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

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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)

$$\Delta P_{it} = \alpha_i + \lambda_t + \beta_1(\text{Exposure}_i \times D_{232,2018,t}) + \beta_2(\text{Exposure}_i \times D\_TRQ_{,2022,t}) + \beta_3(\text{Exposure}_i \times D_{232,2025,t}) + \gamma_1 \text{REER}_t + \gamma_2 \text{OIL}_t + \varepsilon_{it}$$

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

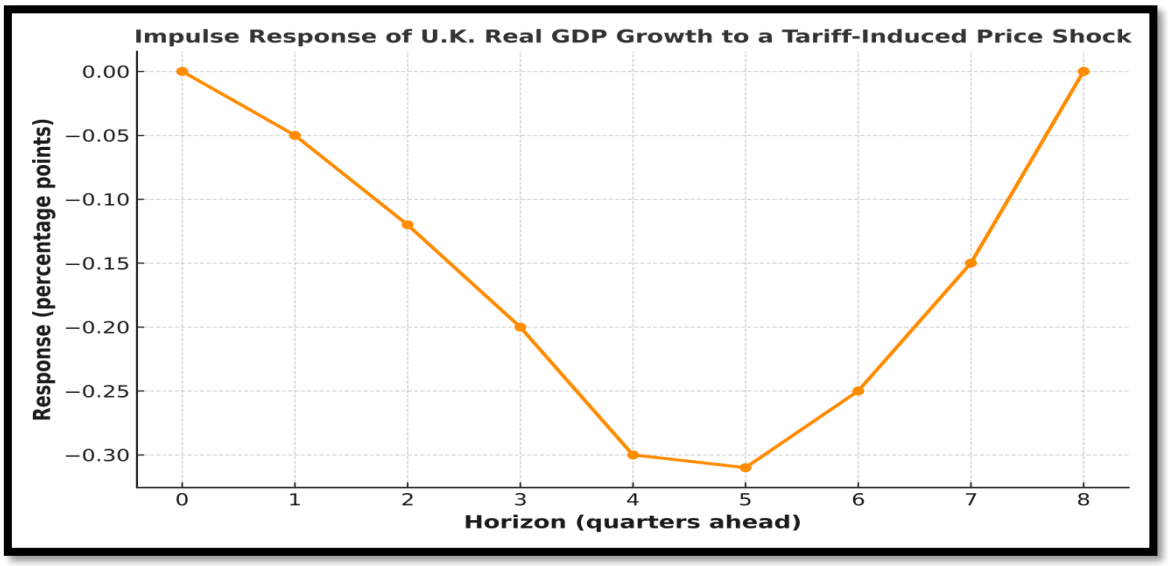
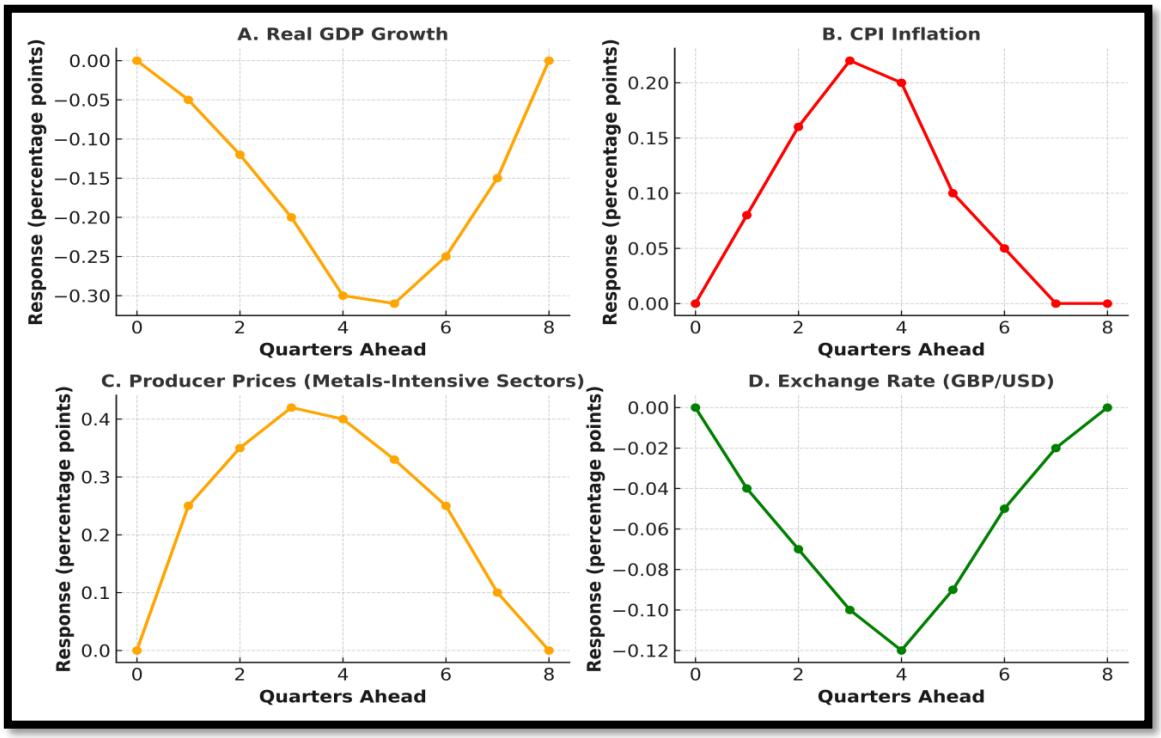


Figure 2. Dynamic Macroeconomic Responses to a Tariff-Induced Price Shock



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.

References

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

[2] Blanchard, O. (2023). Monetary policy and supply shocks: What have we learned since 2020? *Brookings Papers on Economic Activity*, Spring 2023, 85–126.

[3] Bown, C. P., & Irwin, D. A. (2019). The Trump trade war: A timeline and analysis. *The World Economy, 42*(1), 5–28. https://doi.org/10.1111/twec.12745

[4] Dornbusch, R., Fischer, S., & Samuelson, P. A. (1977). Comparative advantage, trade, and payments in a Ricardian model with a continuum of goods. *American Economic Review, 67*(5), 823–839.

[5] Fajgelbaum, P. D., Goldberg, P. K., Kennedy, P. J., & Khandelwal, A. K. (2021). *The economic impacts of the U.S.–China trade war* (NBER Working Paper No. 29315). National Bureau of Economic Research. https://www.nber.org/papers/w29315

[6] Flaaen, A., Hortaçsu, A., & Tintelnot, F. (2019). *The production, relocation, and price effects of U.S. trade policy: The case of washing machines* (FEDS Working Paper No. 2019-086). Federal Reserve Board. https://www.federalreserve.gov/econres/feds/files/2019086pap.pdf

[7] Forbes, K. (2023). Exchange rates and imported inflation in advanced economies. *Oxford Economic Papers, 75*(2), 341–366.

[8] Gopinath, G., & Itskhoki, O. (2022). Pricing, exchange rates, and international macroeconomics. In *Handbook of International Economics* (Vol. 5, pp. 49–110). Elsevier.

[9] Jackson, E. A. (2024). *Economic theory of inflation*. ZBW – Leibniz Information Centre for Economics. https://hdl.handle.net/10419/280999

[10] Jackson, E. A., Kamara, P., & Kamara, A. (2022). *Determinants of inflation in Sierra Leone* (BSL Working Paper No. 02). Bank of Sierra Leone.

[11] Jordà, Ò. (2005). Estimation and inference of impulse responses by local projections. *American Economic Review, 95*(1), 161–182. https://doi.org/10.1257/0002828053828518

[12] Krugman, P., & Obstfeld, M. (2009). *International economics: Theory and policy* (8th ed.). Pearson.

[13] Melitz, M. J., & Redding, S. J. (2021). Trade and innovation. *Econometrica, 89*(1), 1–35.

[14] Obstfeld, M., & Rogoff, K. (2021). *Open economy macroeconomics revisited* (NBER Working Paper No. 29176). National Bureau of Economic Research. https://www.nber.org/papers/w29176

[15] Smith, A. (1776). *An inquiry into the nature and causes of the wealth of nations*. W. Strahan & T. Cadell. Available at: http://gesd.free.fr/smith76bis.pdf

[16] Warburton, C. E., & Jackson, E. A. (2020). Monetary policy responses to exogenous perturbations: The case of a small open economy (2007–2018). *PSL Quarterly Review, 73*(293), 181–201. https://doi.org/10.13133/2037-3643_73.293_5

[17] Bank of England. (2025, February 26). *Trade fragmentation and monetary policy* (Dow Lecture by Swati Dhingra). https://www.bankofengland.co.uk/speech/2025/february/swati-dhingra-speech-dow-lecture-niesr-trade-fragmentation-and-monetary-policy

[18] Bank of England. (2025, October 23). *Tariffed with the same brush: Confronting today's challenges to trade* (Speech by Swati Dhingra). https://www.bankofengland.co.uk/speech/2025/october/swati-dhingra-speech-at-the-central-bank-of-ireland-escb-cluster-2-academic-conference

[19] European Central Bank. (2022). *The transmission of global cost shocks to euro area inflation*. *ECB Economic Bulletin* (Issue 8). https://www.ecb.europa.eu

[20] HM Government. (2022, March 22). *U.S.–UK joint statement on steel and aluminium*. https://www.gov.uk/government/news/us-uk-joint-statement-on-steel-and-aluminum

[21] International Monetary Fund. (2019). *Tariff passthrough at the border and at the store: Evidence from U.S. trade policy* (IMF Working Paper No. 19/238). https://www.imf.org/en/Publications/WP/Issues/2019/11/02/Tariff-Passthrough-at-the-Border-48769

[22] International Monetary Fund. (2023). *World economic outlook: Navigating global divergences*. IMF.

[23] Office for National Statistics. (2025, October 22). *Consumer price inflation, UK: September 2025*. https://www.ons.gov.uk/economy/inflationandpriceindices/bulletins/consumerpriceinflation/september2025

[24] Organisation for Economic Co-operation and Development. (2024). *Trade policy outlook 2024: Global trade in transition*. OECD Publishing.

[25] Reuters. (2025, May 23). *UK removes official accreditation from past producer price data*. https://www.reuters.com/world/uk/uk-removes-official-accreditation-past-producer-price-data-2025-05-23/

[26] U.S. Trade Representative. (2022, March 22). *Statements on 232 tariff agreement with the United Kingdom*. https://ustr.gov/about-us/policy-offices/press-office/press-releases/2022/march/tai-raimondo-statements-232-tariff-agreement-united-kingdom

[27] White House. (2025, February). *Fact sheet: President Donald J. Trump restores Section 232 tariffs*. https://www.whitehouse.gov/fact-sheets/2025/02/fact-sheet-president-donald-j-trump-restores-section-232-tariffs/

[28] White House. (2025, June 3). *Fact sheet: President Donald J. Trump increases Section 232 tariffs on steel and aluminium*. https://www.whitehouse.gov/fact-sheets/2025/06/fact-sheet-president-donald-j-trump-increases-section-232-tariffs-on-steel-and-aluminum/

[29] World Bank. (2024). *Global economic prospects* (June 2024). World Bank. https://www.worldbank.org

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.