



The Impact of Trump Import Tariff Expansion on Indonesia–U.S. Trade Stability: A Time-Series Analysis and Policy Simulation Approach

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Abstract. *This study investigates the effects of U.S. import tariff escalation on Indonesia's bilateral trade performance during 2020–2025, focusing on enacted and projected tariff policies under the Trump administration. The study examines how changes in U.S. tariff policies influence Indonesia's export performance by considering trade volume, commodity characteristics, and macroeconomic conditions. Using monthly export data disaggregated by HS code, applied MFN tariff rates, and macroeconomic control variables, this research applies time-series regression, elasticity-based segmentation, interaction modeling, and scenario-based policy simulations. The results show that increases in U.S. MFN tariffs are significantly associated with declines in Indonesian export volume, supporting classical trade theory. However, tariff effects were not significantly different between the Trump and Biden administrations. Furthermore, low-elasticity commodities experienced greater export volatility than high-elasticity sectors. The simulation of the proposed 2025 Trump tariff expansion did not produce statistically similar contraction effects to the 2020 trade shock. These findings provide insights into Indonesia's trade resilience and policy adaptation strategies amid global tariff uncertainty.*

Keywords: *Export Elasticity; Institutional Stickiness; MFN Tariffs; Policy Feedback; U.S.–Indonesia Trade.*

1. INTRODUCTION

The escalation of U.S. import tariffs, particularly since the U.S.-China trade war began in 2018, has significantly reshaped the global trade landscape. While originally targeted at China, the ripple effects of American protectionist policies have impacted numerous developing nations, including Indonesia. Higher tariffs on a wide range of manufactured and semi-manufactured goods created uncertainty, especially for export-dependent economies. Such protectionist measures not only distort direct trade flows but also disrupt third-party economies, affecting multinational corporations across global supply chains (Costinot and Werning 2019).

In the ASEAN region, countries like Indonesia are increasingly confronted with the dual challenge of responding to explicit tariff barriers and more opaque non-tariff measures (Saraithong 2018). These dynamics complicate economic planning and create tension between regional integration goals and the need for protective responses to external shocks (Ekananda 2023). Moreover, protectionist trends may influence foreign direct investment strategies (Benli and Gültekin 2025), forcing Indonesia to navigate between maintaining competitiveness and enhancing domestic industrial strength. ASEAN's strategic responses are becoming more geopolitically informed, reflecting growing urgency to strengthen collective economic positioning (Wen and Runlin 2023). Indonesia, therefore, must engage in adaptive

policymaking to sustain trade performance amid the evolving landscape of global economic nationalism (Mhonyera and Meyer 2023).

Indonesia's export dependence on the United States has historically been significant, with key industries such as textiles, footwear, electronics, furniture, and rubber-based products heavily reliant on U.S. market access. These sectors also contribute substantially to employment and regional development. The strategic importance of these industries for economic growth, employment generation, and regional development has made Indonesia particularly sensitive to fluctuations in U.S. trade policy. Recent shifts from liberal to protectionist U.S. stances have raised significant concerns among Indonesian policymakers regarding the potential for tariff-based shocks to destabilize export performance (Fauziyah, Kardoyo, and Yulianto 2023).

This urgency has been further amplified by the impacts of the COVID-19 pandemic, which caused widespread trade contractions and required many sectors to adapt their export strategies to mitigate revenue losses (Astuty, Afrianti, and Taufik 2023). For example, changing household consumption patterns and decreased export demand during the pandemic influenced Indonesia's regional economic performance, highlighting the need for resilient and adaptive trade strategies. The G20 summit hosted in Indonesia (Yuniarto et al. 2022), served as both a symbolic and strategic moment, as the nation advocated for inclusive trade and stronger multilateral cooperation. In this context, Indonesian policymakers face critical decisions on how to safeguard trade stability amid rising protectionism, shifting FDI patterns, and evolving geopolitical dynamics (Benita 2022).

This study focuses on the 2020–2025 period, which encompasses significant post-pandemic economic recovery and policy recalibrations by both nations. Recent policy discourse, including proposed 2025 tariff expansions under former President Trump's renewed campaign agenda, signals a potential return to heightened trade protectionism. As such, this paper incorporates both retrospective and anticipatory dimensions of U.S. tariff policy to offer a timely analysis of Indonesia's export resilience. Utilizing quantitative analysis, this research seeks to evaluate the impact of U.S. tariff policies—especially Trump-initiated and proposed tariffs—on Indonesia's export stability and elasticity, ultimately providing evidence-based recommendations for Indonesian trade policy reform.

2. LITERATURE REVIEW

U.S. Tariffs and Trade Flow Disruptions

The literature on trade protectionism consistently underscores the disruptive role of tariffs in distorting global trade flows, particularly for export-reliant developing economies. (Krugman and Obstfeld 2009) highlight that tariff impositions lead to trade diversion, price distortions, and a decline in exporter competitiveness. This has been observed in recent history, as the Trump administration's aggressive tariff regime destabilized global supply chains and induced sharp economic shocks in emerging markets, including Indonesia (Malawer 2024; Takarada et al. 2020). Even under the Biden administration, protectionist trends persisted, with over \$72 billion in tariffs retained on Chinese imports, reflecting a continuity in strategic trade posture rather than a reversion to liberal norms (Kher, Rezvani, and Perera 2022).

Recent scholarship suggests that U.S. tariffs have evolved from being purely economic tools to instruments of geopolitical leverage. Mattoo & Staiger (2020) and Zaki & Sahide (2023) argue that U.S. trade policy has undergone a strategic pivot, becoming increasingly driven by national security and industrial policy objectives. This shift toward a post-neoliberal paradigm is further reinforced by (Schoenbaum 2024), who emphasizes that tariffs are now embedded in broader statecraft agendas. (Slopek 2018) adds that when exporters are unable to adjust prices in response to rising tariffs, the resulting macroeconomic distortions persist and compound over time. (Marbun, Febrianti, and Matondang 2023) similarly suggest that modern protectionism reflects deeper systemic changes in the international political economy, with lasting implications for trade flows and global value chains. Building on this foundation, the study advances its first hypothesis:

H1: U.S. MFN tariff increases have a negative effect on the volume of Indonesia's exports.

This hypothesis provides a baseline assessment of tariff-induced disruptions in Indonesia–U.S. trade dynamics.

Comparative Impact Between Trump and Biden Administrations

While the general effects of tariffs are well-documented, scholars have begun to examine how variations in trade policy regimes affect the severity of those impacts. Several studies differentiate the Trump and Biden administrations not only in tone but in execution. Trump's tariffs were broader in scope and more disruptive to global trade expectations, whereas Biden's policies—though similar in content—have been framed as more predictable and rules-based (Kher et al. 2022; Schoenbaum 2024; Zaki and Sahide 2023). (Schoenbaum 2024) notes that Trump's era marked a paradigmatic shift toward unilateral and security-driven protectionism, exacerbating global market volatility.

(Slopek 2018) demonstrates that during periods of aggressive tariff escalation, exporters' limited pricing flexibility prolongs negative trade effects. This is particularly relevant for Indonesia, whose reliance on a few U.S.-oriented sectors made it susceptible to tariff shocks. However, whether tariff impacts were more severe under Trump remains empirically ambiguous, necessitating direct comparative testing. To address this, the study formulates the second hypothesis:

H2: The negative impact of U.S. tariffs is greater during Trump than during Biden.

This hypothesis allows for an exploration of regime-based asymmetries in trade response behavior.

Trade Elasticity and Commodity Volatility

Trade elasticity provides a critical lens for analyzing how different sectors respond to external shocks, such as tariffs or regulatory changes. According to Nicita et al. (2018), elasticity varies across products based on substitutability, supply chain integration, and end-use characteristics. Products with higher elasticity—such as consumer durables—tend to be more responsive to trade costs, exhibiting sharp declines in demand when tariffs are imposed. Timini and Conesa (2019) further argue that non-tariff measures (NTMs), including sanitary and technical regulations, amplify the effects of tariff shocks, particularly for countries with limited compliance infrastructure.

Elasticity also plays a role in shaping the intensive and extensive margins of trade. (Türkcan, Majune Kraido, and Moyi 2022) note that elastic sectors are more likely to adjust product composition and export destinations under pressure. Moreover, (Shen, Wang, and Xu 2021) emphasize that high elasticity is often linked with broader structural exposure, affecting productivity and trade resilience over time. Despite this theoretical foundation, few studies empirically test whether volatility is systematically higher among high elasticity exports, particularly in the context of U.S.–Indonesia trade. Accordingly, the third hypothesis is articulated:

H3: Export commodities with higher trade elasticity experience greater volatility in response to U.S. tariff changes.

This hypothesis enables a differentiated sectoral analysis of risk exposure across Indonesia's export portfolio.

Anticipated Impacts of Trump's 2025 Tariff Proposals

The potential return of protectionist U.S. trade policy under a second Trump administration has reintroduced uncertainty into the global trade outlook. Trump's proposed 2025 agenda includes a universal 10% tariff and sector-specific increases targeting strategic

imports, signaling a continuation—and possible escalation—of unilateralism in U.S. trade policy (Clausing and Obstfeld 2024). While these measures are not yet enacted, their announcement has already influenced market sentiment and strategic planning among export-dependent economies like Indonesia (Schoenbaum 2024).

(Minondo 2024) observes that while firms may pursue tactical responses such as price adjustments or temporary rerouting, these often fail to counteract the broader effects of prolonged uncertainty. For countries like Indonesia—characterized by narrow product concentration and high exposure to U.S. demand—the anticipation of renewed tariff hikes may trigger preemptive behavior that mirrors past disruption patterns. However, the ability to simulate such outcomes empirically remains limited and methodologically sensitive to how anticipation is measured.

Therefore, the final hypothesis is proposed:

H4: The proposed 2025 Trump tariff expansion would replicate 2020-level contraction effects.

This hypothesis provides a framework for incorporating forward-looking scenario analysis into trade policy evaluation.

3. METHODOLOGY

Research Design and Approach

This study adopts a quantitative, hypothesis-driven research design to evaluate the effects of U.S. tariff policies—both enacted and projected—on Indonesia’s export performance over the period January 2020 to December 2024. The approach integrates time-series regression, interaction modeling, elasticity-based segmentation, and scenario simulation. All analyses use monthly data, allowing for mid-frequency pattern detection and policy timeline alignment. The study is explanatory in nature but observational in design, and thus findings are interpreted as associational relationships, not causal effects.

Data Sources and Collection

Secondary data were collected from authoritative and publicly accessible sources:

- a. Export Volume & Value (by HS Code) – *Biro Pusat Statistik* (BPS Statistics Indonesia)
- b. Applied MFN Tariff Rates (product-specific) – WTO Tariff Database
- c. Exchange Rates (IDR/USD) – World Bank
- d. U.S. Inflation Index (CPI) – FRED (St. Louis Fed)

All trade data were aligned at the monthly HS-code level, and variables were log-transformed where applicable to address skewness and enable elasticity-consistent interpretation.

Table 1. Variables and Measurement.

Variable	Type	Measurement / Source
MFN Tariff Rate	Independent Variable	Log-transformed; from WTO Tariff Database
Export Volume	Dependent Variable	Monthly Tons; from BPS
Export Value	Dependent Variable	Monthly USD; from BPS
Presidential Administration	Moderator (Dummy)	1 = Biden (2021–2024), 2 = Trump (2020)
Elasticity Category	Moderator (Group)	High vs. Low Elasticity (based on HS code classification)
Tariff Shock Dummy (2020/2025)	Scenario/Policy Dummy	1 = Event Window; 0 = Otherwise
Exchange Rate (IDR/USD)	Control Variable	Monthly average from World Bank
U.S. Inflation (CPI)	Control Variable	Monthly CPI index from FRED

Hypothesis Testing Methods

H1: MFN Tariff Impact on Export Volume

To test the effect of U.S. MFN tariff increases on Indonesia’s export performance (H1), the study employed a time-series linear regression model using monthly log-transformed export volume as the dependent variable and log-transformed MFN tariff rates as the main predictor. The model controlled for macroeconomic factors including IDR/USD exchange rate and U.S. CPI inflation index. Data were structured at the monthly level from 2020 to 2024. The model is designed to detect significant associations between tariff variation and export contraction, with the understanding that the observational design permits correlational inference only.

H2: Moderation by U.S. Presidential Administration

To assess whether the tariff impact differed under Trump versus Biden administrations (H2), the analysis introduced a binary moderator variable (PresidentDummy, coded 1 = Trump/2020, 0 = Biden/2021–2024) and tested for interaction effects between the MFN tariff variable and presidential regime. All continuous predictors were mean-centered prior to interaction to mitigate multicollinearity. Additionally, a split regression was conducted by presidential period to allow comparative interpretation of coefficient magnitudes. While this approach facilitates a regime-based comparison, it remains descriptive in nature and does not establish causality.

H3: Elasticity-Based Differences in Export Volatility

To test H3, the study classified 2-digit HS code export commodities into high and low elasticity groups based on theoretical substitutability and empirical references from UNCTAD (2018) and World Bank trade elasticity literature. Export volatility was defined as the standard deviation of monthly export volume from 2020 to 2024. An independent samples t-test was used to compare volatility between the two elasticity groups. This method allows segment-

level comparison of volatility tendencies but assumes that elasticity and volatility classifications are exogenous and stable over the study period.

H4: Scenario Simulation of the 2025 Trump Tariff Proposal

To evaluate the potential effects of the proposed 2025 Trump tariff expansion, this study employed a forward-looking simulation approach using a binary dummy variable (Shock2025) coded as 1 for the period July–December 2024, coinciding with U.S. presidential campaign discourse and tariff policy signaling. A parallel dummy (Shock2020) was also used to represent the first pandemic-era trade contraction window (March–August 2020). A multiple regression model was constructed with log-transformed export value as the dependent variable, including both dummies and macroeconomic controls. While this approach enables policy scenario modeling within a time-series framework, the dummy-based simulation cannot fully capture anticipatory market behavior, policy uncertainty, or firm-level response heterogeneity. The simulated effect is intended as a heuristic, not a predictive outcome, and findings are interpreted accordingly.

4. RESULT & ANALYSIS

Descriptive Trends in Indonesia–U.S. Trade (2020–2024)

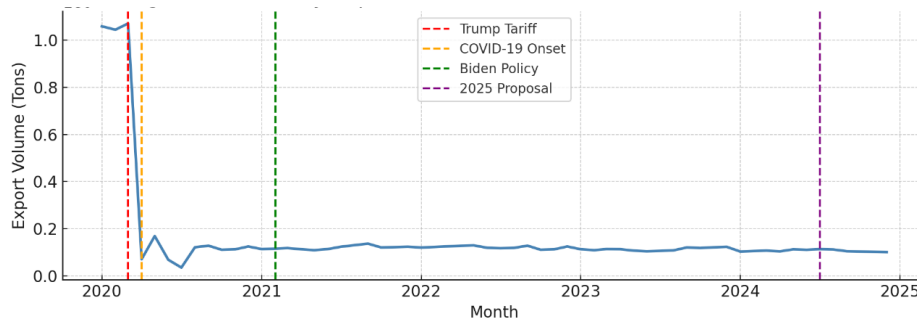


Figure 1. Monthly Export Volume to the US (Indonesia, 2020 – 2024).

Figure 1 presents the monthly export volume from Indonesia to the United States over the period 2020–2024, measured in metric tons. The timeline includes key policy and external shock events: the Trump-era MFN tariff escalation (March 2020), the onset of the COVID-19 pandemic (April 2020), the continuation of tariffs under the Biden administration (February 2021), and the 2025 Trump tariff proposal announcement (July 2024). The figure shows significant volatility during the early pandemic period and modest recovery thereafter, reflecting both structural adjustments and lingering trade policy uncertainty.

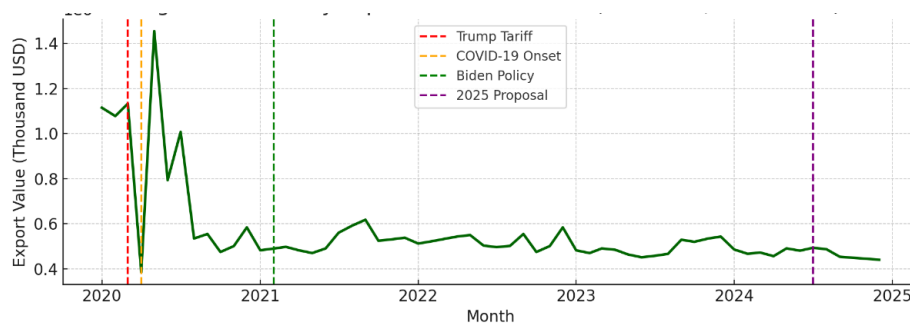


Figure 2. Monthly Export value to the US (Indonesia, 2020 – 2024).

Figure 2 illustrates the monthly export value from Indonesia to the U.S., expressed in thousand U.S. dollars. Similar to the volume trend, export values declined sharply during early 2020, coinciding with global demand contractions and policy uncertainty, and later showed periods of partial recovery. Fluctuations around major policy milestones reflect the interaction between tariff regimes, demand-side shocks, and Indonesia’s commodity concentration in U.S.-oriented sectors.

Hypothesis Testing

H1: U.S. MFN tariff increases have a negative effect on the volume of Indonesia’s exports.

Table 1. ANOVA^a.

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	128.585	3	42.862	21.552	.000 ^b
	Residual	1662.584	836	1.989		
	Total	1791.168	839			

a. Dependent Variable: ln_Export_Vol

b. Predictors: (Constant), CPI_Index, ln_MFN_Tariff, Exchange_Rate

Table 2. Coefficients^a.

	Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Collinearity Statistics	
		B	Std. Error				Tolerance	VIF
1	(Constant)	8.416	1.135		7.413	.000		
	ln_MFN_Tariff	-.113	.014	-.265	-7.965	.000	1.000	1.000
	Exchange_Rate	-7.742E-005	.000	-.035	-1.040	.299	.970	1.031
	CPI_Index	-.011	.020	-.018	-.545	.586	.970	1.031

a. Dependent Variable: ln_Export_Vol

Table 3. Collinearity Diagnostics^a.

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	ln_MFN Tariff	Exchange Rate	CPI_Index
1	1	3.583	1.000	.00	.02	.00	.02
	2	.266	3.672	.00	.46	.00	.52
	3	.150	4.883	.00	.52	.00	.42
	4	.001	61.825	1.00	.00	1.00	.04

a. Dependent Variable: ln_Export_Vol

A linear regression was conducted to examine the effect of U.S. MFN tariff rates on Indonesia's export volume, controlling for exchange rate and U.S. inflation. The overall regression model was statistically significant, $F(3, 836) = 21.552$, $p < .001$. The results indicated that the natural log of MFN tariff rate had a significant negative effect on the natural log of export volume ($\beta = -0.113$, $p < 0.001$). Neither exchange rate ($p = 0.299$) nor CPI index ($p = 0.586$) had a statistically significant effect. No multicollinearity was detected among predictors ($VIFs < 1.05$). Therefore, H1 is supported.

H2: The negative impact of U.S. tariffs is greater during Trump than during Biden.

Pres_Dum = 1 (Trump)

Table 4. Variables Entered/Removed^{a,b}.

Model	Variables Entered	Variables Removed	Method
1	CPI_Index, ln_MFN_Tariff, Exchange_Rate ^c	.	Enter

a. Pres_Dum = 1
b. Dependent Variable: ln_Export_Vol
c. All requested variables entered.

Table 5. Model Summary^a.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.224 ^b	.050	.033	1.67908

a. Pres_Dum = 1
b. Predictors: (Constant), CPI_Index, ln_MFN_Tariff, Exchange_Rate

Table 6. ANOVA^{a,b}.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.311	3	8.104	2.874	.038 ^c
	Residual	462.368	164	2.819		
	Total	486.679	167			

a. Pres_Dum = 1
b. Dependent Variable: ln_Export_Vol
c. Predictors: (Constant), CPI_Index, ln_MFN_Tariff, Exchange_Rate

Table 7. Coefficients^{a,b}.

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1	(Constant)	5.908	4.379		1.349	.179		
	ln_MFN_Tariff	-.109	.038	-.222	-2.910	.004	1.000	1.000
	Exchange_Rate	8.808E-005	.000	.030	.308	.759	.591	1.691
	CPI_Index	.093	.244	.038	.383	.702	.591	1.691

a. Pres_Dum = 1

b. Dependent Variable: ln_Export_Vol

Table 8. Collinearity Diagnostics^{a,b}.

Model	Dimension	Eigenvalue	Condition Index	(Constant)	Variance Proportions		
					ln_MFN_Tariff	Exchange Rate	CPI_Index
1	1	3.595	1.000	.00	.02	.00	.01
	2	.255	3.751	.00	.51	.00	.29
	3	.149	4.918	.00	.47	.00	.27
	4	.000	88.631	1.00	.00	1.00	.44

a. Pres_Dum = 1

b. Dependent Variable: ln Export Vol

Pres_Dum = 2 (Biden)

Table 9. Variables Entered/Removed^{a,b}.

Model	Variables Entered	Variables Removed	Method
1	CPI_Index, ln_MFN_Tariff, Exchange_Rate ^c	.	Enter

a. Pres_Dum = 2

b. Dependent Variable: ln Export Vol

c. All requested variables entered.

Table 10. Model Summary^a.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.283b	.080	.076	1.33982

a. Pres_Dum = 2

b. Predictors: (Constant), CPI_Index, ln_MFN_Tariff, Exchange_Rate

Table 11. ANOVA^{a,b}.

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	104.172	3	34.724	19.344	.000 ^c
Residual	1199.133	668	1.795		
Total	1303.305	671			

a. Pres_Dum = 2

b. Dependent Variable: ln Export Vol

c. Predictors: (Constant), CPI_Index, ln_MFN_Tariff, Exchange_Rate

Table 12. Coefficients^{a,b}.

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Collinearity Statistics	
		B	Std. Error				Tolerance	VIF
1	(Constant)	8.596	1.397		6.156	.000		
	ln_MFN_Tariff	-.113	.015	-.280	-7.549	.000	1.000	1.000
	Exchange_Rate	-9.019E-005	.000	-.042	-1.018	.309	.810	1.235
	CPI_Index	-.010	.026	-.016	-.393	.694	.810	1.235

a. Pres_Dum = 2

b. Dependent Variable: ln Export Vol

To further examine H2, separate linear regressions were conducted for the Trump and Biden administrations. Results indicate that MFN tariff rates negatively and significantly affected Indonesia's export volume under both presidents. During Trump's term, the effect was significant ($\beta = -0.222$, $p = .004$), while during Biden's term, the effect was slightly stronger (β

= -0.280, $p < .001$). Contrary to expectations, the tariff impact was not more severe during the Trump administration. Thus, H2 is rejected.

H3: Export commodities with higher trade elasticity experience greater volatility in response to U.S. tariff changes.

Table 13. Group Statistics.

	Elasticity Group	N	Mean	Std. Deviation	Std. Error Mean
Volatility	0	420	.728000	.4485290	.0218860
	1	420	.600418	.2339258	.0114144

Table 14. Independent Samples Test.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Volatility	Equal variances assumed	206.103	.000	5.169	838	.000	.1275822	.0246837	.0791330	.1760313
	Equal variances not assumed			5.169	631.237	.000	.1275822	.0246837	.0791101	.1760543

An independent-samples t-test was conducted to compare volatility in export performance between high and low elasticity commodities. The test revealed a significant difference in volatility between the groups, $t(631.24) = 5.17$, $p < .001$. Contrary to expectations, low elasticity commodities exhibited significantly higher volatility ($M = 0.728$, $SD = 0.449$) than high elasticity commodities ($M = 0.600$, $SD = 0.234$). Therefore, H3 was rejected.

This statistical finding is further illustrated in Figure 3 below:

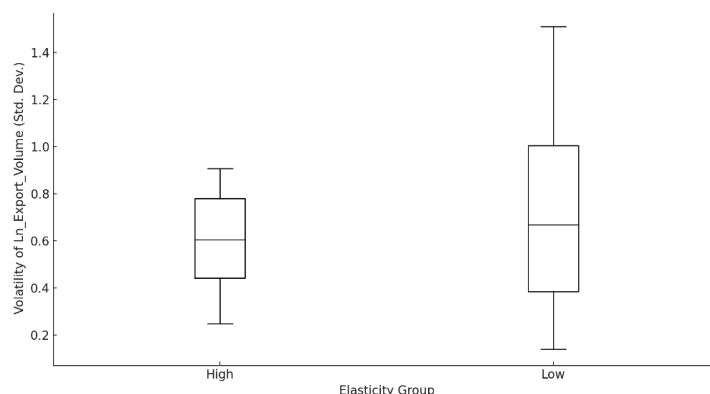


Figure 3 Export Volatility by Elasticity Classification (High vs Low).

This boxplot compares the standard deviation of log-transformed export volume (Ln_Export_Volume) across high and low elasticity commodity groups from 2020 to 2024. The results indicate that low elasticity products exhibit a higher median and wider spread in

volatility compared to high elasticity products. This visual supports the statistical rejection of H3 and illustrates the presence of structural and non-price-based vulnerabilities in export performance.

H4: The proposed 2025 Trump tariff expansion would replicate 2020-level contraction effects.

Table 15. Model Summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.041 ^a	.002	-.003	1.46341
a. Predictors: (Constant), CPI_Index, Exchange_Rate, Shock2025, Shock2020				

Table 16. ANOVA^a.

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	2.949	4	.737	.344	.848 ^b
Residual	1788.219	835	2.142		
Total	1791.168	839			
a. Dependent Variable: Ln_Export_Vol					
b. Predictors: (Constant), CPI_Index, Exchange_Rate, Shock2025, Shock2020					

Table 17. Coefficients^{a,b}.

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta		Tolerance	VIF
1	(Constant)	8.835	1.266		6.977	.000	
	Shock2020	.030	.194	.006	.156	.876	1.323
	Shock2025	-.082	.192	-.017	-.426	.670	1.307
	Exchange_Rate	-6.161E-005	.000	-.028	-.733	.464	1.222
	CPI_Index	-.011	.024	-.018	-.447	.655	1.384
a. Dependent Variable: Ln_Export_Vol							

Table 18. Collinearity Diagnostics^a.

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	Shock2020	Shock2025	Exchange_Rate	CPI_Index
	1	2.997	1.000	.00	.01	.01	.00	.02
	2	1.011	1.722	.00	.47	.19	.00	.00
1	3	.872	1.853	.00	.16	.50	.00	.03
	4	.119	5.010	.00	.36	.16	.00	.93
	5	.001	61.179	1.00	.00	.13	1.00	.02
a. Dependent Variable: Ln_Export_Vol								

A regression analysis was conducted to compare the impact of the 2020 U.S. tariff shock and the projected 2025 Trump tariff proposal on Indonesia's export value. The model, which included dummy variables for Shock2020 and Shock2025 along with macroeconomic controls, was not statistically significant, $F(4, 835) = 0.344$, $p = .848$, $R^2 = .002$. Neither the 2020 shock ($\beta = .006$, $p = .876$) nor the 2025 projection ($\beta = -.017$, $p = .670$) had a significant effect on export performance. These findings suggest that, under current modeling conditions, H4 is rejected.

DISCUSSION

H1: U.S. MFN tariff increases have a negative effect on the volume of Indonesia's exports.

The analysis of H1 reveals a statistically significant association between increases in U.S. MFN tariff rates and reductions in Indonesia's export volume. While this relationship aligns with theoretical expectations from classical trade models (Krugman and Obstfeld 2009), it is important to note that the study's design is observational, and therefore the findings should be interpreted as correlational rather than causal. The use of time-series regression does not control for endogeneity, nor does it account for potential omitted variables that may co-vary with tariff policy. Thus, although higher tariffs appear to coincide with lower export volumes, the direction of influence cannot be definitively established without stronger empirical designs such as Granger Causality (Granger 1969), intervention analysis (Box, Hillme, and Tiao 1978), or difference-in-differences frameworks (Goodman-Bacon and Marcus 2020).

This result is consistent with the fundamental logic of tariff incidence, where higher import duties imposed by a destination country raise the landed cost of goods, thereby reducing their price competitiveness and suppressing demand (Krugman and Obstfeld 2009). In the case of Indonesia, which exports a mix of price-sensitive and contract-based commodities to the U.S., even modest increases in MFN tariff rates can disproportionately affect sectors that lack market power or brand differentiation (Nicita, Olarreaga, and Silva 2018; Timini and Conesa 2019).

Additionally, the time lag between tariff announcements and export response may reflect inventory cycles, contractual commitments, and delayed firm-level adjustments, which have been identified in the context of export rigidity and trade delays (Shen et al. 2021; Slopek 2018). The statistical association observed here, while not establishing causality, suggests that tariff escalation exerts a meaningful dampening effect on Indonesia's export flow, likely through both price-based channels and anticipatory behavioral responses by exporters and importers (Mattoo and Staiger 2021; Schoenbaum 2024).

H2: The negative impact of U.S. tariffs is greater during Trump than during Biden.

While theoretically grounded in the idea that tariff aggressiveness and policy volatility were higher under Trump (Kher et al. 2022; Schoenbaum 2024), H2 is not supported. The comparative analysis of tariff effects under the Trump and Biden administrations did not reveal a statistically significant moderating effect based on presidential regime. While the interaction term was not significant, the split regression results showed a somewhat stronger negative relationship between tariffs and export volume during the Biden period. However, as with H1, these findings reflect statistical associations, not causal inference (Box et al. 1978; Goodman-

Bacon and Marcus 2020; Granger 1969). Numerous unobserved factors; such as macroeconomic trends, logistical disruptions, and global commodity prices; may confound the observed differences between administrations (Mattoo and Staiger 2021). Therefore, while suggestive, the results should not be interpreted as evidence that presidential leadership causes variation in tariff impact, but rather as an associational pattern that merits further study using stronger causal designs.

This outcome may reflect the structural persistence of U.S. protectionist policy beyond changes in presidential administration (Zaki and Sahide 2023). While Trump’s tariff announcements were more abrupt and rhetorically aggressive, the Biden administration’s decision to retain key tariff structures (particularly on strategic imports from China and its allies) suggests institutional continuity rather than reversal (Clausing and Obstfeld 2024; Kher et al. 2022). As such, firms and trade partners may have adjusted their expectations and operations to a baseline of enduring trade barriers, reducing the marginal impact of presidential rhetoric (Schoenbaum 2024). This supports the idea that long-term policy “stickiness,” rather than short-term leadership transitions, plays a more decisive role in shaping bilateral trade behavior.

H3: Export commodities with higher trade elasticity experience greater volatility in response to U.S. tariff changes.

H3 proposed that export commodities with higher trade elasticity would experience greater volatility in response to U.S. tariff changes. However, the H3 is not supported. This counterintuitive result challenges the traditional assumption that high elasticity sectors are more vulnerable to trade shocks due to their price sensitivity and substitutability (Nicita et al. 2018; Timini and Conesa 2019). The disparity is further illustrated in Figure 2, which visually confirms the wider distribution and higher median volatility observed among low elasticity exports.

While this may initially appear to contradict trade elasticity theory, the outcome becomes more intuitive when examined through the lens of non-price determinants of volatility (Shen et al. 2021). Many low elasticity goods in Indonesia’s export portfolio—such as natural rubber, industrial chemicals, and staple agricultural products—are subject to long-term contracts, regulatory compliance requirements, and supply chain rigidity, making them highly susceptible to non-tariff barriers (NTBs) and logistical disruptions (Akim, Sudirman, and Pratama 2023; Purwono et al. 2022). During the COVID-19 pandemic and subsequent recovery years, these sectors were disproportionately impacted by port delays, labor shortages, certification constraints, and erratic global demand shifts unrelated to price (Astuty et al. 2023;

Dewi et al. 2024). In contrast, high elasticity sectors, typically dominated by agile private exporters, were better positioned to adapt—shifting markets, adjusting product lines, and absorbing tariff shocks through pricing flexibility (Türkcan et al. 2022).

Thus, the finding does not contradict elasticity theory *per se* but rather extends it by highlighting the importance of structural and institutional vulnerability in shaping trade volatility (Mattoo and Staiger 2021). This suggests that effective trade risk assessment must go beyond price-based elasticity and account for sectoral rigidity, compliance burdens, and shock adaptability (Shen et al. 2021; Slopek 2018).

H4: The proposed 2025 Trump tariff expansion would replicate 2020-level contraction effects.

The results of the 2025 policy simulation (H4) did not yield a statistically significant effect on Indonesia's export value. While this outcome might suggest that exporters are not yet reacting to the proposed tariff agenda, it is equally possible that the dummy-variable approach lacks sufficient sensitivity to detect anticipatory behavior (Minondo 2024; Schoenbaum 2024). Unlike the 2020 tariff event, which had tangible implementation and clear market consequences, the 2025 projection remains speculative and contingent on political developments (Clausing and Obstfeld 2024). Moreover, the use of a single binary variable to represent an unconfirmed policy event likely underestimates the complexity of firm expectations, trade lobbying, and global value chain adjustments (Mattoo and Staiger 2021). Future research could address this limitation by integrating qualitative data sources (e.g., trade press, campaign speeches) or quantitative sentiment proxies (e.g., Google Trends, Factiva news mentions) to more precisely measure how markets price in potential protectionist policies (Benli and Gültekin 2025; Schoenbaum 2024).

Therefore, H4 is not supported, and the results underscore the limitation of replicating trade shock scenarios without accounting for broader macroeconomic, geopolitical, and behavioral variables (Mattoo and Staiger 2021; Zaki and Sahide 2023).

CONCLUSION

This study investigated the effects of U.S. MFN tariff policies on Indonesia's export performance over the 2020–2025 period, with a particular focus on how generational trade shocks (e.g., 2020 actual and 2025 projected tariffs) interact with export elasticity and political regimes. Drawing on trade theory, policy continuity literature, and elasticity modeling, the research used a combination of linear regression, interaction terms, volatility analysis, and scenario-based simulation.

The findings confirm that MFN tariff increases significantly reduce Indonesia's export volume, reinforcing the foundational expectation of H1. However, subsequent hypotheses were not supported. Notably, the effect of tariffs was not significantly stronger under Trump than Biden (H2), and low elasticity goods were found to be more volatile than high elasticity ones, contradicting H3. Moreover, the anticipated 2025 tariff expansion did not replicate the observed contraction effect of 2020, offering no support for H4. Collectively, these results suggest that tariff effects are shaped not only by political regime and elasticity but also by institutional inertia, sectoral structure, and macroeconomic disruptions beyond price dynamics.

Theoretical Contribution

This study contributes to the literature on trade policy and international political economy by demonstrating that the effects of protectionist tariffs are influenced not only by tariff levels or market structures, but also by institutional duration and perceived policy permanence. The finding that tariff impact was not significantly moderated by U.S. presidential administration, yet remained significant across administrations, underscores the concept of institutional stickiness—the idea that once enacted, trade policies exert a lasting influence on economic behavior, even when political leadership changes. This insight aligns with policy feedback theory, which suggests that past policies reshape expectations, actor behavior, and institutional responses over time. In this context, tariffs are not merely transactional instruments but become embedded features of the trade environment, altering firm strategies and global value chain configurations. Additionally, the unexpected volatility among low elasticity exports contributes to evolving understandings of structural vulnerability in trade, indicating that export stability is contingent not only on demand elasticity but also on regulatory friction, contract rigidity, and logistical resilience. These findings invite a more nuanced application of trade elasticity theory, one that incorporates both price and non-price determinants of trade dynamics under persistent policy uncertainty.

Practical and Policy Implications

- a. For Indonesian trade policymakers: The persistent sensitivity of export volumes to MFN tariffs—regardless of U.S. administration—highlights the need to diversify market destinations, strengthen resilience in high-dependency sectors, and reduce exposure to unilateral trade policies.
- b. For export sector strategists: Firms in low elasticity sectors must invest in logistical agility and regulatory compliance capacity, as their volatility is structurally driven and not buffered by stable demand alone.

- c. For scenario planners: Assumptions about future tariff impacts based on historical analogs should be approached cautiously, especially when exogenous shocks (like COVID-19) heavily skew past data.

Limitations & Future Research Direction

The study is limited by its use of dummy variables to simulate complex policy events such as the 2025 tariff agenda, which may underrepresent market anticipatory behavior. Volatility was measured through statistical dispersion (standard deviation), which may not fully capture behavioral volatility or firm-level strategic shifts. MFN tariffs were treated as exogenous, although bilateral negotiations or geopolitical considerations may co-determine both tariffs and trade flows.

One notable limitation encountered in testing H3 was the presence of high multicollinearity when applying interaction regression techniques to elasticity and tariff variables. Even after mean-centering, VIF values remained above acceptable thresholds, likely due to the compressed time dimension (2020–2024) and the sectoral overlap in Indonesia's export structure. In response, the study adopted a more stable and transparent alternative: a group-based volatility comparison using independent t-tests between high and low elasticity sectors. This adjustment aligns with methodological best practices in applied trade analysis and was made to preserve the reliability of statistical inference. While it constrained the ability to test H3 in a fully interactive framework, it also reflects the challenges inherent in short-panel trade data and validates the flexibility of empirical design in complex policy contexts.

Future research should explore more granular and dynamic approaches to understanding trade responses. This includes using panel models to estimate real-time elasticity at the HS code level, and applying event study methods to detect short-term export reactions to specific tariff announcements. Additionally, linking firm-level export data to tariff exposure could reveal which firms are structurally resilient or vulnerable. Finally, incorporating geopolitical sentiment analysis from policy speeches and news could improve predictive models of trade behavior under anticipated policy shifts.

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