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Insight Paper

Tariffs and Triumph: The UK's Edge in a Fractured World

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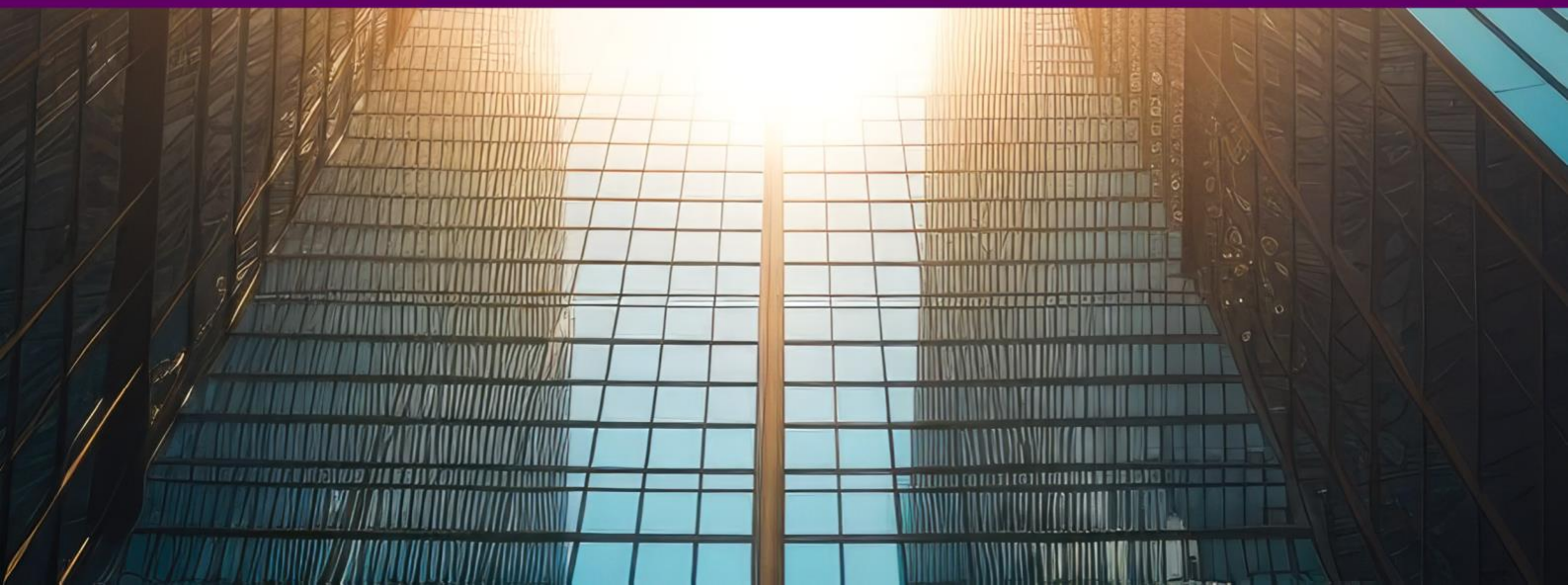

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Abstract

Donald Trump's 2025 tariff policies have reignited global trade tensions, imposing sweeping protectionist measures that risk escalating into a full-scale trade war. This paper employs a structural gravity model to quantify the economic impacts across six scenarios, projecting a $1.4 trillion global welfare loss under full retaliation. The UK faces trade declines but also gains from rerouting opportunities. The analysis draws on optimal tariff theory and historical precedents, such as the 2018 U.S.-China trade war, to underscore the systemic risks of protectionism. Strategic recommendations advocate for pragmatic diversification via CPTPP and India agreements, reinforced by multilateral engagement to mitigate UK-EU divergence. The study highlights the imperative of balancing bilateral opportunism with cooperative frameworks, positioning the UK as a stabilising bridge in an increasingly fractured global economy.

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Key Insights

- **Global Economic Toll**: Trump's tariffs trigger a trade war, slashing global welfare by up to $1.4 trillion, with widespread price hikes and inefficiencies.
- **Retaliatory Spiral**: Major economies' countermeasures amplify losses, undermining trade norms and echoing theoretical warnings of escalation.
- **UK's Ambivalent Impact**: The UK experiences simultaneous trade disruptions and rerouting benefits, illustrating its dual exposure to both vulnerability and resilience amid global trade tensions.
- **Theoretical Validation**: Economic models predict short-term gains unravelling into broader losses as retaliation intensifies.
- **Empirical Patterns**: Current tariff-induced disruptions, including elevated costs and fragmented supply chains, mirror historical protectionist episodes, notably the U.S.-China trade war of 2018.
- **Strategic Responses**: The UK can adapt through supply chain shifts, new trade partnerships, and global cooperation, leveraging post-Brexit flexibility.
- **Policy Call**: Swift, coordinated action is critical to mitigate risks and seize opportunities in a disrupted trade landscape.
- **UK-EU Trust Erosion**: UK's trade shifts risk EU ties, sparking regulatory clashes and supply chain strains in key sectors.
- **Pragmatic Rebalancing Act**: UK must weigh tariff gains against EU ties. Post-Brexit agility and multilateral anchoring position it as a global bridge, curbing fragmentation.

1. Introduction

Donald Trump's 2025 return to power has unleashed a gale of protectionism, reshaping global trade within weeks. By March 20, tariffs of 25% on Mexico and 25% on Canada (excluding energy at 10%), an additional 20% on China (on top of existing duties), and 25% on steel and aluminium imports worldwide have triggered rapid retaliation: Canada imposed $30 billion in duties on U.S. goods, Mexico prepared mirror measures, China targeted $21 billion in U.S. exports like agriculture and rare metals, and the EU rolled out a two-phase response worth €26 billion, starting with €8 billion on U.S. products like bourbon and motorbikes. In March 2025 at the time of writing, counting down to US Reciprocal tariffs, these actions and further tariffs threaten a full-blown trade war, with profound implications for interconnected economies like the UK.[1]

As a trade-dependent nation navigating post-Brexit realities, the UK stands at a crossroads. Trump's tariffs disrupt supply chains and exports, yet might open doors for rerouting, with high potential for exporting much more to the U.S. The dual-edged impacts are stark: fleeting export gains collide with vulnerabilities in critical sectors like automotive and tech, while EU divergence risks, amplified by regulatory misalignment and political distrust, threaten its efforts in resetting the UK-EU relationship.

This paper analyses these dynamics through a structural gravity model, simulating six escalation scenarios to quantify protectionism's global and UK-specific impacts. Our findings reveal a projected $1.4 trillion welfare loss under full global retaliation, alongside asymmetric risks: while the UK benefits transiently from rerouted trade, overreliance on unilateralism risks alienating the EU and fracturing cross-Channel supply chains. Grounded in optimal tariff theory (Bagwell & Staiger, 1999) and political economy frameworks (Grossman & Helpman, 1994), the study bridges historical precedents—from Smoot-Hawley to Brexit—and contemporary GVC fragility (Yanıkkaya et al., 2023) to propose a **pragmatic equilibrium** for UK resilience.

We chart a dual strategy: accelerating CPTPP and India partnerships to diversify trade, while anchoring EU cooperation through joint supply chain initiatives and WTO reforms. This approach balances post-Brexit agility with multilateral stability, positioning the UK as a bridge—not a bystander—in a fractured global order.

2. Review of the Literature: The Economics of Tariffs and Trade Policy

The economics of tariffs as tools of protection and influence is a well-researched field, extensively studied for their impacts on trade, welfare, and global economic stability. While tariffs can shield domestic industries, nurture nascent sectors, and generate government revenue, these benefits often erode under scrutiny, giving way to inefficiencies and broader costs. This section synthesises the theoretical foundations, empirical evidence, and historical lessons surrounding tariffs, providing a robust backdrop to assess the UK's position amid Trump's 2025 protectionist measures.

[1] Appendix 1 provides a summary of Trump tariffs and retaliations as of 20 March 2025.

2.1 Theoretical Foundations: Optimal Tariff Theory and Trade Wars

Tariff policy rests on a dual-edged theoretical framework: it can enhance national welfare under specific conditions, yet it risks triggering destructive escalation absent coordination. Optimal tariff theory, as articulated by Bagwell and Staiger (1999) and quantified by Ossa (2014), identifies key motives:

- **Terms-of-trade externality**: A country can improve its welfare by imposing tariffs that lower import prices, shifting costs onto foreign producers and improving its terms-of-trade. This externality drives tariffs above globally efficient levels, as nations prioritise self-interest over collective gain.
- **Profit-shifting and production relocation**: Ossa's (2014) 'new trade' approach highlights tariffs as tools to relocate manufacturing production, boosting domestic employment. Unlike price-focused terms-of-trade effects, this emphasises quantity shifts – drawing production to the tariff-imposing country.
- **Political economy drivers**: Grossman and Helpman (1994) extend this, showing tariffs often reflect lobbying by influential industries, not just welfare goals. This political motive amplifies protectionism.

The textbook case against tariffs hinges on retaliation: nations, acting rationally, meet tariffs with tariffs, spiralling into trade wars that beggar all sides. Ossa (2014) models this dynamic, projecting that unchecked escalation could raise tariffs to 62% on average, slashing global welfare by 2.9% – a $3.1 trillion loss slightly less the UK's 2023 GDP.[2]

2.2 Channels of Tariff Impacts

Empirical studies consistently reveal tariffs' negative impact across multiple dimensions – spanning price, production, and social outcomes – reinforcing the theoretical case against protectionism:

- **Price increases and consumer impact**: Tariffs raise prices for intermediate and final goods, often fully passed to consumers and importers, reducing real income. Amiti et al. (2019) find the 2018 U.S. tariffs cost consumers $1.4 billion monthly in welfare losses and $3.2 billion in added tax costs by year-end, with near-complete pass-through to import prices.
- **Economic output and productivity**: Tariff hikes cut domestic output and productivity, effects magnified in advanced economies or during expansions. Furceri et al. (2021, 2018, 2020) document larger declines when tariffs rise than fall, driven by resource misallocation and reduced competition.
- **Unemployment and inequality**: Higher tariffs, which is a regressive tax on the imported goods, increase unemployment and inequality, compounded by real exchange rate appreciation that strains export sectors (Furceri et al., 2021, 2018).
- **Trade Flows and Global Value Chains**: Tariffs disrupt trade flows, reallocate sectoral output, and hinder GVC participation by raising supply chain costs, eroding competitiveness (Charbonneau & Landry, 2018; Yanıkkaya et al., 2023).

[2] Global GDP in 2023 was 106.17 trillion USD (WDI, World Bank), which translate into the loss of 3.08 trillion USD as a result of full-scale trade war (Ossa, 2014), while UK GDP in 2023 was 3.380 trillion USD.

In sum, the consensus is near-unanimous: protectionism distorts resource allocation, erodes competitiveness, and leaves economies poorer. To counter the negative impact of tariff and trade protection, the WTO was created (succeeding General Agreement on Tariffs and Trade, or the GATT) to build a stable, transparent, and rules-based trading system that benefits all member nations by reducing trade conflicts and promoting economic growth.

3. The World Trade Organization: Purpose, Principles, and Potential Fallout

The economics of tariffs reveals a persistent tension: nations can wield tariffs to secure short-term gains – whether through terms-of-trade advantages or production shifts – yet risk spiralling into trade wars that erode global welfare. This is why the WTO emerged as a critical response to this dilemma, promoting trade liberalisation and enforcing multilateral agreements to temper unilateral impulses.

3.1 Purpose: Mitigating Tariff Inefficiencies

The WTO's *raison d'être* lies in countering the inefficiencies that optimal tariff theory predicts, as nations pursue beggar-thy-neighbour strategies to exploit trading partners or protect domestic industries. Left unchecked, these actions – highlighted in the literature as drivers of trade distortions – threaten the stability that underpins economic prosperity. The WTO facilitates coordinated trade policies, building on the liberalisation legacy of the post-1945 GATT era (Irwin, 2017). By offering a structured alternative to unilateral tariff-setting, it seeks to prevent the retaliatory cycles that historical episodes, such as the Smoot-Hawley Tariff Act of 1930, exemplify, a role ever more pressing as protectionism resurges.

3.2 Core Principles: Reciprocity and Non-discrimination

Bagwell and Staiger (1999, 2010) detail how the WTO's twin principles – reciprocity and non-discrimination – address the tariff externalities and political pressures outlined earlier:

- **Reciprocity**: This mandates mutual tariff concessions, ensuring balanced reductions that offset terms-of-trade manipulations. By aligning market access gains across members, it curbs the incentive for countries to shift costs onto foreign producers, fostering cooperation over exploitation.
- **Non-discrimination** (Most-Favoured-Nation, MFN)**:** The MFN clause requires that a tariff granted to one member applies to all, eliminating discriminatory practices that skew local prices or favour select partners. This promotes efficiency by harmonizing trade conditions globally.

These principles have historically slashed tariffs – from 40% in 1947 to under 4% by 2010 (Figure 1) – anchoring decades of trade growth. They stand as a bulwark against the protectionist impulses now testing multilateral norms.

3.3 Potential Fallout: Risks of a WTO Collapse

A weakening or collapse of the WTO – whether through withdrawal by major economies or defiance of its rules – carries significant risks, as Bagwell and Staiger's framework suggests:

- **Tariff Escalation and Trade Wars**: Without WTO disciplines, countries would revert to non-cooperative tariffs, setting rates to maximise national advantage. Retaliation

would likely follow, igniting trade wars that shrink global trade and heighten economic friction – dynamics akin to the 1930s post-Smoot-Hawley collapse (Irwin, 1996).
- **Welfare and Efficiency Losses**: The absence of multilateral coordination would erode global welfare, as higher barriers disrupt efficient production and resource allocation. Historical precedents point to substantial costs reverberating across markets.
- **Erosion of Multilateral Incentives**: Outside the WTO, nations lose the cooperative benefits of reciprocity and MFN, diminishing the impetus for tariff reductions through unilateral or bilateral channels. This could stall liberalisation, deepening inefficiencies.

In sum, the WTO's reliance on reciprocity and non-discrimination is pivotal to averting the tariff escalations that economic theory and history caution against. Without these principles, nations risk reverting to higher tariffs and reduced trade flows, amplifying the distortions the literature review identifies. As protectionism – exemplified by Trump's tariff agenda – challenges this system, the stakes for trade-dependent economies rise.

4. Protectionism in the United States

U.S. trade policy has long oscillated between protectionism and liberalisation, a dynamic that shapes the context for Trump's 2025 tariff resurgence. This section traces this historical arc, examines the economic fallout from Trump's 2018 trade war, and unpacks the likely strategic playbook behind his current approach, as articulated by Miran (2024). Together, these elements illuminate the interplay of economic theory, empirical outcomes, and policy intent – critical for understanding the broader implications of contemporary protectionism.

4.1 Historical Evolution: From Protectionism to Liberalisation and Back

U.S. tariff policy has consistently mirrored broader political and economic debates, oscillating between protectionism and liberalisation. Figure 1 illustrates the changes and the average tariff levels of the US.

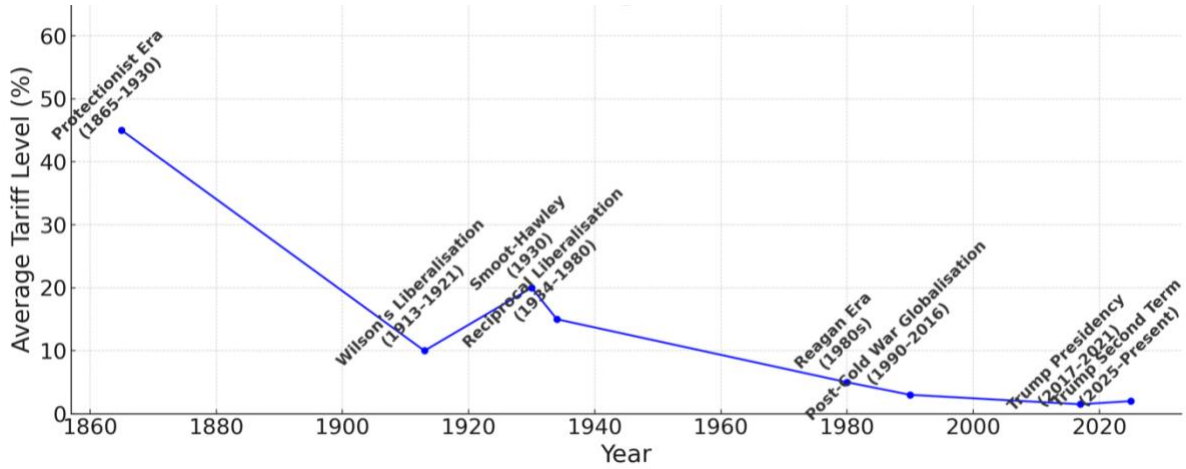
From 1850 until the early 20th century, protectionism was prevalent, driven by Republican political dominance following the Civil War. High tariffs protected emerging American industries from international competition, yet they imposed significant costs on agricultural exporters and consumers due to elevated prices. While protectionism is sometimes credited for supporting the era's rapid industrialisation, scholars such as Irwin (2017) argue that productivity gains and capital accumulation were more influential, highlighting the complex legacy of protectionist policies.

Between 1915 and 1945, U.S. trade policy experienced significant volatility. Initially, the Smoot-Hawley Tariff Act of 1930 exemplified protectionism at its peak, exacerbating global economic conditions during the Great Depression through retaliatory tariffs and severely reduced international trade and investment (Crucini & Kahn, 1996; Irwin, 1996). Although Irwin (1998) acknowledges that monetary crises also intensified the economic downturn, Smoot-Hawley remains a stark historical illustration of the risks associated with aggressive protectionism. In reaction to these consequences, the Reciprocal Trade Agreements Act of 1934 marked a pivotal shift towards liberalisation, granting the executive branch authority to negotiate reciprocal tariff reductions.

This liberalisation initiative laid the foundation for the post-World War II trade framework, notably through institutions like the General Agreement on Tariffs and Trade (GATT) and its successor, the World Trade Organization (WTO). Under this multilateral system, average tariff barriers dramatically decreased—from around 40% in 1947 to below 4% by 2010 (WTO data)—coinciding with sustained economic growth and integration into the global economy (Irwin, 2017). The 1980s saw a brief return to selective protectionism under President Reagan, even as broader liberalisation trends continued through initiatives such as NAFTA.

The resurgence of protectionism under Donald Trump's administrations (2017–2021, 2025–present), marked by substantial tariffs on imports, notably from China, represents a return to historical policy tensions between isolationism and multilateralism. Trump's policies echo earlier protectionist measures, reviving debates on trade's role in national economic security and reflecting an enduring cyclical struggle within American trade policy.

Figure 1: Historical Evolution of US Trade Policy and Average Tariff Levels



Note: Average tariff levels are indicative and based on historical estimates. Figures reflect general trends in applied tariff rates for the US over each period. Specific tariff rates over each period can vary. Sources include historical trade policy analyses, U.S. Tariff Commission reports, and academic literature, sourced from US Department of Commerce, Bureau of the Census, US International Trade Commission.

4.2 Lessons from Trump's First Trade War (2018–2019)

Impact on the U.S.

Trump's 2018–2019 tariffs—10–25% on steel, aluminium, and $250 bn of Chinese goods—provide a modern case study of protectionism's economic toll, dissected in recent scholarship. Amiti, Redding, and Weinstein (2019) estimate near-complete pass-through to U.S. import prices, costing consumers and importers $3.2 billion monthly, including $1.4 billion in deadweight welfare losses. Reduced import competition inflated domestic manufacturing prices (e.g., steel up 9%), shrank product variety, and distorted markets, echoing Smoot-Hawley's pitfalls. Cavallo et al. (2021) nuance this: while border pass-through was high, retail prices rose less as U.S. retailers absorbed costs, cutting margins by 1–2% rather than passing on full hikes. This tariff-specific asymmetry—unlike exchange rate shocks—spurred short-term supply chain adjustments (e.g., stockpiling, sourcing from Vietnam), per their firm-level data.

Fajgelbaum et al. (2020) offer a broader lens, finding U.S. imports dropped 12% and exports fell 11% due to tariffs and retaliation (e.g., China's 25% on $110 billion U.S. goods). Consumer and firm losses reached $51 billion (0.27% of GDP), with net real income down $7.2 billion (0.04% of GDP) after tariff revenue ($25 billion) and producer gains. Regional disparities emerged—e.g., Midwest farmers lost $2 billion from China's soy tariffs—while Chinese yuan depreciation (6% in 2018) failed to offset shocks, per elasticity models. These outcomes—price spikes, trade contraction, welfare costs—foreshadow Trump's 2025 tariffs (Appendix 1), anchoring expectations of U.S.-centric disruption.

Impact on Bystander Countries

The US-China trade war has had widespread repercussions beyond the two primary nations involved. Various bystander countries have been affected in different ways, experiencing both opportunities and challenges due to shifting trade patterns and economic uncertainties.

Trade Diversion and Export Growth

As the US and China imposed tariffs on each other's goods, many bystander nations benefited from trade diversion. Countries with competitive industries stepped in to fill gaps left by restricted trade flows between the two economic giants. They boosted their exports to the U.S., maintained relatively stable export levels to China, and expanded exports to the rest of the world in industries affected by higher U.S.-China tariffs (Fajgelbaum et al., 2021). For example, Vietnam capitalised on the increased demand for electronics and textiles, industries that were previously dominated by Chinese exports to the US. Similarly, Mexico saw a rise in manufacturing exports to the US as companies sought alternatives to Chinese suppliers. Thailand and Korea are another two beneficiaries. This shift was largely influenced by tariff elasticities rather than inherent specialisation advantages, allowing certain nations to experience significant export growth (Carvalho et al., 2019).

The trade war also reshaped global trade patterns in favour of some emerging economies. Countries with competitive advantages in specific industries found new markets opening up. Bangladesh, for example, saw increased demand for its garment exports as buyers sought alternatives to Chinese suppliers (Carvalho et al., 2019). India experienced a surge in exports of pharmaceuticals and agricultural products, capitalising on shifting global supply dynamics.

Tariff Elasticities and Market Reallocation

The extent to which countries benefited from the trade war depended on the elasticity of their exports in response to US-China tariffs. Nations that could efficiently replace Chinese or American products in international markets saw the greatest gains (Fajgelbaum et al., 2021). For instance, European agricultural exporters benefited from China's retaliatory tariffs on US farm products, gaining market share in soybeans and pork. At the same time, industries with rigid supply chains, such as automotive manufacturing, struggled to adjust quickly, limiting potential benefits for countries reliant on these sectors (Li et al., 2018).

Economic Uncertainty and Challenges

Not all bystander nations benefited from the trade war. Some, particularly those with strong economic ties to China, faced economic slowdowns due to reduced Chinese demand for raw materials and intermediate goods, the impact due to uncertainty, and rising input costs and

disruptions in technology supply chains (Pangestu, 2019). Countries such as Indonesia, Malaysia, and Brazil, which export significant amounts of commodities to China, experienced economic headwinds as global growth prospects weakened. Additionally, businesses operating in multiple markets faced uncertainty, leading to delayed investment decisions and disruptions in global supply chains (Li et al., 2018). While some countries have benefited from increased export opportunities, the overall impact of the trade war has been negative for global economic welfare. The reduction in allocative efficiency and terms of trade has led to welfare losses worldwide, particularly affecting countries with strong trade ties to the US and China (Carvalho et al., 2019).

Long-Term Implications and Structural Reforms

The trade war has underscored the importance of structural reforms for bystander nations looking to navigate an increasingly uncertain global trade environment. Countries aiming to mitigate risks and capitalise on new trade opportunities need to enhance regional economic integration and diversify supply chains (Pangestu, 2019). The shifting trade landscape has also highlighted the necessity of reforms in global trade institutions, such as the WTO, to address the challenges posed by rising protectionism and geopolitical tensions. Nations that proactively adjust their trade policies and invest in competitive industries will be better positioned to withstand future trade disruptions (Carvalho et al., 2019).

In conclusion, the US-China trade war has created a complex economic environment for bystander countries. While some nations have seized new opportunities through trade diversion, others have faced significant economic challenges due to declining demand and global uncertainty. The long-term impact will depend on each country's ability to adapt to evolving trade patterns and implement strategic economic reforms.

4.3 Trump 2.0: Strategic Framework and Policy Playbook

There is considerable speculation regarding the rationale behind Trump's renewed tariffs in 2025, ranging from claims of political unpredictability and incompetence to strategic "madman" theories and sophisticated geopolitical manoeuvring. While assessing these competing narratives is beyond the scope of this paper, we explore one plausible strategic framework articulated by Miran (2024), who later became head of Trump's Council of Economic Advisers. This structured approach integrates economic and geopolitical objectives, although its practical implementation may vary significantly in reality.

Core Economic and Geopolitical Principles:

- **Dollar Overvaluation**: A persistently strong dollar, linked to its reserve currency status, is viewed as exacerbating trade imbalances that erode U.S. manufacturing competitiveness.
- **Triffin Dilemma and Structural Deficits**: The U.S.'s role as a reserve currency provider fuels long-term deficits, benefitting the financial sector over domestic industry.
- **Trade and National Security Nexus**: Trade deficits are framed as a national security issue, with tariffs serving as a tool to pressure allies into greater burden-sharing.
- **Currency Offset Mechanism**: Tariffs are paired with targeted currency adjustments to curb inflation, generate revenue, and redistribute costs internationally.

Policy Implementation Strategy:

- **Tariff Policy**: Plans include tariff hikes – potentially up to 60% on China and 10% globally – implemented gradually to manage market volatility. Tariffs are scaled based on trade fairness, currency practices, and security alignments.
- **Currency Policy**: Uses a mix of multilateral coordination (via G7 and IMF) and unilateral actions (via IEEPA powers) to counter currency undervaluation and reduce foreign reserve accumulation.
- **Domestic Economic Support**: Sustains low taxes and deregulation to enhance U.S. industrial competitiveness, mitigating potential risks from tariff-driven currency appreciation.

Projected Outcomes and Risks:

- **Optimistic Scenario**: Currency markets absorb tariff costs, limiting inflation while strengthening manufacturing, with tariff revenues primarily impacting exporters rather than U.S. consumers.
- **Potential Risks**: Market volatility and capital outflows from tariff-targeted economies, particularly China, could destabilise global trade. Phased implementation and Federal Reserve coordination aim to contain disruptions.
- **Market Implications**: Exchange rate fluctuations could overshadow direct price impacts, leading to broader global economic spillovers.

In sum, this strategic framework represents one plausible interpretation of Trump's 2025 trade policy motivations, seeking calculated realignment of global economic relationships while addressing domestic economic concerns. Ultimately, its effectiveness will hinge on practical implementation, international responses, and the complex interplay between currency and trade policies within a highly volatile global environment.

5. Global Economic Effects of Trump's Tariffs

This section quantifies the economic effects of Trump's 2025 tariffs using a structural gravity model across six scenarios – from unilateral U.S. actions to a global trade war – using a structural gravity model. We examine global and UK-specific outcomes, linking these to theoretical, empirical, and historical insights from Sections 2–4 to evaluate protectionism's broader costs, setting the stage for analysing the UK's unique position in the next section.

5.1 Methodology and Data

We employ a structural gravity model (Allen et al., 2020; Yotov et al., 2016) to simulate Trump's tariffs, using 2023 bilateral export data for 132 top exporting countries from UN COMTRADE,[3] augmented by GDP from the World Bank World Development Indicators for internal trade estimates.[4] Bilateral tariff data from TRAINS incorporates Trump's 2025 measures under six scenarios, from unilateral U.S. action to a global trade war, and retaliatory responses. Parameters include a trade elasticity of substitution ($\sigma = 5.14$, Head & Mayer, 2014)

[3] See a list of countries included in the analysis in Appendix 5.

[4] We approximate internal trade as GDP less total export.

and supply elasticity ($\psi = 1.24$), implemented via Campos et al.'s (2024) Stata module. We calculate changes in trade volumes, price indices, and welfare (real GDP per capita) using cleaned trade flow data from major economies. Full details of the model can be found in the Appendix 2.

5.2 Findings: Economic Impacts Across Scenarios

Trump's tariffs promise U.S. industrial gains, but our findings reveal broader costs, summarized in Table 1. Trade volume reductions are observed across all scenarios, with the most severe contractions occurring under full global retaliation.

- Price indices rise significantly in the U.S., Canada, Mexico, China, and the EU, leading to consumer welfare losses.
- Production adjustments vary, with certain domestic industries benefiting from protectionist policies, but overall economic welfare declining due to inefficiencies and reduced competitiveness.
- The most significant economic losses occur under comprehensive trade war scenarios, emphasising the high costs of protectionist policies.

The complete set of detailed results is reported in Appendix 3. These results underline the significant negative global economic consequences of comprehensive tariff escalations and retaliatory measures.

Table 1: Tariff Measures and Impact in Six Scenarios

Scenario	Tariff Measures	Key Findings and Economic Effects
1. U.S. Initial Tariffs	U.S.: 25% on Mexico and 25% on Canada excluding energy tariffed at 10% (20.6% weighted), +20% on China	US prices rise by 2.7%, with real GDP per capita falling 0.9%, while Canadian and Mexican welfare decline by 3.2% and 5.0%, respectively, with notable trade contractions
2. Retaliation by Canada, Mexico, China	Reciprocal tariffs by Canada, Mexico, China on U.S.	It deepens these losses significantly, with welfare reductions reaching 5.1% for Canada and 7.1% for Mexico, alongside substantial U.S. welfare losses (1.1%).
3. U.S. Tariffs on EU	U.S.: Scenario 2 + 25% on EU goods	Sharp transatlantic trade contraction: EU production disruptions, notably impacting EU nations and significantly reducing U.S. welfare (-1.5%).
4. EU Retaliates	Scenario 3 + EU: 25% on U.S. goods	U.S./EU prices rise, mutual welfare losses. It intensifies negative outcomes for the U.S. (-1.6% welfare), although countries like the UK experience modest trade diversion benefits.
5. U.S. Global Tariff	U.S.: 25% global tariff (excluding China which is tariffed at current level + 20% tariff and Canada which has a lower 10% tariff on energy)	It severely intensifies global trade contraction, substantial price hikes, dramatically affecting North American welfare (U.S.: -2.0%, Canada: -5.1%, Mexico: -7.2%) and UK trade volumes.
6. Full Global Retaliation	Comprehensive global reciprocal tariffs, all partners retaliate with the	This results in extensive global disruptions, including severe U.S. welfare losses (-2.5%),

	same levels of tariffs on US.	dramatically reduced trade flows worldwide, and a $1.4 trillion global welfare loss.

Notes: Data for the starting, status quo equilibrium are drawn from several sources: bilateral trade data for 132 countries in 2023 from the IMF's Directions of Trade Statistics (DoTs), bilateral tariff data from the World Bank's WITS, and 2023 GDP figures from the World Bank's World Development Indicators. The scenarios are constructed based on documents from the White House's official website as well as on both official and unofficial communications from President Trump. The counterfactual scenarios are calculated using the structural gravity methodology (Allen et al., 2020; Yotov et al., 2016), with the algorithm implemented in Stata using the ge_gravity2 module developed by Campos et al. (2024). The global impact in Scenario 6 is determined by summing the impacts on each individual country. Detailed results are reported in Appendix 3.

5.3 Discussion

Trump's tariffs trigger extensive global economic disruptions, highlighting the considerable risks inherent in protectionist measures. Optimal tariff theory (Bagwell & Staiger, 1999) explains the initial decline in U.S. welfare observed in Scenario 1 as resulting from temporary terms-of-trade benefits that are quickly eroded through retaliation, as evidenced in Scenario 2. In the extreme case of Scenario 6, the U.S.'s comprehensive tariffs, matched equally by retaliatory tariffs from affected countries, produce severe global trade disruptions consistent with Ossa's (2014) predictions of a beggar-thy-neighbour spiral. These escalating tariff exchanges substantiate Grossman and Helpman's (1994) political economy framework, wherein limited sector-specific gains for U.S. manufacturers are ultimately overshadowed by broader economic inefficiencies driven by domestic lobbying interests.

The observed economic impacts occur through several distinct yet interrelated channels. First, the notable increase in U.S. prices (2.7% in Scenario 1) aligns with Amiti et al.'s (2019) findings of near-total tariff cost pass-through to consumers, directly imposing substantial burdens on households. Additionally, the welfare losses in Canada and Mexico (ranging from 5% to 7% in Scenario 2) echo Furceri et al.'s (2018, 2021) evidence of decreased output and productivity, particularly pronounced in advanced, trade-dependent economies. Disruptions to EU trade flows in Scenario 4 further reflect Charbonneau and Landry's (2018) documentation of rising global value chain (GVC) costs and fragmentation. Scenarios 5 and 6, illustrating deep global trade contractions, further validate Yanıkkaya et al.'s (2023) observations on fractured supply chains and eroding competitiveness within interconnected markets.

Historically, the magnitude and characteristics of these disruptions recall the significant economic downturn precipitated by the Smoot-Hawley tariffs in the 1930s (Crucini & Kahn, 1996). Nevertheless, contemporary global trade integration somewhat moderates these impacts compared to historical precedents (Irwin, 1998). The scale of economic losses witnessed during the 2018 U.S.-China trade conflict, estimated at approximately $51 billion (Fajgelbaum et al., 2020), offers a recent empirical benchmark relevant to Scenarios 1–4. Concurrently, adaptive supply chain adjustments observed by Cavallo et al. (2021) illustrate market responses that may partially mitigate immediate economic disruptions, yet the monthly $3.2 billion consumer costs identified by Amiti et al. underscore the substantial, enduring economic risks inherent in Scenario 6's systemic tariff escalations.

From a policy perspective, Trump's tariff strategy, potentially influenced by Miran's (2024) objectives of addressing dollar overvaluation, significantly challenges WTO stability and established multilateral trade norms. Unilateral tariff impositions risk triggering retaliatory trade wars, undermining intended economic gains by provoking global market instability and currency volatility. This underscores the critical importance of coordinated international policy frameworks to manage these risks effectively. Policymakers must therefore prioritise

reinforcing cooperative trade institutions to prevent recurrence of historical protectionist missteps and ensure a stable global economic environment.

6. UK-specific Impact, Strategic Positioning and Response

Following the same empirical strategy in Section 5, this section assesses UK-specific trade outcomes under Trump's 2025 tariffs, integrating global impacts, building on the previous section's global analysis to evaluate protectionism's costs. It proposes strategic responses leveraging post-Brexit flexibility to mitigate costs and harness opportunities.

6.1 Findings: UK Trade Shifts and Impacts

Trump's tariffs reshape UK trade flows across the three scenarios (2, 4 and 6), revealing direct disruptions, indirect rerouting, and economy-wide effects (Table 2). The findings show significant trade disruptions, vulnerabilities, and opportunities for the UK, as summarised below. The complete set of detailed results is reported in Appendix 4.

- **Direct Impacts – U.S.-UK Trade**: The +9.8% (Scenario 2) and +17.5% (Scenario 4) UK export gains to U.S. reflect diversion from retaliating markets, per Fajgelbaum et al.'s (2021) bystander effects. Reductions in UK imports from the U.S. (-5.5% in Scenario 2; -10.5% in Scenario 4) expose critical vulnerabilities in UK supply chains reliant on U.S. inputs. U.S. tariffs raise US export prices (e.g., steel, tech inputs), which UK firms pass on or absorb, cutting import volumes, consistent with Amiti et al.'s (2019) findings on tariff cost pass-through. In Scenario 6, bilateral trade collapses severely, with UK exports falling by 43.6% and imports from the U.S. declining by 66.5%, highlighting significant susceptibility to bilateral disruptions. This imposes significant costs on UK industries dependent on U.S. inputs, such as aerospace and technology components. Bagwell and Staiger (1999) explain this as a terms-of-trade deterioration exacerbated by retaliatory measures, underscoring the UK's exposure and vulnerability as an open economy.
- **Direct Impacts – UK with Other countries**: UK exports to China decline -4.9% (Scenario 2) and stabilise at -3.6% (Scenarios 4, 6) as China's $21 billion retaliation against U.S. tariffs (Appendix 1) curbs demand, per Pangestu's (2019) bystander effects from its slowdown. Imports from China rise +5.8% (Scenario 2) and +4.2% (Scenarios 4, 6), reflecting sustained UK reliance on Chinese intermediates (e.g., electronics, machinery), per Yanıkkaya et al.'s (2023) GVC exposure. EU exports shift from a modest +0.2% (Scenario 2, Germany) to -2.5% (Scenario 4) and -1.5% (Scenario 6) as EU retaliation (25% tariffs) disrupts trade, with imports from the EU increasing +3.4% (Scenario 4) due to costlier U.S. alternatives (Appendix 4). Exports to Mexico plummet -12.4% (Scenario 2) from U.S. 25% tariffs (Appendix 1), easing to -0.8% by Scenario 6. These shifts strain UK automotive and tech sectors, risking jobs in the Midlands and North West, exacerbated by WTO norm erosion and tariff-driven price hikes (Amiti et al., 2019).
- **Indirect Effects – Rerouted Trade**: The UK's +9.8% (Scenario 2) and +17.5% (Scenario 4) U.S. export surges stem from U.S. tariffs diverting demand from retaliating markets (e.g., Canada, Mexico, China; Appendix 1), per Fajgelbaum et al.'s (2021) bystander gains, with supply chain shifts reinforcing this (Cavallo et al., 2021). EU exports briefly rise +0.2% (Scenario 2, Germany) before falling -2.5% (Scenario 4) under EU retaliation. Japan (+1.6%) and South Korea (+1.3%, Scenario 4) see modest gains as U.S. substitutes, per Charbonneau and Landry's (2018) trade elasticity, holding

at +1.0% and +0.8% in Scenario 6. Mexico's -12.4% export drop (Scenario 2) eases to -0.8% (Scenario 6), hinting at partial rerouting. China, however, sustains losses (-3.6%, Scenarios 4, 6), with no rerouting upside. Scenario 6's global contraction (-43.6% to U.S.) curtails these gains, underscoring rerouting's limits.

Table 2: UK-Specific Impacts

Scenario	Key Effects	UK Exports to U.S.	UK Imports from U.S.	UK Exports to Mexico	UK Exports to China	UK Welfare Change
2	Retaliation (Canada, Mexico, China)	+9.8%	-5.5%	-12.4%	-4.9%	Negligible
4	EU Retaliates	+17.5%	-10.5%	-9.0%	-3.6%	+0.1%
6	Full Global Retaliation	-43.6%	-66.5%	-0.8%	-3.6%	-0.5%

Notes: Data for the starting, status quo equilibrium are drawn from several sources: bilateral trade data for 132 countries in 2023 from the IMF's Directions of Trade Statistics (DoTs), bilateral tariff data from the World Bank's WITS, and 2023 GDP figures from the World Bank's World Development Indicators. The scenarios are constructed based on documents from the White House's official website as well as on both official and unofficial communications from President Trump. The counterfactual scenarios are calculated using the structural gravity methodology (Allen et al., 2020; Yotov et al., 2016), with the algorithm implemented in Stata using the ge_gravity2 module developed by Campos et al. (2024). The global impact in Scenario 6 is determined by summing the impacts on each individual country. Detailed results are reported in Appendix 4.

6.2 Strategic Positioning and Response: Policy Options for the UK

As a mid-sized open economy, the UK is intricately embedded into global supply chain networks, with roughly half of total production coming from the sourcing and sales of intermediate inputs (Freeman et al 2024). Trump's tariffs introduce substantial economic disruptions, exposing clear vulnerabilities stemming from the UK's reliance on critical markets such as the U.S. and the EU. However, these disruptions also offer strategic opportunities for adaptation and repositioning.

Navigating this challenging economic landscape requires agile policy responses. Despite the complexity of current trade dynamics, the UK's independent trade policy framework allows for quicker and more targeted actions, enabling it to adapt proactively to shifting global conditions. Policy measures could include diversification of supply chains, strategic engagement in alternative markets, and fostering resilience by reducing dependencies on tariff-impacted regions. Ultimately, a proactive and responsive approach will be essential in mitigating risks and enhancing the UK's economic stability and competitiveness amid escalating global trade tensions.

Three key policy avenues emerge:

1. **Global Value Chain Adaptation**: Disruptions to North American and Asian supply chains necessitate the reconfiguration of sourcing strategies to enhance resilience. Alternatives include Japan and South Korea, with exports rising in specific scenarios, as evidenced by Cavallo et al.'s (2021) findings on effective rerouting through supplier diversification and inventory management. Enhancing domestic production capacity, particularly in automotive components or electronics, provides a complementary approach, reducing dependence on tariff-affected imports, aligning with Yanıkkaya et al.'s (2023) emphasis on GVC resilience. By targeting less-disrupted markets and strengthening internal capabilities, the UK can mitigate exposure to volatile trade flows.

2. **Trade Diversification**: The notable increase in U.S.-bound exports demonstrates the potential for redirecting trade towards less-affected regions, such as ASEAN and India, to offset existing losses. Recent UK accession to the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), including key markets such as Japan and Canada, provides immediate access to alternative export channels. Additionally, actively pursuing a trade agreement with India, a fast-growing economy relatively insulated from current tariff disputes, offers significant long-term benefits. Drawing on Irwin's (2017) analysis of agile trade redirection post-RTAA, rapid negotiation and implementation of these agreements could enhance the UK's economic stability before retaliatory escalations intensify. This strategic pivot mirrors successful diversification observed in economies like Vietnam during recent trade conflicts (Fajgelbaum et al., 2021).
3. **Policy Stability and Agility**: The UK's ability to independently negotiate trade policies, free from the EU's multilateral constraints, enables a dual-track approach to international engagement. Advocating for WTO reform to reinforce reciprocity mechanisms (Bagwell & Staiger, 1999, 2010) aims to mitigate global tariff conflicts that could otherwise escalate dramatically. Concurrently, bilateral negotiations leveraging opportunities such as increased U.S.-bound exports could secure sector-specific advantages for pharmaceuticals and financial services. Ossa (2014) highlights the importance of multilateral cooperation, while Miran's (2024) tariff strategies necessitate agile responses to market volatility, potentially through currency adjustments. By strategically balancing diplomatic engagement and pragmatic economic initiatives, the UK can effectively manage global disruptions while enhancing its competitive position.

6.3 Complementary Strategy: Leveraging Opportunities and Building Resilience

In addition to managing immediate trade disruptions, the UK can proactively capitalise on opportunities emerging from the trade tensions and strengthen long-term economic resilience:

1. **Market Share Gains from Trade Diversion:** The UK can position itself as an alternative supplier in markets disrupted by tariffs, benefiting from redirected trade flows. Increased exports to the U.S., for example, highlight potential gains in sectors such as pharmaceuticals, financial services, and technology.
2. **Attracting Foreign Direct Investment (FDI):** Heightened trade uncertainties may motivate multinational firms to diversify their production and investment locations. By providing a stable business environment, the UK could attract firms seeking to mitigate tariff risks, thereby boosting employment and high-value economic activity.
3. **Expanding Financial Services:** Increased financial market volatility presents opportunities for London to expand its global leadership in currency trading, risk management, and financial services, reinforcing its critical role in managing international economic uncertainties.
4. **Enhancing Export Competitiveness via Currency Management:** Effective exchange rate management during periods of volatility could enhance UK export competitiveness, particularly benefiting sectors such as high-value manufacturing and advanced services.
5. **Promoting Sustainability and Green Trade:** Leveraging the global shift towards sustainable practices from which the US seems deviating, the UK can position itself as a leader in green technologies and sustainable products, aligning trade policies with international climate commitments and emerging green standards.

6. **Strengthening Geopolitical Influence:** By advocating multilateral cooperation and acting as a diplomatic intermediary between major economies, the UK could reinforce international trade governance, contributing to global stability and solidifying strategic economic partnerships.

These combined measures enable the UK not only to mitigate adverse impacts but also to proactively leverage the evolving trade landscape to strengthen its economic competitiveness and resilience.

7. Conclusion from the Core Analysis

The empirical analysis of Trump's 2025 tariffs, simulated through a structural gravity model across six escalating scenarios, underscores the profound risks of protectionism for global and national economies. At the global level, unilateral tariffs and retaliatory measures trigger significant welfare losses, trade contractions, and price hikes, culminating in a staggering $1.4 trillion welfare loss under full global retaliation (Scenario 6). These findings align with historical precedents like the Smoot-Hawley tariffs and modern trade conflicts, illustrating how protectionism erodes competitiveness, disrupts supply chains, and imposes disproportionate costs on consumers. While the U.S. may achieve narrow sectoral gains, broader economic inefficiencies—driven by political lobbying and terms-of-trade dynamics—ultimately diminish welfare, validating theoretical frameworks from Bagwell and Staiger (1999) and Grossman and Helpman (1994). Crucially, the study reaffirms that no economy emerges unscathed from systemic tariff escalations, as retaliatory spirals fracture multilateral cooperation and amplify global instability.

For the UK, the impacts are dual edged. Early scenarios reveal temporary opportunities, such as trade diversion gains (+17.5% U.S. exports in Scenario 4), driven by rerouted demand and bystander effects. However, these benefits are fleeting, as escalating tensions expose critical vulnerabilities: Scenario 6's collapse of U.S.-UK trade (-43.6% exports, -66.5% imports) disrupts key industries like aerospace and tech, while rising import costs fuel inflation and strain households. The UK's post-Brexit agility offers a strategic advantage, enabling adaptive measures such as diversifying supply chains toward resilient partners (e.g., CPTPP members), accelerating trade agreements with India and ASEAN, and reinforcing domestic production capacities. Yet, unilateralism alone is insufficient; the UK must balance bilateral pragmatism with advocacy for WTO reform and multilateral stability to mitigate systemic risks.

Policymakers globally face a clear imperative: while protectionism may promise short-term political wins, its long-term costs—economic fragmentation, reduced productivity, and geopolitical instability—are untenable. For the UK, proactive strategies leveraging trade diversification, FDI attraction, and green innovation can enhance resilience. However, enduring stability demands renewed commitment to cooperative frameworks that curb retaliatory cycles and uphold the rules-based order. History cautions against isolationism; the path forward lies in reinforcing interdependence, not dismantling it. As global tensions rise, this analysis serves as a stark reminder: in an interconnected world, no nation can thrive by retreating behind tariff walls.

8. Implications for the UK-EU Relationship Reset

Trump's 2025 tariffs present the UK with a paradoxical mix of opportunity and risk. While the projected 17.5% surge in U.S. exports (Scenario 4) and post-Brexit policy agility offer

short-term economic advantages, these gains threaten to undermine efforts to reset relations with the EU—a critical objective for reducing post-Brexit friction and fostering long-term stability. This section evaluates how the UK's strategic responses to tariff disruptions could strain its relationship with the EU, amplifying economic divergence, political distrust, and institutional misalignment, while proposing pragmatic pathways to balance autonomy with cooperation.

8.1 Key Challenges to the UK-EU relationship

1. *Economic Divergence and Trade Reorientation*

The UK's rerouting of trade flows—evidenced by the 17.5% export surge to the U.S. (Scenario 4) and diversification toward CPTPP and India—risks shifting its economic focus away from the EU, which accounted for 42% of UK trade in 2023 (ONS, 2024). While initial UK-EU trade declines (-2.5% to Germany in Scenario 4) appear modest, sustained divergence could erode mutual supply chain integration, particularly in sectors like automotive manufacturing, where 60% of UK inputs rely on EU suppliers (Freeman et al., 2024). The EU, facing its own welfare losses from U.S. tariffs (-1.6% in Scenario 4), may resist UK efforts to streamline cross-Channel trade processes or align standards, fearing a dilution of regulatory influence. Such dynamics echo Grossman and Helpman's (1994) political economy framework, wherein EU industry lobbies could push for stricter rules of origin, reigniting Brexit-era disputes over goods like electric vehicles and pharmaceuticals.

2. *Political Trust and Strategic Misalignment*

The UK's pursuit of bilateral U.S. deals contrasts sharply with the EU's collective retaliation against Trump's tariffs (€26 billion in Scenario 4). This risks positioning the UK as a beneficiary of EU economic pain, undermining Prime Minister Starmer's goal of rebuilding trust. EU leaders, wary of the UK's unilateralism (Section 6.2), may perceive closer UK-U.S. ties as tacit endorsement of Trump's protectionism, conflicting with the EU's multilateralist ethos. Historical parallels to the 2018 U.S.-EU steel tariff dispute—where unilateral EU exemptions fragmented transatlantic solidarity (Irwin, 2018)—highlight the fragility of trust in tariff diplomacy.

3. *Supply Chain Competition*

The UK's GVC adaptation – shifting sourcing to Japan or South Korea for example – may compete with EU efforts to secure alternative suppliers amid U.S. and Chinese disruptions. Shared supply chains, like automotive parts crossing the Channel, could become contested if both pursue independent resilience strategies. This threatens reset initiatives, such as joint green industrial policies, as the EU might prioritise its own firms over UK collaboration. Regulatory divergence, e.g., UK easing standards to attract non-EU inputs – could revive tensions over the Northern Ireland Protocol. Yanıkkaya et al.'s (2023) findings on GVC fragmentation underscore the systemic costs of such divergence.

4. *Conflicting WTO Strategies*

The UK's dual-track approach – advocating WTO reform while chasing bilateral gains – may clash with the EU's multilateral stance. The EU's unified retaliation contrasts with the UK's agility (e.g., U.S. export surge), potentially weakening collective leverage in WTO talks. If the UK pushes reforms favouring its interests (e.g., CPTPP exemptions), the EU might resist,

viewing it as self-serving rather than cooperative. This divergence could derail reset goals like trade policy alignment, reducing both parties' global influence.

5. *Inflation Spillovers and Border Pressures*

Tariff-driven import cost spikes could exacerbate UK inflation, straining households and diverting policy focus from reset priorities. Border bottlenecks, like Dover delays caused by rerouted EU-bound cargo, might escalate into broader trade friction, despite mutual commitments to ease post-Brexit checks. These pressures recall Amiti et al.'s (2019) findings on tariff pass-through, where consumer costs erode political capital for cooperation.

8.2 Recommendations: A Pragmatic Approach

Our principal recommendation is pragmatism: balancing short-term gains with long-term stability, keeping options open for pivoting, and prioritising economic flexibility over rigid political stances. Unlike a political approach focused on ideology, this economic lens seeks to maximise growth potential by maintaining the widest possible external market, mitigating the global trade war and welfare loss risk. Below are five actionable steps:

First, enhancing UK-EU supply chain coordination is critical. Establishing a bilateral forum to align sourcing strategies for critical inputs such as semiconductors and rare earth minerals would mitigate redundancy and regulatory friction. By harmonizing standards and pooling logistical resources, both parties could reduce procurement costs in sectors like automotive manufacturing, where cross-Channel value chains remain deeply integrated. This approach draws on Cavallo et al.'s (2021) evidence of supplier diversification efficacy while preserving UK autonomy through flexible participation frameworks.

Second, trade diversification efforts should be reframed as complementary rather than competitive. Positioning CPTPP and India agreements as gateways for EU access to Asian markets would reinforce—rather than erode—continental ties. Such a strategy mirrors Fajgelbaum et al.'s (2021) "bystander gain" dynamics, where third-party partnerships offset losses like the 12.4% decline in UK-Mexico trade under Scenario 2. By fostering triangular trade frameworks that incorporate EU inputs into UK exports destined for CPTPP members, the UK could demonstrate reciprocity while expanding its global footprint.

Third, institutional alignment on WTO reform is essential to counter systemic fragmentation risks. Partnering with the EU to advocate stricter rules against unilateral tariff escalations—such as those in Scenario 6's $1.4 trillion welfare loss—would strengthen multilateral governance. Concurrently, negotiating carve-outs for bilateral agreements (e.g., U.S.-UK tech partnerships) balances Bagwell and Staiger's (1999) reciprocity principles with the need for policy agility, countering Ossa's (2014) "beggar-thy-neighbor" spillovers.

Fourth, addressing inflationary and border pressures requires targeted interventions. Subsidizing firms affected by tariff-driven input spikes, such as electronics manufacturers, would mitigate consumer cost passthrough documented by Amiti et al. (2019). Accelerating digital customs systems at Dover-Calais, developed jointly with EU authorities, would streamline trade flows disrupted by rerouted cargo, preserving political capital for broader reset negotiations.

Finally, U.S. engagement must be balanced with EU reassurance. Pairing bilateral trade talks with symbolic gestures—reviving youth mobility schemes or co-investing in cross-Channel green tech hubs—would signal commitment to European cooperation. This dual-track approach embodies Sun Tzu's strategic adaptability, leveraging Miran's (2024) insights on currency volatility management while avoiding perceptions of opportunism.

8.3 Conclusion: Pragmatism Over Ideology

The UK's tariff-driven "fortune" is a double-edged sword. While short-term gains offer respite, overreliance on unilateralism risks alienating the EU, exacerbating global fragmentation, and amplifying systemic costs. The path forward lies in strategic adaptability: leveraging post-Brexit agility to seize opportunities while anchoring European ties through pragmatic cooperation. By reframing diversification as complementary, aligning institutional efforts, and pre-empting inflationary spillovers, the UK can sustain its global footprint without sacrificing continental stability.

A coherent strategy must anchor bilateral agility within robust multilateral frameworks, harmonising unilateral initiatives with commitments to WTO-led governance. Such a balance not only reinforces the UK's role as a stabilising force in global trade but also positions it as a strategic bridge between competing economic blocs. In an era of escalating polarisation, this pragmatic equilibrium offers a pathway to sustain growth, curb fragmentation risks, and transcend zero-sum geopolitics. Ultimately, the UK's success hinges on its ability to transform tariff-induced disruptions into opportunities for leadership— balancing independence with interdependence, ensuring it remains a bridge, not a bystander, in an increasingly fractured world.

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Appendix 1: Summary of Trump Tariffs and Retaliations (as of March 20, 2025)

Trump's 2025 Tariffs

- **Initial Tariffs (February 1–4, 2025)**: Trump imposed 25% tariffs on all imports from Canada and Mexico (except energy at 10%) and a 10% tariff on all Chinese imports, effective February 4, following a January 20 memorandum targeting trade deficits and fentanyl flows.
    - *Source*: Reuters, "Trump launches trade war with tariffs on Mexico, Canada and China," February 1, 2025; Holland & Knight, "China's Retaliatory Measures in Response to Trump Tariffs," February 3, 2025.
- **Escalation (March 3–4, 2025)**: After a brief suspension, tariffs on Canada and Mexico resumed at 25%, with China's tariff doubling to 20% atop existing duties, effective March 4, tied to immigration and drug concerns.
    - *Source*: CNN, "China and Canada immediately retaliate against Trump's tariffs. Mexico is next," March 3, 2025; The Washington Post, "China, Mexico and Canada to retaliate after Trump imposes new tariffs," March 3, 2025.
- **Steel and Aluminium Tariffs (March 12, 2025)**: A 25% tariff on steel and aluminium imports from all countries was enacted, reversing Biden-era exemptions, aiming to boost U.S. manufacturing.
    - *Source*: CNN, "Trump imposes sweeping 25% steel and aluminium tariffs. Canada and Europe swiftly retaliate," March 12, 2025; AP, "Trump's Trade War Draws Swift Retaliation," March 6, 2025.
- **Policy Intent**: Tariffs aim to address trade imbalances, dollar overvaluation, and national security, per Miran's (2024) framework, with phased implementation to manage volatility.
    - *Source*: The New York Times, "Trump's Tariffs Set Off Day of Anger, Retaliation and Market Unease," March 5, 2025; Tax Foundation, "Trump Tariffs: The Economic Impact of the Trump Trade War," March 7, 2025.

Retaliatory Measures

- **Canada**: Imposed $30 billion CAD ($20.7 billion USD) in tariffs on U.S. goods like steel, agriculture, and electronics by March 4, with an additional $20–$29.8 billion CAD announced March 12 against steel/aluminium tariffs, threatening energy cuts.
    - *Source*: The Guardian, "China and Canada retaliate after Trump trade tariffs come into effect," March 4, 2025; CNN, "Canada announces $20 billion in retaliatory tariffs following Trump's latest 25% levy," March 12, 2025.
- **Mexico**: Planned reciprocal tariffs on U.S. agriculture and industrial goods by March 9, to be detailed Sunday, March 23, targeting Trump's 25% duties, with President Sheinbaum rejecting U.S. fentanyl claims.
    - *Source*: The New York Times, "Trump's Tariffs Set Off Day of Anger, Retaliation and Market Unease," March 5, 2025; ABC News, "'Dumb': Canada, Mexico blast historic Trump tariffs, threaten retaliation," March 4, 2025.

- **China**: Levied $21 billion in tariffs on U.S. exports (e.g., soybeans, coal) starting February 10, raised to 10–15% by March 4, alongside export controls on tungsten and a Google probe, adopting a measured stance.
    - *Source*: AP, "Trump's trade war draws swift retaliation with new tariffs from Mexico, Canada and China," March 6, 2025; Holland & Knight, "China's Retaliatory Measures in Response to Trump Tariffs," February 3, 2025.
- **European Union**: Announced €26 billion ($28 billion USD) in two-phase retaliation to steel/aluminium tariffs: €8 billion on U.S. goods (e.g., bourbon, motorcycles) starting April 1, followed by €18 billion mid-April, targeting Republican states.
    - *Source*: Reuters, "Donald Trump's tariffs on imports of metals kicks in," March 12, 2025; The New York Times, "Wary Markets Rebound as Europe and Canada Retaliate Against Trump Tariffs," March 15, 2025.
- **UK and Others**: The UK, under Starmer, avoided retaliation, seeking a U.S. trade deal, while Brazil, Japan, and others held off, pursuing exemptions.
    - *Source*: The New York Times, "Wary Markets Rebound as Europe and Canada Retaliate Against Trump Tariffs," March 15, 2025; CBS News, "Trump tariffs of 25% on steel and aluminium take effect, prompting EU retaliation threat," March 13, 2025.

Appendix 2: Technical Notes: Model

We apply a model consistent with the "universal gravity" framework by Allen et al. (2020), satisfying six key properties: iceberg bilateral trade costs, constant elasticity of substitution in aggregate demand and supply, market clearing, exogenous trade deficits, and numeraire choice. This setup enables robust simulation of global trade policy impacts, productivity changes, and economic welfare within a general equilibrium environment. In particular, structural gravity model mentioned in Head and Mayer (2014) and Yotov et al. (2016) is nested in the "universal gravity" framework.

The Setup

There are N countries, each producing a unique variety, i. Country i is endowed with L_i units of labor. It also has a certain level of productivity, A_i, which depends, among other things, on human capital endowment and political stability, assumed exogenous.

Production and Costs

Goods are produced using immobile labor and intermediate inputs, modelled using a Cobb-Douglas production function with constant returns to scale. The share of labor in production costs is denoted by ζ while the share of intermediate inputs is $1-\zeta$, resulting in a production function of:

$$Q_i = (A_i L_i)^{\zeta} M_i^{1-\zeta}$$

Pricing and Competition

Markets are perfectly competitive, implying zero profit and prices equal to marginal costs. The output price at each location i is:

$$p_i = \kappa \left(\frac{w_i}{A_i}\right)^{\zeta} P_i^{1-\zeta}$$

where w_i is the wage rate, and P_i is the price index for intermediates (the same goods as in consumption).

Aggregate Supply Elasticity

The model assumes a positive aggregate supply elasticity, defined as:

$$\psi = \frac{1-\zeta}{\zeta}$$

This elasticity indicates how much the output responds to changes in prices.

Demand structure

A representative consumer in country j has a constant elasticity of substitution utility from consuming different varieties, given by:

$$U_j = \left[\Sigma_i \left(c_{ij}\right)^{\frac{\sigma-1}{\sigma}}\right]^{\frac{\sigma}{\sigma-1}}$$

where σ is the elasticity of substitution. The consumer maximises the utility above subject to the budget constraint:

$$\Sigma_j P_{ij} C_{ij} = E_j$$

where E represents expenditures, P_{ij} is the price of product i in country j, and C denotes consumption.

To sell a variety produced in country i to country j, a trade cost is incurred: $\tau_{ij} \geq 1$ units of good i are required to deliver one unit, with $\tau_{ij} = 1$ only when $i = j$. The trade cost is parameterized as:

$$\tau_{ij}^{1-\sigma} = exp(\gamma_t t_{ij} + Z_{ij}\,\gamma_Z) + e_{ij}$$

Where t is applied tariff on exports from country i in country j. We use TRAINS database to calculate applied bilateral tariff rate in 2023.

Equilibrium

The global equilibrium is characterized by trade flows as:

$$X_{ij} = \left(\frac{Y_i\,E_j}{Y_w}\right) \times \left(\frac{\tau_{ij}}{(\Omega_i\,P_j)}\right)^{1-\sigma}$$

The total value of output is either consumed domestically or exported:

$$Y_i = P_i\,Q_i = \Sigma_j\,X_{ij}$$

where P_i is the price index of variety i.
We also assume constant current trade imbalances in both the current and counterfactual equilibria:

$$Y_i = \varphi\,E_i$$

The outward resistance term is expressed as:

$$\Omega_i^{1-\sigma} = \Sigma_j \left(\frac{E_j}{Y_w}\right) \times \left(\frac{\tau_{ij}}{P_j}\right)^{1-\sigma}$$

The inward resistance term is given by:

$$P_j^{1-\sigma} = \Sigma_i \left(\frac{Y_i}{Y_w}\right) \times \left(\frac{\tau_{ij}}{\Omega_j}\right)^{1-\sigma}$$

Counterfactual analysis

Step 1: Set up the Baseline Equilibrium

The initial state is characterized by observed bilateral trade flows, income, expenditures, and prices. This scenario serves as the current equilibrium before any policy or parameter changes.

Step 2: Defining the Counterfactual Scenario

Counterfactual scenarios are introduced as relative changes ("hat" notation) from baseline values:

$$\hat{x} = x'/x$$

These scenarios involve exogenous shocks such as changes in trade costs, productivity, labor force, or trade deficits.

Step 3: Obtaining Equilibrium Quantities

Solving non-linear system of equations derived from equilibrium conditions:
- Income:

$$\hat{Y}_i = \hat{c}_i\,\hat{p}_i \left(\frac{\hat{p}_i}{\hat{P}_i}\right)^{\psi}$$

- Expenditures:

$$\hat{E}_i = \hat{\Xi}\,\hat{\xi}_i\,\hat{Y}_i$$

- Trade flows:

$$\hat{X}_{ij} = \hat{\tau}_{ij}^{-\theta} \hat{p}_i^{-\theta} \hat{P}_j^{\theta} \hat{E}_j$$

- Welfare:

$$\widehat{W}_i = \hat{\Xi} \hat{\xi}_i \hat{A}_i \{\left(\frac{\hat{p}_i}{\hat{P}_i}\right)^{1+\psi}$$

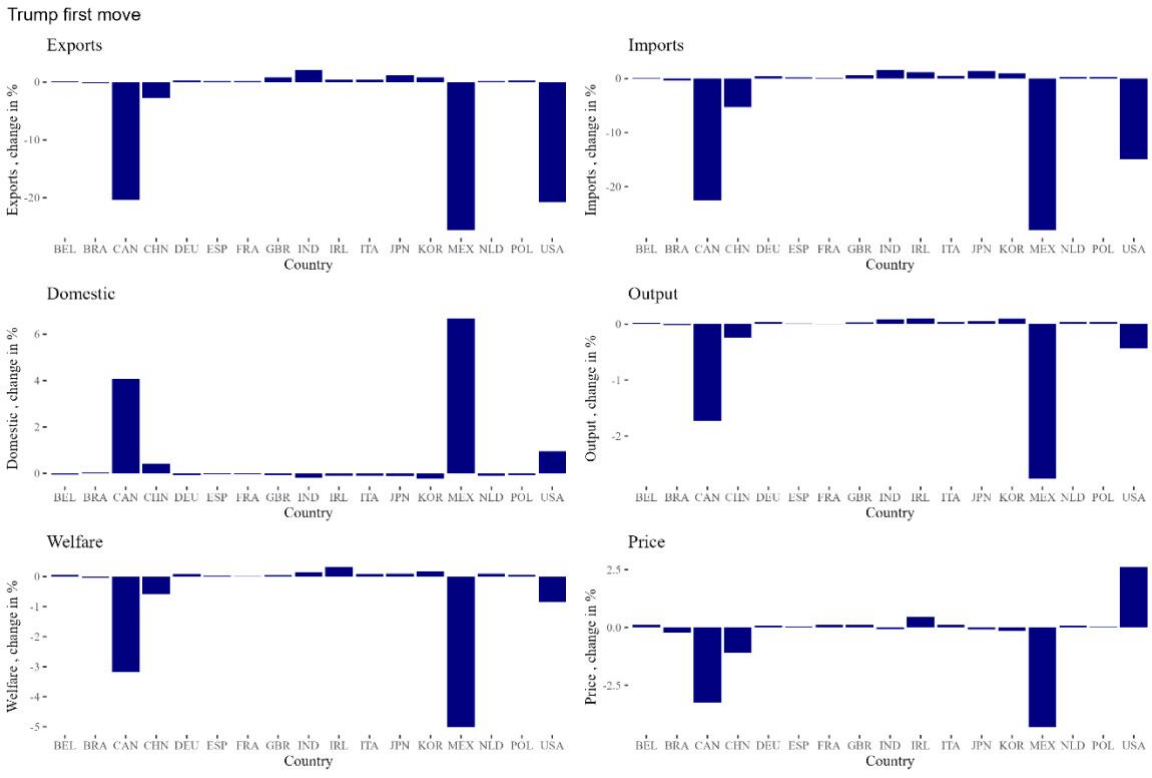
Step 4: Interpretation of Results

The model outputs percentage changes relative to baseline for:
- Trade flows (domestic and international)
- Output and real income
- Welfare effects

Appendix 3: Impact of Trump Tariffs – Full Global Results

Scenario 1: Trump first move: Tariffs 25% on Mexico, 25% on Canada with 10% on energy, weighted rate 20.6%. Additional 20% on China

In **Scenario 1**, the U.S. initially imposes tariffs of 25% on Mexico and Canada (10% specifically on Canadian energy, weighted rate of 20.6%) and an additional 20% on China, without immediate retaliation. These measures lead to substantial declines in trade for directly targeted countries: Canadian exports decrease by 20.4%, imports by 22.5%, and welfare losses reach 4.1%; Mexico experiences a 20.4% drop in exports, a 22.5% fall in imports, and welfare losses of around 5.1%. China also suffers export (-2.7%) and import (-5.3%) reductions, with notable welfare impacts (-0.6%). Conversely, the U.S. sees price increases domestically (0.5%), alongside substantial reductions in its imports and exports, though detailed numbers for the U.S. are clarified further in Scenario 2. Some nations, including the UK, Germany, Japan, India, Italy, and Poland, modestly benefit from trade diversion, reporting small positive impacts on exports, imports, and welfare. Specifically, UK exports increase by 0.8%, imports rise by 0.6%, and welfare slightly improves (0.05%), highlighting limited opportunities amid broader disruptions.

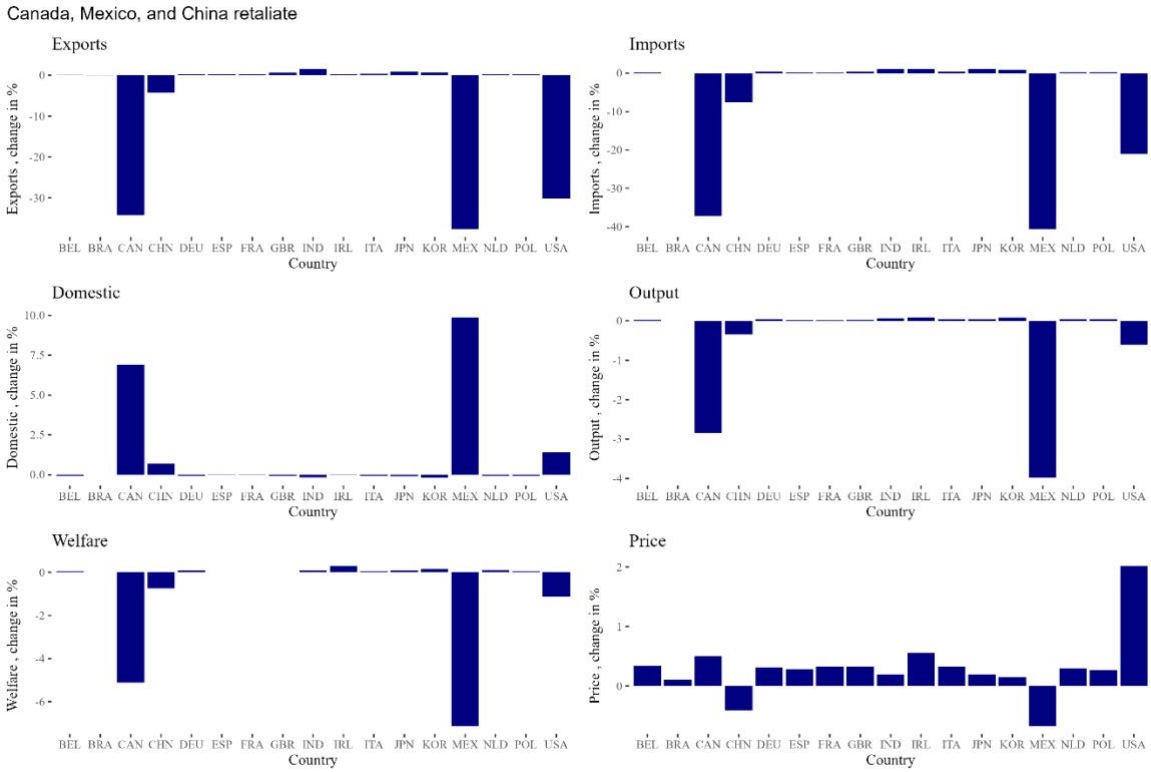


Reporter	Exports	Imports	Domestic	Output	Welfare	Price
CAN	-20.365	-22.519	4.083	-1.728	-3.174	-3.231
MEX	-25.610	-28.027	6.673	-2.757	-5.001	-4.291
DEU	0.272	0.362	-0.082	0.038	0.078	0.085

CHN	-2.725	-5.297	0.402	-0.240	-0.591	-1.092
GBR	0.820	0.578	-0.084	0.032	0.047	0.124
JPN	1.155	1.322	-0.128	0.055	0.099	-0.083
KOR	0.841	1.010	-0.222	0.096	0.174	-0.139
FRA	0.171	0.122	-0.028	0.009	0.010	0.114
BRA	-0.202	-0.385	0.021	-0.016	-0.045	-0.233
IND	2.069	1.542	-0.198	0.083	0.144	-0.053
USA	-20.743	-14.920	0.957	-0.435	-0.851	2.623
IRL	0.437	1.170	-0.096	0.101	0.325	0.454
ITA	0.435	0.511	-0.096	0.043	0.081	0.110
POL	0.239	0.267	-0.091	0.039	0.069	0.021
ESP	0.206	0.195	-0.038	0.016	0.026	0.044
BEL	0.103	0.143	-0.052	0.026	0.053	0.126
NLD	0.188	0.266	-0.096	0.046	0.094	0.070

Scenario 2: Scenario 1+ Canada, Mexico, and China retaliate equally and reciprocally

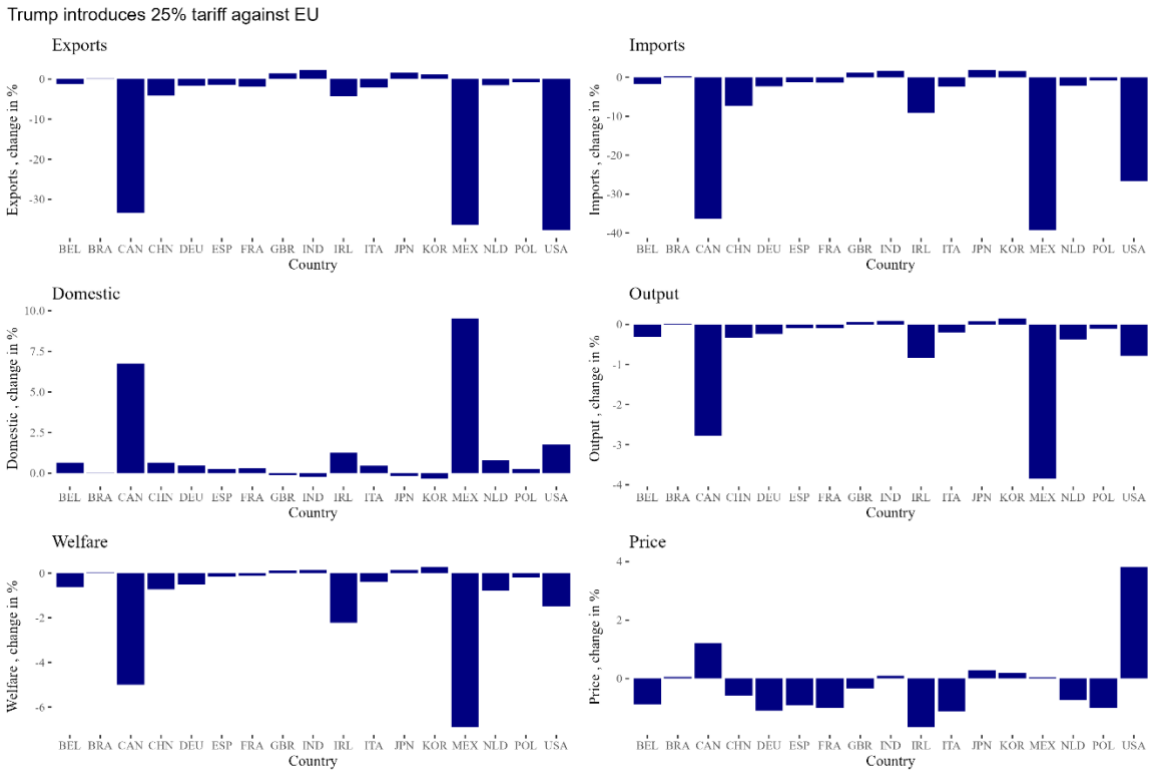
In **Scenario 2**, following initial U.S. tariffs, Canada, Mexico, and China retaliate with equal and reciprocal measures, deepening economic disruptions. The U.S. suffers significant reductions in trade, with exports falling by 30.2%, imports by 21.1%, accompanied by notable welfare losses (-1.1%) and domestic price increases (2.0%). Canada and Mexico face severe consequences, experiencing large decreases in exports (Canada: -34.2%, Mexico: -37.7%) and substantial welfare declines (Canada: -5.1%, Mexico: -7.1%). China also faces reduced trade volumes and welfare losses (-0.7%). Conversely, several economies, including Germany, the UK, Japan, South Korea, and India, experience modest gains from trade diversion, reflected in slight increases in exports and imports, minimal output growth, and small welfare improvements. The UK specifically sees exports rise modestly by 0.6%, imports by 0.4%, with negligible welfare effects. Overall, retaliatory tariffs intensify economic losses in directly targeted countries while redistributing modest trade benefits to select third-party nations.



Reporter	Exports	Imports	Domestic	Output	Welfare	Price
CAN	-34.206	-37.195	6.909	-2.839	-5.122	0.499
MEX	-37.656	-40.624	9.866	-3.971	-7.120	-0.668
DEU	0.204	0.311	-0.054	0.032	0.077	0.311
CHN	-4.319	-7.555	0.707	-0.347	-0.733	-0.411
GBR	0.628	0.376	-0.070	0.021	0.018	0.331
JPN	0.838	0.988	-0.091	0.041	0.078	0.196
KOR	0.659	0.823	-0.169	0.077	0.150	0.148
FRA	0.175	0.084	-0.033	0.007	-0.003	0.324
BRA	-0.028	0.003	0.007	0.000	0.006	0.109
IND	1.484	1.038	-0.148	0.056	0.085	0.194
USA	-30.152	-21.076	1.420	-0.615	-1.141	2.019
IRL	0.303	0.987	-0.036	0.082	0.304	0.555
ITA	0.331	0.407	-0.070	0.034	0.069	0.326
POL	0.200	0.222	-0.076	0.032	0.057	0.265
ESP	0.212	0.179	-0.042	0.015	0.019	0.281
BEL	0.099	0.156	-0.046	0.026	0.063	0.333
NLD	0.163	0.265	-0.073	0.043	0.104	0.289

Scenario 3: Scenario 2 + Trump introduces 25% tariff against EU

In **Scenario 3**, following Scenario 2, the U.S. further escalates tariffs by imposing a 25% rate against the EU, intensifying economic disruptions. The U.S. sees exports decline significantly by 37.7%, imports by 26.7%, alongside welfare losses (-1.5%) and notable domestic price increases (3.8%). Canada and Mexico continue experiencing substantial economic impacts, with large reductions in exports (Canada: -33.4%, Mexico: -36.4%) and welfare declines (Canada: -5.0%, Mexico: -6.9%). The EU nations directly affected by these tariffs, including Germany, France, Italy, Ireland, and the Netherlands, suffer meaningful trade contractions, reduced output, and welfare losses. In contrast, countries like the UK, Japan, South Korea, and India benefit from trade diversion effects, recording modest export growth and slight welfare improvements. Specifically, the UK experiences a 1.5% increase in exports, a 1.2% rise in imports, and modest welfare gains (0.1%). The scenario demonstrates complex redistributive trade effects driven by targeted tariff measures.

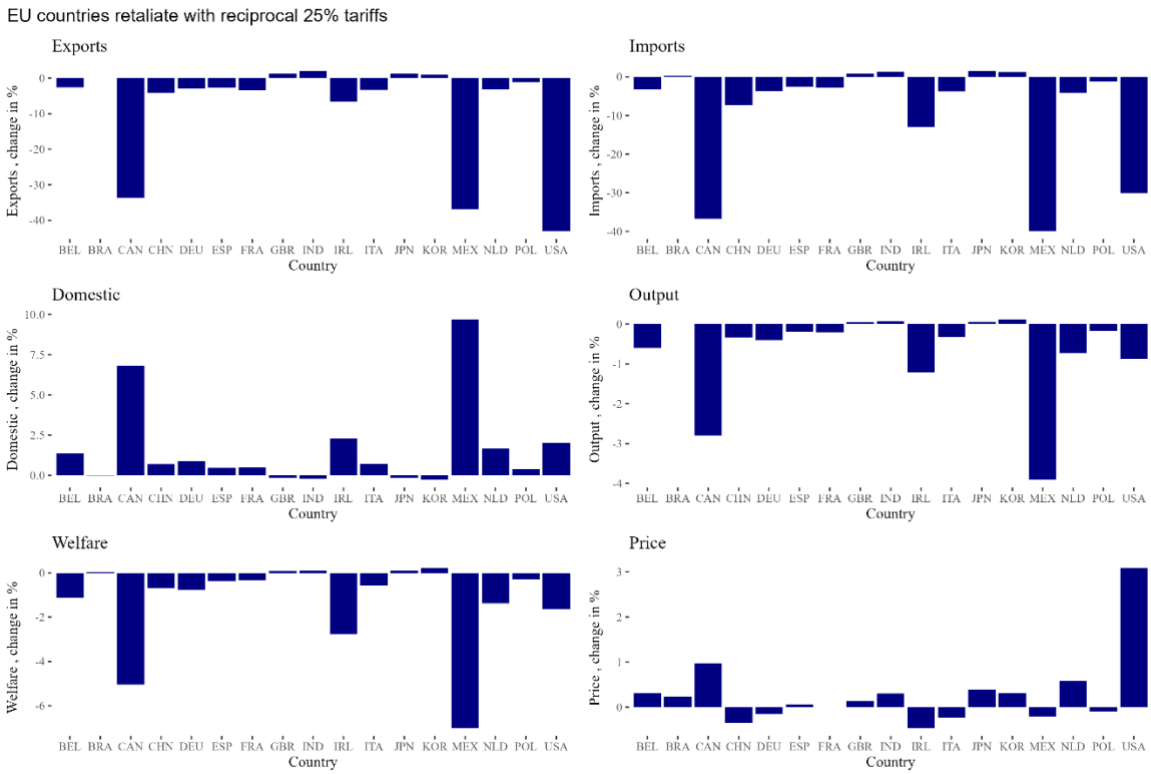


Reporter	Exports	Imports	Domestic	Output	Welfare	Price
CAN	-33.411	-36.320	6.752	-2.774	-4.998	1.217
MEX	-36.356	-39.249	9.526	-3.840	-6.884	0.033
DEU	-1.646	-2.280	0.476	-0.239	-0.514	-1.110
CHN	-4.113	-7.323	0.662	-0.335	-0.729	-0.595
GBR	1.458	1.186	-0.136	0.063	0.127	-0.334
JPN	1.564	1.837	-0.170	0.076	0.145	0.294
KOR	1.264	1.568	-0.326	0.147	0.283	0.192

FRA	-1.821	-1.339	0.291	-0.099	-0.121	-1.003
BRA	0.159	0.252	-0.020	0.011	0.024	0.057
IND	2.242	1.626	-0.219	0.088	0.144	0.097
USA	-37.696	-26.719	1.755	-0.778	-1.487	3.822
IRL	-4.187	-9.204	1.253	-0.838	-2.219	-1.651
ITA	-2.057	-2.462	0.447	-0.204	-0.401	-1.131
POL	-0.681	-0.754	0.260	-0.109	-0.193	-1.008
ESP	-1.381	-1.248	0.263	-0.101	-0.154	-0.919
BEL	-1.269	-1.700	0.663	-0.308	-0.617	-0.889
NLD	-1.555	-2.220	0.788	-0.380	-0.789	-0.730

Scenario 4 – Scenario 3 + EU countries retaliate with reciprocal 25% tariffs

In **Scenario 4**, where the EU retaliates with reciprocal 25% tariffs against U.S. goods following initial U.S. tariffs (Scenario 3), significant disruptions to international trade and economic activity are observed. The U.S. experiences severe declines in exports (-43.1%) and imports (-30.1%), accompanied by welfare losses (-1.6%) and notable price increases (3.1%). Canada and Mexico continue to suffer substantial declines in trade and welfare (Canada: exports -33.7%, welfare -5.0%; Mexico: exports -37.0%, welfare -7.0%). In contrast, certain countries, including the UK, Japan, South Korea, India, and Brazil, benefit modestly from trade diversion, reporting slight increases in exports and positive welfare impacts. Specifically, the UK sees a 1.2% rise in exports, a 0.9% increase in imports, and minor welfare improvements (0.1%). EU nations such as Germany, France, and Italy experience declines in trade, output, and welfare due to reciprocal tariffs, underscoring complex economic outcomes resulting from bilateral retaliations.

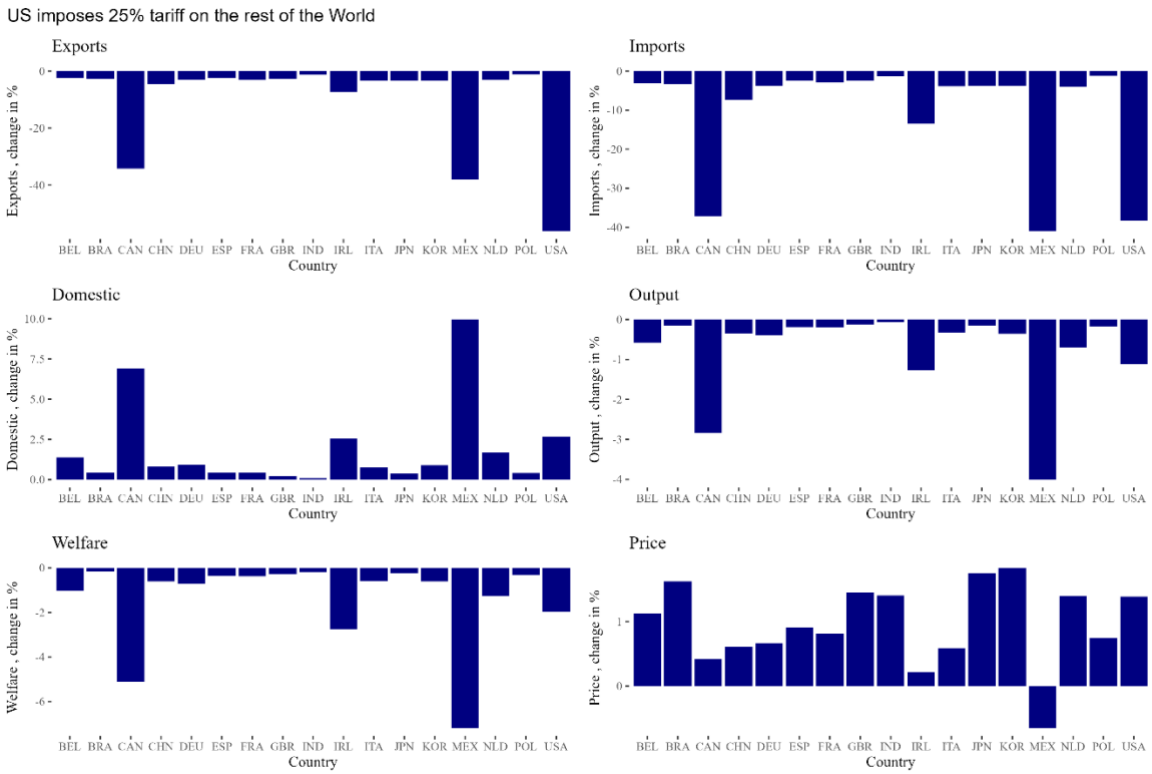


Reporter	Exports	Imports	Domestic	Output	Welfare	Price
CAN	-33.739	-36.679	6.817	-2.801	-5.048	0.968
MEX	-36.978	-39.905	9.689	-3.902	-6.996	-0.207
DEU	-2.916	-3.737	0.895	-0.400	-0.769	-0.145
CHN	-4.204	-7.316	0.691	-0.336	-0.704	-0.340
GBR	1.239	0.887	-0.126	0.049	0.075	0.139
JPN	1.233	1.466	-0.133	0.060	0.118	0.390
KOR	0.977	1.233	-0.249	0.115	0.228	0.316
FRA	-3.367	-2.847	0.496	-0.204	-0.349	-0.003

BRA	0.125	0.276	-0.010	0.011	0.036	0.239
IND	1.976	1.370	-0.198	0.074	0.110	0.301
USA	-43.051	-30.087	2.025	-0.877	-1.631	3.090
IRL	-6.625	-12.903	2.274	-1.212	-2.766	-0.459
ITA	-3.271	-3.791	0.728	-0.317	-0.589	-0.234
POL	-1.062	-1.188	0.403	-0.171	-0.308	-0.098
ESP	-2.616	-2.531	0.477	-0.200	-0.354	0.062
BEL	-2.542	-3.222	1.382	-0.599	-1.112	0.312
NLD	-3.130	-4.139	1.677	-0.732	-1.373	0.577

Scenario 5 - US imposes 25% tariff across the board, except 10% on Canada energy and extra 20% on China

In **Scenario 5**, the U.S. unilaterally imposes tariffs (25% broadly, except 10% on Canadian energy and an additional 20% on China) without initial retaliation from trading partners. This policy severely affects U.S. trade, reducing exports by 56.1%, imports by 38.3%, and causing notable welfare losses (-2.0%), along with domestic price increases (1.4%). Canada and Mexico experience significant contractions in both exports (down by approximately 34.1% and 38.0%, respectively) and imports, with substantial welfare losses (Canada: -5.1%, Mexico: -7.2%). Major economies including Germany, China, Japan, and the UK face reduced trade volumes and decreased domestic output, although their impacts are comparatively milder. The UK specifically records export reductions of 2.7%, import declines of 2.4%, a welfare loss of 0.3%, and significant domestic price increases (1.5%). Overall, even unilateral U.S. tariff actions impose widespread global economic strain, with notable disruptions across international trade and production.

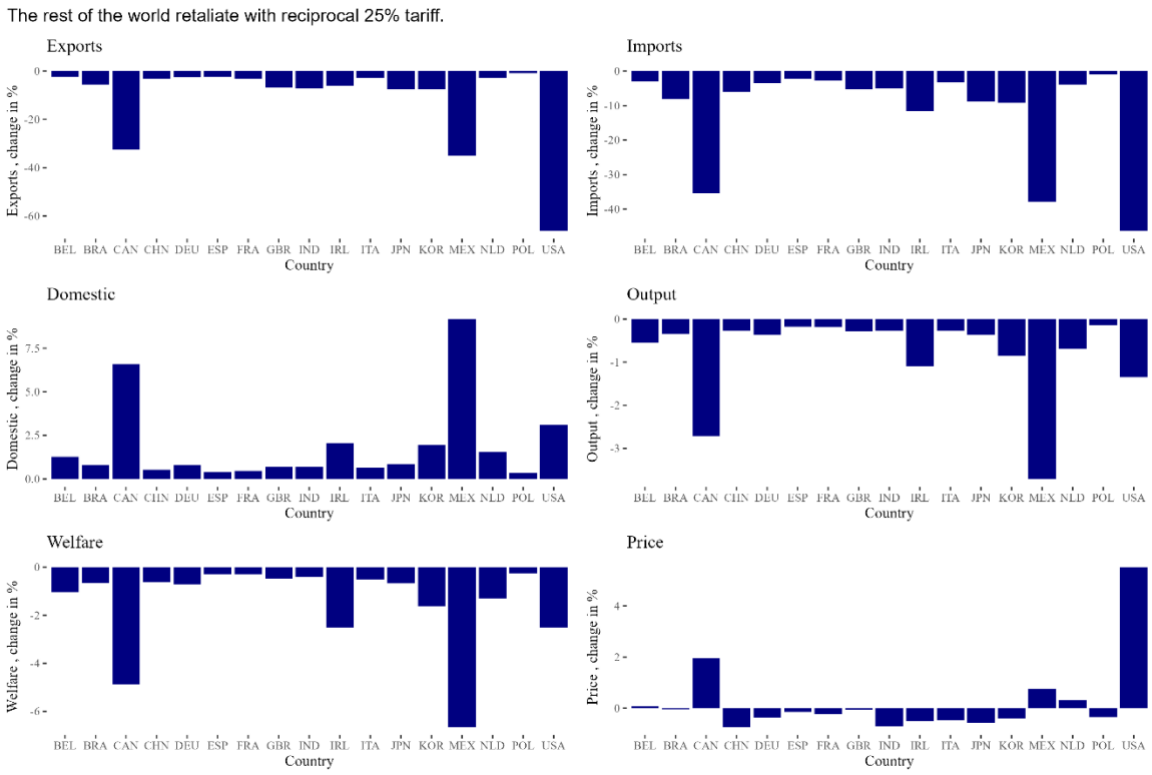


reporter	Exports	Imports	Domestic	Output	Welfare	Price
CAN	-34.146	-37.136	6.896	-2.835	-5.115	0.414
MEX	-37.992	-40.973	9.955	-4.004	-7.179	-0.649
DEU	-2.976	-3.683	0.937	-0.399	-0.723	0.666
CHN	-4.591	-7.374	0.806	-0.343	-0.619	0.615
GBR	-2.652	-2.386	0.227	-0.125	-0.292	1.450
JPN	-3.376	-3.690	0.386	-0.154	-0.253	1.751
KOR	-3.291	-3.780	0.895	-0.362	-0.609	1.836

FRA	-3.169	-2.841	0.448	-0.200	-0.384	0.816
BRA	-2.718	-3.302	0.421	-0.145	-0.179	1.623
IND	-1.232	-1.313	0.084	-0.066	-0.191	1.403
USA	-56.136	-38.305	2.685	-1.116	-1.983	1.389
IRL	-7.192	-13.470	2.565	-1.278	-2.760	0.216
ITA	-3.385	-3.859	0.762	-0.324	-0.585	0.588
POL	-1.075	-1.210	0.407	-0.174	-0.316	0.745
ESP	-2.444	-2.444	0.436	-0.192	-0.360	0.915
BEL	-2.480	-3.076	1.368	-0.578	-1.039	1.126
NLD	-3.060	-3.923	1.675	-0.704	-1.260	1.398

Scenario 6 - US imposes 25% tariff across the board, except 10% on Canada energy and extra 20% on China. All impacted countries retaliate with equal measures

In Scenario 6, where the U.S. imposes extensive tariffs (25% across the board, except 10% on Canadian energy and an additional 20% on China), and all affected countries retaliate equivalently, severe disruptions to global trade are observed. The U.S. experiences substantial declines, with exports down 66.2%, imports down 46.3%, and significant welfare losses (-2.5%), alongside notable domestic price increases (5.5%). Canada and Mexico suffer pronounced trade contractions (exports falling by approximately 32.6% and 35.0%, respectively) and face substantial welfare reductions (Canada: -4.9%, Mexico: -6.6%). Major economies like Germany, China, Japan, and the UK also report reduced trade volumes, diminished domestic output, and welfare losses, though less severe compared to North America. The UK specifically sees exports down by 7.0%, imports down by 5.2%, and a welfare loss of 0.5%. These results underline the significant negative global economic consequences of comprehensive tariff escalations and retaliatory measures.



reporter	Exports	Imports	Domestic	Output	Welfare	Price
CAN	-32.601	-35.426	6.592	-2.707	-4.870	1.963
MEX	-35.042	-37.857	9.182	-3.707	-6.643	0.750
DEU	-2.637	-3.419	0.803	-0.365	-0.714	-0.367
CHN	-3.279	-6.003	0.515	-0.274	-0.621	-0.730
GBR	-6.970	-5.183	0.691	-0.281	-0.476	-0.057
JPN	-7.598	-8.794	0.833	-0.363	-0.676	-0.564
KOR	-7.528	-9.167	1.962	-0.859	-1.619	-0.394
FRA	-3.165	-2.632	0.471	-0.189	-0.314	-0.224
BRA	-5.625	-8.148	0.773	-0.346	-0.666	-0.049
IND	-7.135	-5.035	0.707	-0.272	-0.422	-0.722

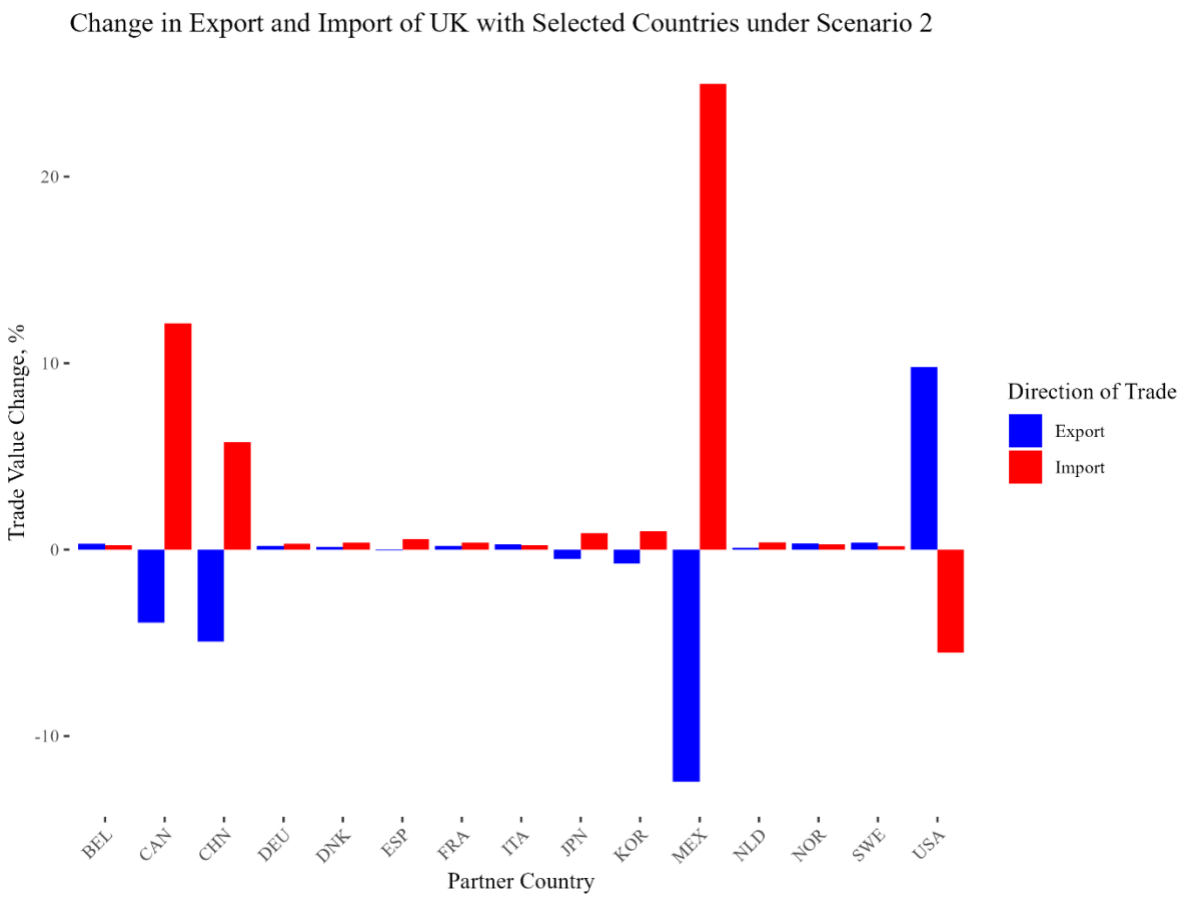
USA	-66.181	-46.288	3.103	-1.344	-2.521	5.519
IRL	-5.953	-11.670	2.031	-1.094	-2.518	-0.500
ITA	-2.839	-3.310	0.629	-0.276	-0.519	-0.462
POL	-0.870	-0.971	0.331	-0.140	-0.251	-0.352
ESP	-2.268	-2.176	0.416	-0.173	-0.300	-0.150
BEL	-2.347	-2.991	1.271	-0.555	-1.038	0.090
NLD	-2.919	-3.896	1.554	-0.686	-1.304	0.317

Appendix 4: Impact on UK Bilateral Trade – Selected Bilateral Pairs under Scenarios 2, 4, 6

Scenario 2: Canada, Mexico, and China retaliate equally and reciprocally

In **Scenario 2**, notable impacts emerge. UK exports to the U.S. rise significantly (9.8%), while imports from the U.S. decline (-5.5%), reflecting substantial trade diversion as UK firms gain competitive advantages due to retaliatory tariffs elsewhere. Conversely, UK exports to Mexico fall sharply (-12.4%), alongside a considerable increase in imports from Mexico (25.0%), highlighting vulnerabilities in UK-Mexico trade relationships. Similarly, UK exports to Canada and China moderately decline (-3.9% and -4.9%, respectively), even as imports from both countries increase (Canada: 12.1%, China: 5.8%). UK trade with European nations (e.g., Germany, France, Belgium) and other partners (e.g., Norway, Sweden) generally sees modest positive adjustments, reflecting further trade reorientation. Overall, this scenario underscores the complexity and uneven distribution of tariff-driven trade disruptions for the UK.

Reporter	UK Export	UK Import
BEL	0.315	0.233
CAN	-3.913	12.110
CHN	-4.928	5.767
DEU	0.197	0.322
DNK	0.158	0.371
ESP	-0.050	0.550
FRA	0.193	0.359
ITA	0.278	0.238
JPN	-0.506	0.877
KOR	-0.728	0.975
MEX	-12.447	24.972
NLD	0.085	0.391
NOR	0.347	0.291
SWE	0.376	0.189
USA	9.788	-5.510



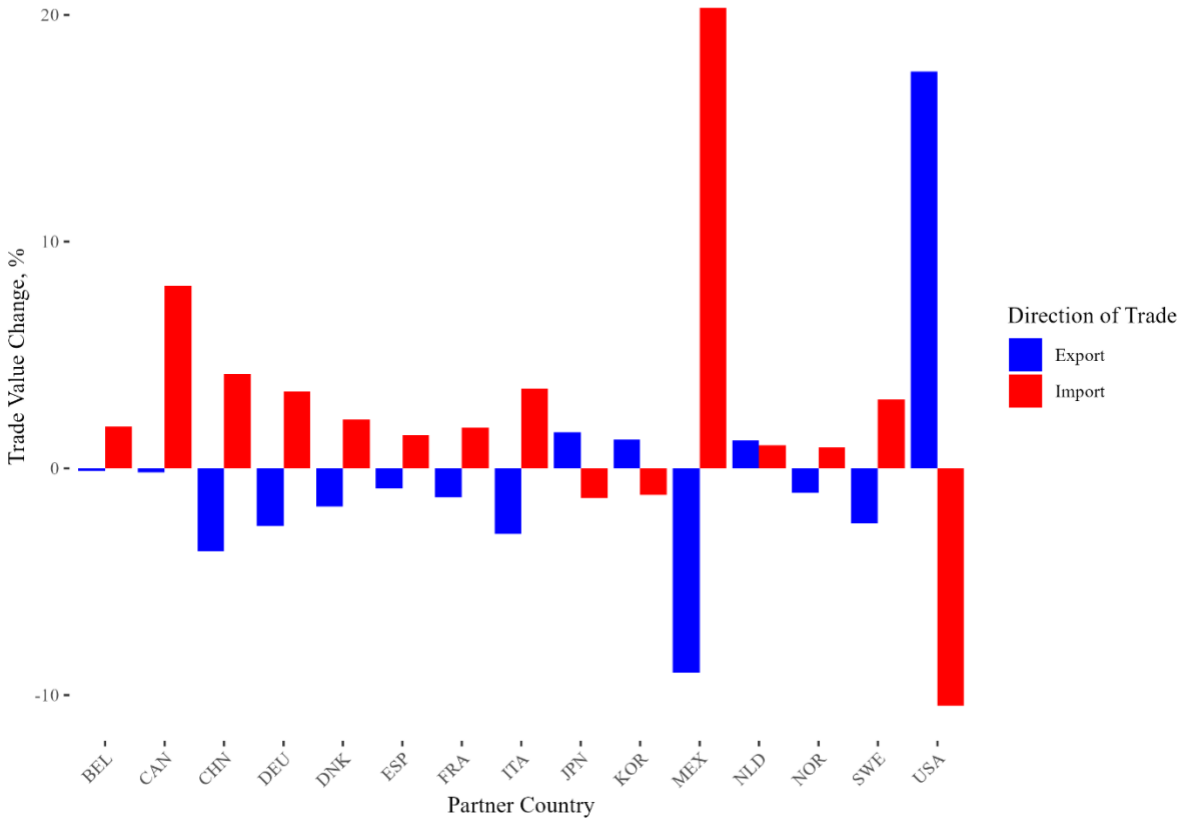
Scenario 4: Canada, Mexico, and China retaliate equally and reciprocally. Same for US-EU trade

In **Scenario 4**, UK trade experiences significant reorientation and disruption. Notably, UK exports to the U.S. surge dramatically (17.5%), accompanied by a sharp reduction in imports from the U.S. (-10.5%), highlighting substantial trade diversion effects. Conversely, UK exports to key European markets, including Germany (-2.5%), Italy (-2.9%), France (-1.3%), and Denmark (-1.7%), decline considerably, even as imports from these countries increase. Trade with Mexico also sees pronounced impacts, with UK exports dropping by 9.0% and imports rising significantly (20.3%), underscoring vulnerability in this relationship. UK trade with Asian markets, particularly Japan and Korea, improves modestly, reflecting further shifts in trade flows due to tariff-induced disruptions elsewhere. Overall, Scenario 4 demonstrates complex trade adjustments, with both opportunities and substantial challenges for the UK economy.

Reporter	UK Export	UK Import
BEL	-0.118	1.833
CAN	-0.179	8.058
CHN	-3.647	4.160

Reporter	UK Export	UK Import
DEU	-2.546	3.394
DNK	-1.686	2.154
ESP	-0.888	1.453
FRA	-1.276	1.805
ITA	-2.903	3.510
JPN	1.604	-1.313
KOR	1.254	-1.161
MEX	-9.006	20.312
NLD	1.240	1.024
NOR	-1.074	0.929
SWE	-2.426	3.044
USA	17.500	-10.475

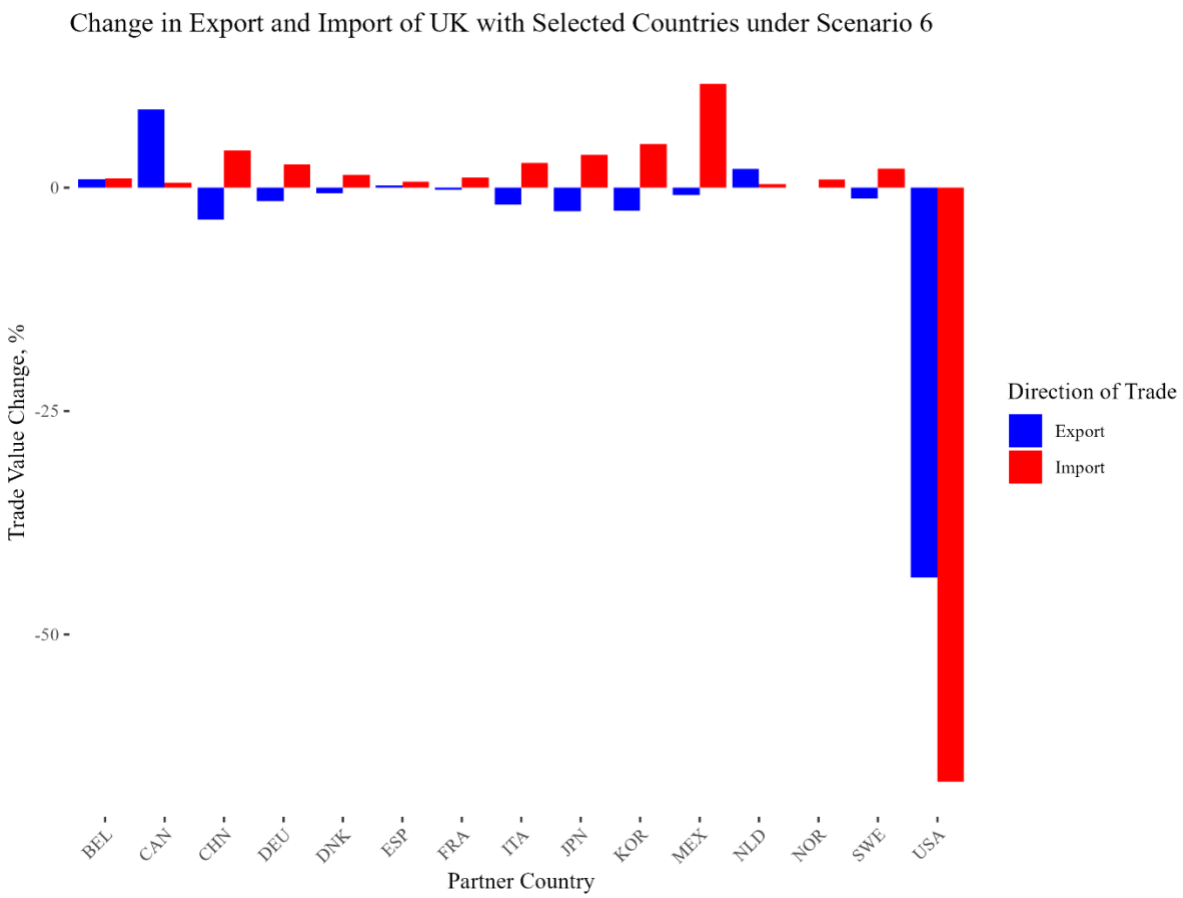
Change in Export and Import of UK with Selected Countries under Scenario 4



Scenario 6 - US imposes 25% tariff across the board, except 10% on Canada energy and extra 20% on China. All impacted countries retaliate equally and reciprocally

In **Scenario 6**, UK trade is severely disrupted, especially with the U.S. Bilateral trade with the U.S. collapses dramatically, with UK exports falling by 43.6% and imports plunging by 66.5%. Trade with major EU economies also weakens, notably with Germany (exports -1.5%, imports +2.6%), Italy (exports -1.9%, imports +2.7%), and France (exports slightly down, imports up by 1.1%). Trade with Asian markets such as Japan and Korea deteriorate further, with significant export declines and rising imports. Conversely, UK exports to Canada notably increase (8.8%), highlighting some trade reorientation. Overall, Scenario 6 reveals profound disruptions in UK trade flows, particularly with the U.S., underscoring significant economic risks from comprehensive global tariff escalation.

Reporter	UK Export	UK Import
BEL	0.970	1.023
CAN	8.764	0.560
CHN	-3.600	4.162
DEU	-1.506	2.614
DNK	-0.609	1.421
ESP	0.235	0.664
FRA	-0.233	1.117
ITA	-1.887	2.737
JPN	-2.657	3.653
KOR	-2.567	4.897
MEX	-0.827	11.620
NLD	2.111	0.402
NOR	0.009	0.931
SWE	-1.245	2.171
USA	-43.596	-66.495


Change in Export and Import of UK with Selected Countries under Scenario 6
Trade Value Change, %
0
-25
-50
BEL
CAN
CHN
DEU
DNK
ESP
FRA
ITA
JPN
KOR
MEX
NLD
NOR
SWE
USA
Partner Country
Direction of Trade
Export
Import

Appendix 5: List of countries included in the analysis

Country code									
ALB	AND	ARG	ARM	AUS	AUT	AZE	BEL	BEN	BFA
BGR	BIH	BMU	BOL	BRA	BRN	BWA	CAF	CAN	CHE
CHL	CHN	CIV	COL	CPV	CRI	CYP	CZE	DEU	DNK
DOM	ECU	EGY	ESP	EST	ETH	FIN	FJI	FRA	GAB
GBR	GEO	GHA	GIN	GMB	GRC	GRD	GTM	HKG	HND
HRV	HUN	IDN	IND	IRL	IRN	ISL	ISR	ITA	JAM
JOR	JPN	KAZ	KEN	KGZ	KHM	KOR	KWT	LBN	LKA
LTU	LUX	LVA	MAC	MAR	MDA	MDG	MDV	MEX	MKD
MLT	MMR	MNE	MNG	MOZ	MRT	MUS	MWI	MYS	NAM
NER	NGA	NIC	NLD	NOR	NZL	OMN	PAK	PAN	PER
PHL	POL	PRT	PRY	ROU	RUS	SAU	SEN	SGP	SLV
SRB	STP	SUR	SVK	SVN	SWE	SWZ	SYC	TGO	THA
TUN	TUR	TZA	UKR	URY	USA	UZB	VCT	WSM	ZAF
ZMB	ZWE								