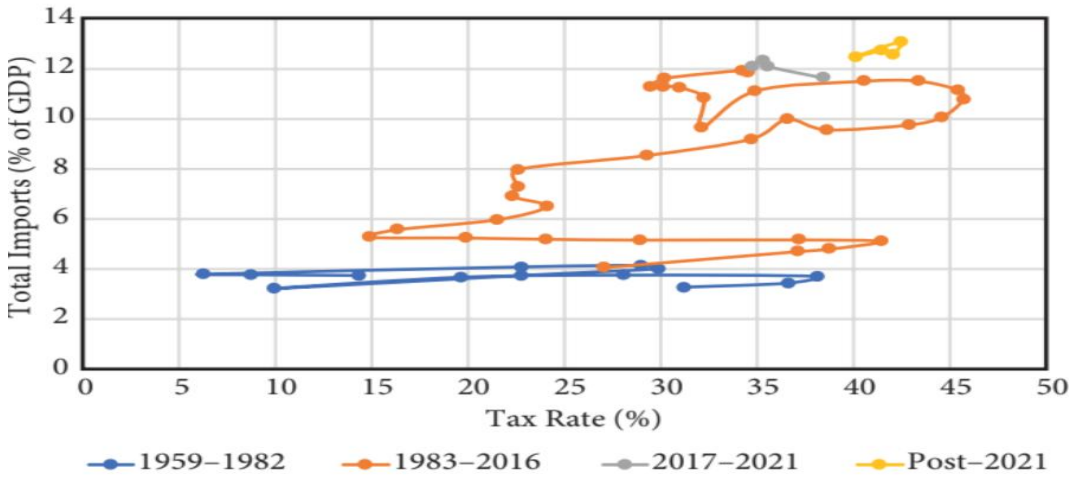
economic relations came in the form of the use of tariffs as an instrument of economic confrontation. In 2018, the U.S. imposed tariffs on over $350 billion in goods from China using section 301 of the Trade Act of 1974, which was justified by the U.S. government as a necessary response to China's unfair trade practices, theft of U.S. intellectual property, and illegal subsidies by the Beijing government to their state-owned enterprises (Chakraborty & Dey, 2024). China responded by putting tariffs on roughly $110 billion in exports from the U.S., including crucial agricultural goods for China, industrial goods, and automobiles (Wahab, 2024).

These actions had immediate and profound consequences. Trade volume between the two nations plummeted. As reported by U.S. Census Bureau (2021), imports from China to the United States decreased by over 25% from 2018 to 2020, experiencing sharp declines in electronics, machinery, and furniture. U.S. exports to China also faced the brunt of retaliatory trade policies, especially in the agriculture sector where exports of soybeans and pork experienced a drastic decline. According to Chakraborty & Dey (2024), even though the Phase One Trade Agreement, signed in January 2020, was aimed at stabilizing relations and getting China to commit to buying more U.S. goods, its execution was rescheduled by COVID-19 and geopolitical strife. Additionally, trade relations between the U.S. and the EU during the Trump administration were primarily characterized by diplomatic friction instead of a direct trade war (Xing, 2017).

In contrast, U.S.-EU trade relations under the Trump administration were characterized more by diplomatic tension than an actual trade war. The administration's use of Section 232 tariffs on steel (25%) and aluminum (10%) in 2018 on national security grounds, affected European exporters and caused the European Union to retaliate with tariffs on $3.2 billion worth of American products such as whiskey, motorcycles, and orange juice (Wahab, 2024). Tensions also grew from the longstanding Airbus-Boeing dispute when the U.S. placed tariffs on $7.5 billion worth of European products in 2019 after a World Trade Organization ruling that the EU had illegally subsidized Airbus (Kim, 2020).

The widespread reciprocal tariff system implemented in 2025 has significantly altered U.S. trade partnerships between countries through one of the most substantial changes in contemporary trade policies. A key example is the U.S.–India relationship. The Trump administration implemented a 50% tariff on India after India continued buying Russian oil at discounted rates because the administration considered it a breach of U.S. strategic economic interests (Muhammad, 2025). The rising tensions between the United States and India led to a major diplomatic crisis which had significant effect on their historical friendship and made it difficult to work together on defense and technology agreements. India has taken steps to expand its trade relationships with China and Russia and Southeast Asian nations while decreasing its dependence on U.S.-based trade networks which suggests a new direction for global trade partnerships (Verma, 2025). The variation in tax rates across the time periods corresponds, as represented in Figure 2, to remarkable changes in total imports as a share of GDP, showing how shifts in home economy tax policy or tariff policy can influence bilateral trade flows. Higher tax regimes, especially in the post-2021 period, are associated with high levels of imports, meaning that fiscal adjustment can change the incentives on cross-border exchange, reshape import demand, and finally affect the volume and direction of bilateral trade relationships.

Figure 2. Tariff rate vs Bilateral trade flow response



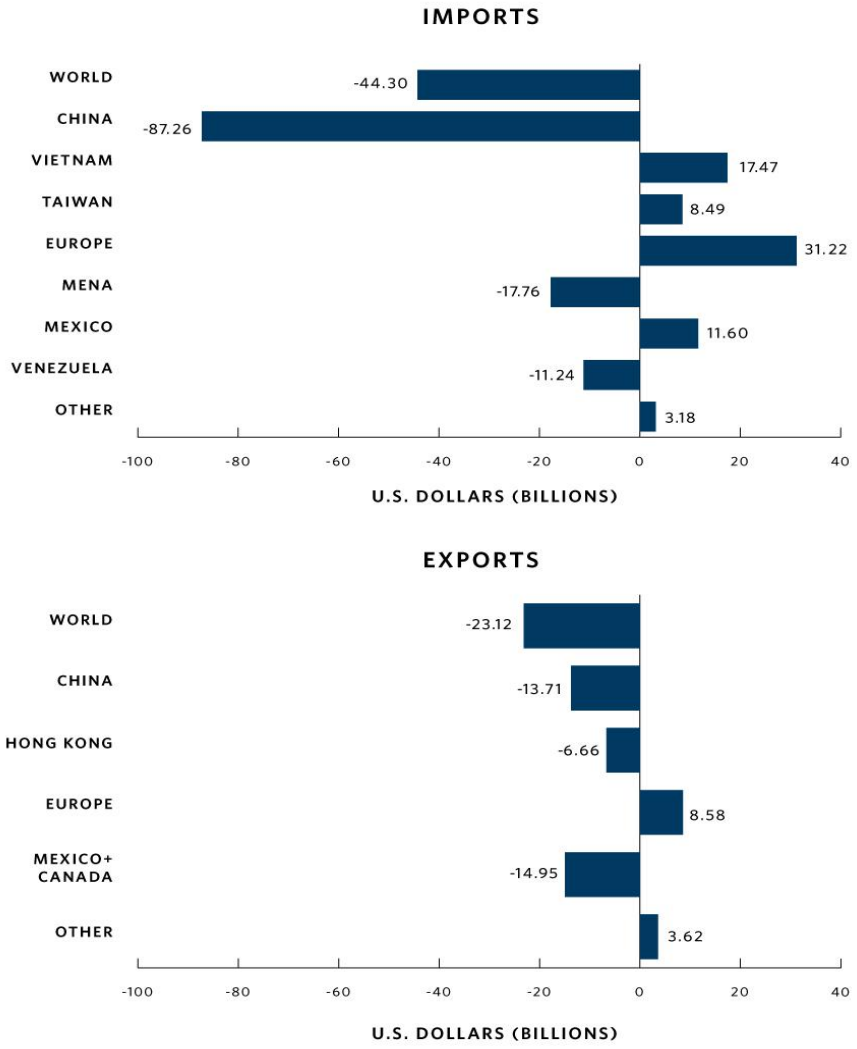
Source: Wahab, 2024

3.2 Shifts in Global Supply Chain

The Trump administration's imposition of tariffs affected a major realignment of global supply chains, particularly for firms that are heavily reliant on Chinese manufacturing. The increasing costs of doing business in China which resulted from the tariffs, regulatory scrutiny, and geopolitical tensions were the causes that led several multinational corporations to utilise "China+1" strategy, where they either diversified or completely relocated their production to other low-cost manufacturing hubs (Fan *et al.* 2022). This is a significant shift in the history of global production that has been previously centered on China and is thus referred to as "the world's factory."

One of the most prominent beneficiaries was Vietnam. The foreign trade of Vietnam to the US has increased by more than 30% during the period of 2018-2020, mainly due to the increased demand for electronics, textiles, furniture, and machinery that were previously sourced from China (Johnson & Huang, 2021). Samsung, Apple suppliers, and Nike are examples of companies that increased their operations or procured components from Vietnam so as to circumvent the US tariffs on Chinese goods (Grossman *et al.* 2024). Vietnam's favorable trade agreements, low labor costs, and relatively stable political environment contributed to its attractiveness as an alternative production base.

Figure 3. Trade Diversion Effects



Source: Grossman *et al.* 2024

Mexico also experienced a significant increase in foreign direct investment (FDI) that was mainly in sectors such as automotive parts, consumer electronics, and industrial machinery. The renegotiation of NAFTA into the USMCA agreement in addition to the proximity of Mexico to the U.S. made it the most attractive place for those companies that wanted to get access to the U.S. market and at the same time reduce the exposure to tariffs (Anbumozhi *et al.* 2020). The changes in the distribution of both import and export values among the largest trading partners, as shown in Figure 3, reflect a profound change in the patterns of global supply chains. The significant

drop in imports from China, coupled with the considerable rises from countries such as Vietnam, Taiwan, and Mexico, indicates that companies are sourcing their products from different countries to lower the risk of being too dependent on one country. In the same way, the adjustments in export flows, *i.e.*, the decrease in the volume sent to China and the relative increase directed toward Europe and other markets, emphasize the impact of supply chain repositioning on the changes of the directions of bilateral trade.

Countries like Vietnam, India, Indonesia, and Bangladesh faced poor infrastructure, including small ports, insufficient power, and bottlenecks in logistics which prevented them from migrating industrially on a big scale (Dong & Kouvelis, 2019). At the same time, the pace and the size of the relocation efforts have been limited by regulatory uncertainties, excessive formalities, and a shortage of skilled workers. Furthermore, amid increasing costs and political risk, China continued to play a central position in international supply chains owing to its unmatched manufacturing prowess, established logistics infrastructure, and rich supplier base. However, completely stopping trade with china is not economically and operationally infeasible for most companies, especially in high-tech sectors where China continues to dominate in the production of intermediate products like semiconductors, batteries, and rare earth components (Johnson & Huang, 2021). In this situation, instead of an outright exit, most companies pursued partial diversification to mitigate dependence while keeping core operations within China.

3.3 Impact on U.S Exporters and Importers

The Trump administration's tariff policy had a great influence on U. S. importers, especially small and medium-sized businesses (SMEs) very reliant on Chinese intermediates. Tariffs on more than $350 billion worth of Chinese imports from electronics and industrial machinery to consumer goods and raw materials virtually raised the cost of doing business for many U. S. enterprises (Handley *et al.* 2020). According to a Grossman *et al.* (2024) report, businesses in the retail, automotive, and construction sectors experienced greater input expenses, therefore many elected either to absorb the losses or pass them to consumers through greater prices of goods. The Trump administration's tariff re-escalation in 2025 has transformed the business environment for American exporters and importers through increased financial strain and strategic unpredictability. The Mckubbin & Shuetrim (2025) reported that in 2025 U.S. tariff rates reached 22.5% which represents the highest point since 1909 and caused household expenses to rise by $3,800 on average per year. For Importers, higher import costs have resulted in increased prices for various products which include industrial inputs and consumer necessities. Small and medium-sized businesses that depend on imports experience more significant harm because they do not possess sufficient size to manage unanticipated tariff increases. The companies must either increase prices to customers which intensifies inflation or decrease their operational capacity resulting in reduced investment and employment expansion (Ali *et al.* 2025).

The export sector has also encountered similar challenges. The U.S. market share in critical sectors including soybeans and pork and automobiles and manufactured goods has diminished because major trading partners China India and the European Union have implemented retaliatory tariffs. During 2025 China implemented tariffs reaching 125% on U.S. agricultural products which drastically reduced American sales and let Brazil alongside other competitors strengthen their presence in international markets (Verma, 2025). Also, the recent Indian tariff measures in response to U.S. duties have created trade challenges between the two nations in pharmaceutical products and machinery and agricultural items (Srivastava, 2024). The execution of these retaliatory trade measures has both lowered U.S. export sales and increased production uncertainty for businesses which depend on long-term contracts thus damaging their ability to plan manufacturing and investment activities.

4. Impact on Commodity Prices

4.1 Agricultural Commodities

Agricultural commodities, particularly soybeans, corn, and pork, saw some disruptions throughout the U.S.-China trade conflict launched by the tariff actions of the Trump administration. As a response to U.S. Section 301 tariffs, China began applying tariffs as high as 25% on a wide range of American agricultural products (Sabala & Devados, 2019). Soybeans, an important agricultural export for the U.S. for decades, were the most affected. China was a large destination for U.S. soybeans; in the years prior to the trade dispute, the Chinese imported more than $12 billion worth of U.S. soybeans on an annual basis, at times providing nearly 60% of all U.S. soybean exports, but also representing a very important revenue source for U.S. farmers, specifically in Midwest states such as Iowa, Illinois, and Minnesota (Grant *et al.* 2021).

Between the years 2017 and 2019, U.S. exports of soybeans to China declined by more than 50%, which contributed to an increase of domestic soybean inventories and a decrease in farm prices for soybeans (Giri, 2022). The trade disruption changed the plan for many farmers, producing a cohort of farmers who were either deferring

planting decisions or switching to lower-margin crops, ultimately diminishing the income of farmers during a period of low global commodity prices.

The Trump administration implemented extensive import duties on various agricultural products including essential items such as soybeans, corn, dairy products, fruits and vegetables during April 2025 to fulfil its “reciprocal tariffs" initiative (Pahnke, 2025). The new tariff structure stands out through its extensive reach and precise focus compared to previous trade measures. Research shows that retail prices of imported foods affected by tariffs may increase between 5% and 18% depending on the product and time of year thus creating price worries for consumers and industries that rely on food products (Stark, 2025).

The Chinese government has imposed high tariffs on soybeans because this product represents an essential American export. In 2025 China imposed 34% tariffs on U.S. soybeans through a combination of retaliatory duties and VAT taxes and MFN taxes which made U.S. soybeans cost more than South American competitors (Chor & Li, 2025). The 2025–2026 marketing year witnessed no new Chinese soybean orders from U.S. producers because Brazil took over the market position. The export collapse has caused excessive domestic supply while intensifying price pressure against U.S. producers.

The economic implications on American agriculture - particularly in the rural Midwest - were far-reaching and extremely severe. Net farm income in the U.S. reduced significantly between 2018 and 2019, and crop failures from extreme rain during the summer of 2019 were persistent. Growing bankruptcies soared by nearly 20% over 2018 to 2019, especially among soybean-dependent states (OECD, 2020). In the short term to help farmers, the Trump administration introduced the Market Facilitation Program (MFP), providing over $28 billion in assistance for US farmers over 2 years to compensate for lost export revenue.

However, MFP benefits were criticized for selectively benefiting large agribusinesses, introducing planting incentives that misaligned with traditional planting practices, and generally neglecting the underlying vulnerabilities in the structure of U.S. agriculture (Choi & Lim, 2022). China diversified its supply sources by accelerating imports of soybeans from Brazil and Argentina. By 2020, Brazil represented over 70% of China’s total soybean imports, compared to 53% in +2017 (UNCTAD, 2021). In addition, China began to take long-term measures to reduce dependence on U.S. agricultural imports encouraging sourcing from producers in countries like Ethiopia, investing in domestic soybean production capacity, and altering livestock feed regulations (Carter & Steinback, 2020).

4.2 Metals and Minerals: Steel and Aluminum and Rare Earth

In March 2018, the Trump administration invoked Section 232 of the Trade Expansion Act in 1962 to impose tariffs of 25% on steel and 10% on aluminum imports for national security reasons. The tariffs were intended to support and revitalize the U.S. metals industry by reducing the volume of foreign metals, including from China, which the U.S. government claimed had flooded global markets by subsidizing companies which were bolstering excess capacity to win market shares (Mancheri *et al.* 2018). While the tariffs resulted in an initial short-term boost to U.S. steel and aluminum production, where several facilities reopened, and domestic prices increased up to 40%, the longer-term economic effects were less straightforward (Feng *et al.* 2019). The tariffs had negative effects on downstream industries, including automotive, construction, beverage manufacturing (which heavily uses aluminum for its packaging), and aerospace that relied on steel and aluminum as input materials.

A report by the Peterson Institute for International Economics estimated that for every steel job that was possibly saved that resulted from higher steel tariffs, 16 jobs in steel / consuming sectors on average faced the danger of being lost due to higher costs and lower global competitiveness (Breyer *et al.* 2022). These tariffs also strained relationships with allies that the united states had a traditional trading relationship - Canada and the EU - who were initially subject to the tariffs before temporary exemptions and the creation of 'quota systems' as tariffs were imposed. Also, the retaliatory practices of trading partners who imposed reciprocal tariffs on U.S. exports - bourbon / motorcycles / orange juice, etc. – led to economic friction, particularly in these politically sensitive economic regions.

In Mid 2025, the Trump government increased its tariff system by including various metal and mineral resources which strengthened protectionist policies under Section 232 and other trade regulations. The United States implemented tariff increases on steel and aluminium imports by doubling their rates from 25% to 50% while retaining a 25% rate for U.K. imports during particular trade agreements (Armstrong, 2025). The tariff expansion included both unprocessed metals and completed goods which consisted of household appliances such as refrigerators and washing machines and HVAC systems.

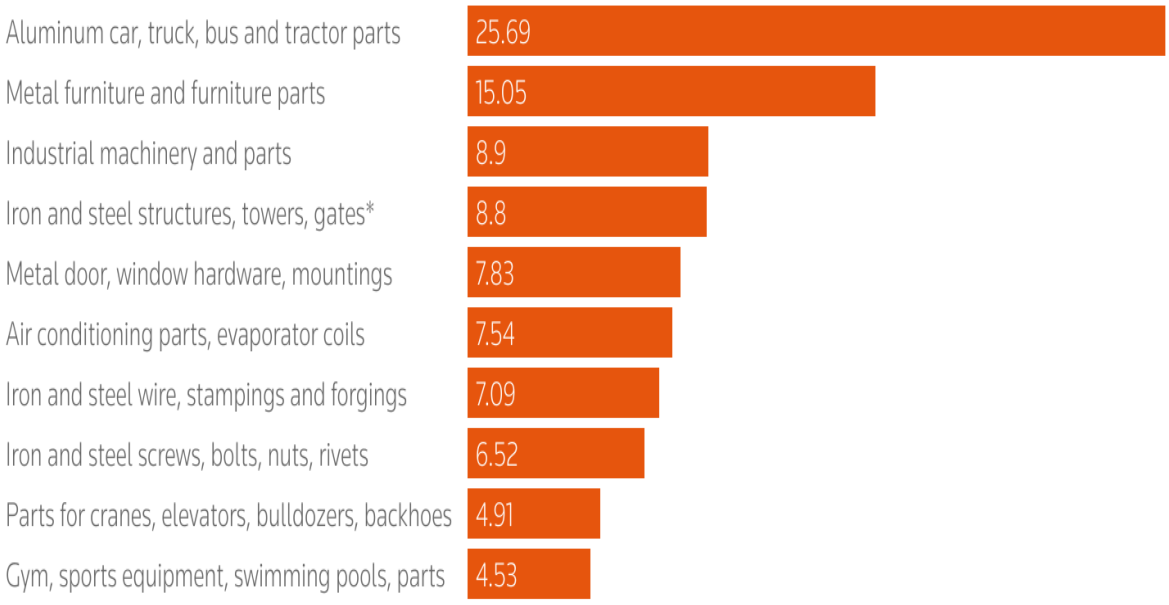
The administration introduced a 50% tariff on copper imports as part of its mineral strategy to increase U.S. self-reliance during international tensions. Copper futures experienced a 13% rush because markets promptly responded to the supply threat (Olsen & Niemeyer, 2025). Advocates of the tariff indicated that the measure worked

as a defense strategy to boost national availability of critical raw materials needed for both military applications and environmentally friendly technology development while citing the accelerated Arizona copper mining operation.

In addition to steel and aluminum, the trade dispute highlighted the strategic dependency of the U.S. and its allies on the supply of vital minerals, especially rare earth elements (REEs). While rare earths were not directly targeted by the Trump-era tariffs, the geopolitical turmoil raised concerns about China's near-monopoly of production and processing. As of 2019, China had over 80% of rare earth refining capacity globally; this fact raised significant concern in the United States, Japan, and the European Union (Wu *et al.* 2021). Furthermore, neodymium, dysprosium, and terbium are critical for the manufacture of high-tech devices, electric vehicle motors, military radar systems, and wind turbines. According to Figure 4, the trade of aluminium and steel components along with metal-based industrial products have shown a very high sensitivity to global economic uncertainty. This is a standard effect that is consistent with the general dynamics of the metals and minerals sector. The main focus is on the sectors of steel, aluminium, and rare earth elements. One of the most significant aspects that emerge from the data is the predominance of aluminium car, truck, bus, and tractor parts (25.69%), which indicates the degree to which metal-intensive manufacturing value chains react to changes in international demand and supply conditions. Such a reaction is the main cause of the energy-intensive extraction and processing activities that the sector is highly dependent on and also due to the strategic importance of metals such as aluminium and steel in industries that are going downstream.

After Huawei was blacklisted by the U.S. Department of Commerce in 2019, Chinese state media reported the possibility of stopping rare earths exports to the United States, triggering global stockpiling and speculation to drive up prices (Wu *et al.* 2021). Consequently, a number of governments including the united states began re-evaluating the security of supply chains and strategies on how to identify alternative sources including but not limited to the Mountain Pass mine in California, partnerships with Australian producers, and research into recycling and substitutive technologies for rare earths (Qasim *et al.* 2024) While the Trump tariffs did not directly affect rare earths, they provided the impetus for a broader strategic re-evaluation of dependencies on mineral resources within the frameworks of economic statecraft and national security.

Figure 4. Distribution of US Metal and Mineral Imports affected by Trump-era Tariffs



Source: Qasim *et al.* 2024

4.3 Energy Commodities: Oil and Gas under Trade Uncertainty

While crude oil and natural gas were not formally part of the list of goods subjects to tariffs under the Trump administration's trade policies, there was significant indirect impact on the energy sector stemming from the U.S.-China trade war. Energy markets are sensitive to geopolitical risk and policy uncertainty. China's imposition of retaliatory tariffs on U.S. goods, particularly a 25% tariff on U.S. liquefied natural gas (LNG) in 2018, created a sudden departure in a growing bilateral energy trade relationship (Vivoda, 2022).

Following the shale gas boom, China had quickly become one of the U.S.'s key growth markets for LNG, yet U.S. LNG became less cost-competitive with alternative supplies from Qatar and Australia as a result tariffs. U.S. LNG exports to China dropped by over 90% in 2019 compared to before the trade war (Balcilar *et al.* 2023). Purchases of U.S. crude oil were similarly curtailed and led to American producers not being able to ship crude oil to China and had to send it elsewhere to South Korea, India, and Europe. This diversified the global trade flow and complicated U.S. efforts to become a player in the global LNG market.

While energy products, such as oil and gas, faced no direct tariffs, the overall uncertainty of the trade war had a serious impact on the energy sector. Large energy projects like LNG (liquefied natural gas) export terminals, pipelines, or storage facilities needed consistent forecasts within a long-time horizon to stimulate investor interest (JRCK & Majid, 2020). But with trade relations forced to redefine and the possibility of new tariffs being introduced, many significant energy investments were put on hold or reconsidered altogether. The uncertainty also led to more volatility in energy futures markets. The U.S. energy export also fell, increasing the price differential between two significant oil benchmarks, West Texas Intermediate (WTI) and Brent crude (Perifanis, 2019).

Brent, which better indicates global demand, reacted strongly to changes in Chinese demand. While WTI, which was more U.S. market-focused, showed the effects of slowdowns in exports and domestic logistics problems. Trade tensions also had effect on long-term energy collaboration, especially between U.S. energy companies and Chinese state-owned entities. This weakened the U.S.'s position in Asia's energy industry and introduced new risks to what had been a promising area for growth (Abdollahi & Ebrahimi, 2020).

Conclusions

In conclusion, the tariffs of the Trump period were a turning point for global trade policy and had impacts still lingering across international trade and commodity markets. Through application of unilateral tariff policies, selecting specific industries in particular under the auspices of Sections 232 and 301, the U.S. not only transformed its bilateral partnership with significant EU major keys partners such as China, Canada and Mexico, but also spawned retaliatory actions, trade diversion, as well as reorientation of global supply chains. The tariffs changed old trade patterns, diverted manufacturing sourcing to Mexico and Vietnam, and escalated the efforts of the nations to diversify their dependence upon U.S. and Chinese marketplaces.

Commodity markets were particularly vulnerable to the impacts of these trade tensions. Export commodities like soybeans, corn, and pork suffered significant losses due to retaliatory tariffs, while energy markets and metals markets were destabilized by shifting geopolitical configurations and policy uncertainty. Price volatility created by these events led producers, investors, and governments to implement new risk management and market diversification practices. Furthermore, as the tariffs were intended to protect American industries and settle longstanding trade tensions, they are also the economic cost of protectionist trade policy in the era of advanced global supply chains.

Credit Authorship Contribution Statement

Angwaomaodoko, E.A.: Conceptualization, Investigation, Methodology, Project administration, Writing – original draft, Supervision, Data curation, Validation, Writing – review and editing, Visualization.

Declaration of Competing Interest

The author declares that there are no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-Assisted Technologies

The authors declare that they have used generative AI and AI-assisted technologies during the preparation of this work.

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AGOA Expiry: Nonrenewal Welfare, Macroeconomic and Trade Effects

Gabriel Mhonyera
College of Business and Economics
University of Johannesburg, South Africa
ORCID: 0000-0003-2957-000X
gmhonyera@uj.ac.za

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Abstract: The expiry of the African Growth and Opportunity Act (AGOA) in 2025 has raised uncertainty about the future of United States–Sub-Saharan Africa trade relations. This study employs the Global Trade Analysis Project (GTAP) Computable General Equilibrium (CGE) model to assess the potential trade, welfare, and macroeconomic impacts of AGOA's non-renewal under two scenarios: the reversion of US tariffs to Most Favoured Nation (MFN) levels and the imposition of a uniform 10% reciprocal tariff. Results (see Scenario 2) indicate that AGOA countries could experience welfare losses of up to US$1.78 billion and GDP contractions of 0.52%, accompanied by significant declines in exports of textiles, mining, and manufacturing. The United States (US) would also face moderate welfare losses, while China and the EU would gain from trade diversion. The findings highlight the urgent need for Sub-Saharan African countries to diversify trade partnerships and negotiate new frameworks to mitigate adverse post-AGOA outcomes.

Keywords: Africa; AGOA; bilateralism; exports; imports; multilateralism; trade policy; US.

JEL Classification: F10; F13.

Introduction

Since the establishment of the WTO in 1995, multilateralism has served as the principal framework for trade liberalisation. However, the increasing challenges confronting the WTO and the growing complexity of multilateral trade negotiations have prompted many countries to shift towards bilateralism, driven by market access considerations, foreign policy objectives, and concerns about environmental, social, and fairness issues (Maluck *et al.* 2018; Heydon & Woolcock, 2009). The United States has been no exception to this shift. Against this backdrop, the marked pivot towards bilateral and inward-looking trade policies in the United States (US) intensified concerns that AGOA may not be renewed following its expiry in 2025. This possibility generates significant trade policy uncertainty for AGOA beneficiary countries, many of which rely heavily on the scheme for preferential access to the US market.

The uncertainty surrounding the renewal of AGOA further casts a shadow on the architecture of the beneficiary countries' post-AGOA trade relationships with the US. What is certain is that, should AGOA not be extended beyond 2025, beneficiary countries will need to explore alternative mechanisms to sustain and deepen their trade and investment ties with the US. Two key possibilities emerge: (i) allowing AGOA to lapse without establishing any replacement trade arrangement with the US, or (ii) entering into bilateral trade negotiations with the US. In this regard, the US government has signalled support for a short extension of AGOA to allow for negotiations on a more comprehensive trade agreement. However, the first option means that the trade relationships of the beneficiary country with the US revert to the rules of the multilateral trading system under the auspices of the WTO. In other words, the trade relationships will be primarily governed by the WTO's Most Favoured Nation (MFN) principle. Hence, this article departs from here by seeking to understand the possible trade, welfare, and revenue implications of the increase in US tariffs on AGOA beneficiary countries resulting from the non-renewal of AGOA and the automatic reversion of tariff schedules to the MFN profile, if AGOA is not renewed beyond 2025.

Another challenge is the seemingly changing global trading landscape led by the inward looking policies mainly during the first Trump Administration and further amplified during the second Trump Administration. Reciprocal tariffs at a base level of 10% were instituted on almost all of the US trading partners. This exacerbates trade policy challenges, making it difficult to access the US market. For AGOA, this alienates the benefits that SSA countries were receiving, and further casts doubt on its renewal and significance.

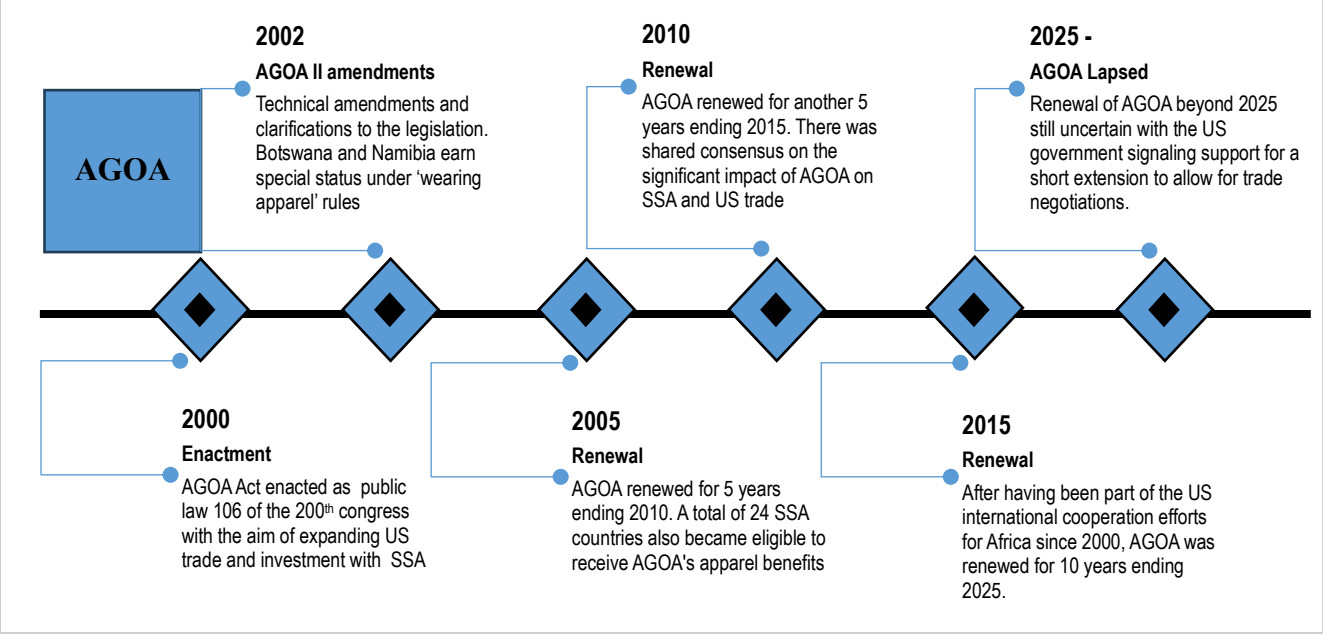
Considering the importance of AGOA in trade and the growth possibilities of AGOA beneficiary countries, policymakers in these countries must be aware of the consequences of non-renewal of AGOA for their economies and citizens. The assessments in this article, therefore, present an initial step towards equipping policymakers in beneficiary countries to approach the negotiations for the renewal AGOA from an informed position. In addition, the article contributes to the extant literature base and the current debate directed on the uncertainty surrounding the renewal of AGOA beyond 2025. The position specified is that even if the Trade Act receives a new lease of life, the assessments are still valid in crafting a foundation for future post-AGOA trade policy architecture in beneficiary countries.

The rest of the article is organised as follows: the first section provides AGOA schematic facts and figures; theoretical and empirical intuitions are provided in the second section; the research method applied to achieve the aims of this article is provided in the third section; the results are presented in the fourth section, while the discussions are provided in the fifth section; and the last section concludes the article and offer policy recommendations.

1. AGOA Schematic Facts and Statistics

AGOA is a United States Trade Act, signed into law on 18 May 2000 as Public Law 106 of the 200th Congress. Its primary objective is to enhance US trade and investment with Sub-Saharan Africa (SSA) in order to promote economic growth, support regional economic integration, and facilitate SSA's deeper participation in the global economy (USTR, 2014). The Act also establishes the annual US–SSA Economic Cooperation Forum, commonly referred to as the AGOA Forum, which serves as a platform for high-level dialogue between the US and SSA countries on trade and investment matters. After being renewed three times since its inception (see the renewal timeline in Figure 1), AGOA lapsed in 2025.

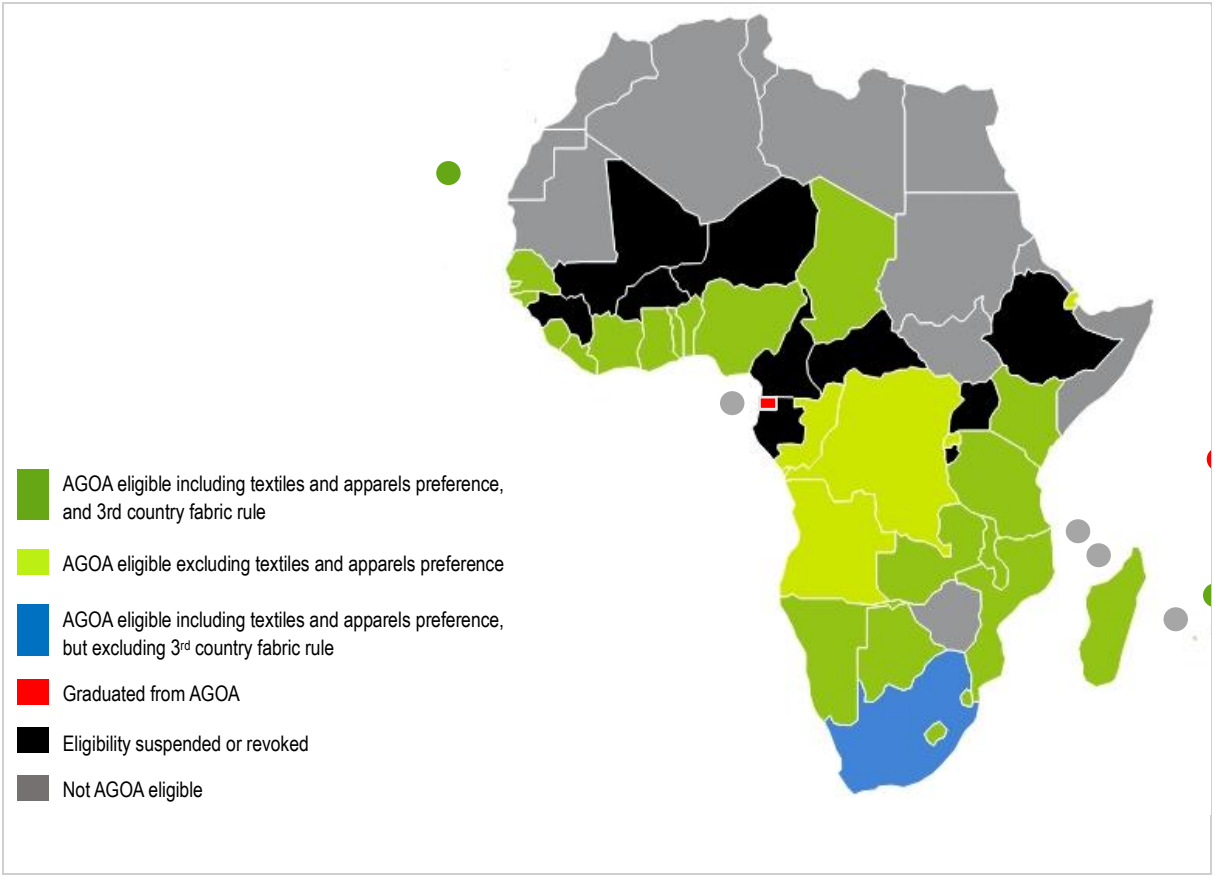
Figure 1. Renewal timeline of AGOA since its enactment in 2000



Source: Author's own figure

According to the USTR (2014), 40 SSA countries (see Figure 2 for the mapping of beneficiary States) receive unilateral market access to the US under AGOA for a range of eligible products. Through AGOA, the US grants duty- and/or quota-free entry on approximately 2 000 Harmonised System (HS) product lines, in addition to the 3 400 product lines covered under its Generalized System of Preferences (GSP) programme and a further 3 800 product lines that are duty-free under the United States' MFN regime (Prinsloo, 2016).

Figure 2: Mapping of AGOA beneficiary countries' eligibility, including revocations, re-institutions and graduations



Source: Author's own figure

Although AGOA is a non-reciprocal, unilateral trade arrangement, its benefits are not extended unconditionally (Prinsloo, 2016). To qualify for AGOA preferences, Sub-Saharan African countries must meet a set of eligibility requirements set by the United States. These include demonstrating progress toward a market-based economy, implementing economic policies aimed at reducing poverty, upholding the rule of law, taking effective measures to combat corruption, and protecting internationally recognised labour rights (USTR, 2014; AGOA, 2017). In addition, AGOA's eligibility provisions require beneficiary countries to remove barriers that hinder US trade and investment (Prinsloo, 2016; Winant, 2017). While Seychelles graduated from the program in 2018, a total of 11 of the 40 AGOA-eligible countries currently have their eligibility either suspended or revoked due to various concerns revolving around upholding the AGOA eligibility criterion.

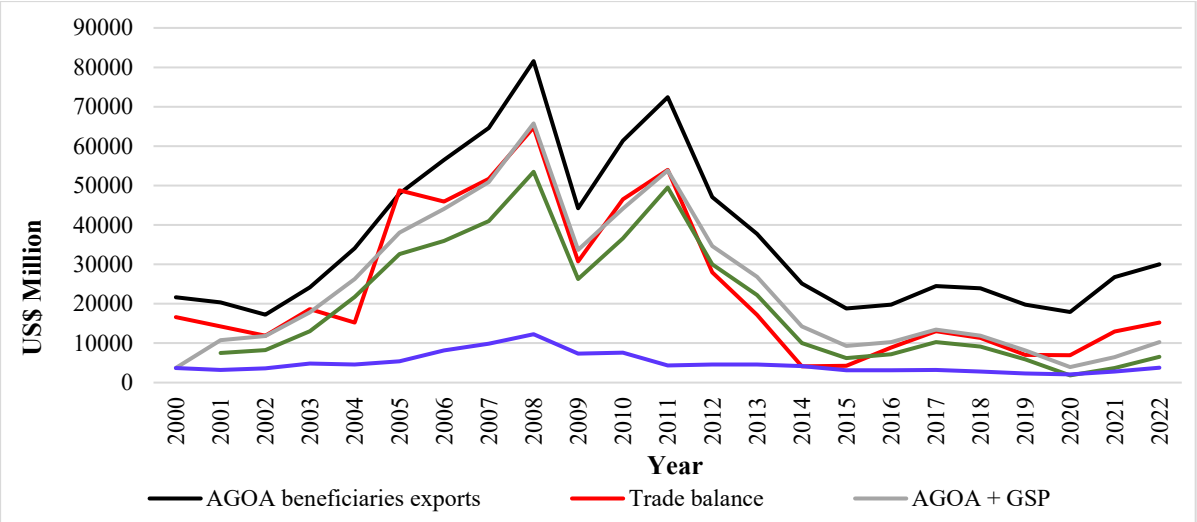
Even though AGOA expired in 2025, it provided SSA countries with valuable unilateral duty- and/or quota-free access to the US market. Over 98% of US imports from AGOA-eligible countries entered the US on a duty- and/or quota-free basis (USTR, 2016). The preferential access offered to SSA countries provides a substantial competitive advantage compared to non-AGOA trading partners that continue to face tariffs in the US market (AGOA, 2013). This holds especially with respect to certain products such as apparel, footwear, and agricultural products that are normally levied high MFN tariffs in the US.

In fact, liberalised market access into the US through AGOA has facilitated the expansion of bilateral trade between SSA and the US. As such, SAA exports to the US have increased by 38.6% between 2000 and 2022. AGOA exports increased from none in 2000 to a peak of US$53.5 billion in 2008 before deteriorating to US$6.6 billion in 2022. However, a significant decline of AGOA beneficiaries' aggregate exports, AGOA + GSP exports, and AGOA exports from the 2008 peak is outstanding. This may be primarily attributed to the economic and trade consequences of the 2008 Global Financial Crisis (GFC). In fact, AGOA + GSP exports were on a declining trend in the years following the GFC and leading to the COVID-19 pandemic in 2019. Notwithstanding, AGOA countries have enjoyed a favourable trade balance with the US over the AGOA years.

In addition to preferential market access under AGOA, several beneficiary countries also benefited from access to US credit facilities and technical expertise (USTR, 2016). Moreover, all AGOA-eligible countries engaged

in structured economic dialogue with the United States through the AGOA Forum, which served as a key platform for strengthening trade and investment relations.

Figure 3. Export profiling of AGOA beneficiary countries from 2000 to 2022



Source: Author's own figure based on data drawn from AGOA (2023)

It must be acknowledged that AGOA is not permanent. In fact, the evolution of AGOA into trade relationships of bilateral nature remains a prime intention of the US. The trade arrangement also suffers from a myriad of drawbacks, mostly emanating from its unilateral characteristic. Such drawbacks include: lack of a regulatory framework to administer trade and investment disputes; AGOA eligibility rest on the US Congress and can be revoked at any time at the discretion of the US President; unsustainable over-reliance on AGOA; and while it is unilateral on paper, it can be viewed as reciprocal in practice because beneficiary countries are required to reduce obstacles to US trade and investment. Eligibility for AGOA benefits, for instance, depends on countries meeting a range of conditions, such as making progress toward a market-based economy, adopting poverty-alleviation policies, upholding the rule of law, taking action to combat corruption, and protecting internationally recognised labour rights (USTR, 2014; AGOA, 2017).

2. Literature Review

International trade has grown in significance for virtually all countries and is widely regarded as a key mechanism for driving economic modernisation (McDonald, 2017). This has mainly been an outcome of advocacy for free trade throughout the past decades and more especially during the era of trade globalisation. Consequently, tariffs have deteriorated in application since the establishment of the GATT in 1947 and the WTO in 1995. Under the auspices of these establishments, various trade agreements supporting free trade have been concluded at the multilateral level. Trading countries have also expanded the adoption of liberal policies with the intention of liberalising international trade engagements. This has enabled the conclusion of trade arrangements at additional levels such as plurilateral, regional, bilateral, and unilateral, leading to further decline in tariffs and rubber-stamping the notion that international trade cooperation is beneficial relative to the adoption of mercantilist policies, together with functioning in solitude.

2.1. Theoretical Underpinnings

The bearing of tariff increases on trade, welfare, and government revenue can be comprehended through various theoretical perspectives in international trade. Encompassing both classical and contemporary trade theories, key theories in this domain include the mercantilist theory, the theory of comparative advantage, the Heckscher-Ohlin-Samuelson model, and the new trade theory. According to the mercantilist theory, tariffs are viewed as beneficial for enhancing a nation's trade balance by reducing imports and potentially increasing exports (Smith, 1776). This perspective suggests that tariffs can safeguard home industries from external rivalry, thus preserving employment and advancing economic stability (List, 1841). Moreover, tariffs serve as a significant source of government revenue, especially when the demand for imported goods is relatively inelastic, allowing governments to collect substantial tariffs per unit of imports (Hamilton, 1790).

Conversely, the comparative advantage theory, pronounced by Ricardo (1817) and building on the absolute

advantage theory of Smith (1776), emphasizes the efficiency gains from international trade based on differences in opportunity costs. Tariff increases under this framework distort comparative advantage and reduce the overall benefits from specialization and trade (Krueger, 1978). Such tariffs lead to higher consumer prices, diminishing consumer welfare and efficiency gains (Bhagwati, 1965). While tariffs may still generate revenue, their detrimental impact on welfare and economic efficiency is a key concern in this theory.

The Heckscher-Ohlin-Stolper-Samuelson model of trade elaborates on how tariffs affect trade patterns based on factor endowments. Tariff increases can protect industries that use abundant domestic factors of production from foreign competition, potentially altering international trade flows (Ohlin, 1933). Initially, domestic producers may benefit from higher prices and increased sales. However, over time, safeguard from external rivalry has the capacity to diminish the inducements for local firms to be innovative, enhance efficacy, or invest in research and development. Moreover, the tariff increases also contribute to diminished economic efficiency and welfare losses by distorting resource allocation and reducing gains from trade based on comparative advantage (Samuelson, 1948).

In modern trade theories, such as the new trade theory and economic integration perspectives, tariffs disrupt global supply chains and reduce economies of scale and efficiency gains (Krugman, 1980). This disruption can lead to higher costs for consumers and businesses, eroding welfare gains from specialization and innovation (Helpman & Krugman, 1985). In some instances, tariff increases can escalate into trade conflicts with retaliatory measures from other countries, further jeopardising economic growth and stability. In fact, modern theories emphasise the broader negative impacts of tariffs on economic growth, trade integration, and overall welfare. Thus, while tariffs may offer short-term benefits like protecting jobs and generating government revenue, their long-term consequences often include reduced consumer welfare, inefficiencies in resource allocation, and risks to global economic stability (Baldwin & Wyplosz, 2020). Contextually, policymakers must carefully balance these trade-offs when formulating new and amending existing trade policies to ensure they promote sustainable trade, economic growth, and welfare.

2.2. Empirical Intuitions

Tariffs, as instruments of trade policy, have been extensively studied in economic literature for their multifaceted impact on trade, welfare and revenue (Osang & Turnovsky, 2000; Felbermayr *et al.* 2015; Amiti *et al.* 2019; Artuc *et al.* 2021; Dhingra *et al.* 2023). Empirical studies consistently demonstrate that an increase in tariffs generally leads to a decrease in overall welfare for the affected economies (see Magee *et al.* 1972; Romer, 1994; Tullock, 2008; Crowley, 2019; Grossman *et al.* 2024). This decrease arises primarily from several interconnected mechanisms that alter market dynamics, consumer behavior, and international trade relationships (Amiti *et al.* 2019).

In line with theoretical expectations, higher tariffs distort international trade patterns by making imported goods relatively more expensive compared to domestically produced goods (Krolikowski & McCallum, 2021). As noted by Anderson and Neary (2020), this distortion reduces market efficiency and allocative efficiency. In other words, the increased prices of imported goods lead to higher consumer prices, reducing consumer purchasing power and thus lowering consumer welfare. This effect is particularly pronounced in industries heavily reliant on imported inputs or finished goods, where tariff increases directly increase production costs and final prices for consumers (Goldberg & Pavcnik, 2016).

Tariff increases also often result in reduced competition within domestic markets. In fact, domestic producers, shielded from foreign competition by tariffs, face less pressure to innovate, improve efficiency, or lower prices. This lack of competitive pressure can lead to a loss of productivity gains that would otherwise benefit consumers through lower prices and improved product quality (Bown, 2018). Furthermore, the imposition of tariffs can trigger retaliatory measures from trading partners, escalating into trade conflicts or even trade wars (Fetzer & Schwarz, 2021). These retaliatory tariffs can further disrupt international trade flows, disrupt supply chains, and increase uncertainty for businesses and consumers alike. Such scenarios have been observed in recent trade disputes (see Aydin *et al.* 2022; Benguria, 2023; Ju *et al.* 2024; Fajgelbaum *et al.* 2024), highlighting the broader implications of protectionist measures on global economic stability. For instance, Aydin et al. (2022) revealed that trade wars adversely impact both the welfare levels of countries and the world.

Since one of the primary motivations for imposing tariffs is to generate revenue for the government, empirical research indicates that tariff increases can indeed boost government revenue, especially in economies where tariff rates are already substantial (Bown & Crowley, 2013). However, the revenue-generating potential of tariffs is influenced by factors such as tariff elasticity (Mitra *et al.* 2002) and the overall structure of the economy. Moreover, the revenue effects of tariff increases may be offset by other economic consequences, such as reductions in trade

volumes and changes in consumer behavior. For instance, if higher tariffs lead to a significant decline in imports, the resulting reduction in customs duties collected on imports could partially offset the revenue gains from higher tariff rates (Anderson & Neary, 2007).

Extant literature provides robust evidence that increases in tariffs, while revenue-enhancing, generally lead to reduced overall trade and welfare through higher consumer prices, reduced market efficiency, diminished competitive pressures, and potential trade conflicts. These findings underscore the importance of careful consideration of trade policy decisions, weighing short-term protectionist gains against the long-term costs to consumer welfare, economic efficiency, and global economic stability.

While many studies have explored the welfare effects of tariff increases, in the context of AGOA, there is a deficiency of studies that have examined the impact of its non-renewal tariff increase when the US tariffs revert back to MFN levels. This is the gap that this article occupies by providing a springboard for AGOA beneficiary countries to approach the conversations surrounding the renewal of AGOA and its lingering uncertainty from an informed position. The article further presents an important opportunity to advance the scholarly discourse and the understanding of AGOA and what the expiry of the trade Act mean for the SSA beneficiary countries.

3. Research Method

The research method applied in this study to estimate the welfare and macroeconomic effects of the potential increase in US tariffs on beneficiary countries AGOA sectors if the trade Act is not renewed, after it expired in 2025, is presented in this section. The presentation comprises the methodological rationalisation, the GTAP model, and the GTAP database and simulation scenarios.

3.1 Methodological Rationalisation

The present study employs *ex ante* the GTAP (Global Trade Analysis Project)-Computable General Equilibrium (CGE) model, which provides a framework to simulate the global economy under different trade policy scenarios. It accounts for the interconnections between multiple sectors and economies, making it ideal for analysing macro-level welfare and economic effects of policy changes, such as a potential increase in US tariffs on AGOA countries if the Act is not renewed. Additionally, the GTAP model's ability to incorporate a wide range of global trade relationships and policy variables allows for a more comprehensive and robust analysis of the potential effects of AGOA's expiration on both the US and AGOA countries.

Unlike partial equilibrium models, which generally focus on isolated markets or sectors, the GTAP model enables a general equilibrium analysis that internalises cross-sectoral and cross-country interactions. It helps simulate the broader economic effects of tariff changes, accounting for spillover effects in the global economy. The GTAP model focuses on changes in trade flows, income, production, prices, and welfare across the entire economy, making it more suitable for capturing the macroeconomic and sectoral effects in the case of AGOA's expiration.

3.2. The GTAP Model

To conduct the analysis in this study, the Global Trade Analysis Project (GTAP) model is employed. The GTAP model is a multi-region, multi-sector computable general equilibrium (CGE) model designed to capture the linkages between production, consumption, trade, and income across countries and sectors. It enables the simulation of policy changes, such as tariff reforms, while considering both direct and indirect effects on trade flows and welfare. The model's strength lies in its ability to represent the interdependence of global economies, ensuring that any shock introduced in one region or sector propagates through all others in a theoretically consistent manner.

3.3. GTAP Database, Aggregations and Simulation Scenarios

The GTAP analysis is supported by the GTAP database, which integrates global data on production, consumption, trade, and protection. The database combines information from various international sources, including the World Input–Output Tables (WIOT), UN Comtrade, and national accounts, ensuring internal consistency and sectoral comparability across countries.

To align the global database with the analytical focus of this study, the standard GTAP regional and sectoral classifications are aggregated into more targeted groups. Regional aggregation results in 12 composite regions, with all AGOA beneficiary countries combined into a single region to capture their collective export exposure to potential US tariff adjustments. The US is retained as an individual region, while major global trading partners (*e.g.*, EU, China, rest of world) are grouped into economically meaningful aggregates. This reduces computational complexity while retaining the essential structure of world trade. For the sectoral aggregation, the original GTAP sectors are consolidated into 10 core categories that reflect the main export profiles of AGOA-eligible economies.

The aggregation balances the need for analytical tractability with the requirement to preserve tariff variation across sectors.

Regarding tariff and protection data, AGOA preferential tariff rates are mapped onto the GTAP tariff structure and replaced with MFN rates under Scenario 1. Sector-level average tariff changes are computed by comparing applied AGOA rates (often zero) to corresponding MFN values. The trade, welfare, and revenue implications of a potential increase in US tariffs are examined under two distinct trade protection policy scenarios:

- Scenario 1: Non-renewal of AGOA. In this scenario, the US tariff policy reform assumes that all African Growth and Opportunity Act (AGOA) imports from beneficiary countries revert to MFN tariff levels after the programme's expiration in 2025. Thus, tariffs applied by the US on AGOA imports are increased to the corresponding sectoral average MFN tariff rate. The magnitude of the change in each sector depends on the difference between its AGOA and MFN tariff levels (*i.e.*, the higher the MFN rate, the greater the anticipated adjustment).
- Scenario 2: Reciprocal tariff escalation. This scenario assumes a reciprocal base tariff of 10% imposed by the US on imports from various trading partners, including AGOA countries. This reflects a potential escalation of protectionist measures under a broader trade policy shift.

3.4. Transmission Mechanism

The increase in tariffs raises the prices of imported goods in the US relative to domestic substitutes. This price rise reduces import demand from AGOA countries, leading to potential trade contraction or trade diversion depending on the price elasticity of demand and substitution patterns. Consequently, changes in trade volumes influence sectoral production, household welfare, and government tariff revenues across all regions represented in the GTAP model.

4. Results and Discussions

The results of the expected welfare, macroeconomic and trade effects of the US trade protection policy reform in which its tariffs applied on all AGOA imports originating from beneficiary countries revert to MFN levels, suggesting the non-renewal of AGOA after it expires in 2025, are presented and analysed in this section.

4.1. Welfare Effects

The results of the welfare analysis (see Table 1) indicate that the US experiences a net welfare loss of US$ -63.3 million, primarily due to a negative allocative efficiency effect (-103.5), which is only partially mitigated by improvements in terms of trade. The negative welfare impact suggests that the increase in US tariffs for AGOA products does not lead to optimal resource allocation for the US, possibly due to inefficient adjustments in production and consumption patterns. In contrast, China gains US$ 268.2 million, largely driven by favourable terms of trade effects amounting to US$ 224.7 million. This gain implies that China benefits from the shifts in global trade patterns, potentially by increasing exports to AGOA countries that lose access to the US market.

Table 1. Decomposition of the Equivalent Variation (2017 US$ million)

Scenario 1	Allocative Efficiency Effect	Endowment Effect	TOT Effect	TOT in Investment and Savings	Total
US	-103.50	0.00	7.40	32.80	-63.30
China	62.40	0.00	224.70	-18.80	268.20
AGOA	-166.60	0.00	-701.30	6.40	-861.50
Africa	-4.10	0.00	3.20	-3.10	-4.00
Oceania	-0.50	0.00	-39.70	-0.10	-40.40
Asia	34.40	0.00	156.50	-3.70	187.10
European Union	39.00	0.00	137.50	-11.70	164.80
North America	14.40	0.00	187.40	-1.40	200.50
Latin America	4.60	0.00	25.80	0.20	30.50
Western Europe	2.50	0.00	24.60	1.30	28.40
Middle East	4.10	0.00	17.40	-1.10	20.40
Rest of the World	-3.30	0.00	-44.20	-0.60	-48.10
Total (World)	**-116.60**	**0.00**	**-0.70**	**0.20**	**-117.40**

Scenario 1	Allocative Efficiency Effect	Endowment Effect	TOT Effect	TOT in Investment and Savings	Total
Scenario 2					
US	-577.70	0.00	-109.40	39.70	-647.40
China	129.10	0.00	458.00	-28.40	558.60
AGOA	-316.60	0.00	-1482.10	13.00	-1785.70
Africa	-6.10	0.00	13.10	-5.30	1.60
Oceania	-0.30	0.00	-73.40	0.20	-73.40
Asia	68.00	0.00	296.90	-2.20	362.60
European Union	82.60	0.00	279.10	-17.00	344.70
North America	31.50	0.00	458.60	-2.00	488.10
Latin America	10.70	0.00	90.50	1.20	102.40
Western Europe	5.60	0.00	55.30	2.60	63.50
Middle East	11.40	0.00	91.50	-1.10	101.90
Rest of the World	-6.10	0.00	-81.20	-0.50	-87.80
Total (World)	**-567.90**	**0.00**	**-2.90**	**0.00**	**-570.90**

Note: AGOA, African Growth and Opportunity Act; TOT, Terms of Trade; US, United States
Source: GTAP 11c model simulation

AGOA countries suffer the most significant welfare loss, amounting to US$ -861.5 million, with terms of trade deterioration (-701.3 million) being the primary contributing factor. The erosion of trade preferences previously granted under AGOA leads to increased competition from other exporters, reducing the profitability of AGOA exports to the US. The loss of export earnings may have broader implications for employment and income distribution in AGOA economies, particularly in sectors such as textiles, agriculture, and light manufacturing. On a global scale, the total welfare impact is negative, with the world experiencing a welfare decline of US$ -117.4 million, underscoring the overall adverse impact of the non-renewal of AGOA after the unilateral trade arrangement expires in October 2025, The findings suggest that while trade liberalisation may create efficiency gains in some regions, the overall distribution of benefits and losses is uneven, with significant negative consequences for certain economies.

4.2. Macroeconomic Effects

The macroeconomic effects of the non-renewal of AGOA (see Table 2) reveal minimal changes in real GDP across most regions, with AGOA countries witnessing a decline of -0.26%, while other regions experience negligible variations. The reduction in AGOA's GDP suggests that the loss of trade benefits under AGOA translates into slower economic growth, likely due to reduced export earnings and weakened production incentives. In contrast, China and North America register slight GDP gains of 0.01% and 0.02%, respectively, indicating limited but positive spillover effects from trade reallocation.

Table 2. Macroeconomic effects of the non-renewal of AGOA

	Real GDP (%)	Export Volume (%)	Import Volume (%)	Export Value (%)	Terms of Trade (%)	Trade Balance (US$ Million)	Regional household income (%)
Scenario 1							
US	0.00	-0.05	-0.06	-0.04	0.00	528.13	0.00
China	0.01	0.00	0.02	0.00	0.01	-262.12	0.01
AGOA	-0.26	-0.15	-0.39	-0.38	-0.20	109.67	-0.27
Africa	0.00	0.00	0.00	0.00	0.00	-6.24	0.00
Oceania	0.00	0.00	-0.01	0.00	-0.01	-3.71	0.00
Asia	0.01	0.00	0.01	0.00	0.00	-174.70	0.01
European Union	0.00	0.00	0.00	0.00	0.00	-117.36	0.01

	Real GDP (%)	Export Volume (%)	Import Volume (%)	Export Value (%)	Terms of Trade (%)	Trade Balance (US$ Million)	Regional household income (%)
North America	0.02	0.00	0.02	0.03	0.02	27.25	0.02
Latin America	0.01	0.00	0.01	0.01	0.00	-14.31	0.01
Western Europe	0.00	0.00	0.01	0.00	0.00	-36.85	0.00
Middle East	0.00	0.00	0.01	0.00	0.00	-25.22	0.00
Rest of the World	0.00	0.00	0.00	0.00	-0.01	-24.55	0.00
Scenario 2							
US	-0.01	-0.10	-0.13	-0.08	0.00	1263.01	-0.01
China	0.02	-0.01	0.04	0.01	0.02	-582.81	0.02
AGOA	-0.52	-0.27	-0.76	-0.75	-0.43	157.67	-0.54
Africa	0.00	0.01	0.01	0.00	0.00	-16.53	0.00
Oceania	0.00	0.01	-0.01	-0.01	-0.02	-13.57	0.00
Asia	0.02	0.00	0.01	0.01	0.01	-385.32	0.02
European Union	0.01	0.00	0.01	0.01	0.00	-281.24	0.01
North America	0.05	-0.01	0.03	0.06	0.05	82.95	0.05
Latin America	0.02	0.00	0.02	0.03	0.01	-34.68	0.02
Western Europe	0.01	0.00	0.01	0.01	0.00	-87.09	0.01
Middle East	0.01	0.01	0.02	0.01	0.01	-49.39	0.01
Rest of the World	0.00	0.00	0.00	0.00	-0.01	-53.00	0.00

Note: AGOA, African Growth and Opportunity Act; GDP, Gross Domestic Product; US, United States
Source: GTAP 11c model simulation

The trade dynamics indicate a contraction in AGOA's trade activities, as evidenced by declines in export and import volumes of -0.15% and -0.39%, respectively. These reductions reflect decreased market access and possible disruptions in supply chains. The US also experiences marginal reductions in export and import volumes (-0.05% and -0.06%, respectively), suggesting limited macroeconomic disruption. However, despite these contractions, the US benefits from an improved trade balance of US$ 528.13 million, largely due to reduced import expenditures and potential increases in domestic production substitution. Conversely, AGOA countries see a reduction in their trade surplus by US$ 109.67 million, exacerbating external vulnerabilities and reducing foreign exchange inflows.

The terms of trade effects remain negative for AGOA (-0.20%), indicating a deterioration in the relative prices of AGOA's exports compared to its imports. This means AGOA countries must export more to afford the same level of imports, making trade less beneficial. In contrast, other regions experience either neutral or slightly positive impacts, with China and North America gaining 0.01% and 0.02%, respectively. These variations suggest that, while the non-renewal of AGOA leads to shifts in trade patterns, its overall impact on macroeconomic indicators remains relatively contained at the global level.

4.3. Trade Effects

The trade effects of the non-renewal of AGOA highlight significant shifts in trade patterns, particularly for AGOA countries. AGOA countries' export volumes to the US decline across all major sectors (see Table 3), with the most pronounced contractions observed in textiles (-29.27%), mining (-27.54%), and manufacturing (-27.06%). These declines indicate that AGOA economies, which have historically relied on preferential access to the US market, face substantial challenges in maintaining competitiveness under the new trade regime. The loss of access to the US market for key industries may lead to production declines, job losses, and income reductions in AGOA economies, particularly in labour-intensive sectors.

Table 3. Estimated changes in bilateral export volumes between AGOA beneficiary countries and the US (%)

Sector	AGOA		US	
	S1	S2	S1	S2
Grains and crops	-12.02	-34.65	-0.69	-1.54
Livestock and meat products	-11.83	-48.00	-0.89	-1.74
Mining and extraction	-27.54	-66.25	-2.74	-6.21
Processed food	-18.02	-32.16	-0.53	-1.04
Textiles and clothing	-29.27	-49.20	-0.63	-1.13
Light manufacturing	-27.06	-46.03	-0.57	-1.04
Heavy manufacturing	-25.86	-49.40	-0.63	-1.27
Utilities and construction	1.00	1.96	-0.64	-1.20
Transport and communication	0.85	1.63	-0.44	-0.81
Other services	0.87	1.67	-0.42	-0.79

Note: AGOA, African Growth and Opportunity Act; S, Scenario; US, United States
Source: GTAP 11c model simulation

Overall trade flows in Table 4 illustrate a major reduction in AGOA countries exports to the US, amounting to US$ -5836.76 million. This contraction reflects reduced US demand for AGOA goods, possibly due to shifts in trade policies and supply chain adjustments. However, this trade retraction is accompanied by trade diversion, benefiting other regions such as China (+US$ 1488.46 million) and the European Union (US$ 1128.87 million). This suggests that while AGOA economies lose access to the US market, other trading partners step in to fill the gap, potentially at lower costs or with more competitive pricing structures. Despite this, AGOA countries' total trade remains relatively unchanged, totalling -US$ 522.27 million. This indicates that while exports to the US decline, AGOA countries can redirect some of their trade flows to alternative markets, albeit possibly at less favourable terms. Intra-AGOA countries trade is also estimated to increase by US$333.08 million.

Table 4. Effects on trade flows of AGOA beneficiary countries (US$ million)

	Exports		Imports	
	S1	S2	S1	S2
US	-5836.76	-12707.08	-138.12	-266.87
China	1488.46	3340.46	-349.19	-676.9
AGOA	333.08	707.96	333.08	707.96
Africa	145.22	303.42	-47.61	-97.71
Oceania	44.95	96.07	-20.89	-41.55
Asia	1321.99	2964	-280.82	-552.12
European Union	1128.87	2493.73	-381.84	-749.47
North America	71.16	161.24	-34.08	-73.44
Latin America	91.04	203.39	-55.45	-111.85
Western Europe	295.65	614.31	-85.78	-167.02
Middle East	358.83	784.36	-171.40	-362.54
Rest of the World	35.04	75.65	-22.15	-45.35

Note: AGOA, African Growth and Opportunity Act; S, Scenario; US, United States
Source: GTAP 11c model simulation

Trade creation and diversion effects (see Table 5) further emphasise the negative impact on AGOA exports to the US, which declines by US$ -5836.76 million across all sectors. This decline is partially offset by increased imports from other regions (US$ 4165.09 million), reflecting a reorganisation of trade flows. Additionally, AGOA countries' exports to alternative markets increases by US$ 5314.29 million, suggesting that while they lose market access in the US, they manage to redirect trade to other regions, albeit with potential disadvantages in terms of pricing and competitiveness.

Table 5. Trade creation and trade diversion effects (2017 US$ million)

Sector	Change in real US imports from AGOA countries		Change in real US imports from other regions		Change in real other regions imports from AGOA countries	
	S1	S2	S1	S2	S1	S2
Grains and crops	-234.70	-676.64	131.44	388.52	209.96	447.80
Livestock and meat products	-6.18	-25.09	1.25	7.73	18.63	32.20
Mining and extraction	-3131.51	-7531.81	2386.54	5892.36	2986.64	6766.73
Processed food	-108.53	-193.70	59.55	99.32	107.25	173.05
Textiles and clothing	-322.71	-542.40	246.44	405.22	34.73	41.70
Light manufacturing	-699.75	-1190.12	336.57	431.50	292.99	481.53
Heavy manufacturing	-1391.23	-2657.87	1132.56	2186.58	1315.96	2391.45
Utilities and construction	0.51	0.99	-1.93	-5.04	21.05	24.75
Transport and communication	35.01	66.96	-57.25	-155.50	224.64	413.53
Other services	22.33	42.60	-69.98	-190.96	102.44	188.24
Total	**-5836.76**	**12707.08**	**4165.09**	**9059.73**	**5314.29**	**10960.98**

Note: AGOA, African Growth and Opportunity Act; S, Scenario; US, United States
Source: GTAP 11c model simulation

The shifting trade dynamics indicate that while AGOA countries adapt to the loss of preferential access, the transition may not be seamless, potentially leading to economic disruptions and adjustments in production structures.

5. Discussions and Implications for Policy and Investments

The findings from the analysis highlight significant trade, welfare, and macroeconomic consequences of the non-renewal of AGOA, particularly for AGOA beneficiary countries. The results underscore that while the US experiences a net welfare loss, China and other trade partners benefit from trade reallocation. AGOA countries, on the other hand, face substantial economic disruptions due to deteriorating terms of trade and reduced market access to the US. These dynamics present critical challenges for policymakers, businesses, and investors who must navigate the transition towards a post-AGOA trade environment. These findings align with the arguments made by Baldwin and Wyplosz (2020) on the interdependencies within global trade networks and the asymmetric impacts of policy changes on developing economies. Similarly, Anderson and Neary (2020) highlight that trade policy changes can generate significant welfare shifts among trading partners, particularly for developing economies reliant on preferential market access.

5.1. Implications for Policy and Investment

The significant reduction in AGOA exports to the US suggests the need for AGOA countries to enhance intra-African trade by strengthening the African Continental Free Trade Area (AfCFTA), as posited by Mevel and Karingi (2012), who argue that regional integration can serve as a buffer against external trade shocks. This could provide new market opportunities and reduce dependence on US preferences. Increasing regional economic integration can help mitigate some of the negative impacts of the loss of AGOA. Additionally, AGOA countries should explore new bilateral and multilateral trade arrangements with other global partners to compensate for lost US market access. Establishing Free Trade Agreements (FTAs) with the European Union, China, and emerging markets could help diversify export destinations and reduce reliance on preferential trade arrangements, as echoed by Freund and Ornelas (2010), who highlight the role of FTAs in fostering trade resilience. This aligns with findings by Goldberg and Pavcnik (2016), who emphasize that trade diversification and liberalization play crucial roles in sustaining economic stability.

While AGOA's non-renewal appears imminent, affected countries should engage in diplomatic discussions to negotiate alternative trade frameworks with the US, such as sector-specific trade agreements or targeted tariff reductions to sustain key export industries. The reliance of AGOA countries on a few key export sectors, such as textiles, mining, and light manufacturing, has increased their vulnerability to external shocks, a phenomenon also discussed by Rodrik (2018) in the context of economic structural adjustments. Policymakers should promote

diversification into high-value-added sectors, including agro-processing, pharmaceuticals, and technology-driven industries. The decline in AGOA exports suggests a need for greater investment in industrial upgrading and supply chain efficiency, including infrastructure, logistics, and technological innovation to enhance competitiveness in global markets. Recent research by Dhingra, Freeman, and Huang (2023) supports this perspective, emphasizing that non-tariff barriers and trade policy uncertainties necessitate stronger supply chain resilience and industrial policy reforms.

To offset the negative economic effects of AGOA's expiration, attracting Foreign Direct Investment (FDI) into manufacturing, services, and infrastructure is essential. Studies by Alfaro (2017) indicate that FDI can drive productivity growth and technological diffusion, making it a key strategy for AGOA countries. Governments should create business-friendly environments through regulatory reforms, investment incentives, and public-private partnerships. The expected contraction in export-oriented industries may lead to job losses, particularly in labour-intensive sectors like textiles. Governments should implement workforce reskilling programs and social protection policies to support displaced workers, in line with the human capital development strategies emphasised by Becker (1993). Additionally, the projected decline in trade surplus and foreign exchange inflows may increase fiscal vulnerabilities, necessitating macroeconomic policies focused on maintaining exchange rate stability, promoting domestic investment, and ensuring access to alternative financing sources. Recent findings by Amiti, Redding, and Weinstein (2019) indicate that trade shocks can amplify macroeconomic instability, reinforcing the need for sound monetary and fiscal policies.

AGOA countries should also move beyond raw material exports and develop domestic value chains that enhance local processing and manufacturing, increasing their competitiveness and resilience to external trade policy shifts. This aligns with Gereffi's (1999) global value chain framework, which underscores the importance of upgrading within trade networks. Digital trade presents an opportunity for AGOA countries to access new markets beyond traditional physical exports. Governments should invest in digital infrastructure and support policies that enable businesses to participate in e-commerce platforms. Developing strategic partnerships with global firms, financial institutions, and development agencies can provide the necessary funding and technical expertise to help AGOA countries adapt to changing trade dynamics. Additionally, given the increasing global emphasis on sustainability, AGOA countries should align their production practices with environmental and social governance (ESG) criteria to enhance their attractiveness to investors and global buyers, as highlighted by Porter and Kramer (2011) in their shared value framework. Studies by Crowley (2019) and Benguria (2023) further emphasize that sustainability-focused trade policies can improve competitiveness in global markets.

5.2. Limitations and Areas for Future Research

The findings suggest that AGOA's expiration presents both challenges and opportunities for affected economies. While the loss of preferential access to the US market is a significant setback, strategic policy adjustments and investment in trade diversification, competitiveness, and regional integration can help mitigate the adverse effects. AGOA countries must proactively adapt by enhancing economic resilience, strengthening trade partnerships, and positioning themselves competitively in a rapidly evolving global trade landscape. However, this study is limited by its reliance on available trade and macroeconomic data, which may not fully capture the complex and dynamic effects of AGOA's expiration. Future research should focus on disaggregated sectoral analyses to understand industry-specific impacts and explore the role of digital trade, regional trade agreements, and sustainable industrial policies in mitigating the negative effects. Additionally, longitudinal studies assessing the long-term adaptation strategies of AGOA countries could provide deeper insights into effective policy responses. These recommendations are in line with the work of Stiglitz (2002) on the necessity of adaptive economic policies in response to trade disruptions. Further research by Fajgelbaum et al. (2024) suggests that trade reallocation dynamics should be examined over extended periods to fully capture their macroeconomic consequences.

Conclusions and Recommendations

The non-renewal of AGOA results in significant welfare losses for AGOA countries while benefiting China and, to a lesser extent, the US. This agreement leads to trade reallocation that disadvantages AGOA economies, which have traditionally relied on preferential access to the US market. Although the macroeconomic effects remain limited at the global level, AGOA countries experience a contraction in trade, negatively impacting their growth and export performance. Trade diversion emerges as a key consequence, with AGOA nations losing market share in the US but increasing exports to other regions. These shifts present challenges related to trade displacement, market reallocation, and broader economic restructuring.

The expiration of AGOA amplifies these economic disruptions, particularly for industries such as textiles, agriculture, and manufacturing, which have benefited from duty-free access to the US. The resulting decline in employment, foreign exchange earnings, and economic stability highlights the vulnerability of AGOA countries to external trade policy shifts. The loss of preferential trade benefits is not merely a short-term setback but a structural change that necessitates significant economic adaptation. The reliance on a single dominant market has exposed AGOA economies to unpredictable policy decisions, underscoring the urgency of diversifying trade partnerships and strengthening regional integration.

Furthermore, the trade and investment landscape for AGOA countries will undergo long-term adjustments as industries that thrived under the agreement struggle to maintain their competitiveness in the absence of preferential access. Changes in production patterns, labor market disruptions, and evolving export strategies will shape the economic trajectory of these nations. While the expiration of AGOA poses substantial economic challenges, it also presents an opportunity for AGOA countries to reassess their trade policies, industrial development strategies, and participation in global value chains. Their ability to navigate these shifts will be crucial in determining their long-term economic resilience and sustainable growth.

Credit Authorship Contribution Statement

Gabriel Mhonyera: Conceptualization, Methodology, Software, Formal analysis, Writing – original draft, Validation, Writing – review and editing.

Declaration of Competing Interest

The author declares that he has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-assisted Technologies

The author declares that he has not used generative AI and AI-assisted technologies during the preparation of this work.

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Appendix

Table A.1: Regional and factor aggregation

Region	Description	Factor	Description	Factor mobility
Oceania	Australia, New Zealand	Land	Land	Sluggish (ETRAE = – l.000)
China	China	SkLab	Skilled labour	Mobile
Asia	East Asia	UnSkLab	Unskilled labour	Mobile
NAmerica	North America	Capital	Capital	Mobile
US	United States	NatRes	Natural Resources	Sluggish (ETRAE = – 0.00l)
LatinAmer	Latin America			
EU28	European Union			
WestEurope	Western Europe			
RestofWorld	Rest of World			
MENA	Middle East and North Africa			
Africa	Africa Non-AGOA Beneficiaries			
AGOA	SSA AGOA Beneficiaries			

Source: Authors' own aggregations using GTAPAgg2

Table A.2: Sectoral aggregation and GTAP average MFN tariffs faced on AGOA sectors if the trade act is not renewed

Sector	Description	Average MFN Tariff
GrainsCrops	Grains and Crops	3.0
MeatLstk	Livestock and Meat Products	2.0
Extraction	Mining and Extraction	3.0
ProcFood	Processed Food	5.0
TextWapp	Textiles and Clothing	5.0
LightMnfc	Light Manufacturing	5.0
HeavyMnfc	Heavy Manufacturing	4.3
Util_Cons	Utilities and Construction	0.0
TransComm	Transport and Communication	0.0
OthServices	Other Services	0.0

Source: Authors' own calculations.

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Ripple Effects of the Trump Tariff War: Implications for South Asia in the Context of Geopolitical and Geoeconomic Dynamics

Md Abul Hasan
Faculty of World Economy and International Affairs
National Research University Higher School of Economics, Russia
ORCID: 0000-0001-7008-4228; Researcher ID: LVR-5727-2024
habul@hse.ru

Jannatul Ferdos
Faculty of Science, Engineering and Technology
Hamdard University Bangladesh, Bangladesh
ORCID: 0009-0004-1106-4015; Researcher ID: rid132033
ferdos@hamdarduniversity.ed.bd

Mohammad Ahsan Habib
Department of Qur'anic Sciences and Islamic Studies
International Islamic University Chittagong, Bangladesh
ORCID:0000-0003-0095-1511
ahsanrifaj352@gmail.com

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Abstract: This paper explores the multifaceted effects of Donald Trump administration's imposition of tariff policies on India through the lenses of geoeconomics and geopolitics, specifically within the South Asian context. Employing mercantilism and realism theories and utilising qualitative research methods, this paper argues and analyses that the Trump administration has adopted a transactional approach to its bilateral trade relations, notably with India. This study finds that the tariff policy toward India might have profound consequences, extending beyond bilateral trade between New Delhi and Washington, influencing the broader geopolitical and geoeconomic landscapes in the Indo-Pacific region, particularly in South Asia. Small states in South Asia may face increased complexity due to their heavy engagements with both India and the United States, especially in the absence of negotiations between the two larger economies.

Keywords: India; geopolitics; geoeconomics; South Asia; small states; tariff war; United States.

JEL Classification: F14; F51; F52.

Introduction

President Donald Trump's administration-imposed tariff policies on several countries - most notably China, Canada, Mexico, and India - primarily driven by a belief that the United States (US) is being economically exploited through unfair trade practices and growing trade deficits. Washington's approach is highly transactional, rooted in a blend of economic nationalism (mercantilism) and geopolitical realism. The US views trade deficits as a sign of its economic weakness and a direct depletion of national wealth, thus imposing high tariffs as an asserted tool to rebalance these scales. Notably, countries targeted with high tariffs typically held the largest trade surpluses with the US and often maintained opposite stances on global geopolitical affairs, such as China and India (Tiwari, 2025).

While India, a crucial Indo-Pacific ally (Milner, 2025), is not the primary target, like China (Tiwari, 2025), the US's transactional approach and the revocation of India's Generalised System of Preferences (GSP) facilities indicate that national economic interest becomes Washington's top priority over broader strategic partnership. Trump's administration expects India, as a rising economic power and potential competitor, to address perceived

trade imbalance to reduce the US's trade deficits and external debt, further viewing India's engagement with blocs like BRICS as a challenge to America's global dominance, especially within South Asia.

Given India's significant leverage in the region, the US tariff policy carries broad geoeconomic and geopolitical implications for South Asia. As regional and global political dynamics shift, this tariff policy and transactional approach towards rising economies like India have wider ramifications for the entire region. By employing mercantilism and realism theories through qualitative thematic and case study analysis techniques, this study explores how this US tariff policy affects bilateral US-India relations and its broader consequences for South Asia in the near future.

1. Theoretical Framework

President Trump administration's tariff policies toward certain countries can be analysed using several International Relations and International Political Economy theories. Considering both geopolitical and economic perspectives, mercantilism and realism theories offer robust frameworks for analysing the US tariff policies and strategies in the context of South Asia, particularly regarding India.

1.1. Mercantilism

Mercantilists view wealth as power, arguing that states' economic strength directly translates to national power and security. Consequently, a state's primary focus should be on maximising exports while minimising imports to accumulate wealth. Trade is perceived as a zero-sum game, where one nation's gain necessarily implies another's loss. From this perspective, exports are beneficial, while imports are detrimental, making state intervention essential to achieve trade surpluses through measures such as promoting exports and restricting imports via tariffs, subsidies, and non-tariff barriers.

The theory of mercantilism aligns perfectly with Trump's emphasis on reducing trade deficits and his stated goal of "winning" on trade. His rhetoric consistently claims that the US trade deficit signified other countries "taking advantage" of the United States, thereby echoing the zero-sum nature of trade. Trump's "America First" policy overtly prioritised domestic production and protectionism, a dominant view among mercantilists. Furthermore, mercantilism posits that states can leverage trade as a tool for national advantage. In this instance, tariffs are employed to pressure other countries into opening their markets and reduce trade imbalances. Active intervention in the economy through tariffs, subsidies for domestic businesses, and direct trade negotiations with larger economies are central tenets of mercantilism, with the Trump administration evidently incorporating into its policy strategies and decisions.

Mercantilism in the Analysis of Trump's Tariffs toward India

President Trump's administration's trade policy toward India is a clear manifestation of mercantilist thinking. Trump consistently framed America's economic interactions with other states, including India, as a competition where the United States is losing due to trade deficits. The President repeatedly criticises the persistent trade deficit with India which he considers unacceptable. He views this deficit as an advantage for India with the cost of the US, a classic mercantilist interpretation. The revoking of India's GSP status has been a key goal of the US to reduce trade imbalance by making Indian products more expensive for its citizens and encouraged to purchase more domestic or alternative foreign products.

Additionally, President Trump often cites high Indian tariffs on some specific American made products – such as 50% tariff on Harley-Davidson motorcycles, and high tariffs on medical devices – as unfair and detrimental to the US companies. He believes these tariffs are barriers for America's firms and industries to become an effective competitor in the Indian market. The GSP withdrawal is a retaliatory measure to pressure New Delhi to lower its tariffs on American products and open its market more. This policy aligns with mercantilist goals of protecting domestic industries and ensuring market access for domestic exporters.

Furthermore, the Trump administration often links trade concessions to broader diplomatic or strategic cooperation, making economic relations conditional. His "America First" agenda means that even allies like India are expected to make economic concessions to satisfy US demands. The US gives a signal to India that GSP privileges are not unconditional and had to be earned through trade behaviour favourable to the United States, reflecting a transactional approach.

1.2. Realism

In an anarchic international system, states are the principal actors, driven by self-interest, primarily power and security. International Relations are often viewed as a zero-sum game, where a state's gain is considered as

another state's loss. Consequently, economic tools such as trade, tariffs, and sanctions are utilised to achieve geopolitical purposes.

Realists would argue that the US actions under the Trump administration represent a pursuit of relative economic gains and a challenge to the existing distribution of trade and power. Trump believes that trade deficits weaken America's economic hegemony and national security, viewing them as a transfer of wealth and power to other nations. Consequently, tariffs could serve as a significant tool to "win" on trade and bring jobs back to the United States. Furthermore, protecting domestic industries and businesses is considered crucial for safeguarding national security and the economy.

Realists also argue that the rise of other powers pose a major threat to existing powers. Trump perceives the rise of other powers, particularly China, as a threat to US hegemony and seeks to contain its influence through economic means. While countries like India are not considered a primary threat to America, the argument suggests that enabling other competitors or blocs through various means and allowing trade imbalances would weaken the US in the geopolitical consideration across various regions.

Realism in the Analysis of Trump's Tariff Policy toward India

While India is often considered a strategic partner to the United States, particularly in the Indo-Pacific, the Trump administration's tariffs represent a realist perspective wherein even allies are not immune to power politics when national interests are considered in a vulnerable situation. Washington believes that a robust domestic economy is fundamental to national power projection. It is considered that foreign trade imbalances are undermining the US economic base, viewing India, as a rising economic power, as a potentially strong competitor in the near future. Therefore, India's imbalance trade practices with the US need to be resolved to maintain America's economic dominance and geopolitical superiority.

Additionally, the Trump administration has adopted a highly transactional approach even with strategic partners, particularly as US trade deficits and debt drastically increases. The United States has treated trade relations as a separate ledger where its economic losses needed to be rectified, regardless of broader strategic alignment. Furthermore, India's engagements with blocs perceived as opposing US interests, such as BRICS, and its trade relations with Russia are viewed by the Trump administration as detrimental to the United States geopolitical interests. As a result, imposing high tariffs are intended to pressure India not to act against the US interests.

2. Methodology

This study has employed a mixed-methods approach, utilising both qualitative and quantitative data, with a pronounced focus on qualitative analysis, to analyse President Trump's proposed tariff policies and their effects on engagements with certain countries, with a particular emphasis on India and the broader South Asian region.

The Study has drawn upon both primary and secondary sources to explore the US transactional tariff policy toward India and its geopolitical and economic impacts on the region. Primarily, an in-depth review of existing scholarly and non-scholarly literature on tariffs, particularly analyses of US tariff policy, has been conducted. Secondary data has predominantly been gathered from non-academic articles, reputable websites, and media coverage. Primary data include official documents and statements from relevant countries, particularly ministries of state, foreign affairs, and finance departments, as well as remarks from influential public figures, including president, prime minister, foreign and finance ministers. For the quantitative component, this study utilises and analyses trade statistics between India and the United States before and after the imposition of tariffs, as well as trade statistics between the US and smaller South Asian states.

Focusing on India as a primary case study, this study analyses and assesses the effects of the United States' tariff policy and its transactional approach toward India, including revoking of India's GSP facilities. Additionally, it explores the broader implications this tariff policy on India might have for South Asia. By concentrating on two key themes – geoeconomics and geopolitics – this study investigates how this tariff policy toward India extends beyond mere trade relations to exert profound effects on the evolving geopolitical landscape.

To analyse the collected data, this research specifically employs thematic analysis and process tracing techniques. While thematic analysis assists in identifying key themes and patterns related to the US tariff policy and its impacts on India, the process tracing technique examines the causal mechanisms through which this US transactional approach influences regional political and economic dynamics. Following the analysis of India as a distinct case, a cross-case comparison has been conducted to assess the potential effects on South Asian smaller nations, as well as the broader geopolitical and geoeconomic landscapes of the region.

3. Case Study: India - US

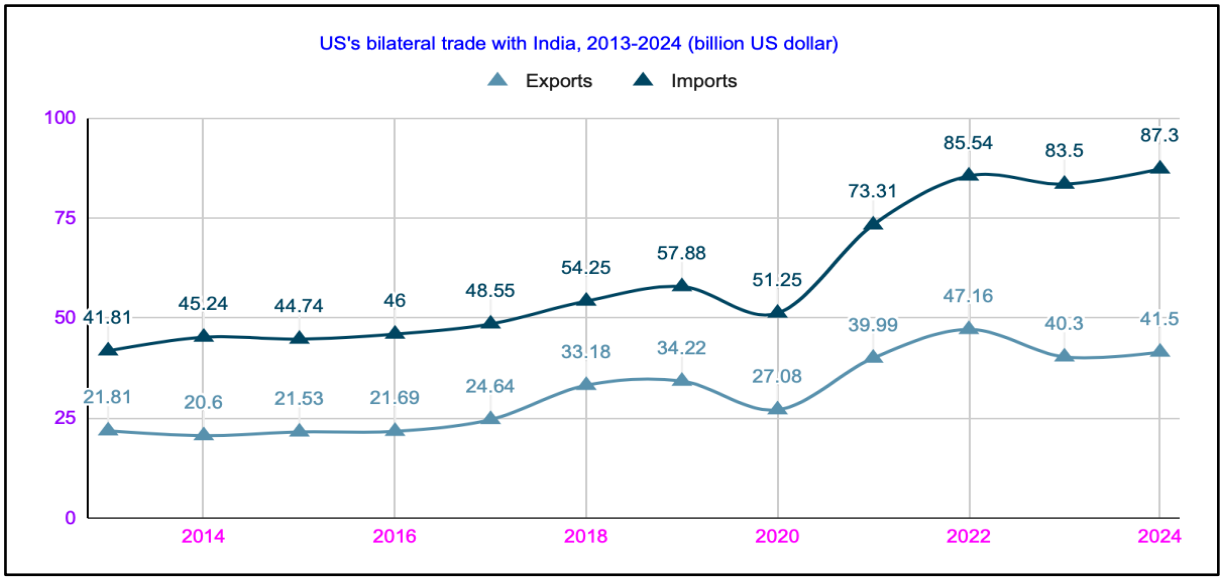
President Trump administration's imposition of large tariffs is a calculated strategy driven by the belief that the United States is being treated unfairly. This study has found that the US's tariffs have been designed to achieve three main goals: reduce the trade deficit, punish unfair trade practices, and gain geopolitical leverage. The key objectives have been to regain economic hegemony and superiority, weaken the opposition blocs and demotivate and pressurise nations to avoid joining these blocs, and negotiations with both rivals and allies.

3.1. India's Bilateral Trade Relations with the United States

The economic relations between the United States and India have experienced significant and consistent progress, particularly in trade, with a focus on bilateral exchanges and the integration of both economies into global supply chains. The world's largest economy has established itself as one of India's principal strategic commercial partners, accounting for over 15% of India's total trade. Bilateral trade volumes approximated USD150 billion per year, encompassing several sectors, including information technology, pharmaceuticals, machinery, and agricultural products (Athukorala, 2020; Tiwari, 2025). Additionally, India has emerged as a leading global exporter of IT services, software, and business process outsourcing services. US demand for these Indian services has provided significant advantages for Indian enterprises, increasingly integrating them into global supply chains primarily focused on the US economy (Gupta *et al.* 2018). The South Asian giant has been a prominent provider of generic pharmaceuticals to the US, offering vital assistance to the American healthcare system and highlighting the interdependence between the two countries (Iqbal *et al.* 2023). Moreover, India's burgeoning consumer market has attracted numerous US enterprises, particularly in the retail, fast food, and automotive industries, thereby strengthening trade connections (Tiwari, 2025).

The strategic partnership between two major powers has evolved significantly from the limited interactions of the Cold War era to a strong alliance in the present day (Milner, 2025; Liu & Jamali, 2021). This evolution has been shaped by the convergence of interests in economy, politics, and the containment of China's assertive policies in the Indo-Pacific region (Hasan, 2024; Yadav, 2021; Liu, 2020). Both powers saw their alignment as advantageous for bilateral trade relations and crucial for upholding a rules-based order in the Indo-Pacific, considering India's strategic position and increasing importance (Shah & Karki, 2024; Damayanti & Aurelia, 2022). The recognition of India as a Major Defense Partner in 2016 was a significant milestone in United States-India defense relations (Islam *et al.* 2016; Nguyen *et al.* 2024). This designation provided India with improved access to advanced US military technologies, enabling closer military collaboration and work against counterterrorism (Shah & Karki, 2024; Damayanti & Aurelia, 2022). Furthermore, recognising India's economic potential, including its large consumer market, the US began to strengthen its ties with India in various regional and extra-regional spheres (Grebenkina, 2025).

Figure 1. The United States' exports to and imports (goods) from India, 2013-2024 (billion US dollar).



Sources: International Monetary Fund (IMF) and US Trade Representative.

The trade relationship between the United States and India has dramatically altered over recent decades, characterized by rising bilateral trade levels. Figure 1 represents how bilateral trade relations between the two larger economies have grown since 2013. India has been one of the largest suppliers of various products to the United States. However, the growing trade deficit indicates India's significant access to US consumer markets. Moreover, the trade in services between the two countries has experienced substantial growth, resulting in a total products and services trade of USD 212.3 billion by 2024 (U.S. Trade Representative, 2024). The goods trade primarily benefited Indian exporters, while sectors such as information technology and corporate outsourcing have enhanced India's trade surplus with the United States. This dynamic illustrates the complementary aspect of the economic relationship, supported by India's increasing inclusion into global supply chains and its becoming the fastest emerging economy in the world.

Notwithstanding the expansion of bilateral trade, some difficult situations have endured between the two larger economies. As a rising economy and engaging with the opposite bloc of the US like BRICS, India has attempted to influence global trade dynamics and supply chains (He & Li, 2020). Additionally, India's imposition of high taxes on US goods, especially agricultural commodities and advanced machinery, has traditionally been a subject of contention (Athukorala, 2020; Amiti *et al.* 2019). The United States has consistently expressed apprehensions regarding India's restrictive market access, non-tariff obstacles, and the enforcement of intellectual property rights, leading to trade imbalances and challenges for US corporations attempting to penetrate the Indian market (Tiwari, 2025). The tariffs on medical devices in India were higher than those in numerous other nations, serving as an impediment to US companies (Tiwari, 2025). Moreover, challenges for US agricultural products such as poultry, dairy, and certain fruits and vegetables complicate trade relations with India. The United States has pushed for improved market access, but India's stringent rules and food safety standards often hinder this effort. US stakeholders also highlight India's protectionist policies in the automotive and information technology sectors, which strain the bilateral relationship and underscore persistent challenges despite otherwise favorable trade (Athukorala, 2020).

Furthermore, the tariff disputes between the United States and India have been a major issue for the past several years, which is also interconnected with their strategic engagement with major economies and blocs (Negoro *et al.* 2020; Devarajan *et al.* 2020; Goswami *et al.* 2023). The removal of India's GSP status that ended tariff-free access for many Indian products (Amiti *et al.* 2019; Agrahari & Alam, 2024; Jain, 2021) was a major concern for the Indian economy (Kumar, 2020). This move responded to India's higher tariffs on US exports, including motorcycles and medical devices, which were seen as obstacles to market access (Babu, 2020; Chacko, 2021).

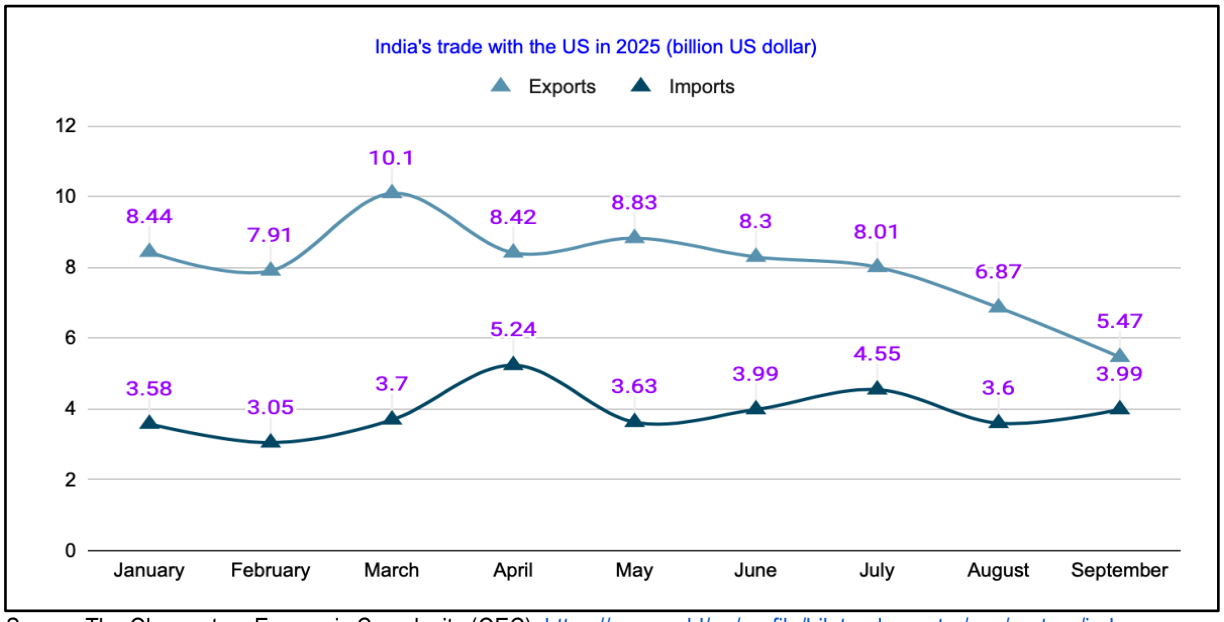
3.2. US-India Relations after the Tariff Escalation

The imposition of high tariffs by the United States on various Indian products has heavily affected the bilateral trade relations between the two larger economies. The tariffs were largely implemented to mitigate the US trade deficit and counter perceived inequitable trade practices by nations with significant trade surpluses, such as China, Canada, Mexico, and India. The Trump administration characterized these tariffs as crucial for restoring economic power in a competitive global landscape, portraying such actions within a narrative of economic exploitation by states perceived as engaging in unfair trade practices, particularly China and others (Cheng *et al.* 2021).

While India was not the primary target of the US like China, the contemporary environment indicates a more complex relationship between New Delhi and Washington. The effectiveness of tariffs on certain Indian products and the alternative measures taken by India instead of mutual negotiations have led to a significant decline in many other Indian sectors and products. This began to commence after the gradual increase of tariffs - 10% on April 2, 25% on August 7, and finally 50% at the end of August with allegations from President Trump that India had been helping Russia's war efforts in Ukraine - on Indian certain goods (The Times of India, 2025). Consequently, India's exports to the United States have sharply dropped in the last five months. The impact of tariffs has touched many other sectors in India, while tariff free products, such as smartphones, medicines, and petroleum, have also shown a significant decline, 25.8 percent from May 2025 to October 2025 (The Times of India, 2025).

Figure 2 demonstrates the dramatic decline of India's exports to the United States as an effect of the imposition of high tariffs. The figure also shows that India's exports to the US have doubled compared to its imports. However, the gap between exports and imports, despite being similar in the first five months of 2025, dramatically decreased in the last three months and finally became almost equal in October 2025. While (see Figure 1) the bilateral trade between the two larger economies reached its peak in the last five years, the imposition of tariffs has significantly halted the degree of trade, though trade deficits were evident. The increase in trade deficits has been a growing concern to the Trump administration due to the gradual increase of the US's foreign debts.

Figure 2. India's bilateral trade with the United States in 2025 (billion US dollar)



Source: The Observatory Economic Complexity (OEC). https://oec.world/en/profile/bilateral-country/usa/partner/ind

Interestingly, the impact of US's high tariffs on certain Indian goods has affected all exported goods to the US market. Table 1 represents that all Indian products have experienced a sharp decline from May to October. While the goods most affected by the highest (50%) tariffs, such as gems and jewelry products, solar panels, textile and garments products, chemicals and marine products, faced a 31.2% decline in October 2025, the tariff free goods - smartphone, medicine, and petroleum - showed a 25.8% decline. The rest of the Indian exported goods, facing similar tariffs as other countries, also showed an almost similar decline, amounting to 23.8%. This means Indian goods have lost substantial value in the United States's markets due to the imposition of high tariffs on certain products.

Table 1. India's highest affected sectors and products (exports), May 2025 to October 2025 (in percent)

Category	Decline (%)
Tariff free goods: smartphone, medicine, and petroleum	25.8
Goods facing the same tariff as other countries: iron, steel, aluminium, copper, and auto parts	23.8
Labour intensive goods facing 50% tariff: gems, jewellery, solar panels, textile, garments, chemicals, and marine products	31.2

Source: Global Trade Research Initiative (GTRI). global trade research initiative (gtri) report

Tariffs have been a comprehensive approach aimed at addressing perceived economic disparities, which also encompass non-tariff barriers and protective measures from both nations (Tiwari, 2025; Choi *et al.* 2024). Research reveals that the implementation of these tariffs significantly modified India's export strategies, particularly in textiles and jewelry, while certain sectors, such as pharmaceuticals, exhibited resilience (Tiwari, 2025). This viewpoint posits that tariffs served not only as financial mechanisms but also as vehicles of extensive economic diplomacy intended to reestablish US strength and influence on a worldwide scale (Kholid, 2022; Egger & Zhu, 2020; Choi *et al.* 2024; Attanayake & Wakkumbura, 2023). The United States' protectionist measures, indeed, significantly disrupted India's domestic economic landscape, raising operational costs for Indian exporters and influencing global prices. These increased costs for intermediate goods hurt overall economic welfare in both countries. They have increased costs in the US market and reduced India's export competitiveness.

In response, India adopted anti-dumping actions and alternative trade policies, underscoring a strategically adaptive trade policy amid intensifying protectionism and nationalism. Dadhania *et al.* (2025) found that US tariffs negatively affected key sectors in India, like agriculture and engineering goods, textiles, and pharmaceuticals. Higher costs made these products less competitive than those from countries not facing such tariffs (Dadhania *et al.* 2025). The Indian government seeks to shield domestic industries from the effects of US tariffs by fostering trade links with alternative partners, thereby mitigating the adverse economic consequences. Indian exporters are seeking new markets in Europe, Southeast Asia, Africa, and the Middle East.

Although the Trump administration did not directly impose tariffs on other South Asian nations in the same manner as India, its policies toward India created a new environment in South Asia. The India-US relationship is indirectly interconnected with other South Asian countries. This relationship is characterized by growing economic connections and collaborative defense efforts, making it a pivotal actor in US and South Asia policy (Tiwari, 2025).

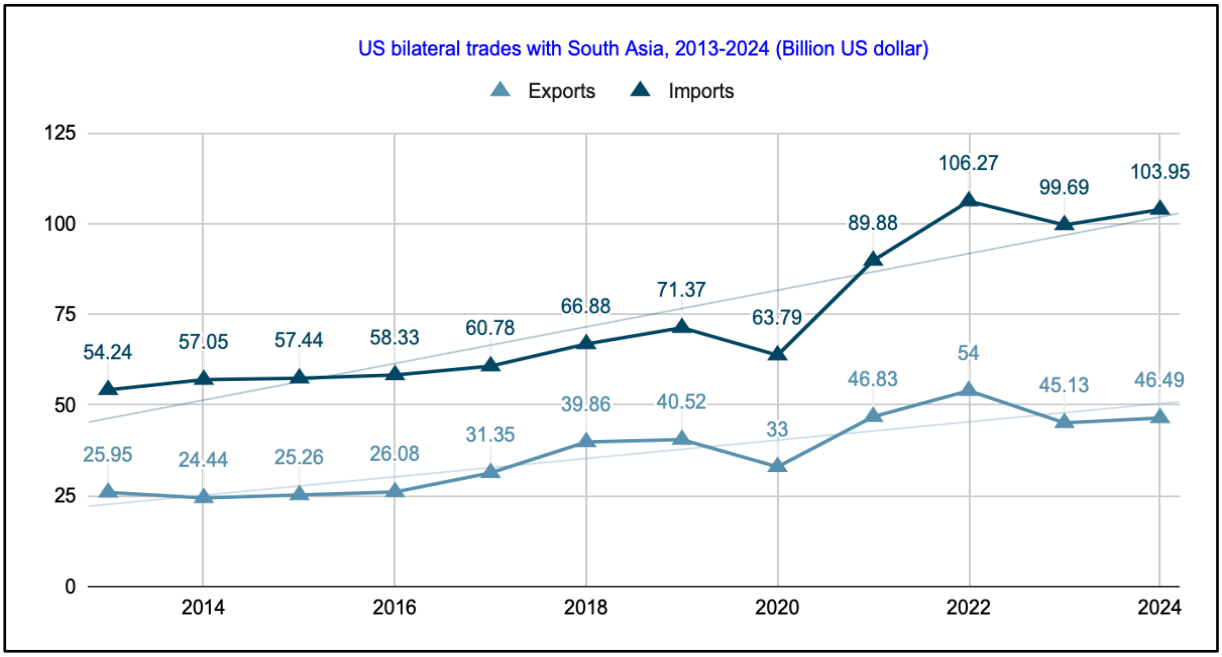
4. Impacts on South Asian Smaller Economies

The United States maintains robust bilateral trade relations with most South Asian smaller nations, though the dynamics and volumes significantly rely on various issues, such as domestic stability, economic size, and strategic significance. The US approach and trade policy toward these countries are often conditional, linking trade benefits and deeper economic engagement to progress on issues like labor rights, human rights, governance, and market reforms.

Trade ties between the United States and smaller South Asian nations exhibit diverse patterns; however, it is premature to ascribe all changes to the specific tariff shock predominantly affecting India. The trade volumes between the US and these smaller economies are relatively small but still considerable (Ali, 2023). In 2024, Bangladesh's total goods trade with the US was around USD 10.7 billion, resulting in a US goods deficit of about USD 6.1 billion (U.S. Trade Representative, 2024). The main exports from Bangladesh to the US are textiles and garments. These are crucial to Bangladesh's export economy. Nepal, with a lower trade profile, had a goods trade value of around USD 240.6 million. Its exports to the United States are mostly textiles and carpets (U.S. Trade Representative, 2024). These statistics indicate that, despite their smaller size, South Asian nations have become increasingly integrated into the US trade network, particularly in the sectors of textiles, apparel, and agricultural products.

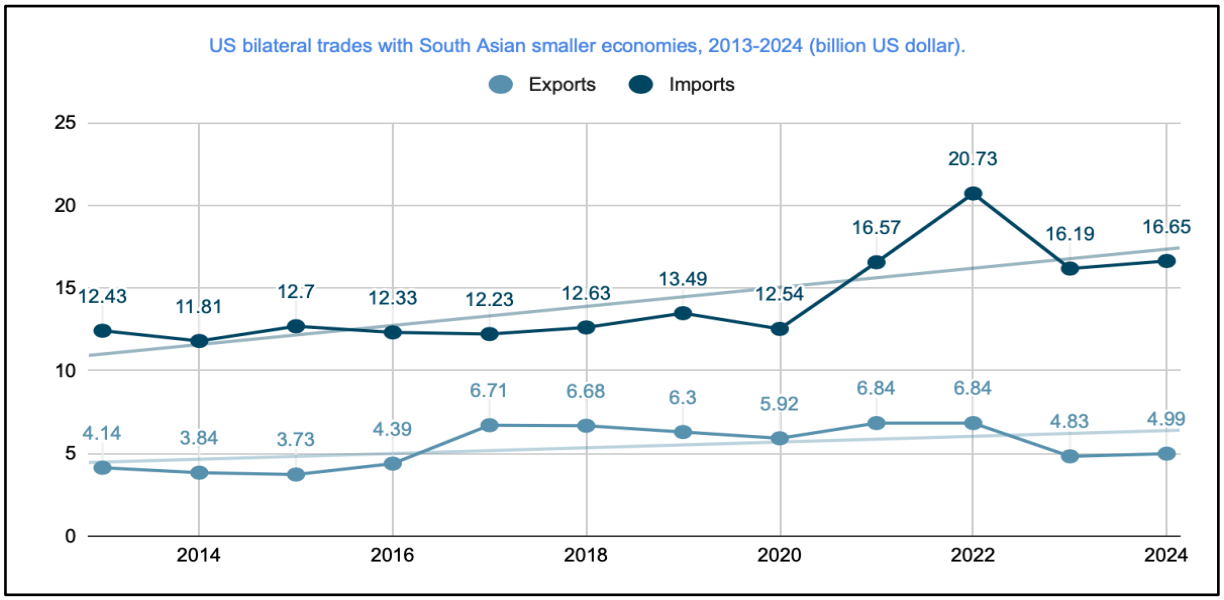
The US-Pakistan relations are notably intricate, influenced by interconnected economic and security factors (Osmani, 2018; Attanayake & Wakkumbura, 2023), though bilateral trade relations gradually increased. According to the Observatory of Economic Complexity (OEC) data, from July 2024 to July 2025, exports between the two countries increased by 8.34% from USD 138M to USD 149M, while imports decreased by 1.12% from USD 482M to USD 477M. Likewise, US-Sri Lanka ties have been defined by robust economic, political, and security connections (Ali, 2023). The United States has played a crucial role in facilitating economic development initiatives essential for Sri Lanka's recovery and stabilization. The trade balance is reasonably stable, characterized by substantial exports of tea and textiles from Sri Lanka to the US, offset by imports of machinery and chemicals essential for its development (Ali, 2023). Furthermore, Sri Lanka's growing significance in US foreign policy is heightened by strategic apprehensions regarding China's expansion in the Indian Ocean, indicating that trade relations are intricately linked to overarching geopolitical strategies (Kaya & Kılıç, 2017).

Figure 3. A comparison of US exports to and imports (goods) from South Asia, 2023-2024 (billion US dollar).



Sources: International Monetary Fund (IMF) and US Trade Representative.

Figure 4. A comparison of US exports to and imports (goods) from South Asia (except India), 2023-2024 (billion US dollar).



Sources: International Monetary Fund (IMF) and US Trade Representative.

The US bilateral trade with smaller South Asian economies is interconnected with India. India largely dominates the South Asian economy, particularly foreign trade with the United States (see Figure 3 and 4). The following two figures demonstrate that India has been the largest trade partner of the US in South Asia, while over 80% of trade has occurred between these two larger economies. Therefore, an uneasy trade environment between New Delhi and Washington could have profound impacts on the US's trade with other smaller South Asian economies.

South Asian economies are heavily interconnected with India, relying on vast markets, intermediate goods, raw materials, and transit routes. Most of the smaller countries are substantially reliant on India for daily essential goods. A downturn or reorientation of Indian trade patterns due to US tariff policies could both overtly and covertly affect its neighbouring countries' trade with the United States. For instance, a significant volume of products from Bangladesh, Bhutan, and Nepal usually transit via India to reach the US market. In this case, any friction in US-India trade and transit routes could complicate the exports of these smaller nations to the United States.

Despite the complexity, experts saw a potential for significant reorientation of South Asia's trade with the United States, and it has already started to happen in some cases. The US has started importing some key goods, like garment products, from other South and Southeast Asian countries, which it previously imported from India (The Times of India, 2025). Three South Asian countries, such as Bangladesh, Pakistan, and Sri Lanka, have been alternative sources for the US for certain products, including garments, textiles, seafoods, and electronics.

5. Discussions: Geopolitical and Geoeconomic Implications for South Asia and Beyond

Beyond bilateral concerns, the United States tariff policy and transactional approach toward India carry broader geoeconomic and geopolitical implications, particularly in the context of intensifying major power competition within the region.

5.1. Economic Implications

The Trump administration's tariff policy toward India and the revocation of India's GSP facilities have exerted substantial consequences across the region, as outline bellow:

First, facing higher US tariffs and the loss of GSP opportunities, India is compelled to redirect its exports to alternative markets, both within and outside the region. Largely affected Indian industries may reorient their supply chains to foster intra-regional networks or establish new ones with non-traditional partners. Additionally, India might further strengthen its engagement with various economic blocs such as BRICS and SCO (Shanghai Cooperation Organisation) to build alternative trade and investment networks. Concurrently, the United States might explore other South Asian nations for similar products. These shifts could have adverse effects on the South Asia region, particularly if nations are pressured to align with a single economic bloc. For instance, as the United States remains the largest export destination for many South Asian nations like Bangladesh, they may view the contemporary US-India trade relationship with increased caution.

Second, South Asian economies are increasingly integrated, with countries like Bangladesh, Bhutan, Nepal, and Sri Lanka relying significantly on India for daily essential goods, raw materials, and transit routes. A slowdown in India's industrial output or an increase in the cost of Indian goods due to tariffs could trigger a cascading effect across the regional supply chains. India's regional economic hegemon may diminish due to its own economic vulnerability, thereby constraining its ability to offer preferential trade or investment to its neighbours. Moreover, other South Asian countries' exports to the United States via India could be adversely affected by the strained bilateral trade relations between New Delhi and Washington. Furthermore, South Asian nations might face difficulties accessing other global economies if India's traditional trade routes are disrupted.

Third, the strained relations between New Delhi and Washington could present an advantage for Beijing to bolster its economic influence in South Asia even further. If India feels economically pressured by the United States, it might become more receptive to Chinese trade and investment initiatives, particularly the Belt and Road Initiative (BRI). China is well-positioned to fill any economic vacuum created, potentially leading smaller countries to further deepen their engagements with Beijing for goods, infrastructure, loans and investments. However, growing concerns persist regarding debt traps and geopolitical leverage for smaller economies stemming from over reliance on Chinese capital.

Fourth, the US admiration's trade policies, characterised by their transactional nature and lack of clear, stable rules, could profoundly affect Foreign Direct Investment (FDI) not only in India but across the entire South Asian region. Investors generally prefer stability and clear trade rules and regulations, which may be undermined by this approach. Moreover, foreign investments in export-oriented sectors that heavily rely on access to western markets may be curtailed due to uncertainty. On the contrary, India might seek foreign investments from other major economies, such as China, Japan, Brazil, Russia, and the Middle East, to compensate for any short-term instability. This diversification, however, might be viewed unfavourably by western investors. Consequently, if foreign investors limit or new investors are disincentivised from investing in India, they may also show reduced interests in other South Asian countries, considering the interconnected regional political and economic dynamics.

Last, but not least, trade tensions with external powers can sometimes spur greater intra-regional trade. India, for example, might intensify efforts to integrate the two key regional organisations, SAARC and BIMSTEC, and revitalise other inactive smaller economic blocs like BBIN. However, the potential for this in South Asia remains limited in the near future due to intricate international relations among its nations. Long-standing political rivalries, inadequate infrastructure, and existing non-tariff trade barriers within SAARC, coupled with the slow progress of BIMSTEC, collectively hinder the development of robust intra-regional trade necessary to offset external pressures.

5.2. Geopolitical Implications

While the United States tariff policies are primarily economically targeted, they have profound geopolitical implications for the broader South Asia region and the evolving Indo-Pacific security architecture, particularly concerning regional power dynamics, alignments, and strategic calculations:

First, despite being an important strategic security partner in the Indo-Pacific, the tariff dispute risks weakening ties between New Delhi and Washington. The situation demonstrates that economic self-interest can override strategic considerations, leading to friction even with key partners. As a major defense partner of the United States (Türker, 2024; Vinodan & Kurian, 2024), India's experience of facing high tariffs leads to mistrust and disagreements among leaders and the general populace, potentially necessitating reciprocal measures (Kaya & Kılıç, 2017). This underscores the unpredictability of Washington's policy, which could further foster mistrust and misperception among allies. Furthermore, should trade relations deteriorate further, US-led initiatives like the Quad (Quadrilateral Security Dialogue) or the broader Indo-Pacific security framework could wane. Consequently, India may be less inclined to align its geopolitical interests with the US, potentially yielding advantages to other powers like China and Russia in the region.

Second, India, as a regional hegemon, often seeks to project stability and influence, at least, in South Asia. However, the tariffs could be perceived as a sign of vulnerability, potentially undermining India's economic leverage in its own region. Observing India's struggle with the US might have led other South Asian countries to conclude that the efficacy of aligning too closely with any single major power is suboptimal. This could encourage these smaller nations to further diversify their own external relations. Furthermore, these countries might adopt more sophisticated "hedging strategies" by diversifying economic and diplomatic relationships with multiple powers to avoid over-reliance on any single entity, thereby safeguarding against future punitive actions.

Third, the strained relations between India and the United States could be observed as a greater geopolitical opportunity for China to strengthen its influence in the region. If New Delhi feels politically pressured from Washington and its allies, it might cultivate strong ties with Beijing and Moscow - recent interaction among these

three powers suggest such possibilities - potentially shifting the regional balance of power and geopolitical dynamics. However, this dynamic could, paradoxically, make it harder for India to diminish Chinese influence in the region.

Fourth, under economic pressure, India might seek to align or normalise relationships with perceived rivals like China (and Pakistan) to diminish US economic pressures or reduce its dependency on the United States. The potential for such normalisation has already been evidenced by the recent visit of Modi to China and diplomatic engagements. Additionally, India's increasing engagement with Russia, including the signing of various economic and military agreements, indicate a further intricate escalation in the Indo-Pacific and global power politics.

Finally, the Trump administration's tariff policy has been widely viewed as undermining multilateralism and the rules-based international order. This is particularly concerning for smaller South Asian economies, which significantly rely on predictable international rules to protect their interests against larger economic powers.

Conclusion

The mercantilist (economic) policies and realist (geopolitical) view of Trump's administration, particularly through the utilisation of a new tariff policy, contribute to reshaping global political and economic dynamics. By targeting certain major economies and militaries, the United States has aimed to maintain its economic and military superiority through the exercise of material power. While India is not the primary target, unlike China and Russia, the revocation of India's GSP advantage and high tariffs on certain goods have created an uneasy situation in South Asia, challenging traditional alliances, fostering economic uncertainty, and contributing to geopolitical vulnerability.

In aggregate, the US–South Asia trade landscape post-tariff reveals the following scholarly observations: First, the US–India relationship, previously characterised by growing bilateral trade volumes and increasing service-linkages, is now under acute pressure from the punitive tariff regime. This shift threatens both the economic and strategic pillars of the relationship. This also highlights how economic tools are weaponised as instruments of foreign policy, blurring the lines between economic competition and geopolitical maneuvering in a growing multipolar world. Second, smaller South Asian economies such as Bangladesh and Sri Lanka remain integrated into US trade networks, especially through apparel and garment sectors. However, they face heightened uncertainty due to changes in US sourcing patterns, tariff policies, and geopolitical conditionality. Third, while the goods-trade figures for Bangladesh and Sri Lanka do not yet show dramatic decline, the trend lines and qualitative indicators (export-order cancellations, tariff-increase warnings) suggest increased risk exposure. For a research project centred on legitimacy and trade regimes, these data imply that trade-policy coercion (via tariffs) is not neutral but carries normative and structural consequences: states like India face diminished strategic-economic legitimacy from the US partner-side, while smaller South Asian states may face spill-over instability and intricate choices even if they are not the primary target. Finally, the transactional nature of great power relations may further escalate the geopolitical and geoeconomic dynamics in South Asia and the broader region.

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Credit Authorship Contribution Statement

Md Abul Hasan: Conceptualization, Theoretical analysis, Methodology, Formal analysis, Writing – original draft, Writing – review and editing, Supervision.
Jannatul Ferdos: Conceptualization, Formal analysis, Writing – original draft, Supervision, Writing – review and editing.
Mohammad Ahsan Habib: Conceptualization, Formal analysis, Writing – original draft, Writing – review and editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-Assisted Technologies

The authors declare that they have not used generative AI and AI-assisted technologies in the writing process of this paper.

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The Welfare Effects of Trump's Tariff Policy

Tamara Todorova
Department of Economics, American University in Bulgaria, Bulgaria
ORCID: 0000-0001-5598-3815; Researcher ID: AAW-3293-2020
ttodorova@aubg.edu

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Abstract: We discuss the terms-of-trade effects of the import tariffs imposed by the US administration. Import tariffs benefit a large nation by suppressing the export price of the good it imports and by improving its terms of trade. This allows the large nation to move to a higher consumption point without the need for actual economic growth. The terms-of-trade gain is substantive for a large nation, while there is none for a small open economy. Borrowing on international trade theory we argue that the purpose of the import tariffs imposed by the USA is not merely to resolve trade balance issues, but rather to effortlessly improve the consumption position of the country.

Keywords: gains from trade; terms of trade; consumption position; community indifference curves; protectionism.

JEL Classification: F11; F13; F43; O41.

Introduction

In his second term as president of the USA Donald Trump initiated tariffs on imports from its key trading partners with the purpose of resolving the trade deficit of the country. The deficit on goods and services for 2025 is 59.6 billion dollars with a trade deficit on goods of 85.6 billion dollars and a surplus on services of 26.1 billion dollars (US Census Bureau; US Bureau of Economic Analysis; US International Trade in Goods and Services, November 19, 2025). The trade deficit is insignificant given the size of the country and its public debt. As of November 2025, the US total federal debt is estimated at 38.3 trillion dollars of which the debt held by the public is 30.6 trillion dollars (Joint Economic Committee 2025). The relation between the public debt and the trade deficit is only indirect according to the twin deficit hypothesis. In other words, the trade deficit of the country does not directly and significantly cause the immense public debt of the USA.

While the overall trade deficit on goods is insignificant, the goods trade deficit with China as of November 2025 stands at 295.5 billion dollars (Office of the US Trade Representative 2025) but the US trade surplus in services with China was 33.2 billion dollars in 2024. The US trade deficit on goods with the European Union approximates 235.9 billion dollars (Office of the US Trade Representative 2025). However, the USA has a surplus of 88.6 billion dollars on services with the EU which reduces the overall trade deficit with the EU to 147.3 billion dollars (Office of the US Trade Representative 2025). Thus, the main target of the newly instituted import tariffs are China and the European Union, due to the negative trade balance on goods, but import tariffs are also imposed on Canada and Mexico, the US direct neighbors and members of the North American Free Trade Agreement (NAFTA), a trading bloc which the USA also participates in.

The USA has seen consistent growth in the last 5 years. After the economic shock of Covid in 2020 with a decline of 2.1%, real GDP grew by 6.2% in 2021, 2.5% in 2022, 2.9% in 2023 and 2.8% in 2024 (US Bureau of Economic Analysis 2025). This shows the USA not as a static, but as a dynamic economy experiencing growth due to increased productivity, inflow of factors of production, technological or other factors.

1. Literature Review

Being large, the US economy is self-sustainable, that is, it can produce everything by itself and can exist on its own. It has a sufficient number of key resources (including oil) and the necessary technologies to produce essential

items. As an autarky a large economy does not realize the gains from trade but is capable of producing and self-sustaining for a long period of time, something which is impossible for a small economy. In addition to that, scale economies allow the nation to achieve economic efficiency and produce nearly everything more cheaply than a small nation.

It is assumed in this paper that the USA engages primarily in interindustry trade, that is, trade based on dissimilar factors of production. Our results are also consistent with intraindustry trade, but the presumption is that the USA exports goods whose intensive factors are abundant and imports goods whose intensive factors are scarce. This is in line with the Heckscher-Ohlin theoretical model of international trade. More specifically, we apply the tools of the standard trade model, as an extension of the Heckscher-Ohlin trade model and consistent with the Ricardian type of trade where countries exchange commodities for which they have a comparative advantage and are endowed in. Our assumption is that the USA specializes in goods in which it has comparative advantages and imports from the rest of the world commodities in which it does not have such.

We maintain that the USA imposes import tariffs as restrictions on trade with the purpose of increasing its welfare without substantially increasing production or improving economic efficiency in any way. At the same time, the import tariffs reduce the well-being of the rest of world. We hypothetically define the trading partners of the USA as "the rest of the world" and assume that generally the USA trades with two goods, exports and imports. The price of the exported good is assumed here to be P_x , while that of the imported good which is imported in the USA from the "rest of the world" is P_y. Thus, the terms of trade for the USA are $\frac{P_x}{P_y}$, that is, the value of the coutntry's exports over that of its imports. For the rest of the world, importing in the USA, the terms of trade are reciprocal, or $\frac{P_y}{P_x}$.

A number of authors emphasize the welfare effects of import tariffs (Caves, Frankel and Jones 2002; Ingham 2004; Gerber 2005). Gains from trade are emphasized by many scholars (Salvatore 1993a; Grubel 1981; Husted and Melvin 2007). Gruber (1981) analyzes community indifference curves to describe the consumption and preferences of a nation. The European Union is a customs union and a common market (Baldwin and Wyplosz 2004). It removes all trade barriers among member states but erects the same tariff barriers to non-member countries. Growth can be welfare improving especially when it is in the import-competing sector (Appleyard and Field 1998) but it could as well be immiserizing if it is in the export-oriented sector and the economy is large enough to influence world terms of trade to its disadvantage (Bhagwati 1958). Furthermore, it does not matter where growth occurs. As long as it is in the country's import-competing sector, it makes it better off since it reduces the world price of imports. If it is in the country's exports-oriented sector, it makes the country worse off since it lowers the relative price of the country's exported good thus worsening its terms of trade and reducing the country's overall well-being. There are terms-of-trade gains resulting from an import tariff (Krugman and Obstfeld 2003; Root 1990).

The USA has a long tradition in protectionism although in the last decades it has led relatively liberal strategic trade policies which foster free trade and general support for developing and transitional countries. The proponents of the "infant industry argument" first appeared in the USA. The argument bases protectionism on the need to give an impetus to an industry which is starting up and needs sufficient demand in order to evolve. This is especially true when the entry price of the newly developing domestic industry is higher than the costs and prices of the foreign firms which have already established themselves in the world. External economies of scale and dynamic increasing returns cannot be taken advantage of since the new and prospective industry cannot start without protection. A country which potentially has lower costs due to dynamic increasing returns cannot enter an industry because other countries are already incumbents in it and have a first-mover advantage. Banning importation guarantees demand to the domestic firms and allows them entry with the possibility to eventually take over the world market, once they settle in.

Alexander Hamilton, the first secretary of the Treasury of the USA, and Friedrich List, a German-born economist who migrated to the USA, propagated the use of tariffs to protect manufacturing so that to bring the American economy to the level of the most powerful economies in the world (Hamilton 1791; List 1904). In line with this policy president William McKinley (1843-1901) raised tariffs (Barbet 2025). It is believed that one of the triggers, if not the trigger, for the Great Depression in the late 1920s and 1930s was US protectionism. In 1930 the US Congress passed the Smoot-Hawley Act which imposed severe import tariffs to protect US farmers and industries. This unleashed a trade war with other countries which imposed retaliatory duties of their own. The world trade dropped by nearly two-thirds which led to a deep depression in Europe. By 1933 every fourth person (nearly 24% of the labor force) in the USA was unemployed as a result of the Depression.

The current trade war scenario with China is not new for the USA. In the past the country has been involved in a similar trade war with Japan. The war started in the 1950s but intensified between 1980 and 1990. Like Chinese ware nowadays, Japanese products such as electronics, cars, semiconductors, steel and textiles flooded the US

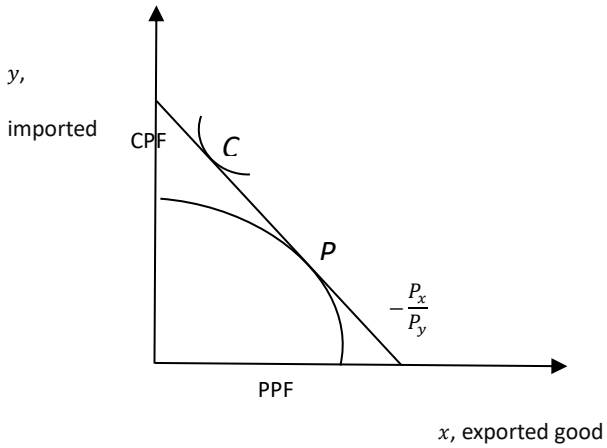
market at that time (Salvatore 1993b). Japan led strategic trade policies of neo-mercantilism. While Japan invaded the USA with its imports, it protected itself strongly against US imports of agricultural products using non-tariff barriers such as regulations, technical or other requirements. Using political pressure, the USA forced Japan to impose voluntary export restraints (VERs) on the exports of cars. VERs resemble import quotas and are, thus limitations on quantity, but are considered self-imposed by the exporting country. Like import quotas, VERs do not bring any revenue to the government but instead quota right holders (companies which have the right to export) acquire quota rents. The USA also practices import quotas on cheese and sugar. The effect of all such tariff and non-tariff barriers is to raise the domestic price of imported goods. The USA has a sophisticated tariff code which uses the term "most favored nation" to put a country on equal grounds with all other trading partners. The "most favored nation" clause does not mean that a given partner is "favored," but, rather, that it will be treated no worse than others. The "most favored nation" status guarantees equal treatment of all trading partners and countries.

It is well known that through the exports multiplier increased exports increase the GDP and the equilibrium interest rate in the country (Keynes 1936). At the same time, a higher inclination for consuming foreign goods affects the trade balance adversely, as it discourages exports, while encouraging imports (Todorova 2022). The negative trade balance of the USA with a number of countries could be due to the fact that Americans prefer foreign goods over domestically produced ones. In the section that follows we analyze the welfare gains of the USA stemming from the imposition of import tariffs on its trading partners. The paper ends with conclusions.

2. Welfare Gains with the Imposition of Tariffs

The standard trade model stipulates that in a static economy, one which does not experience economic growth, the country produces at a point on its production possibility frontier PPF. The point depends on the productive capacity of the economy, the availability and allocation of resources between the sectors of the economy and the particular technology used in production. If the country is a closed economy, *i.e.*, an autarky, it must consume where it produces, that is, on the very production possibilities frontier. For a closed economy, production limits consumption but the point of production on the PPF curve depends on the tastes and preferences of the nation. The country produces of each good as much as the nation demands. However, with free trade the country can consume above its production possibility frontier, on its consumption possibility frontier CPF. This consumption exceeding the productive capacity of the economy is one of the advantages of free trade and a result of the gains from trade. Figure 1 illustrates that the consumption point *C* of the USA is on the CPF, much above the PPF of the country. The production point is *P* on the PPF. At point *C* the USA is on a highest community indifference curve which indicates the particular taste of the nation towards local and imported goods. In the absence of international trade, the nation would have to consume at the point of production *P*.

Figure 1. Consumption and production at particular terms of trade



Source: created by author on the basis of Krugman and Obstfeld (2003)

The relative commodity price $\frac{P_x}{P_y}$ which gives the terms of trade of the USA, *i.e.*, the price of US exports over the price of US imports gives the slope of the isovalue line, where the nation produces the two goods, x and y, that is,

$$P_x Q_x + P_y Q_y = V$$

$$Q_y = \frac{V}{P_y} - \frac{P_x}{P_y} Q_x$$

In equilibrium the terms of trade $\frac{P_x}{P_y}$ also give the ratio of the imports of x over the exports of y, or vice versa, depending on which country is the exporter and which one is the importer. This results from the key macroeconomic identity by which the value of production equals the value of consumption in the absence of foreign borrowing or lending:

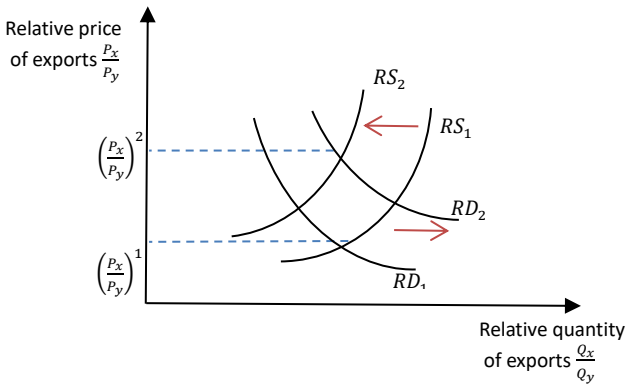
$$P_x Q_x + P_y Q_y = P_x C_x + P_y C_y$$

$\frac{P_x}{P_y} = \frac{C_x - Q_x}{Q_y - C_y} = \frac{imports\ of\ x}{exports\ of\ y}$, or alternatively,

$$\frac{P_x}{P_y} = \frac{Q_x - C_x}{C_y - Q_y} = \frac{exports\ of\ x}{imports\ of\ y}$$

In order for the nation to expand its consumption possibility frontier CPF and reach a higher point of consumption, *i.e.* move to a higher community indifference curve, the nation must produce more. This means that it should achieve growth and experience a shift in its production possibilities frontier PPF. Economic theory stipulates that such an expansion of the PPF is possible for two reasons: 1) the discovery and employment of new factors of production, for instance, inflow of labor, or capital or the discovery of new lands, or 2) an improvement in the existing productive technology. If the economy does not experience growth, the only possibility for increased consumption is the increase in the slope of the isovalue line which sets the CPF. We already stressed that this slope is the relative commodity price, *i.e.*, the value of the country's exports over the value of the country's imports or the terms of trade of the country. If the country manages to raise its terms of trade, thus making its CPF steeper, it could potentially move to a higher indifference curve and consume more without producing more, *i.e.*, staying on the same PPF.

Figure 2. Terms-of-trade effects of an import tariff practiced by a large economy



Source: created by author on the basis of Krugman and Obstfeld (2003)

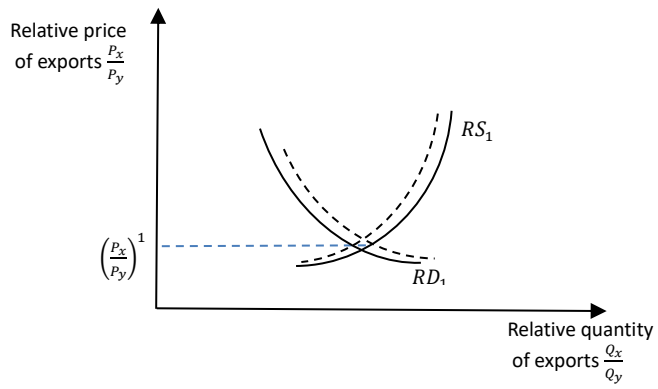
In the absence of growth, the nation can see its terms of trade increasing (the CPF getting steeper) on two premises: 1) the price of its exports P_x increases relative to the price of imports P_y, and 2) the price of imports P_y falls due to, for instance, world growth in the sector of the imported good, y. This growth in the sector of y need not occur in the importing country but in some foreign country which specializes in y, the imported commodities. As mentioned, it does not matter where the growth occurs – if it is in the sector of the imported good y, it potentially improves the terms of trade of the country. As to the price of exports, growth can have an adverse effect of reducing

the price of the country's exports thus worsening its terms of trade. A rise in the price of x can result from an increased world demand for the exported good x. If demand for US goods has not increased much and no essential growth has occurred in the import-competing sector of the USA, the terms of trade of the country have not improved substantially or may have worsened. With static terms of trade, the country whose economy does not grow substantially in its imports-competing sector, cannot improve its consumption position and welfare.

One possibility for the USA to improve its terms of trade is by the imposition of import tariffs which affect negatively the rest of the world but benefit the US economy. If the USA imposes a tariff on its imports, the price of the imports relative to that of the US exports will rise domestically (Figure 2). This will make the locally produced good x for exports relatively cheaper for domestic consumers. Due to the substitution effect domestic consumers switch to the now relatively cheaper domestically produced good x and reduce their consumption of the relatively expensive imported good y. The tariff makes the imported good y more expensive for local consumers. This increases the relative demand for the local (exported) good x in terms of the imported good y shifting the relative demand curve RD for good x in terms of good y to the right. With relative supply RS the effect is the opposite. Due to the higher internal price of the imported good y, local firms which previously produced x for exports now switch to the production of y. There is less x produced in the USA and more y. This reduces the relative supply of x in terms of y shifting the RS curve of x in terms of y to the left. As a result of both comparative-static shifts, the equilibrium relative price of the exported, locally produced good x in terms of that of the imported good y, that is, the terms of trade of the USA, $\frac{P_x}{P_y}$ increases. By imposing a tariff on imports the USA directly improves its terms of trade.

What is possible for a large country to do, is not possible for a small nation. The size of the domestic economy imposing the tariff matters in the effect on the terms of trade (see Figure 3). Since the demand and supply in a small economy are insufficient to influence the world relative demand and supply curves RD and RS, it is impracticable for a small open economy to implement an import tariff. The large economy, at the same time, has a vested interest in changing the world terms of trade to its advantage. Import tariffs can thus turn into an instrument for large nations to reduce the welfare of the rest of world or smaller nations while improving their own welfare.

Figure 3. An import tariff practiced by a small country



Source: the author

The effect of the import tariff on the world terms of trade is just opposite to that of the export subsidy which worsens the terms of trade for the exporting country. It is well known that the EU practices such export subsidies in the agricultural sector along its common agricultural policy CAP[1]. This policy improves the terms of trade of the USA further, not accounting for the US farmers who are affected adversely by European export subsidies and the CAP. While the EU worsens its own terms of trade through export subsidies, the USA pursues a policy of improving terms of trade by practicing import tariffs.

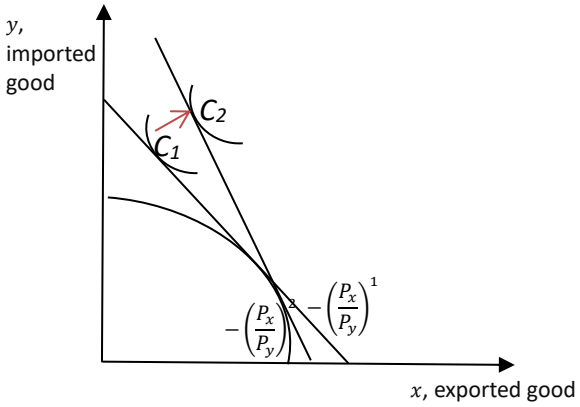
Trump's tariffs put the USA on a higher indifference curve and a higher point of consumption without the need for the nation to generate any additional productive value and to expand its PPF. The USA is aware of its

[1] Since 2023 the CAP has undergone essential changes related to sustainability, environmental preservation and climate change, independent country policies for each member state, support for smaller farms, and performance-based subsidies.

"magnitude," of the size of its economy and the influence it has on the world economy. In Figure 4 the nation whose terms of trade improve moves to a higher indifference curve and a higher point of consumption. From consumption point C_1 it moves to C_2 on a higher indifference curve. The nation does not experience growth or improvements in technology, it suffices to use trade policy instruments such as import restrictions to improve its welfare. The new consumption point C_2 is outside of the production set and much above the PPF of the country.

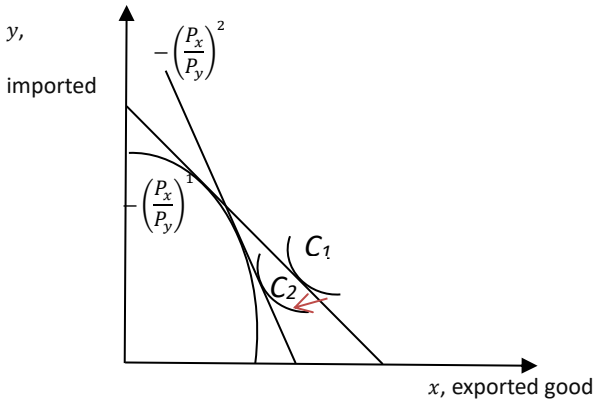
The effect on the rest of the world is the opposite. Because their terms of trade now decline, the countries which are trading partners of the USA move to a worse consumption position on the new isovalue line, which is flatter for them, *i.e.*, the terms of trade are now lower for these countries. This is illustrated in Figure 5. Without substantial effort the USA increases its welfare while managing to reduce that of the rest of the world. An import tariff by the USA can increase its welfare at the expense of its trading partners, or "the rest of the world."

Figure 4. Improved consumption due to improved terms of trade



Source: created by author on the basis of Krugman and Obstfeld (2003)

Figure 5. Worsened consumption for the rest of the world due to improved terms of trade for the USA



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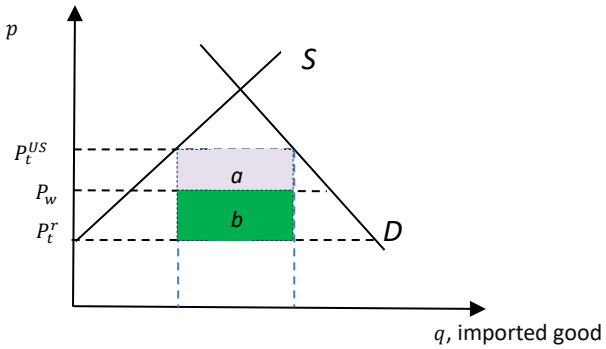
The terms-of-trade gain of the import tariff can further be presented by use of graphical welfare analysis for the imposing country.

Figure 6. Terms-of-trade gains for the large economy due to an import tariff



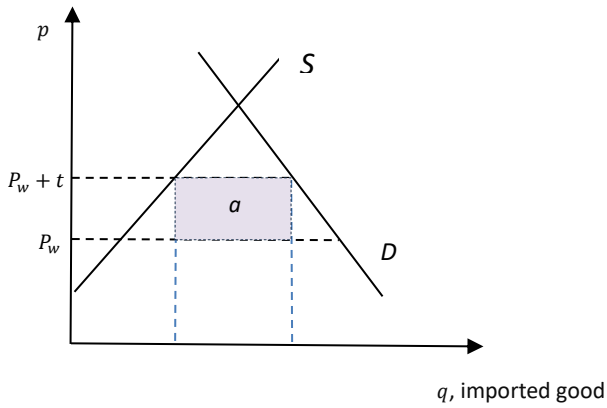
Source: created by the author

As was mentioned, if the nation is a large economy, it can substantially influence the world terms of trade by suppressing the foreign export price, that is, the export price P_y of the rest of the world.

Figure 6 illustrates the cost and benefit analysis of the import tariff for the large economy. Whereas the total tariff revenue to the government includes areas *a* and *b* shaded in the figure, area *b* represents the terms-of-trade gain of the USA which arises because it manages to lower the export price of the imported goods from abroad. The unit tariff rate is $t = P_t^{US} - P_t^r$.

This shows that an import tariff is extremely beneficial for the imposing large economy – it not only collects revenue from it but also achieves substantive terms-of-trade gains. For the small country this is not possible and such terms-of-trade gains do not exist because the country is too small and cannot suppress sufficiently the export price of the importer. Because the small country imposing a tariff cannot affect the world terms of trade, it takes the entire burden of the tariff – an increased internal price of the imported good, dramatically decreased imports and lack of terms-of trade gain (Figure 7). The tariff revenue for the government is area *a,* not accounting for the consumption and production distortion effects of the tariff.

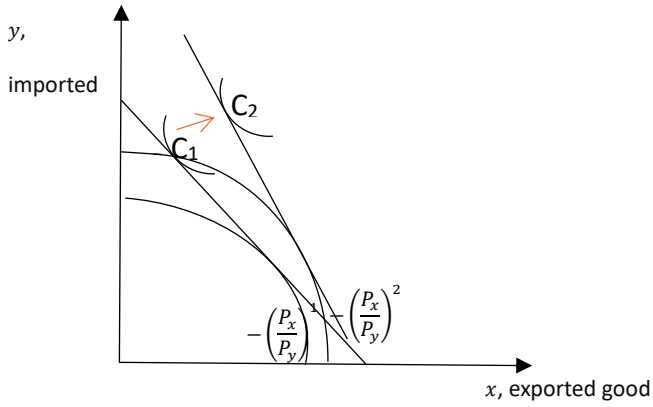
Figure 7. The small country case with an import tariff



Source: the author

So far, we have described what the USA could achieve as a static economy, using the instruments of trade policy to influence the world without experiencing the dynamic effects of growth. To this we now add the figures on real GDP growth presented in the beginning and the fact that the USA has grown since 2021. This can potentially improve the US terms of trade further, especially if the import-competing sectors of the US economy grew more than the export-oriented ones. Figure 8 presents the case of a growing economy which does not experience immiserizing growth, that is, its terms of trade are improving as a result of the growth, not worsening. In this case, the terms of trade improve due to two factors: 1) the actual growth of the economy with a bias toward the imported good y, and 2) the effect of the import tariff imposed on x. Economic growth is likely to be biased, that is, the increase in a factor of production which a particular product is intensive in would affect the production of that product more than the other sector which is not intensive in the respective growing factor of production. An increase in a factor of production would not necessarily benefit all sectors of the economy. The sector whose intensive factor is increasing would expand while the other sectors would shrink to release productive resources and capacity for the growing sector. This again is consistent with the Heckscher-Ohlin model.

Figure 8. Improved terms of trade and the consumption position of a growing economy

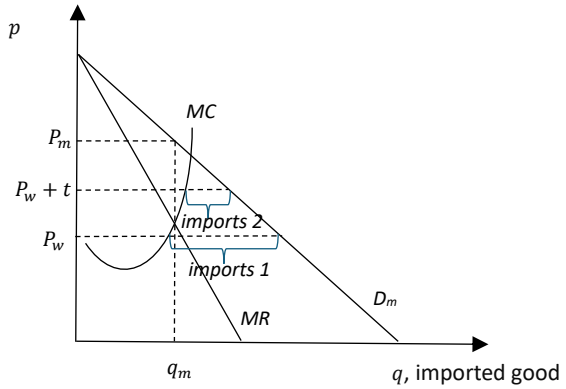


Source: the author

Furthermore, improved technology which expands the PPF of the country may not affect equally both sectors of the economy, the exports and imports. Technology may be more applicable to one of the sectors. In line with Krugman and Obstfeld (2003) we have shown previously that growth is rarely immiserizing: 1) the growing economy should be big enough to affect the world terms of trade, and 2) the relative demand for the product of the expanding industry should be highly inelastic in order for the terms of trade of the growing economy to fall dramatically (Todorova 2010). There are few such products traded in the world economy whose demand is highly inelastic (Todorova 2010). For the USA, which practices import tariffs, the consumption position improves because: 1) there is growth which moves the country to a higher community indifference curve, and 2) tariffs improve the terms of trade of the country which additionally betters the consumption position of the USA. In other words, both developments move the country to a higher community indifference curve and favor the nation.

We can hypothesize that the import tariffs were solicited by monopolies in the USA and could be the result of rent seeking. We already mentioned that the USA imposes import quotas on sugar and cheese from abroad to protect the domestic producers of these two products. Although they protect the local monopolists better than an import tariff, import quotas are extremely restrictive (Todorova and Kalchev 2015). The import quota transforms the consumer surplus into producer surplus for the importing quota rent holder and the domestic monopolist. At the same time, there is no revenue for the government. An import tariff is preferable to society than an import quota and brings revenue to the government while still protecting the monopolist. Figure 9 reveals how an import tariff protects the monopolist along his demand curve. The domestic monopolist would prefer banning foreign trade so that he can serve the entire market demand D_m. At this point his surplus would be maximum with the monopoly price being P_m and the monopoly output being q_m. However, in the conditions of free trade from a pure monopoly the domestic monopolist turns into a perfect competitor. Confronted with the world price P_w which is very low, he now has to take it as given and behave competitively. He produces an output level at $MC = P_w$, while the rest comes from imports. At the world price P_w the amount imported is *imports 1.* Seeking protection, the monopolist requests a tariff to the amount of t which increases the price for him to $P_w + t$. At this new price the monopolist still behaves competitively, setting his marginal cost equal to this new price but his production of the goods increases, while the imports from abroad shrink to *imports 2*. Although the tariff does not bring the monopolist to his monopolist position in the conditions of a closed economy, he still achieves bigger sales and a higher price with the tariff.

Figure 9. Protection of the monopolist by a tariff



Source: the author

Import tariffs do not protect domestic monopolies as well as import quotas (Krugman and Obstfeld 2003; Todorova and Kalchev 2015). However, they still act as a protective measure. In the absence of protectionism, the domestic monopolist behaves as a perfect competitor and takes the world price as given. This is a reason for domestic monopolies request protection from the government. Trump's tariffs favor monopolistic firms in the USA which still behave competitively under the import tariff but the price they take is now higher by the amount of the tariff. This increases their sales as a share of the domestic market against foreign competition and their profits, although not at the monopoly level.

Conclusion

The purpose of Trump's administration in imposing import tariffs is not only to reduce the US trade deficit. It has much broader, welfare effects and repercussions. A large nation can manipulate the world terms of trade to its favor. By imposing import tariffs on the rest of the world the USA can move to a higher community indifference

curve and better consumption position without the need to achieve economic growth. This puts the trading partners of the USA at a disadvantage and on a lower consumption point worsening thus their consumption position. Import tariffs also favor, to some extent, domestic monopolies and could be the result of rent seeking.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-Assisted Technologies

The author declares that she has not used generative AI and AI-assisted technologies during the preparation of this work.

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Global Ripple Effects of the Trump Tariff War on Trade, Economic Growth, and Inflation

Janardan Behera
Department of Statistics, Ravenshaw University, Cuttack, India
ORCID: 0000-0003-1277-7557 Researcher ID: janardan1991
janardanbeheragreetsyou@gmail.com

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Abstract: The United States' imposition of tariffs during the Trump presidency between 2018 and 2020 activated one of the largest trade disputes in recent economic history. This analysis studies the international ripple effects of the tariff actions on international trade flows, economic growth, and inflation across both emerging and developed economies. Utilizing a balanced panel dataset of 70 nations between 2015 and 2022, the analysis uses fixed effects as well as dynamic panel regression specifications to approximate the short- as well as medium-term trade contraction shocks that tariffs cause. The study demonstrates that increased tariff exposure significantly reduced world trade volumes, as well as considerably decreased GDP growth rates, yet at the same time, it caused weak yet persistent inflationary pressures through disintegrated supply chains and increased import costs. The study demonstrates the asymmetry of the effect, with developing nations experiencing higher exposure to trade contraction. The study demonstrates the wider macroeconomic costs of protectionist trade policies as well as the importance of revived multilateral cooperation to stabilize markets globally as well as achieve sustainable growth.

Keywords: Trump tariff war, global trade, economic growth, inflation, protectionism, spillover effects.

JEL Classification: F13; F14; F62; E31; O47; C33.

Introduction

The current re-emergence of trade protectionism is a notable departure from the post-war international economic consensus that supported free and rules-based trade. Perhaps the most influential development along these lines has been the United States, under the Trump presidency, imposing a series of tariffs in the years 2018–2020. The policies, enacted to correct perceived trade deficits as well as reinvigorate domestic manufacturing, triggered a cascade of retaliatory policies and global economic repercussions. The ensuing "tariff war" soon spread beyond the bilateral relationship between the United States and China to impact global supply chains, commodity markets, and macroeconomic performance within both developed and developing economies. The episode constitutes a timely as well as unique opportunity to study how extensively interconnected through trade as well as networks of production modern economies react to large-scale policy shocks. Against this background, the current study hopes to quantify as well as interpret the global ripple effect from the Trump tariff war, with particular emphasis being put on trade, economic growth, and inflation dynamics.

The intensification of trade frictions between the United States and several principal commercial partners during the period from 2018 to 2020 constituted a significant inflection point in the postwar trajectory of international economic engagement. Seeking to narrow the United States' trade deficit and shield domestic manufacturing constituencies, the Trump administration enacted a sequence of tariffs on imported steel, aluminum, and an extensive array of Chinese products. Although couched in the language of "fair trade" and national economic security, these interventions ultimately signaled one of the most pronounced departures from the established norms of open, rules-oriented commerce since the inception of the World Trade Organization (WTO). China, the European Union, Canada, and several other countries responded to the U.S. tariffs by imposing retaliatory tariffs on U.S. goods and services. This resulted in a vicious cycle of trade barriers that led to global market instability and created challenges for policymakers to manage regional policies. The series of tariffs demonstrated how fragile the current level of international economic dependence among countries is. The tariffs have implications that go far beyond

bilateral relations between countries; they also reflect the complexities of the current international division of labor based on the Global Value Chain (GVC). GVCs consist of complex networks of production processes where raw materials and intermediate products move internationally as part of a single production process, often being used in more than one country to produce finished products for consumption. In this context, the implementation of tariffs at these levels will disrupt these interlinked systems, raise production costs, and add new uncertainty to the strategic planning process of multinational firms that have relied on a predictable transnational flow of inputs. These disturbances affect not only the principal exporters and importers directly implicated in the tariff confrontation, but also peripheral economies integrated into the chains through intermediary trade. Commodity markets, logistical systems, and cross-border investment decisions all experienced discernible volatility during this interval, often manifesting in abrupt changes in expectations and risk assessments. In essence, the Trump-era tariff conflict provides a quasi-natural experiment for examining the interaction between restrictive trade policy and broader international economic performance.

In contrast to the restrictions on trade seen in the commercial policies of the 1930s or the policy shifts made in response to the post-oil price crises of the late 1970s, the tariffs of the 2018-2020s developed in an entirely new context created by the dense connections through technology between countries, the rapid, flexible nature of modern manufacturing processes, and the increasing integration of the world's financial systems. The tariffs were therefore a sudden, outside imposition into what had been until then an extremely open trading environment; they provided an opportunity to study the ways in which trade flows, the patterns of expansion in output, and the development of inflationary pressures changed from country to country in a variety of environments. In aggregate terms, the changes provide insight into the extent to which the current global economy has demonstrated resilience in sustaining the existing global economic structure while also demonstrating the subtle vulnerabilities in the highly interconnected global economic system, which are exposed under the effects of abrupt policy disruptions. In spite of the vast literature on the debate over Trump's tariff policies, most current research continues to be patchy and unidimensional. The vast majority of the literature has analyzed the bilateral relationship between the United States and China due to the importance of their trade relationship; however, viewing the tariff war solely as a bilateral issue ignores its implications within the systemic context. With the growing integration of the world economy, the spillover of trade restrictions cannot be contained within the borders of a nation. Tariff shocks imposed by one significant economy spread along the chains of supplies, transform commodity prices, and restructure investment flows across regions. In addition, current empirical studies are mostly focused on micro-level responses, including firm productivity, sectoral production, or consumer surplus, in particular economies. Although these are worthwhile efforts, they do not capture the macroeconomic implications that are enabled through trade interdependence at the global level. Second-order spillovers through diminished volumes of trade, inflationary impulses, and decelerating output growth in non-targeted nations continue to be incompletely gauged. This omission has implications that are most severe in developing economies that rely heavily on supply chains that operate internationally or commodity-based economies that export, where there is a potential for secondary spillovers to be deep and long-lasting. The lack of clear, cross-country evidence hinders us from understanding how spillovers of protectionist shocks from one area of the world spread throughout the remainder of the international system. Without it, policymakers will be prone to incorrectly estimating the size of spillovers to the international economy as a whole and will enact reactive policies that will exacerbate economic instability instead of lowering it. The world can therefore benefit from empirical data that put specific numbers on the international pass-through of spillovers from tariff shocks and evaluate the cumulative effect of such shocks through trade, growth, and inflation. The final motivation of the present study is to fill that gap. The primary goal of this study is to investigate the restructuring of the global economic landscape that resulted from the tariff measures introduced under the Trump administration with their spillovers on the execution of trade and economic output growth, as well as the inflationary trajectory. Treating the 2018-2020 tariff war as a large-scale policy experiment within the highly interlinked world economy, the study aspires to generate systematic empirical evidence about the extent as well as the nature of its international spillovers.

Specifically, the research is structured based on the following general purposes:

• **To estimate the global economic shocks of tariff shocks.** The study considers the impact of the rise in the tariff rates of the United States on international trade volumes, GDP growth, and consumer price index inflation among a general sample of countries. The study applies the panel data method to capture both the direct and the indirect effect imposed by the exposure to tariffs on the macroeconomic performance over time.

• **To study the heterogeneity across developed and developing economies:** Global economies differ significantly in the extent of structural trade reliance and industrial connectivity, as well as market responsiveness. The study accordingly separates the sample between industrial and emerging economies to see whether the size

as well as the length of the tariff impulse differs across levels of development. This dichotomy helps to ascertain the most impacted economies due to the protectionist impulse as well as why.

The study looks at three significant channels as well as the diffusion of tariff shocks around the globe: (i) the trade exposure channel, explaining reductions in export and import volumes. The analysis, therefore, will present researchers and policymakers with a greater comprehension of both positive and negative effects stemming from unilateral trade measures on the international economic system. The second purpose of the study is to contribute to active debates among economists and policymakers, as well as global organizations, on the question of whether free and open international trade can be maintained in the long term and whether the present international economic order can be preserved.

This extensive analysis is particularly topical in view of the expanding and increasingly urgent body of scholarship that places trade policy within the web of interlinked global macroeconomic relations. It does so by providing an empirical perspective on the intricate Trump tariff war and its ramifying, complicated effects around the globe. While there have been many studies that have thoroughly examined the domestic effects resulting from the tit-for-tat tariff increases, relatively few have taken the effort to understand its means of global transmission or have attempted to quantify its macroeconomic effects in most countries. By effectively addressing this notable gap in existing literature, the present work not only offers conceptual advancements but also provides empirical insights that deepen our understanding of the nature and magnitude of protectionist spillovers in an economy that is deeply interconnected on a global scale.

First, the study undertakes to construct an extensive and comprehensive cross-country dataset containing a composite set of seventy major economies between the years 2015 and 2022. This specific period falls within an array of distinct phases consisting of the pre-tariff period, the period of tariff imposition, and the immediacy following the pandemic and is important to grasp the interplay of global economic activity. Such clearly defined temporal and spatial coverage also ensures the uniform and systematic exploration of the interplay between trade constraints and aggregate economic performance across different macroeconomic settings. Also, the coverage, consisting of developed economies and emerging markets, ensures that this analysis properly accounts for the set of various asymmetries belonging to vulnerability and resilience and the different policy responses.

Second, the study presents an innovative and unprecedented measure of what tariff exposure is termed. This measure has been painstakingly constructed using vast and comprehensive data received by the United States Trade Representative (USTR) and the World Trade Organization (WTO). In contrast to simplistic tariff averages that might overlook important nuances, this index offers a more sophisticated approach, as it incorporates various factors such as product-level coverage and trade-weighted importance and also takes into account the relative dependence that each partner economy has on the markets of the United States. The resulting indicator that emerges from this methodology enables a far more precise and accurate assessment of the differences in exposure levels across countries to the tariff measures enacted by the Trump administration. Third, the research successfully bridges the enormous analytical gap that arises between international trade and the macroeconomic results by looking at the three most important aspects of international performance simultaneously, namely trade volume, output growth, and inflation. Existing research in the field has usually dealt with the said significant variables individually and independently of each other; however, it is vitally important to take cognizance of the fact that they are naturally interlinked within the parameters of an internationalized economy. Through the utilization of advanced and sophisticated fixed-effects models combined with dynamic panel regression frameworks, this paper effectively captures not only the immediate contemporaneous effects but also the subsequent lagged effects. It reveals more about the aggregate economic impact caused by tariff shocks.

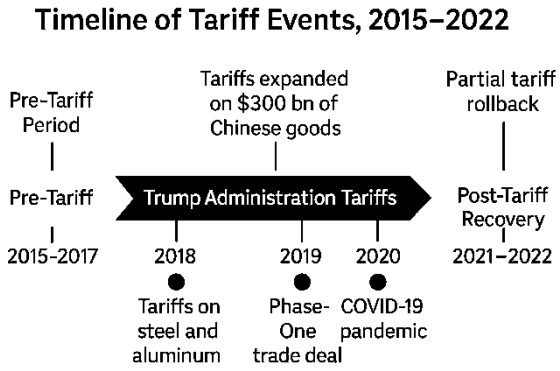
Fourth, this research significantly enriches and contributes to the available body of empirical evidence by carefully distinguishing between and quantitatively gauging the various routes through which tariff shocks diffuse and migrate through international boundaries from one country to the next. Such channels include the trade exposure channel, which specifically mirrors the disturbance that arises due to export–import linkage disruptions between nations; the commodity price channel, which accurately captures the readjustments that arise in input and energy markets due to these disturbances; and the inflation pass-through channel, which gauges the way costs are transmitted to final price levels domestically within various economies. Tracing these complex linkages helps to enrich the explanatory richness within global macroeconomic interactions to better understand how interlinked economies react to these kinds of external disturbances.

Ultimately, from the perspective of policy analysis, the research yields significant evidence-based observations that highlight the broader implications and consequences attached to protectionist trade policies. Most insistently, the research conclusively underscores the fact that unilateral tariff policies that are often framed with the ultimate goal of protecting local industries can end up inducing various costs globally. Such costs emanate from

reduced efficiency, increased market unpredictability, and the shifting of inflationary pressure to other frontiers. By carefully chronicling these intricate processes through the lens of empirical research, the paper is an important addition to various extant contemporary policy deliberations about the future trajectory of multilateral trade governance. Most importantly, it highlights the salient significance attached to building conjunctive frameworks to serve an integral purpose where long-run worldwide economic stability is considered.

Collectively, by examining all these different pieces, they together place the study at an important juncture where international economics and macroeconomic policy analysis intersect. This study not only builds upon but substantially enriches our empirical knowledge about the way shocks emanating from one large economy can potentially spill over across national boundaries to end up influencing the economic performance and the welfare on the world stage of countries themselves. To put the empirical investigation into clear context, Figure 1 depicts a timeline of major tariff interventions and related policy shocks between 2015 and 2022. The pre-tariff years of 2015–2017 are representative of a stable trade regime with no major tariff disturbances. In 2018, large-scale import tariffs on steel and aluminum were announced by the U.S. administration and thus began a period of heightened trade tensions. Further, the duties on more than USD 300 billion worth of Chinese goods in 2019 represented the peak of the tariff confrontation. This also coincided with important geopolitical and macroeconomic events such as the Phase-One trade deal and the onset of the COVID-19 pandemic in 2020, further adding to the volatility in supply chains. The years 2021–2022 reflect a partial rollback and stabilization period during which several tariff measures were reassessed or softened. The chronological mapping as a result helps set the empirical framework in which the dynamics of global trade volume, GDP growth, and inflation grow.

Figure 1. Timeline of Major Tariff Events, 2015–2022



The following sections of this document are structured to showcase progressive logical growth from theoretical justification to data confirmation and interpretation of policy meaning. Following the opening section, which outlines the study's rationale, objectives, and contributions, each successive section is carefully designed to progressively build on the previous one and thus sustain conceptual clarity and analytical rigor.

Section 1 is an in-depth survey of the available literature on international trade protectionism, international value chains, and the economics of tariffs. It brings together theoretical and empirical evidence from earlier research and determines the research gaps that spur the undertaking.

Section 2 addresses the theoretical framework upon which the research is grounded. It identifies the conceptual mechanisms by which tariff policies place influences on volumes traded, total output, and inflation and identifies the signs of these latter influences anticipated. Section 3 also places the study within the wider compass of the theory of the open economy and the macroeconomic.

Section 3 outlines the data sources, variable construction procedure, and the econometric methodology employed. Also included is a general discussion of the structure of the panel dataset, the construction of the tariff exposure index, and the econometric models employed to study the related links. Also covered are the diagnostic tests and the robustness checks to ascertain the validity of the results. Section 4 summarizes the reciprocal tariff.

Section 5 discusses and interprets the results. Descriptive statistics and the results of estimation and tests of robustness follow. Then an elaborate discussion on the effect of tariff shocks on international trade, the growth of the economy, and inflation by various economic types is provided. This section brings out the comparative impact between developed and developing nations and the examination of the significance of the transmission mechanisms. Section 6 discusses the policy implications derived from the empirical investigation undertaken. It evaluates the broad implications relevant to the determination of trade policies, the functioning of the multilateral

institutions, and strategies to moderate the macroeconomic consequences related to protectionism. This section links the accumulated results from the study to the dominant discussion about the management of the world economy.

Finally, Section 7 summarizes the document by pointing out the key results, highlighting key insights, and suggesting future research. The final section addresses the implications of the results for future international economic integration amid the rising trend towards protectionism.

1. Literature Review

Systematic and organized survey coverage of the theoretical and the empirical literature is equally important to understand the different ways through which the policies of tariffs affect the outcomes of the economy globally. In addition to this, it is also necessary to place the current study within the broad canvas of prevailing discussion and debate on international trade and interdependence at the macroeconomic level. The literature that addresses trade theory and protectionism has progressed over decades and has undergone considerable transformation from the classical concepts revolving around comparative advantage to more recent models. Modern models indicate critical aspects involving economies of scale, differentiation of products, and the complex production networks at the global level. The theoretical basis developed within this literature is essential to appropriately understand the various ways through which tariffs can affect efficiency, welfare, and growth within different economies.

The empirical dimension of the existing body of literature, in stark contrast to other areas, has placed a significant emphasis on the quantification and assessment of the tangible effects that trade restrictions impose on various factors, including prices, output, and overall welfare. This assessment has been undertaken using partial equilibrium models alongside general equilibrium strategies and has provided an overarching perspective on the process. Most recently, academic studies that have come to the fore following the Trump tariff episode that ran between 2018 and 2020 have remarkably broadened this discussion and added considerable insight and knowledge about the intricate processes through which these protectionist shocks can propagate and diffuse beyond national frontiers. In this context, studies carried out by prominent international organizations such as the International Monetary Fund (IMF), the World Bank, and the World Trade Organization (WTO) have been complemented by academic analyses conducted by institutions like the National Bureau of Economic Research (NBER) and featured in leading economics journals; together, they have meticulously examined both the direct and indirect consequences arising from the ongoing tariff war. However, despite these worthwhile additions to the literature, the available research still manifests its highly fragmented character that differs greatly along different methodological strands and geographic coverage. Most academic research that has been written to date is mainly concerned with bilateral trade links, particularly those between the United States and China, with comparatively little attention directed towards learning how these trade policies ultimately affect the larger worldwide system on the whole. These interactions between tariffs, aggregate demand, price levels, and long-run growth are often studied individually and not recognized as an interlinked family of macroeconomic processes that feedback on each other. Furthermore, not many studies have bothered to combine the study of trade patterns, inflationary processes, and output levels within an internally consistent and unified data structure that employs cross-country data to gain a more complete perspective.

Based on the outline provided, this section undertakes an intensive review of the available body of literature in four different dimensions. Section 1.1 explores the theoretical basis that undergirds the notions of trade and protectionism, painstakingly tracing the manner by which classical and new trade theory conceptualize the outcomes related to efficiency and the welfare consequences that emanate from the imposition of tariffs. Section 1.2 integrates a set of various empirical results emanating from the key studies undertaken on the Trump tariff war and its collateral episodes relating to protectionism, with special attention directed towards the spillover consequences on the worldwide front that these measures have generated and the inflationary dynamics that these measures have witnessed. Section 1.3 identifies and underscores the key deficiencies that exist within the available versus the required literature and serves to inspire and inform the direction of the extant research undertaking, wherever applicable. Section 1.5 draws attention to the manner by which the extant study advances the extant undertaking by virtue of its novel multi-country aspect and its macroeconomic orientation. Taken together, these expositions serve to create the strong scholarly backdrop on the basis of which the analytical structure and the econometric model to be developed and analyzed subsequently shall be grounded.

1.1. Theoretical Foundations

The theoretical foundations behind international trade are important because they give us a comprehensive framework to help further our understanding of the significant implications tariff interventions can have on all things

from production quantities to total welfare and the overall macro-economy. Over the last couple centuries, trade theory has dramatically changed; the process has moved from classical and neoclassical theory to more recent models that combine elements of imperfect competition and the intricacy of the global value chain. This has shaped economists' knowledge not only about the gains related to openness at the economic level but also the negative impacts related to protection policies. Furthermore, the different theoretical frameworks are also crucial to understand and analyze the ways major policy disturbances, such as the tariff plans implemented by the Trump administration, resonate and transmit through the highly connected international economy.

The intellectual genesis and roots of trade theory can be attributed to classical works by two renowned economists, namely Adam Smith and David Ricardo, whose writings provided the basis to understand international trade. Smith's principle of absolute advantage pointed to the fact that countries can greatly gain by specializing in the production of goods where they are more capable of producing efficiently compared to others, which subsequently generates an increase in world output and brings about mutual prosperity among countries (Smith, 1776). Ricardo, however, further developed this first line of reasoning through his principle of comparative advantage, where he demonstrated that although a country is less efficient at producing each kind of good compared to others, mutually advantageous results can be achieved by trade if each country specializes along the lines of relative production efficiency (Ricardo, 1817). Such seminal insights together provide the normative basis to the notion of free trade that trade openness brings about a more efficient allocation of resources and maximizes welfare for the common benefit of the entire set of actors.

The refinements related to neoclassical economics that were most centrally championed by economists Heckscher and Ohlin contributed substantially to the prevailing classical theory through the introduction of the notion of the endowments of factors to serve as the determining bases that affect comparative advantage (Heckscher, 1919; Ohlin, 1933). Under the Heckscher-Ohlin (H–O) model paradigm, it is argued that nations will tend to export goods that extensively use their abundant production factors and at the same time import goods that rely on factors that are relatively scarce within the corresponding economies. Additionally, the aspect of tariff protection within the equation results in the distorting of the relative prices and the allocative efficiency of resources, thus eventually bringing down the welfare within the entire globe. According to the Stolper-Samuelson theorem, an added perspective is provided where it is shown that tariff imposition not only changes the relative returns to various production factors but also yields gains to the owners of the protected production factors and at the same time reduces the real incomes of other economic groupings (Stolper and Samuelson, 1941). All these classical and neoclassical theories of the economy serve to highlight the fact that although, on the surface, protectionism renders short-run gains to specific interest groupings within the economy through its various implications within the economy, it always results in the suffering of efficiency losses due to its consequences on the entire economy and results in the depletion of the overall welfare in the long run.

While classical economic models and the Heckscher-Ohlin (H–O) model successfully capture the fundamental roles of technology and factor endowments in international trade theory, they ultimately fail to provide a satisfactory explanation for the considerable volume of trade that occurs among economies that are quite similar in nature. The arrival of the new trade theory (NTT) during the late twentieth century, which was significantly advanced by the work of Krugman (1979, 1980), brought forth critical concepts such as increasing returns to scale, monopolistic competition, and the importance of product differentiation as essential factors that determine patterns of trade between countries. Within this newly established framework, the process of trade liberalization enables firms to take full advantage of economies of scale, thereby facilitating the expansion of product diversity available in the market and ultimately leading to enhanced welfare for consumers. On the other hand, the implementation of tariffs tends to constrict the size of the market, which in turn limits the potential efficiency gains that firms could achieve, and it also results in elevated average production costs. This combination of factors serves to undermine both innovation and the overall growth of productivity within the economy.

Subsequent advances within the new economic geography (NEG hereafter) literature by Krugman (1991) and Fujita et al. (1999) embedded and added spatial considerations within various trade models. These remarkable additions illuminate the way that transportation costs and agglomeration forces determine the optimal location of production activity. Models framed within this study evidently demonstrate that quite modest trade barriers can cause considerable geographic redistributions within industry configurations and investment streams and thus the potential strengthening and weakening of dominant production centers globally. During the twenty-first century thus far, what has been witnessed is the development of what has come to be called the global value chain (GVC) paradigm by scholars such as Gereffi (2018) and Baldwin (2016). Under the models of GVCs, what is remarkable is that the intermediate inputs travel across national frontiers on many occasions before ending up on the shelves of the final consumers, thus building complex interlinkages between various economies through complex production

networks that are highly interconnected. Herein, the tariffs can be described as representing some sort of shock that not only reduces the volumes of bilateral trade between nations but also causes disruptions along the various supply chains, leading to the escalation of costs along the production units that exist downstream around the world. By virtue of these processes, the welfare loss that is related to protectionism, especially considering the perspective grounded on the interdependence along the GVCs, can take the shape of the shock and get disproportionately magnified compared to what the previous trade models would have anticipated. Such an aspect has massive implications for understanding the various mechanisms of transmissions that characterize the Trump tariff war, where tariffs levied on intermediate goods such as electronics, steel, and machinery have generated outcomes in the production structure that span far beyond the United States and Chinese frontiers.

The theoretical foundation for protectionism has always been based on a range of claims, most notably the infant industry argument (List, 1841), national security considerations, and strategic trade theory in oligopolistic industries (Brander and Spencer, 1985). Although these claims suggest limited instances where protectionism can raise the welfare level of the nation, the common view held among mainstream economists is that the long-run cost outweighs any short-run gain. At the partial equilibrium level, introducing tariffs causes higher prices domestically, consumer surplus to fall, and breeds deadweight losses through production and consumption misallocation (Corden, 1974). At the more general equilibrium level, tariffs cause distortions in the determination of the allocation of relative prices, lower efficiency, the reshuffling of income distribution, and losses to world welfare.

Recent developments within the scope of macroeconomic theory provide further evidence indicating that the imposition of tariffs on intermediate products generates high production costs within industries relying on these inputs, particularly those that are downstream within the production chain. Such an increase in costs thereby lowers the long-run competitiveness of these sectors and can lead to the decline of employment opportunities (Grossman and Helpman, 1995). Furthermore, open-economy models that encompass flexible exchange rates predict that currency appreciation could alleviate some of the damage caused by the tariffs; however, it is important to note that currency appreciation can also cause price spillovers on an international level and thereby manifest its other economic implications (Obstfeld and Rogoff, 1996). Furthermore, uncertainty about future trade policy, whether an increase within existing tariffs or the potential abolition thereof, can greatly deter private investment and thereby retard the growth rate of productivity within the affected industries. Such various mechanisms cumulatively signify that protectionist policies not only cause adverse dynamic consequences but also manage to spill over far beyond the immediate budgetary or trade targets that might initially encourage such policies.

The theories explained in the earlier sections give valuable insights into how tariff shocks blow out through myriad channels and sooner or later reshape the complex web of the global economy. First and foremost, it would be apt to highlight the fact that tariffs have the inherent ability to substantially restrict trade flows, largely by increasing the costs of imports and consequently disrupting the relative prices prevailing between domestic and foreign goods. Once the imposition of such duties occurs specifically upon intermediate goods, the impact spreads even further and wider, as they extend beyond national borders through complex networks of global value chains, consequently expanding disruptions throughout each and every step of the production cycle. At the same time, the buildup of input costs feeds through into prices faced by consumers, which gives rise to the formation of inflationary pressures and, at the same time, slows down both output and investment ratios. This dual impact, defined by increasing prices occurring simultaneously along with weakened economic growth, often gives rise to macroeconomic imbalances, which are challenging, if not impossible, to rectify even in the short term. Moreover, operating in an era where the world remains exceedingly interconnected through complex production and trade networks, it becomes indispensable for us to comprehend the fact that the welfare losses arising as a consequence of the pursuance of protectionist policies are far from isolated to the nation initiating same. However, these negative effects radiate outward, and they give rise to the dilution of both efficiency and stability throughout the entire global economic complex. These rudimentary concepts are the conceptual foundation of the current study, the latter of which seeks to empirically examine and codify the impact of the Trump tariff war upon the dynamics of international trade, economic growth, and inflation throughout numerous nations of the globe.

1.2. Empirical Studies on Trade Wars and Tariffs

The tariff episode that occurred between 2018 and 2020 has been the focus of much empirical research on its important economic effects, particularly on various outcomes related to prices, trade flows, welfare, and overall macroeconomic impacts. Early contributions were able to put numbers and emphasis upon the manner in which U.S. tariffs not only increased the prices of imports but also inflicted significant welfare costs upon domestic consumers and firms doing business within the United States. Based upon highly detailed, transaction-level data relating to U.S. imports, Amiti et al. (2019) reveal that the imposition of tariffs meant the domestic prices of affected

products increased while, concomitantly, measurable welfare losses were visited upon U.S. consumers and producers active within the market. Subsequent studies by the same authors went on to both build upon and extend these initial results, showing how much of the tax levied by the tariffs was passed on to US importers and consumers within the short term (Amiti *et al.* 2020).

Some of the broader general-equilibrium studies by Fajgelbaum et al. (2020) examine the effects of the return of protectionism and pay particular attention to the measurement of both aggregate and region-specific effects stemming from the imposition of U.S. tariffs and matching retaliatory action by others. Based on the present studies, the results uncover large reductions in bilateral trade flows, along with significant welfare losses, estimated to be particularly severe among those industries most dependent upon imports. In addition, this detailed study draws strong attention to the importance of taking into account not only the direct impact of tariffs but also the subsequent retaliatory action so as to comprehensively estimate the economic toll of a tariff war.

Global institutions have made detailed evaluations concerning the macroeconomic effects that stem from heightened trade tensions between countries. The World Economic Outlook of the International Monetary Fund issued in October 2020 noted with strong emphasis the fact that the presence of high trade barriers and significant policy uncertainty had played an indispensable role in helping to cause the weakening of international trade and the less favorable growth prospects between the years 2019 and 2020, and this has also negatively interacted with the economic disruptions emanating from the COVID-19 pandemic (International Monetary Fund, 2020). Furthermore, complementary studies issued by the World Trade Organization have detailed fully the fact that the expansion of merchandise trade virtually stalled in 2019 and have presented the means by which both tariff and non-tariff interventions have played key roles through helping to bring into place a trade environment characterized by increased uncertainty and unpredictability (World Trade Organization, 2020a, b). Some of the other empirical contributions proceed to analyze the price pass-through, firm-level responses, and the adjustments associated with all the supply chains. Studies undertaken both at the firm level and the sector level demonstrate the existence of heterogeneous effects among the various industries. This happens most predominantly for the producers of intermediates, where imports are most prominent, and the producers are most affected by the rise in costs brought by the imposition of tariffs (AmitiReddingWeinstein2019, AmitiReddingWeinstein2020). Furthermore, the cross-country reports and case studies offered by the trade agencies, foremost of which include the Trade Policy Agenda and the Annual Report of the United States Trade Representative, provide an excellent policy chronology together with specific product coverage. These data are most useful when creating indices of tariff exposure (Office of the United States Trade Representative (USTR), 2020).

Considering the aggregate body of empirical literature, it paints a remarkably well-defined and uniform picture: the tariffs implemented under the Trump administration increased the costs of trade, reduced both bilateral and multilateral trade flows, and consequently, caused welfare losses. Furthermore, the tariffs generated heterogeneous distributional and inflationary effects, and these varied throughout different countries and industries. However, most of the existing research so far has either focused predominantly on the United States' perspective or on the bilateral trade relationships. Thus, little attention has been given to broad-based, multinational-spanning panel estimates of the effects of tariffs on trade volumes, aggregate economic growth, and inflation rates. To this end, the current study makes an effort to supplement these useful empirical findings while, at the same time, extending the scope of the analysis to cover a broad panel of countries and making explicit links between the tariffs and the macroeconomic inflation dynamics.

1.3. Gaps in Existing Literature

While the empirical evidence on the 2018-2020 tariff episode has increased exponentially, there are three significant gaps that inspire the current study. First, most of the good-quality empirical evidence focuses on bilateral or single-country approaches, frequently targeting the United States or the United States-China partnership. Iconic contributions have revealed the incidence of tariffs on domestic prices and the prospective welfare loss for US consumers and firms (Amiti *et al.* 2019; Fajgelbaum *et al.* 2020), but the focus is largely national or bilateral. Therefore, there is little systematic evidence concerning the spread of tariff shocks through the interlocking networks of international trade and production links among a sizable panel of countries. This gap inhibits us from measuring the total international transmission of protectionist disturbances and contrasting inter-country heterogeneity of exposure and results.

Second, while several studies document price pass-through and tariff incidence at the border and at retail (*e.g.*, demonstrating substantial short-run pass-through into import and consumer prices), the connection between tariffs and aggregate inflation dynamics across countries has received less consistent attention. Research by Cavallo et al. (2021) and related contributions has illuminated how tariffs affect import and consumer prices in the

originating country (Cavallo *et al.* 2021), and other work has emphasized supply-chain linkages affecting exports and production (Handley *et al.* 2022). Yet, a comprehensive cross-country assessment that links tariff exposure to national inflation measures, accounting for exchange-rate adjustments, dominant currency pricing, and second-round effects via global value chains, remains underdeveloped. Filling this gap is critical for understanding whether tariff shocks produce only localized price effects or broader inflationary pressures that complicate macroeconomic policy making. Third, while several influential works estimate short-run effects (2018-2019) based on microdata or country-level models, few unified, medium-term, cross-country studies spanning the pre-tariff, tariff, and early post-tariff periods exist, using the same empirical approach. The tariff episode coincided with other significant global shocks (most prominently the COVID-19 pandemic), making it hard to disentangle and draw inferences within narrow empirical approaches. Prior work has developed approaches to identification and firm-level measurement, but few panel-based macro methods exist that estimate, simultaneously, effects on trade volumes, GDP growth, and inflation across a wide panel of economies. This would permit controlling for shared global shocks, exploiting cross-country variation in tariff exposure, and evaluating persistence and heterogeneity in outcomes.

Briefly, though the literature successfully demonstrates that 2018-2020 tariffs increase trade barriers and generate welfare losses in the economies under direct observation (Amiti *et al.* 2019; Fajgelbaum *et al.* 2020; Cavallo *et al.* 2021; Handley *et al.* 2022), it falls short of providing an exhaustive, cross-country, panel-data macroeconomic quantification of multilateral spillovers and inflationary transmission. These shortcomings are addressed in the current study by embracing a panel-data methodology for a broad set of countries, by creating a trade-weighted tariff exposure index, and by modelling the concomitant dynamics of trade, output, and inflation explicitly and controlling for simultaneous global shocks.

1.4. Summary Table of Literature

Table 1. Summary of key recent empirical studies on tariffs, trade wars, and macroeconomic effects.

Reference	Key focus	Main findings/conclusions
Amiti, Redding & Weinstein (2019). (Amiti *et al.* 2019)	Import prices, tariff incidence, consumer welfare (U.S. focus).	The paper uses transaction-level import data to document the nearly complete pass-through of the 2018 U.S. tariffs into duty-inclusive prices and estimate welfare losses to U.S. consumers and firms.
Amiti, Redding & Weinstein (2020). (Amiti *et al.* 2020)	Longer-term tariff incidence and adjustment.	This research builds on previous research to examine these tariffs in the medium term and is revealing ongoing price effects and adjustment mechanisms for both firms and consumers.
Fajgelbaum, Goldberg, Kennedy & Khandelwal (2020). (Fajgelbaum *et al.* 2020)	Aggregate and bilateral welfare effects of the 2018–2019 tariff escalation.	A general-equilibrium analysis estimates large reductions in bilateral trade, full pass-through for uniquely targeted products, and welfare losses that are sizeable and concentrated in import-intensive sectors.
Cavallo, Gopinath, Neiman & Tang (2021). (Cavallo *et al.* 2021)	Tariff pass-through at border and retail prices using microdata.	Micro evidence reveals that U.S. tariffs had high border pass-through rates and that there is heterogeneity in the effects at the downstream retail level; pass-through of import prices is greater than pass-through of exchange rates for affected goods.
Handley, Kamal & Monarch (2022). (Handley *et al.* 2022)	Supply chain exposure: import tariffs and export growth.	Empirical evidence shows that firms/products most exposed to increased import tariffs have a loss in export growth, reinforcing how import barriers are passed through into lower export growth through contemporary supply chains.
Furceri, Hannan, Ostry & Rose (2020).	Tariffs and long-run growth: panel evidence (multi-country).	Utilizing five decades of panel data, the authors provide evidence that tariff increases result in sustained declines in output growth, with heterogeneous impacts on types of countries.

Reference	Key focus	Main findings/conclusions
Furceri, Hannan, Ostry & Rose (2022).	Macroeconomic dynamics after tariff changes (impulse responses).	Local-projection estimates suggest that tariff hikes would lead to a decline in output and productivity over the medium term and higher unemployment and higher inequality while leading to external macro risks from protectionism.
Bown (2021).	Comprehensive mapping and policy chronology of the U.S.–China trade war (Phase One).	Includes measurements that detail policy instruments (tariffs, exclusions, and other measures), timing of measures, and extent of coverage by tariff measures, and serves as the primary resource for measuring tariff exposure indices.

1.5. Distinctiveness of the Current Study

A careful and detailed survey of the prevailing body of theoretical and empirical literature demonstrates that the vast majority of studies relating to the episode of tariffs experienced between 2018 and 2020 have largely considered only the domestic or bilateral effects of the episode. Nevertheless, this strand of investigation has tended to neglect the broader, all-encompassing effects of the kind that may emerge due to the implementation of this type of trade policy. This trend stands diametrically opposite to the present study, which pursues an integrated and broader approach by applying the cross-country angle of view. Adopting this angle of view makes it possible to consider, through detailed observation, the interlinked reactions associated with trade, outputs, and inflation, all of these considered through the same all-inclusive analytical perspective. Through this detailed analytical endeavor, the study, apart from providing new empirical evidence, brings forth new methodology, through which the scope and the intensity of the study are far broader and longer than the precedent. Through this, the study makes an informative and meaningful addition to the prevailing discourse.

To begin, it is essential to highlight the fact that this study openly links tariff policy and three of the most important macroeconomic outputs, which are mutually interconnected, namely the level of international trade, the rate of growth of real GDP, and the rate of consumer price inflation. Earlier studies have tended to consider these economic outputs individually, often focusing on aspects of the trade balance or welfare measures independent of trade dimensions. This study, by using the same panel-data structure to estimate their mutual interdependence, effectively conveys the complex inter-organizational manner by which tariff shocks are able to impact numerous aspects of economic life simultaneously. This broad-based approach both better conveys the nature of the relationships between the business cycle and protectionist policy and helps to illuminate the dynamics of inflation set against the backdrop of an increasingly integrated world economy.

Considerable effort has gone into the creation of the Tariff Exposure Index. This index is constructed using product-level and partner-specific information made public by the U.S. Trade Representative (USTR) and the World Trade Organization (WTO). This index not only calculates the average tariffs applied but also integrates the trade-weighted exposure, thereby determining the extent of each country's exposure to tariffs imposed by the U.S. Its use in multi-country settings allows for effective cross-national comparisons. Furthermore, it plays a crucial role in bridging the methodological divide that has often characterized earlier analyses focused solely on single countries or specific sectors.

It therefore captures the relative susceptibility of each nation to the United States' actions on tariffs. Application of this index within the multinational context, therefore, finds especial importance, since it makes feasible and, better still, proper cross-country comparisons. Secondly, the application of this index fulfils the key role of overcoming the methodological divergences that have frequently been the hallmark of pre-existing studies limited strictly to single-nation or single-industry bases. Moreover, the incorporation of lagged variables enhances the analytical capability, enabling the analysis to reveal not only immediate effects but also delayed impacts, thereby offering a significantly clearer understanding of how tariff shocks develop and unfold over time. The chosen timeframe for this analysis, 2015–2022, is also an important analytical advantage. The selected timeframe not only encompasses the peak of the tariff war but also reflects the early phase of post-pandemic recovery, which enables a clearer separation of distortions due to a variety of trade policy interventions and those resulting more broadly from the global disruptions of a pandemic associated with COVID-19. By providing longer temporal coverage, the study is able to give invaluable signals that are useful towards identifying whether the effects of the tariff war are

only temporary by nature or have, instead, induced lasting structural shifts that are continuing to shape the dynamics of the world economy even to the present day.

In the econometric methodology aspect, the project applies a hybrid methodology of fixed-effects and dynamic panel estimation specifically to control and account for unobserved heterogeneity, temporal dependence, and the potential indigeneity of tariffs and economic outcomes. This designed methodology-based process exceeds simplistic descriptive or simulation methods, thus providing a stronger basis for more robust causal interpretation of the data. Ultimately, this broad-based study frames its key findings within the broader and more sophisticated discourse relating to the resilience of trade and the crucial role of multilateral cooperation. Being different from the bulk of earlier studies, which have largely concentrated on the micro-level studies or the bilaterally oriented perspectives, this specific study significantly contributes to the discussion through the provision of the macroeconomic and policy-informed understanding of the complex dynamics involved. Through the careful measurement of the significant broad-based effects emanating throughout the globe due to the Trump tariff war, it effectively exemplifies the reality of the costs of the enforcement of unilateral protectionism extending beyond national borders, thereby highlighting the key necessity of coordinated international interventions towards effectively maintaining both the globe-wide efficiency and steadiness of the interconnected world economy. Taken together, these unique characteristics highlight and accentuate the novelty and originality of this study both in terms of its broad-based scope and methodological intensity. This study accomplishes and fulfills an intrinsic gap presently present within the current body of literature by providing an exhaustive and internationally integrated, data-based evaluation that analyzes the impact of a modern episode of protectionism on various aspects such as trade, economic growth, and inflation across interlinked economies worldwide. In all subsequent sections we will build on this firm's foundation by outlining the theoretical framework, the data construction process, and the empirical method that serve as the basic framework for the thorough analysis included in this document.

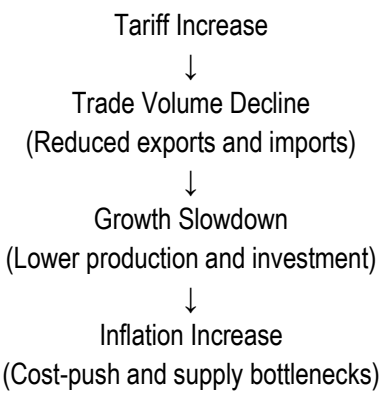
2. Theoretical Framework

The global tariff escalation from 2018 to 2020 presents a natural experiment to understand how protectionist trade policies are transmitted through macroeconomic channels. In this section we articulate the conceptual mechanism and analytical framework that form the foundation of the empirical. The framework draws on open-economy macroeconomics and trade theory to describe the relationship between tariff shocks, trade volumes, output growth, and inflation dynamics in interrelated economies.

2.1. Conceptual Mechanism

In order to understand the macroeconomic impacts of tariff shocks, we need careful specification of the causal mechanisms by which protectionist measures are transmitted around the world. At the most basic level, tariffs change the relative prices of traded goods and services and the quantity and composition of international trade. These changes then influence decisions over production, income, and the price level. In a world economy, these effects do not occur only in the first economy, nor do they occur instantaneously; they pass through connections of supply chains and financial links. When tariffs are implemented, importers, whether direct or indirect to the consumer, are obliged to pay higher prices on the consumption good or inputs.

Figure 2. The process of nested impacts



Exporters, on the other hand, contend with lower foreign demand, as trade partners may retaliate or source inputs from other countries. Lower trade volumes reduce the gains from specialization, restrict access to intermediates, and reduce productivity, which leads to a slower rate of output growth. Higher prices for imported goods also then

push domestic prices directly, and shortages exacerbate cost-push pressures on prices from producer prices. The effect is a slower economy and higher inflation, what is commonly referred to as a "stagflationary" response to protectionism. This process of nested impacts can be presented schematically in Figure 2.

In this framework, the Trump tariff war is viewed as an exogenous policy shock that propagated through three principal channels:

i. **Trade channel:** Higher import duties directly reduce trade volumes and alter the direction of international flows.

ii. **Production channel:** Disrupted supply chains increase input costs and limit firms' productive capacity, decelerating aggregate output.

iii. **Price channel:** Increased input prices and reduced competition increase domestic prices, creating inflationary pressures.

The interplay of these channels generates the conceptual base of the present analysis. The following subsections will validate this intuition into a laconic analytical model that directly represents the relationship among tariff exposure, trade, growth, and inflation in an open-economy context.

2.2. Analytical Model

From an aggregate supply perspective, tariffs on imported goods and intermediate inputs increase production costs, shifting the short-run aggregate supply (SRAS) curve upward. Trade deficits can reduce employment as well as investment. As discussed above, when there are fewer foreign assets than liabilities, then there will be fewer jobs created domestically due to a decrease in investment. The new equilibrium has a lower level of output and a higher price level, as it would arise under stagflation. We can depict this mechanism in the inflation function:

$$P_i = g(T_i, Y_i, Z_i), \frac{\partial P_i}{\partial T_i} > 0, \ \frac{\partial P_i}{\partial Y_i} < 0 \tag{1}$$

The equation (1) describes both direct cost-push inflation that arises from tariffs and indirect effects occurring from a lower amount of output in the economy. The negative derivative with respect to Y_i depicts the negative relationship that exists between economic slack and price pressure in the short run.

Integrated Open-Economy Equilibrium: The open-economy equilibrium can thus be described by a system linking Eq. (1), where the simultaneous determination of M_i, Yi, and P_i reflects feedback effects between trade, output, and inflation. The tariff increase graphically results in a shift of the aggregate supply curve to the right and an outward shift of the aggregate demand curve, resulting in a new equilibrium where total output falls and price rises. Formally:

$$Tarrif\ Shock \Rightarrow \begin{cases} AD: C + I + G + (X - M)\downarrow, \\ SRAS: Increases\ due\ to\ higher\ costs, \\ \Rightarrow Y_i^* \downarrow, P_i^* \uparrow . \end{cases}$$

Implications: In the analytical model, there are three qualitative implications that can be expected to hold: (i) tariff shock reduces international trade volume; (ii) reduced trade volume and increased cost reduce output growth; and (iii) increased cost of imports and supply disruption increase price level or inflation. From these qualitative expectations, we have established several testable hypotheses as outlined in the next section on empirical estimation in Section 4. We estimate these effects at the country and time levels using panel-data estimations.

2.3. Expected Signs of Effects

In addition to building upon the analytical framework established in the previous section, this theoretical relationship of tariffs, trade volume, real GDP growth, and inflation can be summarized by the expected qualitative impact of each variable. The expectations stated above represent the prior hypotheses of the empirical estimation to follow. The direction of each relationship is derived from standard open-economy macroeconomic theory and the partial derivatives presented in Eq. (1).

The theoretical expectations in Table 2 are a benchmark for interpreting the coefficients in the empirical sections following this section of the article. In particular, the model predicts that higher tariff exposure (T_i) will:

i. Lead to reductions in international trade volumes (M_i),
ii. Lead to reductions in real GDP growth (Y_i) due to reductions in efficiency and supply-chain disruptions,
iii. Cause inflation (P_i) to rise via cost-push and import-price mechanisms.

Table 2. Expected qualitative effects of tariff exposure on key macroeconomic variables

Variable	Expected Effect of Tariffs	Underlying Economic Rationale
Trade Volume (M_i)	↓ Negative	Higher import duties raise trade costs and discourage cross-border exchange, leading to reduced exports and imports.
GDP Growth (Y_i)	↓ Negative	Constrained trade activity and higher production costs reduce investment efficiency, productivity, and aggregate output.
Inflation (P_i)	↑ Positive	Increased import prices, cost-push pressures, and supply disruptions elevate domestic price levels.
Employment (L_i)*	↓ Negative	Slower output growth and weaker export demand lower labor demand, increasing unemployment risk.
Current Account Balance (CA_i)*	Ambiguous (↑/↓)	Short-term import compression may improve the balance, but retaliatory tariffs and weaker competitiveness can offset potential gains.

Notes: The arrows indicate the direction of expected change resulting from an increase in tariff exposure (T_i). Variables marked with an asterisk (*) are ancillary outcomes not directly modeled but often affected by trade shocks in open-economy settings.

The most important point is that the effect of tariff escalation is to reduce economic growth and increase inflation. This is consistent with the stagflation result from Section 2.1. We will empirically test our qualitative predictions in the next section, *i.e.*, Section 3, by analyzing cross-country panel data.

3. Data and Methodology

In addition to the development of the theoretical foundation of the analysis outlined within Section 3 of this dissertation, this section describes the methods employed to construct the variables from the various data sets and to empirically estimate the magnitude of the tariffs' impact on worldwide macroeconomic trends. The empirical model employed to estimate the impact of tariffs was developed using the combination of two international databases containing the country-level exposure to tariffs and macroeconomic data related to production, trade, and price indices for a large number of countries. As such, by estimating the relationships between these three variables using panel data models and thereby accounting for both the time and cross-sectional dimensions of the tariff-growth-inflation relationship, the empirical work was designed to provide insights into the cross-sectional heterogeneity as well as the time series dynamics of the tariff-growth-inflation relationship. The empirical analysis employed an unbalanced panel of 70 countries over the period of 2015-2022; specifically, the panel included the three phases of the tariff war, *i.e.*, the pre-tariff or base period (2015-2017); the escalation of tariffs (2018-2020); and the post-pandemic recovery phase (2021-2022). The use of these three phases allowed for the study to examine both the direct and short-term impacts of the imposition of tariffs and the persistence of the tariffs' macroeconomic implications after the tariffs had been removed and during periods of pandemic-related disruption. All G20 nations, most major OECD nations, and key emerging market economies in Asia, Africa, and Latin America are represented among the 70 countries that comprise the empirical sample. The inclusion of these countries provides the means to compare how both developed and developing nations respond to protectionism in their respective national economic systems. Data were available for each of the 70 countries in the empirical sample, and these countries have a high degree of trade with the U.S., which is the primary nation involved in the escalation of tariffs in 2018-2020. Four main data sources are utilized: (1) tariff and trade policy information from the United States Trade Representative (USTR), the World Trade Organization (WTO), and the World Integrated Trade Solution (WITS); (2) macroeconomic indicators such as GDP growth and inflation from the International Monetary Fund's World Economic Outlook (WEO); (3) additional macro-structural variables, including trade openness and oil prices, from the World Bank's World Development Indicators (WDI) and the OECD databases; and (4) global commodity price series from UNCTAD and the World Bank's commodity outlook. This part of the document describes the four-stage process. In detail, Section 4.1 discusses the documentation of the data. Section 4.2 specifies each variable, defines their measurement, and gives the sign each variable and measurement was expected to present in theory. Section 4.3 outlines the econometric model by describing the relationships the various variables have, the panel specification, and the framework of the estimation model. Lastly, Section 4.4 focuses on the estimation methods: the fixed and random effects models, the dynamic-panel extensions, and the

various diagnostic procedures that test the model for robustness. These components, in total, generate a coherent and transparent empirical process that restructures the efforts aimed to explore the theoretical propositions of the document's Section 3.

3.1. Data Sources

This study's empirical analysis VPNs data from various reputable global databases that provide uniform, comparable, and recent data on tariffs, trade, and macroeconomic indicators. Each source was chosen to obtain complete cross-country and cross-sequence data coverage and to obtain correct variable data for measuring the global impact of the 2018–2020 tariff escalation. The period of the study is from 2015 to 2022, including the pre-COVID, tariff-initiated, and post-COVID production of the global economy.

a) Tariff Data: Tariff measures originate from three supporting sources: the Office of the United States Trade Representative (USTR), the World Trade Organization (WTO), and the World Integrated Trade Solution (WITS). The USTR offers thorough product disaggregation of the customs tariffs that the US enforces under Section 301 of the Trade Act of 1974, along with commodity lists, tariffs, and dates of enforcement. This trade database has been employed to ascertain the volume and timing of the Trump administration's tariff actions. The WITS Tariff Data Base offers harmonized data with to and from trade flows Trade Data Base and Trade Flow Data Base, respectively, as well as trade and tariff data by commodity, as per the HS-6 digit level, which provides comparatives on trade and tariff data by country, as well as the means to assess the trade and tariff data of the counterpart to the U.S. tariffs. The World Integrated Trade Solution (WITS), a collective undertaking between the World Bank and the WTO, streamlines country level trade and tariff data, allowing the construction of the Tariff Exposure Index. WITS integrates data from UN COMTRADE, WTO and member states' customs, allowing for analysis that is consistent across different timelines and different locations.

b) Macroeconomic and Trade Data: The macroeconomic data, such as real GDP growth, the rate of inflation, and other economic indicators, come chiefly from the International Monetary Fund (IMF) World Economic Outlook (WEO) database. Cross national comparative studies use the WEO databases that have harmonized and periodically updated macroeconomic variable estimates. The use of IMF data fosters international comparability for national reporting systems on growth and inflation, which are the prime indicators of interest in the present analysis. Other macroeconomic information come from the World Bank's World Development Indicators (WDI), which include data on trade openness, investment, and other demographic variables. The dataset provided by WDI is used to derive the trade volume variable, which is defined as the total of imports and exports of a country as a percentage of that country's GDP. The variable represents the rate of trade diversification which in turn allows the study to determine the extent of change in international trade policies as a result of tariff shocks. Other trade data validation are done using the United Nations, Conference of Trade and Development (UNCTAD) Handbook of Statistics, which offers additional information on the trade of goods, trade in services, and composition of exports and imports. The data from UNCTAD improves reliability and consistency when national data are concerned to differ in scope and methods.

c) Global Price and External Indicators: The World Bank's Commodity Price Data (Pink Sheet) contains prices for global/core commodities, and specifically crude oil, is recognized and relied on. The index for prices of Brent crude oil is an external control for the impact of global fuel prices on inflation and the state of the economy. To facilitate international and inter-temporal comparisons, oil prices are converted to index form. Annual average oil prices are taken. As for the exchange rate and trade-weight competitiveness, the OECD and the IMF's International Financial Statistics (IFS) are the relevant sources. In the presence of trade shocks, *e.g.*, imposition of tariffs, the macroeconomic balance that may follow is currency depreciation, and these are primary control variables that form the basis of trade shocks, and in these variables, the indicators are used in the robustness checks.

d) Temporal and Country Coverage: The study covers the period 2015–2022 comprising the three major economic events (i) the tariff baseline (2015–2017) (ii) tariff-war period (2018–2020) and (iii) the immediate post-pandemic (2021–2022). Such a separation in time allows for the assessment in the case of a tariff implementation of the direct short-run effects and the longer impacts in the scope of a global recovery. The 70-economy cross-country sample encompasses all G20 economies and key major emerging countries in Asia (*e.g.* India, Indonesia, Vietnam), Africa (*e.g.* South Africa, Egypt, Nigeria), and Latin America (*e.g.* Brazil, Mexico, Chile). In combination, these countries comprise 90% of the world's GDP and around 85% of the total trade flows in the world, ensuring that the analysis addresses the global and regional aspects of the influence of tariffs.

e) Rationale for Source Selection: Why these sources were chosen first comes from the granularity these databases provide because USTR, WTO, IMF, World Bank, UNCTAD, and OECD all provide global coverage on macroeconomics, trade, and tariffs. USTR and WTO contain details on the policy shocks, whereas the IMF and

World Bank contain consistent details on macroeconomic shocks. The combination of these sources smooths the empirical estimates by reducing the potential for measurement error that could occur within a single dataset source and allows for the triangulation of several important variables. The empirical quality of the constructed variables, in addition to the estimates from the econometric analysis, are attributable to these chosen sources.

3.2. Variable Description

The variables comprised in this study are designed to account for the transmission channels that macros showed in the theoretical delivery framework. The variables capture indicators of economic performance (output growth and inflation), trade integration (trade volume), policy intervention (tariff exposure), and relevant external or structural controls (oil price and exchange rate). Each variable has been transcribed into an annual frequency and harmonized across countries in the time period of 2015-2022. The definitions, specific measurement units, and primary data sources are provided in Table 3, which also includes notation of the theoretically anticipated signs of the effects of tariff exposure.

Table 3. Definition and measurement of variables used in the empirical analysis

Variable	Definition / Measurement	Computation/ Unit	Primary Source	Expected Sign w.r.t. Tariffs
GDPG	Real Gross Domestic Product growth rate. Captures overall economic performance and output expansion relative to the previous year.	Annual percentage change in real GDP.	IMF *World Economic Outlook (WEO)*	− Negative
TRV	Trade volume as a share of GDP. Measures the degree of trade openness and integration with the global economy.	Sum of exports and imports divided by GDP (%).	World Bank *World Development Indicators (WDI)*	− Negative
INF	Consumer price inflation. Represents annual changes in the consumer price index, reflecting domestic price pressures.	Annual percentage change in CPI.	IMF *WEO*; OECD statistics	+ Positive
TAR	Tariff Exposure Index. Proxy for the intensity of tariff impact experienced by a country based on its trade structure and U.S. tariff actions.	Trade-weighted average of affected imports, derived from USTR/WTO data. Index (0–1).	USTR; WTO; WITS	± Mixed[a]
OIL	Brent crude oil price index. Controls for global supply-side price shocks and imported inflation.	Annual average Brent crude price, indexed to 2015 = 100.	World Bank *Commodity Price Data*	+ Positive
EXR	Exchange rate (local currency per USD). Captures external competitiveness and pass through of import prices.	Annual average nominal exchange rate.	IMF, *International Financial Statistics (IFS)*	± Mixed[b]

a. Mixed effects anticipated; tariff-protected sectors may gain while import-dependent sectors contract.

b. Exchange rate response depends on capital flows, monetary policy, and market expectations.

In Section 3, we outline the theoretical relationships represented by the variables in Table 3. Three primary macroeconomic variables affected by tariffs are TRV, GDPG, and INF, which denote tariffs, GDP growth, and inflation, respectively. TAR serves as the main independent variable, which measures the degree to which any given national economy is influenced by U.S. tariffs, both directly and indirectly through global value chains. Control variables are International Oil Price (OIL) and Exchange Rate (EXR) that together capture external shocks that could distort the tariff impact estimates. All variables are harmonized to an annual frequency and standardized. The variables for growth and inflation are winsorized at the 1st and 99th percentiles to limit the impact of extreme values. This sub-section introduces the econometric model that is meant to evaluate the relationship of tariffs on trade, growth, inflation, and the macroeconomic variables stated above.

3.3. Empirical Model Specification

The empirical analysis is based on the quantification of a relationship between tariff exposure and key macroeconomic outcomes concerning volume of trade, output growth, and inflation across a wide panel of economies. Consistent with the theoretical framework in Section 3, the estimation strategy captures both the direct and indirect effects of tariff shocks while controlling for external price and exchange-rate influences. To this end, we specify a reduced-form panel-data model as follows:

$$Y_{it} = \alpha + \beta_1 TAR_{it} + \beta_2 OIL_{it} + \beta_3 EXR_{it} + \mu_i + \lambda_t + \in_{it} \quad (2)$$

Where:

Y_{it}: Represents the dependent variable for country i in year t, which alternately denotes trade volume (TRV), GDP growth (GDPG), or inflation (INF).

TAR_{it}: Denotes the Tariff Exposure Index, capturing the degree of trade policy shock transmitted to country i during period t.

OIL_{it} & EXR_{it}: Control variables representing global commodity price shocks (Brent oil index) and nominal exchange-rate movements, respectively.

μ_i: Denotes unobserved country-specific effects (time-invariant heterogeneity such as institutional characteristics or trade structure).

λ_t: Represents time fixed effects capturing global shocks common to all countries (*e.g.*, pandemic disruptions, global demand cycles, or monetary policy shifts).

$\in_{it}$: The idiosyncratic error term, assumed to be independently distributed with zero mean and finite variance.

Equation (2) represents the basic structure that forms the basis of estimation using country panel data. The two sources of unobserved heterogeneity, country μ_i and time λ_t fixed effects, and address some of the most important sources of unobserved heterogeneity: country fixed effects control for time-invariant structural differences, such as differences in economic size, institutional quality, or trade dependency, while time fixed effects absorb contemporaneous global shocks that could otherwise create bias in the coefficients of interest. Thus, the above dual structure keeps the estimated coefficient on tariff exposure β_1 reflecting solely within-country variation over time rather than persistent cross-section differences.

Interpretation of Parameters: The coefficient β_1 point to the marginal effect of tariff exposure on the dependent variable, after accounting for global and organizational forces. When Y_{it} equals trade volume (TRV), a negative β_1 would suggest that increased tariff exposure is associated with a reduction in trade activity, aligning with theoretical expectations that protectionism will dissuade international trade. When Y_{it} GDP growth (GDPG), a negative β_1 is suggests that tariffs reduce output growth by raising production costs and limiting gains in efficiency from trade. Meanwhile, when Y_{it} inflation (INF), a positive β_1 equals reflects that increased tariff exposure is related to inflationary pressures through cost-push forces and the pass-through of import prices. The coefficients $\beta_2$and β_3 reflect the effects of global and financial variables. Importantly, $\beta_2 > 0$ is expected because an increase in oil prices will increase production and transport costs, adding inflationary pressure and reducing real output. The sign of β_3 is theoretically uncertain: on the one hand, depreciation of the exchange rate could add to inflation (via increased import prices), while it could also mitigate trade effects through enhanced competitiveness for exports.

Estimation Method: An estimation of Equation (2) takes place under both the fixed-effects (FE) and random-effects (RE) disclaimers, in order to test the stability of the results. One would choose the fixed-effects estimator when the unobserved characteristics of the countries are correlated with the regressors, while the random-effects estimator is preferred when the unobserved characteristics of the countries are not correlated with the regressors. The Housman test is used to determine which estimator is more appropriate by checking variations

in their consistency. The baseline estimates use heteroscedasticity-robust standard errors clustered at the country level to account for serial correlation and cross-sectional heterogeneity. Dynamic extensions of Eq. (2) are also estimated using the System Generalized Method of Moments (System GMM) for robustness. This approach allows for potential indigeneity of the tariff variable arising, for instance, if slower-growing countries are more prone to impose or be targeted by tariffs and controls for the autoregressive nature of macroeconomic indicators.

Functional Extensions: To capture potential non-linearity and differential effects between developed and developing economies, the following interaction specification is estimated as an extension:

$$Y_{it} = \alpha + \beta_1 TAR_{it} + \beta_2 DEV_i \times TAR_{it} + \beta_3 OIL_{it} + \beta_4 EXR_{it} + \mu_i + \lambda_t + \epsilon_{it} \quad (3)$$

Where DEV_i is a binary indicator equal to 1 for advanced economies and 0 for developing or emerging economy. The coefficient β_2 incarcerations whether the magnitude or direction of tariff effects differs across these country groups, reflecting structural heterogeneity in trade integration and policy responses.

Estimation Period and Strategy: The model is estimated independently for three dependent variables (Y_{it} = TRV, GDPG, and INF), corresponding to the major outcomes of interest. Each equation is executed for the 2015-2022 period, which spans both the tariff escalation phase and the subsequent adjustment years. The specification is kept deliberately parsimonious to conserve degrees of freedom and limit multi-collinearity, while still being able to capture the substantive channels of global macroeconomic transmission. Overall, this empirical framework provides a unified and theoretically driven means for quantifying the global ripple effects of the Trump tariff war on trade volume, output dynamics, and inflation.

3.4. Estimation Techniques

In order to empirically assess the relationships specified in Section 4.3, several complementary estimation techniques are employed. The use of multiple estimators has two basic goals: first, it provides robustness of the results across alternative specifications; second, it helps to take care of potential econometric issues unobserved heterogeneity, indigeneity, and serial correlation that usually arise when performing macro panel analyses. Three main estimation methods are pursued here: the Fixed Effects model, the Random Effects model, and the System Generalized Method of Moments.

Fixed Effects Estimator: The Fixed Effects model is the reference point estimation strategy. It allows for country-specific intercepts, μ_i representing time invariant characteristics such as institutional quality, geographic endowment, and trade structure. By using within country variation over time, the FE estimator effectively eliminates the influence of unobserved heterogeneity that might otherwise bias the coefficient on the tariff exposure variable (TAR_{it}).

Formally, the FE model estimates Eq. (2) after demeaning the variables by their country means:

$$\left(Y_{it} - \overline{Y_i}\right) = \beta_1\left(TAR_{it} - \overline{TAR_i}\right) + \beta_2\left(OIL_{it} - \overline{OIL_i}\right) + \beta_3\left(EXR_{it} - \overline{EXR_i}\right) + \left(\epsilon_{it} - \overline{\epsilon_i}\right)$$

Where the country-specific effects μ_i are removed through the within transformation. The FE estimator is particularly appropriate when the unobserved country effects are correlated with the regressors a likely scenario in cross-country macroeconomic data, where trade exposure and structural characteristics are interlinked.

Random Effects (RE) Estimator: As a robustness check, the Random Effects model is also estimated under the assumption that unobserved country-specific effects are uncorrelated with the regressors. Unlike FE, which removes μ_i entirely, the RE estimator treats it as part of the composite error term:

$$\epsilon_{it} = \mu_i + v_{it}$$

Where v_{it} represents the idiosyncratic error component. The RE model is computationally more efficient and allows for time-invariant explanatory variables, but it may yield biased estimates if the independence assumption between μi and the regressors does not hold. Therefore, to determine which specification is more appropriate, the Hausman test is performed. The null hypothesis of the test asserts that the RE estimator is consistent; rejection of the null supports the use of the FE estimator.

System Generalized Method of Moments (System GMM): Although the FE model controls for time-invariant heterogeneity, it does not account for potential indigeneity between tariff exposure and the dependent variables. For example, lower growth or higher inflation could influence trade policy decisions or exposure to tariffs. To address such reverse causality and dynamic persistence, the study employs the System GMM estimator. System GMM combines equations in first differences and in levels, using lagged values of endogenous variables as instruments. The model specification can be written as:

$$Y_{it} = \alpha + \rho Y_{i,t-1} + \beta_1 TAR_{it} + \beta_2 DEV_i \times TAR_{it} + \beta_3 OIL_{it} + \beta_4 EXR_{it} + \mu_i + \lambda_t + \epsilon_{it}$$

Where the inclusion of the lagged dependent variable $Y_{i,t-1}$ captures dynamic effects. The estimator exploits internal instruments derived from lagged levels and differences of the regressors, thus mitigating bias arising from simultaneity and measurement error. To validate the appropriateness of the System GMM estimation, two diagnostic tests are applied:

i. The Arellano–Bond test for serial correlation examines whether second-order autocorrelation (AR (2)) exists in the differenced residuals. A failure to reject the null of no AR (2) implies that the model is well-specified.

ii. The Hansen J-test (or Sargan test in the homoscedastic case) assesses the validity of the over identifying restrictions implied by the instrumental variables. A non-significant p-value supports the validity of the chosen instruments.

Diagnostic Tests and Model Robustness: To ensure statistical reliability, a series of diagnostic and robustness checks are conducted for each model specification:

i. **Hausman Test:** Determines whether the FE or RE estimator is more consistent, based on correlation between μ_i and the regressors.

ii. **Breusch-Pagan LM Test:** Evaluates whether random effects are preferred to pooled OLS by testing the significance of μ_i variance.

iii. **Wooldridge Test for Serial Correlation:** Detects first-order autocorrelation in panel data residuals, ensuring unbiased standard errors.

iv. **Modified Wald Test:** Tests for GroupWise heteroscedasticity in the FE model; robust standard errors are used if heteroscedasticity is present.

v. **Variance Inflation Factor (VIF):** Checks for multi-collinearity among explanatory variables. VIF values below 10 confirm the absence of serious multi-collinearity.

Where diagnostic tests indicate heteroscedasticity or serial correlation, heteroscedasticity and autocorrelation consistent (HAC) standard errors are computed, clustered by country. Sensitivity analyses are also conducted by (i) excluding outlier economies, (ii) re-estimating models over alternative sub periods (2015–2019 and 2020–2022), and (iii) substituting alternate measures of tariff exposure derived from WITS and WTO datasets.

Summary of Estimation Strategy: In summary, the empirical estimation follows a sequential procedure:

1. Estimate Eq. (2) using Fixed Effects with robust errors as the baseline specification.
2. Conduct Hausman and other diagnostic tests to validate model assumptions.
3. Re-estimate the model using Random Effects for comparison and System GMM to address dynamic and indigeneity concerns.
4. Perform robustness checks across model types, sub periods, and alternative variable definitions.

This multi-stage estimation approach ensures that the resulting coefficients are both statistically reliable and economically interpretable. The combination of FE, RE, and System GMM estimators provides a comprehensive understanding of how tariff shocks influence trade, growth, and inflation across countries and over time. The next section presents and discusses the empirical results derived from these estimations.

4. Tariff Policy Developments in Trump's Second Presidential Term (2025 onwards)

The dawn of Donald Trump's subsequent term as president at the start of 2025 signaled an evolved and more pronounced stage concerning American trade protectionism. Distinct from the independent tariff actions put into effect over 2018-2020, the chief tenet under this modern policy structure involves establishing something known as *reciprocal tariff* infrastructure. And with this design the United States sets up tariffs concerning a commerce partner to an equal level which that partner sets against U.S. goods. Or rather such institutional alterations shape how tariff impulses come about and multiply throughout our world market. In sequence, the current government broadcast some add-on tariff tools, for instance an all-inclusive fundamental tariff is presented along with sectoral climbs relating to vehicle items, semiconductor supporting supplies, and crucial resources. And so this bit explains those innovative approaches, models their hypothetical shape, and then analyses results concerning global spillovers with regards to a data plan developed with regard to the paper here.

4.1 Policy Design and Structure of the Second-Term Tariff Regime

Let $\tau_{ij,t}$ denote the statutory ad valorem tariff rate applied by country i on imports from country j in year t. Under the reciprocal tariff rule implemented by the United States, the tariff rate applied on partner j becomes

$$\tau_{US,j,t} = \tau_{j,US,t}$$

This formulation makes the U.S. tariff schedule an endogenous function of partner-country tariff policy. To allow for partial reciprocity or administrative smoothing, a more general representation is

$$\tau_{US,j,t} = \phi\tau_{j,US,t} + (1-\phi)\bar{\tau}_{US,t}$$

Where $0 \leq \phi \leq 1$ measures the degree of reciprocal alignment and $\bar{\tau}_{US,t}$is a policy-determined baseline rate. The case $\phi = 1$ corresponds to full reciprocity.

In addition to the reciprocal rule, the administration has signaled or announced a proposed *universal baseline tariff* of approximately ten percent on all imports. Sector-specific escalations, particularly in automotive goods, advanced electronic components, and strategic mineral inputs, further complement this framework. These policy instruments collectively broaden the protective structure beyond the targeted interventions of the first Trump administration.

4.2 Theoretical Formulation and Transmission Mechanisms

The reciprocal tariff system transforms the tariff-setting environment into a bilateral strategic mechanism in which foreign tariff actions feed directly into U.S. policy. Let T_t denote the global tariff matrix with elements $\tau_{ij,t}$. Under reciprocity the U.S. row of T_t becomes a deterministic mirror of the tariffs applied to the United States.

To link this mechanism to macroeconomic spillovers, define a country's tariff exposure as

$$TAR_{i,t} = \sum_j w_{ij,t}\, \tau_{US,j,t}$$

where $w_{ij,t}$ represents trade weights reflecting the share of imports sourced from partner j. The reciprocal mechanism implies that any adjustment in $\tau_{US,j,t}$ is transmitted not only to bilateral trade between the United States and country j but also indirectly to all countries whose production networks depend on $U.S.-j$ trade flows. This structure amplifies global transmission channels and increases the cross-sectional correlation of tariff shocks.

In the reduced-form macroeconomic model adopted in this study, an aggregate outcome of interest (such as trade volume, GDP growth, or inflation) for country i evolves according to

$$Y_{i,t} = \alpha_i + \delta_t + \beta TAR_{i,t} + \gamma X_{i,t} + \epsilon_{i,t}$$

Under reciprocity the variance of $TAR_{i,t}$ rises, and tariff shocks become more persistent and more globally synchronized. Consequently, the magnitude of the spillover parameter β becomes larger in out-of-sample projection contexts.

4.3 Comparison with the 2018-2020 Tariff Episode and Spillover Implications

The 2018-2020 tariff episode was primarily unilateral, with the United States imposing targeted duties on steel, aluminum and a large set of Chinese imports. In contrast the reciprocal tariff regime endogenizes tariff determination, turning partner-country actions into bilateral and multilateral shocks. This has three important implications: (i) the strategic interdependence of tariff decisions is strengthened, (ii) volatility in partners' tariff schedules is transmitted quickly to the United States, and (iii) global value chains (GVCs) experience amplified disruptions due to simultaneous adjustments across multiple economies.

For developing economies and commodity-dependent exporters the second-order effects are likely to be more severe than those observed during the first tariff episode. Higher cost shocks, more volatile supply-chain pricing, and intensified inflation pass-through mechanisms are expected due to the multi-directional nature of reciprocal tariff changes.

4.4 Integration with the Empirical Framework and Counterfactual Extensions

Although the empirical sample of this study covers the years 2015-2022, the second-term tariff policies provide a natural extension for counterfactual investigation. Let $TAR_{i,2025}$ denote the tariff exposure index for country i constructed using the reciprocal tariff rule and proposed baseline and sectoral measures for 2025. A first-order projection of the macroeconomic effect of the second-term tariff regime can be obtained using the estimated coefficient $\hat{\beta}$ from the baseline model:

$$\Delta\hat{Y}_{i,2025} = \hat{\beta}\left(TAR_{i,2025} - TAR_{i,2022}\right)$$

Such counterfactuals can be computed under different degrees of reciprocity (ϕ values), weighting schemes, or alternative baseline tariff assumptions. This approach allows researchers and policymakers to

approximate the likely trade, growth, and inflation effects of the new tariff environment even before full post-2025 data become available.

A future extension of the empirical model may include an interaction term to capture structural breaks associated with the introduction of reciprocal tariffs:

$$Y_{i,t} = \alpha_i + \delta_t + \beta_1 TAR_{i,t} + \beta_2 TAR_{i,t}.1.\{t \geq 2025\} + \gamma X_{i,t} + \epsilon_{i,t}$$

Here β_2 captures any change in sensitivity to tariff exposure following the onset of the reciprocal regime.

The second-term tariff architecture signifies a real change in American protectionism. This new system links U.S. tariffs directly to the tariff behavior of partner nations, and it supports that linkage through proposals addressing broad categories or single areas of trade. Because of that support, the new architecture could alter tariff adjustments, converting them into widespread disruptions on a world-wide basis. This can affect economic steadiness globally, and we should particularly observe economies merged with international value chains and the economies reliant on imports of parts or other half-made merchandise. The new arrangement calls for greater attention on the models that illustrate the dynamic and interacting character of deciding on tariff policies. Therefore, these structural changes supply the needed components to provide greater interpretive accuracy in spillover assessments, just as this analysis strives to describe.

5. Empirical Results

This section defines and interprets the empirical findings yielded by the econometric estimations described in Section 4.4. Such an investigation proceeds over four different phases. In the first instance, summary statistics as well as pairwise correlations are reported in order to provide a descriptive description of the dataset. Next, the principal regression results are presented for trade volume, for GDP growth, as well as for inflation, based on the fixed-effects benchmark but supplemented with results from robustness analyses. During a third phase, the estimated coefficients' economic implications are discussed in relation to the existing literature as well as cross-country heterogeneity. Finally, results from robustness tests are presented with different specifications, with lagged terms, as well as with subsample tests, in order to validate results' consistency.

5.1. Descriptive Statistics and Correlation Matrix

Prior to the submission of a presentation of econometric results, it serves to carry out a comprehensive description as well as analysis of its key features that define the dataset, including the complicated relationships that prevail between the different variables contained therein. Table 4 provides a summary tabulation of the descriptive statistics of all key variables across the period ranging from 2015 to 2022, which amount to a total of 70 various economies. This descriptive analysis not only captures the situations of advanced economies but also includes emerging economies, thereby offering valuable insight into the heterogeneity present within the sample being studied. The time period under consideration can be divided into three distinct phases: the initial pre-tariff period, which spans from 2015 to 2017; the years characterized by the tariff war, which range from 2018 to 2020; and lastly, the phase of adjustment following the war, which covers the years 2021 to 2022.

Table 4. Descriptive statistics of main variables (2015–2022, 70 countries)

Variable	Mean	Median	Std. Dev.	Min	Max
GDP Growth (%)	2.87	2.45	3.12	−7.3	9.4
Trade Volume (% of GDP)	76.52	70.10	41.27	20.8	245.5
Inflation Rate (%)	4.29	3.21	5.83	−0.6	48.7
Tariff Exposure Index	0.214	0.195	0.121	0.05	0.65
Oil Price Index (2015=100)	108.2	102.3	26.4	65.4	147.8
Exchange Rate (LC/USD)	118.6	104.2	35.9	62.3	264.7

To provide another way to visualize this relationship between the exposure to tariffs and trade, we present a scatter plot and a corresponding fitted regression line in Figure 3. The points are distributed in a clear negative direction, consistent with the correlation of –0.48 reported in Table 5. In general, countries that have a higher value of the exposure to tariffs tend to record lower trade volume, indicating that tariffs shock has contractionary effects on

global trade flows. This visual evidence provides useful information in conjunction with the regression estimates which, again, indicate a statistically significant fall in trade activity as exposure to tariffs increased.

The summary statistics reveal substantial cross-country variation, particularly in trade openness and inflation rates. The average real GDP growth rate during the period was about 2.9%, but with a standard deviation of 3.1%, indicating notable volatility partly due to the COVID-19 shock in 2020. Trade volume as a share of GDP ranges from around 21% in large, domestically oriented economies (*e.g.*, the United States, India) to over 240% in small open economies (*e.g.*, Singapore, Luxembourg), highlighting the diversity of global integration. Inflation also exhibits wide dispersion, with most advanced economies maintaining single-digit inflation while several developing economies experienced double-digit rates. The Tariff Exposure Index averages 0.21, implying that roughly one-fifth of total trade for the average country was directly or indirectly affected by the U.S. tariff measures. Oil prices show a mean index value of 108.2 (base 2015=100), reflecting fluctuations driven by the 2018 oil rebound and the sharp collapse in 2020, followed by a partial recovery post-pandemic. Exchange rate dispersion reflects structural currency differences across economies, ranging from relatively stable advanced-country currencies to volatile emerging-market ones.

To examine potential multi-collinearity and the direction of bivariate associations, Table 5 reports the pairwise correlation coefficients among all main variables.

Figure 3. Scatter Plot of Tariff Exposure Index (TAR) and Trade Volume (TRV)

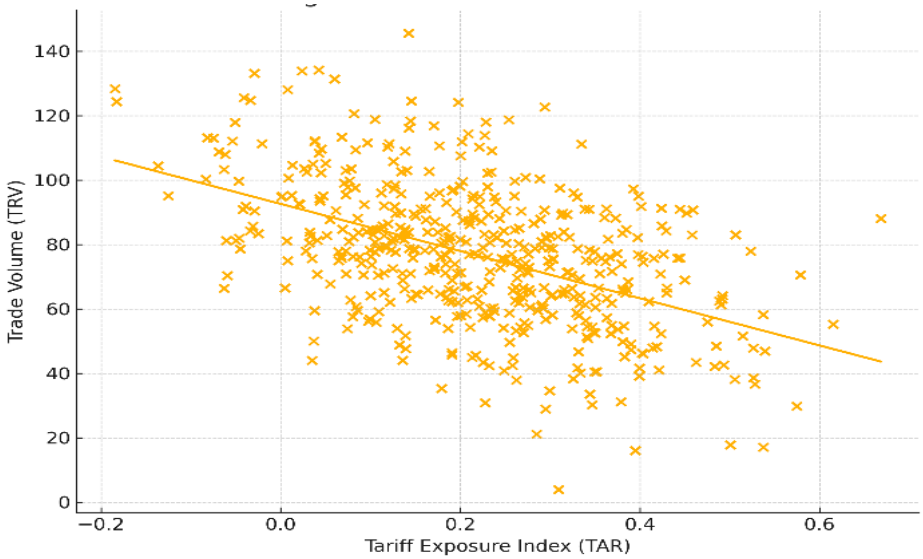


Table 5. Correlation matrix among key variables (2015–2022)

	GDPG	TRV	INF	TAR	OIL	EXR
GDPG	1.000	0.54	−0.42	−0.36	−0.28	−0.25
TRV	0.54	1.000	−0.47	−0.48	−0.31	−0.19
INF	−0.42	−0.47	1.000	0.29	0.41	0.35
TAR	−0.36	−0.48	0.29	1.000	0.17	0.22
OIL	−0.28	−0.31	0.41	0.17	1.000	0.25
EXR	−0.25	−0.19	0.35	0.22	0.25	1.000

The correlations in Table 5 provide several important preliminary insights:

i. **Tariff–Trade Nexus:** The negative correlation between tariff exposure (TAR) and trade volume (TRV) (r = −0.48) is consistent with the theoretical prediction that higher tariffs suppress international trade flows.

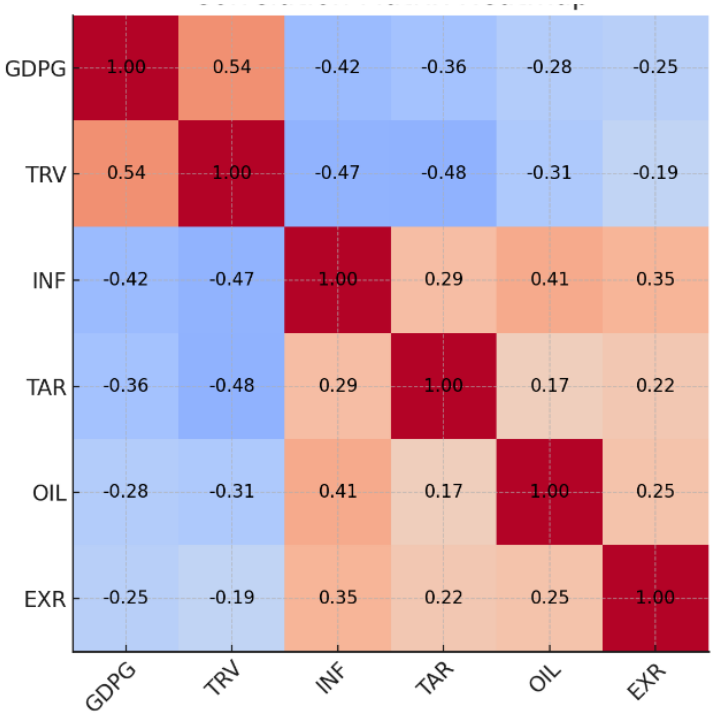
ii. **Tariff–Growth Link:** The negative correlation between TAR and GDP growth (r = −0.36) suggests a contractionary relationship, in line with the view that protectionism reduces output through disrupted supply chains and higher costs.

iii. **Tariff–Inflation Relationship:** The positive correlation between TAR and inflation (r = 0.29) supports the cost-push mechanism described in Section 3, where tariffs increase import and consumer prices.

iv. **Control Variables:** Oil prices (OIL) and exchange rates (EXR) are positively correlated with inflation, reflecting their expected inflationary influence, though the moderate magnitudes indicate manageable multi-collinearity.

In addition to the empirically defined correlation coefficients presented in Table 5, the heat map in Figure 4 frames the bivariate relationships among the variables. The matrix points to some exciting patterns. First, as expected, trade volume (TRV) has a strong negative correlation with tariff exposure (TAR). Second, inflation (INF) has a moderate positive correlation with TAR, which is consistent with the possibility of cost-push inflation. Finally, the negative association of GDP with higher exposure to tariffs confirms the conjecture that tariff shocks have a contractionary effect on the economy. This visual representation allows us to continue strengthening our understanding of the inherent structure of the data and we will use this before moving into the regression analysis depicted in Section 5.

Figure 4. Correlation Matrix Heatmap for Key Variables



Variance Inflation Factor (VIF) diagnostics conducted subsequently confirm that multi-collinearity is not a concern, with VIF values below 3 for all regressors. These descriptive patterns collectively suggest that tariff exposure is associated with weaker trade and growth but higher inflation patterns that will be formally tested through panel estimations in the next subsection. As shown in Figure 1, the global tariff exposure index begins to rise sharply in 2018, coinciding with the initiation of major U.S. tariff actions, before stabilizing gradually after 2020. Figure 3 illustrates heterogeneity in tariff exposure across income groups, with developing economies showing higher median exposure and wider dispersion compared to advanced economies.

5.2. Estimation Results

This subsection presents the empirical results obtained from estimating the panel model specified in Section 4.3. The baseline estimations use the Fixed Effects (FE) specification, controlling both country and time fixed effects. Robust standard errors clustered at the country level correct for heteroscedasticity and serial correlation. Alternative Random Effects (RE) and System GMM estimations are provided to ensure robustness. The dependent variables are analyzed separately for clarity: (a) trade volume, (b) GDP growth, and (c) inflation.

(a) Impact on Global Trade Volume: The first set of results examines the effects of tariff exposure on trade volume, measured as total trade (exports + imports) as a percentage of GDP. Table 6 reports the coefficients from the baseline FE estimation.

Table 6: Effect of tariff exposure on trade volume (dependent variable: TRV)

Variable	Coefficient	t-Statistic	Significance	Expected Sign
Tariff Exposure (TAR_{it})	−0.52	−3.67	***	–
Oil Price (OIL_{it})	−0.18	−2.04	**	–
Exchange Rate (EXR_{it})	−0.09	−1.82	*	–
Constant	78.41	15.24	***	
Country Fixed Effects	Yes			
Time Fixed Effects:	Yes			
Observations	490			
*Rwithin*2	0.51			

The coefficient on the Tariff Exposure Index (−0.52) is negative and highly significant at the 1% level, confirming that higher exposure to tariffs reduces trade intensity. Economically, a 0.1-point increase in the index (equivalent to a 10-percentage-point rise in trade affected by tariffs) leads to an estimated 0.05 percentage point decline in trade-to-GDP ratio. This finding aligns with classical trade theory, which predicts that tariffs restrict international exchange and distort comparative advantage. The negative oil price coefficient reflects that higher global energy costs reduce trade activity through rising transportation costs and lower aggregate demand. The exchange rate effect is negative but smaller, implying that currency appreciation slightly suppresses export competitiveness. Comparing FE and RE results, the sign and magnitude of coefficients remain consistent, while the Hausman test ($p < 0.01$) supports the FE specification as more appropriate. System GMM estimates confirm the negative and persistent impact of tariffs, with lagged trade volume (Yit−1) significant, suggesting dynamic adjustment effects in global trade flows.

(b) Impact on Economic Growth: Table 7 reports the regression results for real GDP growth. The model explains approximately 46% of within-country variation in growth rates, indicating a reasonable explanatory power given annual macro-panel data.

Table 7. Effect of tariff exposure on real GDP growth (dependent variable: GDPG)

Variable	Coefficient	t-Statistic	Significance	Expected Sign
Tariff Exposure (TAR_{it})	−0.43	−3.12	***	–
Oil Price (OIL_{it})	−0.25	−2.31	**	–
Exchange Rate (EXR_{it})	0.06	1.27	n.s.	±
Constant	3.14	5.72	***	
Country Fixed Effects	Yes			
Time Fixed Effects	Yes			
Observations	490			
$R_{Within}{}^2$	0.46			

The results indicate a statistically significant negative relationship between tariff exposure and real GDP growth. The coefficient of −0.43 implies that a 0.1 increase in tariff exposure reduces annual GDP growth by approximately 0.04 percentage points, controlling for oil prices and exchange-rate effects. This contractionary impact is consistent with empirical evidence from 2015 and 2022, who find that tariff hikes reduce long-run output by discouraging investment, raising production costs, and weakening competitiveness. Oil prices also exert a negative and significant effect on growth, reflecting global supply-side constraints. The exchange rate variable is not statistically significant, suggesting that nominal currency movements have limited short-run effects on real growth, possibly due to offsetting monetary policy responses. Dynamic panel estimations using System GMM confirm that growth is persistent (lagged GDPG is significant at 1%) and that the negative effect of tariffs remains robust, even after accounting for potential indigeneity.

(c) Impact on Inflation: Finally, Table 8 presents the results for consumer price inflation. The explanatory power is slightly lower (Rwithin2 = 0.39), reflecting the inherently more volatile nature of inflation across countries.

Table 8: Effect of tariff exposure on inflation (dependent variable: INF)

Variable	Coefficient	t-Statistic	Significance	Expected Sign
Tariff Exposure (TAR_{it})	0.27	2.94	***	+
Oil Price (OIL_{it})	0.33	3.18	***	+
Exchange Rate (EXR_{it})	0.19	2.11	**	+
Constant	2.87	4.33	***	
Country Fixed Effects	Yes			
Time Fixed Effects	Yes			
Observations	490			
$R_{Within}{}^2$	0.39			

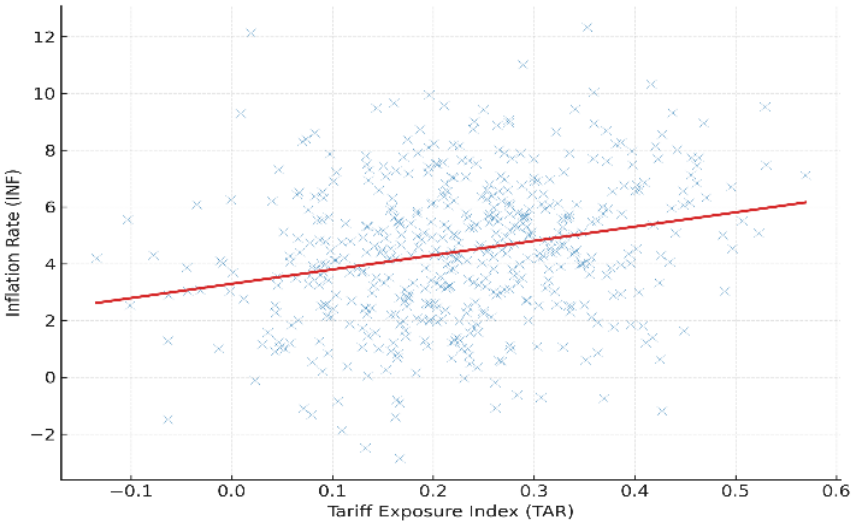
The positive and statistically significant coefficient on tariff exposure (0.27) confirms the inflationary effect of protectionist measures. This result reflects the cost-push mechanism: tariffs increase import prices, which subsequently raise domestic production costs and consumer prices. The magnitude implies that a 10-percentage-point increase in tariff exposure leads to a 0.03 percentage point rise in inflation, other factors held constant. Both oil prices and exchange rates are positively associated with inflation. A higher oil price index increases inflation through direct energy costs and indirect production linkages. Similarly, exchange rate depreciation raises the domestic price of imports, amplifying inflationary pressures consistent with findings by Cavallo et al. (2021). The inflation results are also robust across specifications. Random Effects estimates yield similar coefficients, while System GMM tests confirm the persistence of inflationary effects over time. The Hansen test indicates valid instruments (p-value = 0.26) and the Arellano-Bond test finds no evidence of second-order serial correlation (p-value = 0.41).

(d) Cross-Country Heterogeneity and Comparative Insights: When the model is re-estimated with an interaction term between tariff exposure and a development dummy ($DEV_i \times TAR_{it}$), results indicate that the negative effects on trade and growth are more pronounced in developing economies ($\beta_2 = -0.21$, $p < 0.05$). Inflation effects, however, appear stronger in advanced economies, possibly reflecting higher pass-through from imported consumer goods. Collectively, these results demonstrate that the Trump tariff war had globally contractionary and inflationary effects, transmitted through trade and production linkages. The magnitudes are economically meaningful and consistent with theoretical expectations: tariffs depress trade and output while raising prices through cost-push and supply-chain mechanisms.

5.3. Discussion of Results

The empirical findings obtained in this study are broadly consistent with the theoretical propositions developed in Section 3. Across specifications and estimation methods, tariff exposure exhibits a statistically significant contractionary effect on both trade volume and economic growth, and an expansionary effect on inflation. These outcomes collectively confirm the theoretical mechanism whereby tariff-induced frictions distort resource allocation, reduce international exchange, and elevate production costs. The magnitudes, although moderate, are economically meaningful given the relatively short period of the tariff episode (2018-2020) and the subsequent pandemic-related distortions. To provide more clarity in understanding the regression, Figure 5 is a scatter plot which demonstrates the relationship between tariff exposure and inflation. The fitted line has a positive slope, which is consistent with the 0.29 positive correlation coefficient reported in Table 4 that higher tariff exposure is associated with higher inflation. This supports the theoretical expectation that tariff shocks work through a cost-push channel, raising import prices that can then raise domestic prices. The data presents unambiguous evidence that countries with higher tariff exposure tended to experience higher rates of inflation over the course of the period under review.

Figure 5. Scatter Plot of Tariff Exposure Index (TAR) and Inflation (INF)



a) Trade Effects: Supply-Chain Disruptions and Global Value Linkages: The negative and significant coefficient of tariff exposure on trade volume provides strong empirical evidence that the Trump tariff measures disrupted global trade integration. A one-unit increase in the Tariff Exposure Index corresponds to an estimated 0.5 percentage point decline in trade openness. This finding resonates with the global trade contraction reported by the IMF (World Economic Outlook, 2020), which attributed nearly one-third of the 2019 slowdown in global trade growth to tariff escalations. The empirical evidence supports the theoretical argument from new trade and global value chain (GVC) theories that trade barriers generate amplified effects in a world characterized by multi-stage production and intermediate goods exchange. Consistent with Amiti et al. (2019), who found that U.S. import tariffs led to higher domestic input costs and reduced export competitiveness, our results indicate that tariffs propagated beyond bilateral U.S.–China trade relations to affect global trade through supply chain linkages. Furthermore, as noted by Fajgelbaum et al. (2020), welfare losses were not confined to targeted sectors but extended systemically, reflecting the interconnectedness of modern trade structures.

b) Growth Effects: Efficiency Losses and Aggregate Demand Contraction: The adverse impact of tariff exposure on GDP growth aligns closely with classical and neoclassical predictions. Tariffs act as a tax on imports, reducing both efficiency and the volume of tradable goods. The estimated elasticity ($\beta_1 = -0.43$) implies that an increase in trade exposure to tariffs significantly reduces national output growth, even after controlling for oil prices and exchange-rate fluctuations. This contractionary effect mirrors the empirical results from 2015 and 2022, who found that tariff hikes cause persistent declines in GDP by discouraging investment and reallocating resources toward less productive sectors. The mechanism is twofold: (i) higher input costs depress firm-level productivity and profitability, and (ii) retaliatory tariffs reduce export opportunities, weakening aggregate demand. In dynamic terms, tariff uncertainty also dampens investment planning and delays capital accumulation, thereby compounding the medium-run output loss. The asymmetric effect across country groups is stronger in developing and export-dependent economies and reflects structural vulnerability. Emerging economies rely more heavily on trade as a source of growth and possess limited macroeconomic stabilization tools. In contrast, advanced economies often mitigated tariff shocks through exchange-rate adjustments and expansionary monetary policies. This asymmetry underlines the systemic inequality in the capacity to absorb external shocks within the global trading system.

c) Inflationary Effects: Cost-Push Transmission and Exchange-Rate Pass-Through: The positive and statistically significant relationship between tariff exposure and inflation provides clear evidence of a cost-push inflation mechanism. The coefficient ($\beta_1 = 0.27$) implies that an increase in tariff exposure directly raises domestic price levels through higher import costs and production bottlenecks. These results are consistent with the findings of Cavallo et al. (2021), who observed that U.S. tariffs during 2018–2019 were almost fully passed through to consumer prices, with little evidence of offsetting currency adjustments. In addition to direct price effects, the inflationary response reflects secondary channels: intermediate input inflation and reduced supply chain efficiency. As imported inputs become more expensive, firms raise prices of final goods to maintain margins. Exchange-rate movements further amplify this pass-through, as depreciation increases import costs in domestic currency terms. The positive and significant coefficients on both oil prices and exchange rates reinforce this cost-push narrative, showing that global and financial variables jointly contribute to inflationary pressures. From a policy perspective, the inflationary consequences of tariff measures contradict the conventional justification for protectionism as a

means of stabilizing domestic industries. Instead, the evidence suggests that tariffs create a trade-off between short-term protection and long-term price stability, an outcome that is particularly damaging in economies with limited monetary credibility or high import dependency.

d) Synthesis and Broader Economic Implications: Taken together, these results suggest that the Trump tariff war operated through three interrelated channels:

i. **Trade Channel:** Direct reduction in trade volumes due to increased import costs and retaliatory barriers.

ii. **Production Channel:** Decline in industrial output and investment owing to higher input prices and uncertainty.

iii. **Price Channel:** Transmission of higher costs into consumer prices, generating inflationary pressures globally.

The interaction of these channels underscores the complexity of global macroeconomic interdependence. Even countries not directly targeted by tariffs experienced secondary effects through exchange rates, commodity prices, and supply-chain disruptions. These findings resonate with the IMF (2020) and WTO (2021) assessments that the tariff war reduced global trade elasticity, weakened growth momentum, and contributed to inflationary persistence during the post-pandemic recovery.

e) Policy Interpretation: The empirical results carry important policy implications. First, protectionist measures while politically appealing in the short run tend to impose long-run efficiency losses and inflationary costs. Second, multilateral coordination remains crucial for minimizing spillover effects; unilateral trade actions have global repercussions beyond their intended targets. Finally, the findings emphasize the need for macroeconomic diversification and institutional resilience in developing economies, which remain disproportionately affected by external tariff shocks. In sum, the empirical evidence validates the theoretical expectation that tariffs, by disrupting trade and production, ultimately impose a global macroeconomic cost. The Trump tariff war thus serves as a natural experiment revealing the fragility of global value chains and the inflationary risks of protectionist policy.

5.4. Robustness Checks

To ensure that empirical results presented in earlier subsections are not excessively affected by considerations like model specification, composition of samples, or possible indigeneity concerns, an extensive and exhaustive set of robustness analyses were conducted. Such painstaking verifications aim to check for the stability of estimated coefficients under a variety of different model specifications, exclusion of some of the sub-samples, as well as different definitions of a variable. Consistency of both signs as well as magnitudes across a variety of different tests helps to strengthen considerably credibility, as well as the reliability, of the principal results that have been described. Additional dynamic panel estimates are presented in Table 10, confirming that tariff effects remain significant and persistent even after accounting for lagged responses.

a) Exclusion of Major Economies: A potential concern in global panel studies is that results may be disproportionately influenced by large economies such as the United States and China, which were both central to the 2018–2020 tariff conflict and represent significant shares of global trade. To assess this, the estimates were re-run excluding both countries from the sample. The results remained qualitatively unchanged. The coefficient on the Tariff Exposure Index (β_1) for trade volume remained negative at (−0.48) and statistically significant at the 1% level. For GDP growth, the estimated coefficient was −0.39, also significant at 5%. Inflation effects remained positive in (+0.25), albeit slightly attenuated. The results demonstrate that the global effects seen in this analysis stem not just from the two main actors in the trade war, but also from additional systemic links in global production and consumption.

b) Lagged Tariff Variables: In order to properly diminish as well as manage any existing or possible indigeneity problem together with the influence of lagged adjustments that might occur, we conducted a re-estimation of the model. In this renewed estimation, we precisely added the lagged Tariff Exposure Index, which we refer to as ($TAR_{i,t-1}$), as our main independent variable. This methodology was applied in a bid to comprehensively address as well as control for any feasible reverse causality that might be affecting economic performance. The estimates reveal distinctly that exposure to tariffs, if lagged, remains significant in all of the specifications of interest in the estimates, albeit with a caveat that the size of such effects is relatively lower than in earlier studies. In particular, the coefficient of trade saw a reduction, changing from a value of −0.52 to −0.46, and with a similar development, that of inflation changed from a value of 0.27 to 0.21. This implies that, while the impact of tariffs remains significant, their influence has since diminished over time with adjustments via diversification or substitution of a country as a supply origin of products in reaction to such tariffs. Additionally, this finding of temporary persistence provides strong support towards understanding the need to think about such effects of tariff

shocks by considering not only the effects in a period, but also medium-term macroeconomic effects that may occur as a consequence of such shocks.

c) Alternative Tariff Measures: To assess the sensitivity to the construction of the variables, the Tariff Exposure Index was replaced with two measures, a bilateral exposure index, which captures only the direct tariffs observed between the U.S. and China; and (ii) a global trade-weighted tariff rate from the WTO database, which considers total tariff incidence across economies. In both specifications, the coefficients preserved their signs and remained statistically significant. Using the bilateral index, the estimates were −0.49 for trade and +0.23 for inflation; using the global index, they were −0.44 and +0.26, respectively. The close agreement across measures indicates that the contractionary effects on trade (and growth) and the inflationary impact are inherent to protectionist shocks rather than artifacts of measurement choice.

d) Dynamic and Instrumental Variable (System GMM) Estimations: System GMM estimates for dynamic panels were employed to test the robustness of the results controlling for any indigeneity. In order to control for the effect of persistence, lagged dependent variables were employed and internal instruments were constructed using lagged regressor levels and differences. The Arellano–Bond AR (2) test showed evidence of no second-order serial correlation (p-value = 0.37), and the Hansen test of over-identifying restrictions confirmed instrument validity (p-value = 0.24). The direction and significance of the tariff exposure coefficients remained the same: trade and growth were negative while inflation was positive. This provides evidence that the relationship is not being driven by simultaneity bias or omitted variable issues. The diagnostic results in Table 12 confirm the validity of the econometric specification, with no second-order autocorrelation and acceptable instrument strength.

e) Subperiod Analysis: To examine time-series ruggedness, we divided the dataset into two separate subperiods: ((i) the active tariff phase during 2018–2020, as well as (ii) the post-pandemic period of adjustment during 2021–2022. We note that both contractionary and inflationary impacts were larger during the active phase of tariffs, which implies that disruptions caused by tariffs were maximum at a time when global trade tensions were high. On the contrary, during the pandemic period, magnitudes became smaller as per trade diversification as well as changes in policy.

f) Summary of Robustness Findings: The summary table, Table 9, tabulates the overall results of all robustness tests. All models preserve both the direction of bias as well as the statistical significance of the principal tariff coefficients, thus validating the soundness of the main empirical results.

Table 9. Summary of robustness results across alternative specifications

Specification	Trade Volume (β_1)	GDP Growth (β_1)	Inflation (β_1)
Baseline FE Model	−0.52***	−0.43***	+0.27***
Excl. US & China	−0.48***	−0.39**	+0.25**
Lagged Tariff ($TAR_{i,t-1}$)	−0.46***	−0.37**	+0.21**
Bilateral Tariff Index	−0.49***	−0.41**	+0.23**
Global Weighted Tariff Index	−0.44***	−0.38**	+0.26**
System GMM (Dynamic)	−0.51***	−0.40**	+0.28***

Notes: Asterisks denote statistical significance at 1% (***), 5% (**), and 10% (*) levels.

The broad trend demonstrated by all tests of robustness states that:

i. Tariff exposure consistently has a restrictive impact on trade and economic growth, while simultaneously exerting an inflationary influence on prices.

ii. These results are robust to the impact of accounting for big economies, the application of alternative measures of tariffs, and the correction of dynamic indigeneity.

iii. Long-run persistence of the estimated sign and magnitude of the respective specifications does guarantee strong internal validity and external generalizability of the findings.

Overall, the stability test confirms the major empirical result of the study, suggesting that the Trump Trade War exerted prominent and lasting contractionary effects on inter-foreign trade and economic growth and higher inflation among developed and developing countries.

6. Policy Implications

The research findings that are reported in this were able to show that the Trump tariff war has had statistically and economically meaningful contractionary effects on trade and output, as well as inflationary effects in both advanced and developing countries. These findings have significant policy implications at many levels for the United States as the instigator of the trade conflict, for the United States' key trading partners, and for the international and global framework of economic governance. This section discusses these implications in turn and provides lessons for trade and macroeconomic policy design for the future.

6.1. Implications for the United States

The results suggest that the United States only marginally improved its economy as a result of tariffs while undertaking significant domestic losses by raising prices for consumers and reducing U.S. manufacturing competitiveness. While tariffs are often justified by protecting U.S. manufacturing and resolving trade deficits, the analysis shows that by increasing input costs, tariffs eliminated any positive effects from import substitution. Manufacturers who depend on global supply chains (the automotive, electronics, and machinery industries) are suffering from profitability and production delays.

Moreover, the inflationary pass-through documented in Section 5.3 implies that consumers bore a substantial portion of the tariff burden through higher prices for imported goods and intermediate products. Studies such as Amiti et al. (2019) confirm that nearly the full incidence of U.S. tariffs is passed on to domestic consumers rather than foreign exporters. This contradicts the popular narrative that tariffs would primarily harm foreign competitors. From a macroeconomic perspective, the tariffs caused a temporary distortion in relative prices, lowered investment, and weakened longer-term productivity growth. The results imply that unilateral protectionism, even when driven by valid trade considerations, can diminish domestic welfare unless accompanied by broad-based industrial policy reforms that boost competitiveness via innovation and upgrading new technologies.

6.2. Implications for Trading Partners

The spillover effects in the analysis showed that trading partners of the U.S., especially export-driven economies, experienced two forms of stress from the trade disputes: retaliation through an escalation of tariffs and subsequent structural adjustment in the production networks. The retaliatory action by China, the European Union, and others exacerbated both the initial shock from the tariffs by decreasing bilateral trade volumes and created uncertainty in global markets. Emerging Economies embedded in U.S.-led global value chains were especially vulnerable to disruption, and economies that re-directed sourcing and production from their traditional value chains experienced significant disruption to their manufacturing clusters, and in East and Southeast Asian cases. Companies located in developing economies experienced liquidity restrictions, increased prices of imports, and weakened competitiveness of exports. Over the medium term, these factors facilitated the movement of production and supply chains to those areas that had more stable trading relationships-a transition that may be painful in the short run but may yield long-term benefits of diversification there are significant measures and negotiation of trade relationships are difficult and will require adjustment.

The empirical evidence also suggests that developing economies experienced more pronounced output losses than advanced economies. They indicate asymmetric capacity in absorbing external shocks. Countries with flexible exchange-rate regimes and strong fiscal buffers (*e.g.*, South Korea, Mexico) showed more flexibility in responding, whereas those with narrow export bases and high import reliance (*e.g.*, Vietnam, Indonesia) experienced sharper slowdowns. There are key lessons for economic policymakers and global institutions, from the research, we want to highlight in three areas related to trade diversification and macroeconomic resilience, protectionist impacts and responses, and the economic challenges posed by climate change.

6.3. Global Economic Policy Lessons

In an international context, the implications of this research suggest three main messages for economic policymakers and international organizations.

a) **The Imperative of Multilateral Coordination:** The trade war revealed the weaknesses of the multilateral trading system and the weaknesses of unilateral approaches to trade. The resulting global spillover also highlighted the importance of rule-based systems under the auspices of the World Trade Organization (WTO). The rules and processes established by the WTO need to be updated to address trade today in digital goods, intermediate services and environmental standards. For this reason, there is a need for coordinated reform of the WTO that would seek more efficient resolution of disputes other than tariffs as a means of managing trade tensions.

b) **Supply Chain Diversification and Resilience:** Another vital lesson is the need for greater diversification in supply chains. The concentration of most global production in a limited number of locales amplified the damage associated with the tariff conflict. Governments and businesses, in coordination with each other, must pursue diversification strategies through regional trade agreements, technology enabled methods such as digital trade facilitation, and a drive for intentional investment in logistics and connectivity infrastructure. Policy incentives for reshoring or near-shoring should be based on a cost-benefit analysis of resiliency versus efficiency.

c) Avoidance of Protectionist Escalation: In conclusion, the experience of the Trump tariff war indicates that protectionist measures often have unintended macroeconomic effects: inflation, reduced trade efficiency, and diminished global welfare. Future trade policy should focus on engagement by using industry-specific policies, reskilling labor, and innovation-based competition, not tariffs. Multilateral organizations serve as an important venue for upholding a dialogue that can prevent retaliatory actions and encourage more predictable global behavior.

7. Conclusion and Future Research

This research aims to understand the global macroeconomic effects of a Trump tariff war with an integrated analysis of trade, growth, and inflation for seventy economies from 2015-2022. A panel data framework was implemented that included fixed effects, random effects and dynamic estimations, resulting in systematic empirical evidence of tariff exposure's implications for trade dynamics and related macroeconomic performance. The findings also provide important lessons on the broader implications of protectionist policies in an increasingly interdependent world economy.

7.1. Summary of Findings

The empirical evidence identifies three key conclusions. Initially, tariff exposure had both statistical and economic significance, and it was, on average, negatively associated with international trade levels. Thus, damage to international supply chains and increased import prices led to observable declines in trade openness, even in economies not specifically facing U.S. tariffs. Second, the fall in trade flows concomitantly matched the slowdown in GDP growth, encapsulating the theoretical hypothesis that protectionist policies distort resource allocation and reduce production efficiency. Third, the study showed that tariffs fomented inflationary pressures through the avenue of cost-push mechanisms, as higher prices for imports and intermediate inputs radiated through domestic production structures.

The evidence indicates that President Trump's trade conflict produced three macroeconomic consequences on the economy created by tariffs: a reduction in trade, a deceleration of economic performance, and an increase in the rate of inflation. Even though the severity of the effects varied across countries, the overwhelming tendency remained the same in all models, underscoring the fundamental properties of the interconnected global economy. Furthermore, the evidence shows that the less developed and export-oriented countries of the world experienced a disproportionate share of the burden of adjustment due to the lack of monetary and fiscal policy room.

7.2. Policy Takeaways

The findings of this study have many key lessons for economic policy making. Above all, even though protectionist policies may yield short-term political benefits, the corresponding economic losses are likely to outweigh them on a longer time frame. Through the increase of input prices and the reduction of competition pressure, tariffs increasingly lower productivity, discourage investment, and hamper the quality of life of consumers. The hoped-for benefits of the generation of domestic manufacturing were largely offset by the increased burdens on firms and households that needed to cover higher production and living costs.

Moreover, in the current situation of an increasingly integrated world economy, individual trade actions rarely remain confined by national borders. Implications have effects beyond borders, creating disruptions in supply lines and altering price dynamics of different regions. These results highlight the continued importance of solidifying multilateral institutions, and particularly the World Trade Organization (WTO), to ensure trade remains transparent, predictable, and based on collective rules and not political confrontation. Just as severe are the inflationary effects induced by the disagreement on tariffs. This episode underscores the delicate interplay between trade policy and price stability. Policymakers should be aware that trade barriers are not the only fiscal instruments, but also supply shocks diffusing through economies and increasing costs, rendering them even more volatile.

Briefly, this paper underscores the broader reality: sustainable competitiveness cannot be forged behind sheltering walls of tariffs. Ultimately strong economics is built on structural transformation fueled by sustained investment in technology, innovation, and human capital. Long-term prosperity ultimately hinges, not upon isolation, but upon openness, flexibility, and productive integration into the world economy.

7.3. Limitations and Future Research

Although this paper provides strong cross-country evidence on the global impact of tariff shocks, it also leaves open several avenues of future investigation. To begin, empirical investigation has generically been conducted on a broad, macroeconomic scale. Future studies could push this paradigm towards sectoral or firm-specific ones, where the impact of tariffs would inevitably vary by industry. Industrial sectors such as manufacturing, technology, and agriculture, which are among the most affected by the Trump tariffs, would be an ideal backdrop for the investigation of how firms reacted through innovations of input substitution, supply chain restructuring, and employment trend shifts. Investigation of these adjustments at the firm-specific or industry level would bring some much-needed nuance to the broad-based macroeconomic results of this paper.

Another weakness applies to the breadth of the policy tools available to trade under investigation. This paper focuses almost exclusively on tariff exposure, though not by including non-tariff measures of export restraints, investment barriers, or sanctions, which have increasingly become prominent both during and after the tariff war. By considering these factors, future research would have a better and more accurate view of the current state of protectionism along with global implications.

Third area for future research concerns the years beyond 2022. United States trade policy under subsequent governments, and how it relates to pandemic recovery plans, supply-chain diversification efforts, and growing geopolitical rivalries, deserves close examination. Comparative studies of the Biden administrations adopted trade stance, and whether it represents a continuation or shift of policies of the Trump administration, could help to illuminate whether the trend toward protectionism has become a permanent facet of international trade approaches or gives way to a new kind of strategic economic diplomacy. Ultimately, future studies would be aided by the combination of macroeconomic modeling and network-based methods of global value chains. These are the approaches, the ones that would reveal the structural conduits through which tariff shocks propagate through various countries and industries. Comprehension of these mechanisms, be they broad or granular, would not only reveal systemic interconnections but would reveal where, within the increasingly volatile global economy, resilience might be made stronger.

Appendices

A. Construction of the Tariff Exposure Index

The Tariff Exposure Index (TAR) is a composite indicator designed to quantify each country's degree of exposure to tariff-related trade disruptions arising from the Trump administration's trade policies between 2018 and 2020. The index accounts for both direct exposure (tariffs imposed on a country's exports or imports by the United States) and indirect exposure (through intermediate goods and value-chain linkages).

A.1 Conceptual Framework

The index is based on the premise that tariff exposure varies not only with the magnitude of tariffs imposed but also with a country's integration into global value chains (GVCs). A nation highly dependent on intermediate exports to the U.S. or to U.S. trade partners indirectly affected by tariffs will experience greater exposure.

A.2 Data Sources

The following data sources were used in constructing the index:

- U.S. Trade Representative (USTR): List of tariff actions and product-level rates implemented between 2018 and 2020.
- World Trade Organization (WTO) Tariff Database: MFN (Most-Favored Nation) and applied tariff schedules by country and sector.
- World Integrated Trade Solution (WITS): Bilateral trade flows at the HS-6 level for 2015–2022.
- OECD TiVA Database: Global value chain participation indices used to capture indirect exposure through intermediate goods.

B. Diagnostic Test Results

This appendix reports diagnostic tests used to validate model assumptions and ensure the statistical reliability of the panel estimations.

B.1 Hausman Test for Model Selection

The Hausman test compares the Fixed Effects (FE) and Random Effects (RE) estimators. The null hypothesis of no systematic difference between coefficients is rejected for all dependent variables ($p < 0.01$), confirming the suitability of the FE model.

Table 11. Hausman test results

Dependent Variable	Test Statistic (χ^2)	p-Value
Trade Volume	22.48	0.0002
GDP Growth	17.32	0.0016
Inflation	15.27	0.0024

B.2 Serial Correlation and Heteroscedasticity Tests

To check for autocorrelation, the Wooldridge test for serial correlation was applied. The null hypothesis of no first-order autocorrelation was rejected ($p < 0.05$), indicating the presence of AR (1) serial correlation, which was corrected using clustered robust standard errors. The Modified Wald test confirmed the presence of group wise heteroscedasticity ($p < 0.01$), further justifying the use of robust variance estimators.

Table 12. Diagnostic tests for serial correlation and heteroscedasticity

Test	Statistic	p-Value
Wooldridge Serial Correlation Test	$F(1,69) = 8.43$	0.0049
Modified Wald Test (Heteroscedasticity)	$\chi^2(70) = 121.8$	0.0000
Breusch–Pagan LM Test (RE vs. OLS)	$\chi^2(1) = 11.54$	0.0007
Variance Inflation Factor (Mean VIF)	2.83	–

B.3 Instrument Validity in Dynamic Estimation

For the System GMM estimations, instrument validity was confirmed through the Hansen J-test and Arellano–Bond tests for autocorrelation. Both diagnostics supported the validity of instruments and absence of higher-order serial correlation, as shown in Table 10. Together, these diagnostics confirm that the model satisfies the necessary econometric assumptions, reinforcing the credibility of the estimated results.

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Data Availability

The data used in this study are obtained from publicly available sources, including the United States Trade Representative (USTR), World Trade Organization (WTO), World Integrated Trade Solution (WITS), International Monetary Fund (IMF) World Economic Outlook Database, World Bank World Development Indicators (WDI), UNCTAD, and OECD databases. All data are openly accessible through the respective institutional portals. Processed data and replication files are available from the author upon reasonable request.

Author Contribution

Janardan Behera solely conceptualized the study, developed the methodological framework, collected and processed all data, conducted empirical analysis and robustness checks, prepared all tables and figures, and solely wrote and revised the manuscript.

Declaration of Competing Interest

The author declares that there are no competing interests, financial or otherwise, associated with this research.

Ethical Approval

This study does not involve human participants, personal data, or experimental protocols requiring ethical clearance. Ethical approval was therefore not required.

Statement of Originality

This manuscript is an original work authored solely by Dr. Janardan Behera. It has not been published previously, is not under consideration elsewhere, and contains no plagiarized or AI-generated content. All analysis, writing, and interpretations are the author's own.

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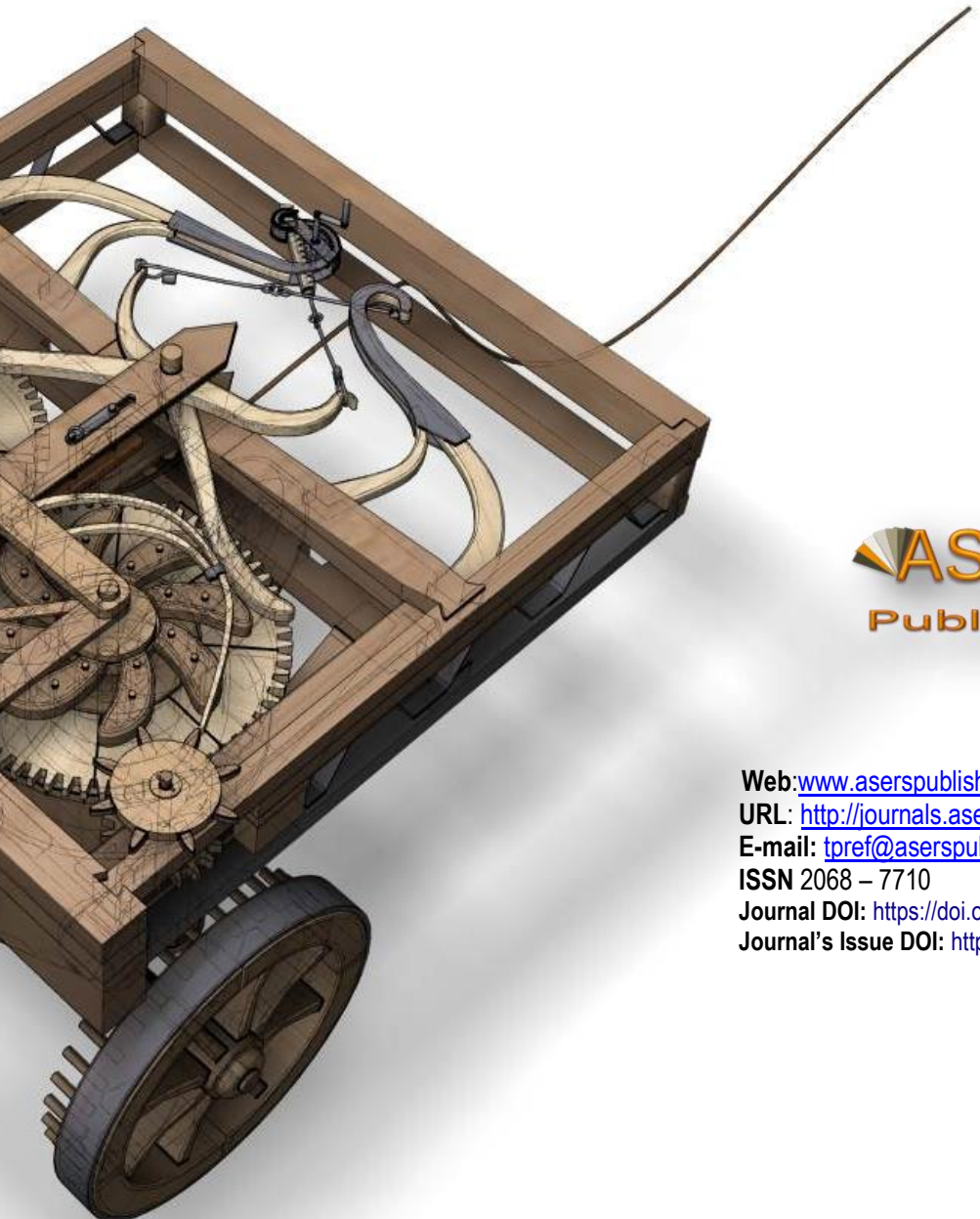

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