Taxation and international trade dynamics in Nigeria: A VECM analysis

American Journal of Social Sciences and Humanities
Vol. 11, No. 1, 100-110, 2026
e-ISSN: 2226-4809/p-ISSN: 2304-6945

(Corresponding Author)

Aishatu Kabir[1]
Nasir Bukola Rasheed[2]

[1]*Nile University of Nigeria.*
[1]*Email: aishakbmaaji@gmail.com*
[2]*University of Abuja, Nigeria.*
[2]*Email: nasconomics@gmail.com*

ABSTRACT

This study examines the impact of taxation on international trade dynamics in Nigeria from 2011Q1 to 2024Q4. The purpose of the study is to analyze how key tax instruments influence export and import performance within the Nigerian economy. The study adopts a Vector Error Correction Model (VECM) to examine the long-run and short-run relationships between taxation and trade flows, while innovation accounting analysis is employed to assess the dynamic effects of tax shocks on exports and imports over time. The findings indicate that positive shocks to customs duties temporarily boost exports and imports when aimed at revenue mobilization but may reduce exports and generate cyclical effects on imports when used for trade control purposes. Corporate income tax shocks are found to reduce exports under revenue-driven policies and consistently depress imports, while import-VAT shocks have a detrimental effect on both export and import flows. In the long run, customs duties remain a significant driver of trade dynamics, whereas corporate income tax and import-VAT continue to constrain export and import activity. These results highlight the complex interaction between taxation and trade performance in Nigeria's external sector. The study therefore recommends that policymakers design tax policies that balance revenue mobilization with trade promotion objectives, incorporate sector-specific considerations, and closely monitor the interaction between trade taxation, investment behavior, and exchange rate dynamics in order to sustain external sector stability and support long-term trade competitiveness.

Keywords: *Exports, Imports, Shock, Taxation, Trade, VECM.*

DOI: 10.55284/ajssh.v11i1.1777
Citation | Kabir, A., & Rasheed, N. B. (2026). Taxation and international trade dynamics in Nigeria: A VECM analysis. *American Journal of Social Sciences and Humanities, 11*(1), 100–110.

Funding: This study received no specific financial support.
Institutional Review Board Statement: Not applicable.
Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: Both authors contributed equally to the conception and design of the study. Both authors have read and agreed to the published version of the manuscript.
History: Received: 21 January 2026/ Revised: 28 February 2026/ Accepted: 4 March 2026/ Published: 18 March 2026
Publisher: Online Science Publishing

Highlights of this paper

- The paper provides new empirical evidence on the relationship between taxation and international trade in Nigeria using a Vector Error Correction Model (VECM).
- It shows that customs duties can have dual effects on trade, temporarily boosting exports and imports when driven by revenue mobilization but potentially reducing exports and creating cyclical effects on imports when used for trade control.
- The study also finds that corporate income tax and import-VAT shocks consistently reduce trade flows, highlighting the importance of balancing revenue objectives with trade competitiveness in tax policy design.

1. INTRODUCTION

Nigeria occupies a strategic position in Africa's trade landscape, with international trade serving as a critical channel for revenue generation, industrial expansion, and integration into the global economy (Mordecai & Akinsola, 2021). However, the performance of the trade in the country is still strongly dependent on the organization and management of the tax system, which is one of the key instruments of fiscal policy (Nwagu et al., 2022). Although the country has experienced successive reforms aimed at enhancing domestic revenue mobilization and trade competitiveness, Nigeria is still struggling with the same issues that are caused by structural inefficiencies, poor tax compliance, and a limited export base (Kirfi, Aliyu, & Solomon, 2025; Simpasa, 2024). Consequently, the relationship between taxation and trade flows, especially imports and exports, is complicated and unpredictable in many cases. Taxation, both direct and indirect, has been observed to be one of the key determinants of trade incentives, production choices, and overall competitiveness of local companies (Sharma, 2025; Silva, Martinez, Zanoteli, & Sarlo Neto, 2024). Moreover, theoretically, taxes can be used to perform several purposes: they raise revenue, control market behavior, and manipulate trade patterns by adjusting prices and costs (Oats, 2023). But in developing and resource-dependent economies like Nigeria, the efficiency of these functions is limited by administrative inefficiencies, reliance on oil revenue, and vulnerability to global shocks (Onoriode & Nwagu, 2025). Furthermore, the historical and current data indicate that the international trade sector in Nigeria has been highly volatile in the last 20 years, especially because of the unstable global oil prices, exchange rates, and unstable trade and fiscal policies (Ikechi & Nwadiubu, 2020; Ikpe, Ubom, & Johnson, 2024). Such dynamics have brought up the question of whether the tax regime is favorable or limiting to the Nigerian external sector. Although indirect taxes like customs duties are supposed to control imports and encourage local production, their practical impacts on the level of trade have not always been in accordance with the theoretical assumptions. On the same note, direct taxes can also affect the productivity and export ability of firms, but the results of empirical studies have been quite mixed (Jovanović, 2021; Nomkuha, Asooso, & Abachi, 2024). In addition, the available literature on taxation and trade has been majorly based on the analysis of the static or partial-equilibrium (Bond, Duan, Ji, & Lu, 2023; Jovanović, 2021; Le, Ngoc, & Van, 2025) which has given little information on the dynamic interaction and long-run relationship between tax variables and trade flows. These studies usually fail to consider the significance of evaluating the transmission of tax-induced shocks through the trade system and the long-run adjustment of the economy. This is a critical gap considering that Nigeria is susceptible to both internal and external shocks. The shock-response mechanism needs to be understood more thoroughly, hence, to design tax reforms that would make the trade more competitive and facilitate the stability of the external sector.

It is against this backdrop that this study employs a Vector Error Correction Model (VECM) to examine the long-run and short-run dynamics between taxation and international trade in Nigeria. Specifically, the research investigates how direct and indirect taxes affect import and export performance, while also analyzing how shocks to tax variables propagate through trade indicators. The VECM framework enables the study to capture both equilibrium relationships and adjustment processes, thereby offering a comprehensive understanding of Nigeria's taxation–trade nexus. By integrating cointegration evidence with impulse response and variance decomposition analyses, the study aims to provide subtle insights that can guide the design of fiscal policies and enhance trade efficiency in the Nigerian economy.

2. LITERATURE REVIEW

Several studies have been carried out on the relationship between tax variables and international trade. For instance, Metelli and Natoli (2021) investigated the international transmission effects of US tax shocks. Using an SVAR approach, they found that personal income tax rate shocks permanently increase both imports and exports above their steady-state levels. Benzarti and Tazhitdinova (2021) examined how value-added taxes influence international trade flows across EU member states and found that trade elasticities with respect to VATs are small, even when VAT changes are substantial. Using data on 41 EU and OECD countries, Jovanović (2021) analyzed the effects of labour and corporate taxation on international trade. Estimating a two-stage least squares (2SLS) panel regression model, the study showed that labour taxes have an insignificant effect on imports and only influence exports when domestic labour contributes significantly to value added. It also showed that corporate taxes affect exports and imports only when the stock of FDI is large, indicating that their overall contribution to trade expansion is small. Holzner, Jovanović, and Vukšić (2021) investigated how corporate income taxes influence international trade across 34 EU and OECD economies. Using a panel regression framework, they found that corporate income taxes reduce both exports and imports only when the stock of foreign direct investment (FDI) is high, with the effect most pronounced in the service sector and in low–corporate tax countries. Adarov, Holzner, Jovanović, and Vukšić (2021) analyzed the relationship between labour taxes and international trade in 41 EU and OECD economies. The result of the panel regression models showed that higher labour taxes have no significant effect on imports but tend to reduce exports, with the magnitude of the effect largely dependent on the share of domestic labour value added, which varies across industries, countries, and time periods.

Nwagu et al. (2022) examined the relationship between fiscal policy, monetary policy, and the trade balance in Nigeria. Using a cointegration approach, they found that government expenditure and tax revenue negatively affect the trade balance in the long run, whereas exchange rate depreciation has a positive impact. Bussy (2023) investigated the effect of corporate tax evasion in the EU context. Employing the fixed-effect panel regression technique, the study found that corporate tax, value-added tax, and average effective tax rate negatively affect imports and exports. Using a general equilibrium approach, Bond et al. (2023) analyzed the trade and welfare effects of export taxes in the Chinese economy. Their simulations showed that the partial VAT rebate on exports had a limited overall impact on the welfare of China and its trading partners. The study further revealed that applying the optimal export tax reduced import volumes in 2007 and 2014, but increased import volumes in 2000. Hayo and Mierzwa (2023) examined the effects of tax changes on the trade balance in the US, UK, and Germany. Results from the VAR model showed that personal income tax (PIT) shocks reduce exports in the US and UK but increase them in Germany. PIT shocks also increase imports in the US and UK but reduce imports in Germany. In addition, corporate income tax (CIT) shocks lower both imports and exports in the US and Germany, while in the UK, they reduce exports but increase imports. Keskin and Bağcı (2024) examined the impact of taxation on international commerce and the exchange rate on imports in 20 OECD economies. Estimating the random effect model, they found that increases in international trade taxes and exchange rate depreciation significantly reduced import volume.

In a more recent study, Rangkuty, Nasution, Hasyyati, Siregar, and Firmansyah (2024) investigated the effects of monetary and fiscal policies on international trade in Indonesia. Impulse response analysis from the VAR model showed that tax and investment shocks have a positive short-run effect on the trade balance but a negative long-run effect, while exchange rate shocks positively affect the trade balance in both the short and long run. Furthermore, the FEVD results indicated that government expenditure and investment account for the largest share of variation in the trade balance. In the US economy, Klein and Linnemann (2024) examined the effect of tax shocks on firm entry and productivity. Using a proxy-vector autoregression approach, they found that exogenous tax reductions lead to higher trade deficits and real currency depreciation. Le et al. (2025) employed the instrumental variable regression technique to examine the relationship between international trade and tax performance in a panel of 109 countries and found a significant positive relationship between total trade and tax ratio. In the US, Auclert, Rognlie, and Straub (2025) analyzed the effects of import tariff shocks on GDP and the trade balance. Using an open-economy New Keynesian DSGE model, they found that tariff shocks induce a recession and initially improve the trade balance; however, when trading partners retaliate, the trade balance deteriorates, and the recession intensifies.

A clear gap emerges from the reviewed literature. Although several studies have examined taxation and trade dynamics (e.g., (Adarov et al., 2021; Benzarti & Tazhitdinova, 2021; Hayo & Mierzwa, 2023; Holzner et al., 2021; Jovanović, 2021; Metelli & Natoli, 2021)) the evidence is overwhelmingly concentrated in advanced and OECD economies. Only a few contributions, such as Nwagu et al. (2022) and Rangkuty et al. (2024) focus on developing contexts, leaving countries like Nigeria significantly underrepresented. Additionally, the empirical findings remain highly inconsistent across studies, differing by tax type, methodology, and country characteristics. Moreover, none of the existing Nigerian studies investigates the shock effects of specific tax instruments on trade outcomes using a structural or shock-identification framework. This study fills these gaps by providing Nigeria-specific evidence on how tax shocks influence trade performance.

3. METHODOLOGY

3.1. Model Specification

The study employed an eight-variable Vector Error-Correction Model (VECM) to investigate the impact of tax on trade dynamics in Nigeria, as specified in Equation 1. In the model in Equation 1 Impt denotes imports, Expt represents exports, CDT is the customs duties, CIT is the corporate income tax, and VAT is the import value added tax, ExR is the exchange rate, GDP serves as a proxy for domestic income, and GDPf proxies foreign income using U.S. GDP. The beta (β) matrix represents the cointegration vectors that capture the long-run relationships between exports and imports and the predictors. In the first row, the export equation vector reflects the long-run effects of the tax variables, exchange rate, and foreign income on export represented by parameters $\beta_{12} - \beta_{17}$. Also, the second row corresponds to the import equation vector, where the long-run influence of the tax variables, exchange rate, and domestic income on imports is captured by parameters $\beta_{23} - \beta_{28}$.

$$\begin{bmatrix} \Delta\ln(\mathrm{Expt}_t) \\ \Delta\ln(\mathrm{Impt}_t) \\ \Delta\ln(\mathrm{CDT}_t) \\ \Delta\ln(\mathrm{CIT}_t) \\ \Delta\ln(\mathrm{VAT}_t) \\ \Delta\ln(\mathrm{ExR}_t) \\ \Delta\ln(\mathrm{GDPf}_t) \\ \Delta\ln(\mathrm{GDP}_t) \end{bmatrix} = \begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \\ a_{31} & a_{32} \\ a_{41} & a_{42} \\ a_{51} & a_{52} \\ a_{61} & a_{62} \\ a_{71} & a_{72} \\ a_{81} & a_{82} \end{bmatrix} \begin{bmatrix} 1 & 0 & \beta_{13} & \beta_{14} & \beta_{15} & \beta_{16} & \beta_{17} & 0 \\ 0 & 1 & \beta_{23} & \beta_{24} & \beta_{25} & \beta_{26} & 0 & \beta_{28} \end{bmatrix} \begin{bmatrix} \ln(\mathrm{Expt}_{t-1}) \\ \ln(\mathrm{Impt}_{t-1}) \\ \ln(\mathrm{CDT}_{t-1}) \\ \ln(\mathrm{CIT}_{t-1}) \\ \ln(\mathrm{VAT}_{t-1}) \\ \ln(\mathrm{ExR}_{t-1}) \\ \ln(\mathrm{GDPf}_{t-1}) \\ \ln(\mathrm{GDP}_{t-1}) \end{bmatrix} + v_t \quad (1)$$

The alpha (α) matrix contains the error-correction terms, indicating the short-run adjustments of the variables within the system. In essence, the alpha matrix reflects the speed at which each variable converges back to the two equilibrium relationships in the model. To assess the dynamic effects of tax shocks on trade, two impulse response function (IRF) identification schemes are used within the VECM framework. The first, Revenue-Surprise Identification (RSI), places trade variables before tax variables in the Cholesky ordering, treating tax shocks as unexpected changes in revenue driven by trade activity. This captures the view that trade influences tax receipts contemporaneously, while tax effects on trade are delayed. The second, Tax Policy Shock Identification (TPSI), reverses the ordering, assuming tax changes can immediately affect trade. Here, tax shocks reflect structural policy actions that alter trade costs and behavior, aligning with the active-policy perspective in fiscal transmission literature.

3.2. Data

This study utilized quarterly time series data covering the period 2011Q1–2024Q4. Data on exports (₦ million), imports (₦ million), exchange rate (local currency to dollar), and GDP (₦ million) were sourced from the obtained from the Central Bank of Nigeria (CBN) statistical bulletin. Data on the tax variables (customs tax revenue (₦ million), VAT revenue (₦ million), and CIT revenue (₦ million)) were collected from the Federal Inland Revenue Service (FIRS) database, while data on the U.S. GDP ($ million) were sourced from the Federal Reserve Bank of Saint Louis database.

Table 1. Descriptive statistics of variables.

Variable	Mean	Std. Dev.	CV	Max.	Min.
Expt	15814.77	5739.398	0.363	28118.77	6236.279
Impt	13881.24	3185.337	0.229	22190.77	8279.827
CDT	254730.9	200454.7	0.787	934433	91414
CIT	488970.9	515512.1	1.054	2923540	112360
VAT	172980.7	319089.2	1.845	1472080	35530
ExR	378.7129	340.499	0.899	1621.875	151.9973
GDPf	5241360	1063999	0.203	7554101	3764835
GDP	34633052	16112173	0.465	81229105	14686114

Note: CV equals standard deviation divided by mean.

4. RESULTS

Table 1 shows the descriptive statistics of the variables used in the study. The mean values indicate the average levels of each series, while the standard deviations and coefficients of variation (CV) provide insights into the volatility and dispersion of the variables over time. It can be observed that exports (Expt) and imports (Impt) averaged ₦15,814.77 million and ₦13,881.24 million, respectively, over the study period. Their coefficients of variation (0.363 for exports and 0.229 for imports) indicate relatively moderate variability, suggesting that quarterly trade flows exhibit some fluctuations but remain reasonably stable in proportion to their means. Imports show lower relative volatility compared to exports, implying that import demand is more consistent over time. For the tax variables, customs duty tax revenue (CDT) displays a mean of ₦254,730.9 million and a high CV of 0.787, indicating substantial variability relative to its average value. Corporate income tax revenue (CIT) also demonstrates pronounced volatility, with a CV of 1.054, while VAT revenue exhibits the highest degree of dispersion in the dataset, with a CV of 1.845. The large variability in VAT and CIT revenues suggests that tax collections respond sensitively to economic conditions, compliance cycles, and possible administrative or policy changes within the period. The exchange rate (ExR) records a mean of ₦378.71 per US dollar and a CV of 0.899, reflecting significant exchange-rate fluctuations. The wide range between its maximum (₦1,621.88) and minimum (₦151.99) values highlights periods of sharp currency depreciation, which are consistent with documented macroeconomic episodes in Nigeria during the sample period. Foreign GDP (GDPf), proxied by U.S. GDP, exhibits a relatively low CV of 0.203, reflecting the stability of the U.S. economy compared to the domestic environment. Conversely, Nigeria's domestic GDP (GDP) shows moderate variability with a CV of 0.465. This level of dispersion indicates noticeable but not excessive fluctuations in aggregate domestic output.

Table 2. ADF unit root test results.

Variable	Tau-Stat.		Critical value			Remark
	@level	@diff	1% cv	5%	10%	
ln(Expt)	-2.079	-8.004***	-4.15	-3.50	-3.18	*I*(1)
ln(Impt)	-2.890	-10.56***	-4.15	-3.50	-3.18	*I*(1)
ln(CDT)	-1.088	-5.562***	-4.15	-3.50	-3.18	*I*(1)
ln(CIT)	1.520	-12.50***	-4.15	-3.50	-3.18	*I*(1)
ln(VAT)	-1.626	-7.624***	-4.15	-3.50	-3.18	*I*(1)
ln(ExR)	0.129	-6.352***	-4.15	-3.50	-3.18	*I*(1)
ln(GDPf)	-0.184	-3.379*	-4.15	-3.50	-3.18	*I*(1)
ln(GDP)	-1.517	-3.382*	-4.15	-3.50	-3.18	*I*(1)

Note: *** p < 1%, ** p < 5%, * p < 10%.

Table 2 presents the Augmented Dickey–Fuller (ADF) unit root test results for all variables in the model. The findings show that none of the series is stationary at the level, as all test statistics at the level are greater than the 1 percent, 5 percent, and 10 percent critical values. This indicates the presence of unit roots in their original forms. However, after first differencing, all variables become statistically significant, with tau-statistics that exceed the critical values at conventional significance levels, indicating that the variables are integrated of order one, I(1). This outcome confirms that the series exhibits stochastic trends but becomes stationary after differencing. The implication is that the variables may share a long-run equilibrium relationship, thereby justifying the application of a cointegration technique and the subsequent use of a Vector Error Correction Model (VECM) to capture both long-run dynamics and short-run adjustments in the empirical analysis.

Table 3. Johansen cointegration test summary based on optimal lag 1.

Data Trend:	None	None	Linear	Linear	Quadratic
Test Type	No Intercept	Intercept	Intercept	Intercept	Intercept
	No Trend	No Trend	No Trend	Trend	Trend
Trace	2	2	1	1	2
Max-Eig	2	2	0	1	1

Note: Critical values based on 5% MacKinnon-Haug-Michelis (1999).

Table 3 reports the results of the Johansen cointegration test. This method accommodates various specifications regarding the inclusion of an intercept, a trend, or both within the cointegration space and provides two main statistics for inference: the trace statistic and the maximum eigenvalue statistic. In practice, a full-rank result indicates that a VAR model in levels is appropriate, whereas a reduced rank points to the suitability of a VECM. A zero-rank outcome, conversely, implies that a VAR in first differences should be estimated. Since the trace and maximum eigenvalue statistics may occasionally yield differing conclusions, the literature (Lütkepohl, 2005; Lütkepohl & Krätzig, 2004) generally considers the trace statistic to be more reliable. Across the different specifications examined, the results indicate the presence of up to two cointegrating vectors among the eight variables, confirming the existence of two long-run equilibrium relationships as specified in Equation 1.

Table 4. Long-run and short-run adjustment estimates.

Variable	β-vector		α'-vector	
ln(Expt)	-1		0.122* (0.067)	-0.193* (0.105)
ln(Impt)		-1	0.184** (0.057)	-0.292** (0.089)
ln(CDT)	19.64*** (3.896)	13.44*** (2.473)	-0.042 (0.038)	0.067 (0.060)
ln(CIT)	-10.76** (2.879)	-7.675*** (1.837)	0.290** (0.104)	-0.512** (0.163)
ln(VAT)	3.609** (1.796)	1.987 (1.147)	0.282* (0.149)	-0.455* (0.236)
ln(ExR)	-14.47** (4.466)	-8.476** (2.856)	-0.008 (0.034)	0.007 (0.054)
ln(GDPf)	6.775** (2.666)		-0.018* (0.010)	0.026 (0.015)
ln(GDP)		1.317** (0.654)	-0.042 (0.030)	0.065 (0.047)

Note: *** $p < 1\%$, ** $p < 5\%$, * $p < 10\%$.

Table 4 presents the long-run coefficient estimates (β-vector) and the short-run adjustment coefficients (α′-vector) for the VECM. The long-run results indicate that customs duties exert a statistically significant positive influence on trade performance, increasing exports and imports by approximately 19.64 percent and 13.44 percent, respectively. In contrast, corporate income tax has a dampening effect on trade: a rise in CIT reduces exports and imports by 10.76 percent and 7.68 percent in the long run. Value-added tax also shows a positive long-run effect on trade, although the significance varies across variables. A percent increase in VAT significantly increases exports by about 3.61 percent, whereas the corresponding effect on imports, though positive at 1.987 per cent, is statistically insignificant. The exchange rate behaves as expected: depreciation significantly lowers exports and imports by 14.47 percent and 8.48 percent, respectively, in the long run. Regarding income variables, foreign income (proxied by U.S. GDP) positively and significantly influences Nigeria's exports, with a one per cent increase in foreign income raising exports by 6.78 percent. Similarly, a percent rise in domestic GDP increases imports by 1.32 percent, consistent with standard import-demand theory. The adjustment coefficients indicate that both exports and imports are actively involved in restoring the long-run equilibrium. Exports deviate above their equilibrium by about 12.2 percent but adjust toward the import-based long-run relationship at a speed of 19.3 percent per quarter. Imports, meanwhile, deviate above the export-based equilibrium by roughly 12.2 percent and correct about 29.2 percent of disequilibrium in each period following a shock. The results also show that corporate income tax and VAT significantly contribute to the system's adjustment dynamics. Conversely, corporate income tax, the exchange rate, and domestic GDP appear weakly exogenous, as their short-run changes do not significantly respond to deviations from the long-run relationships.

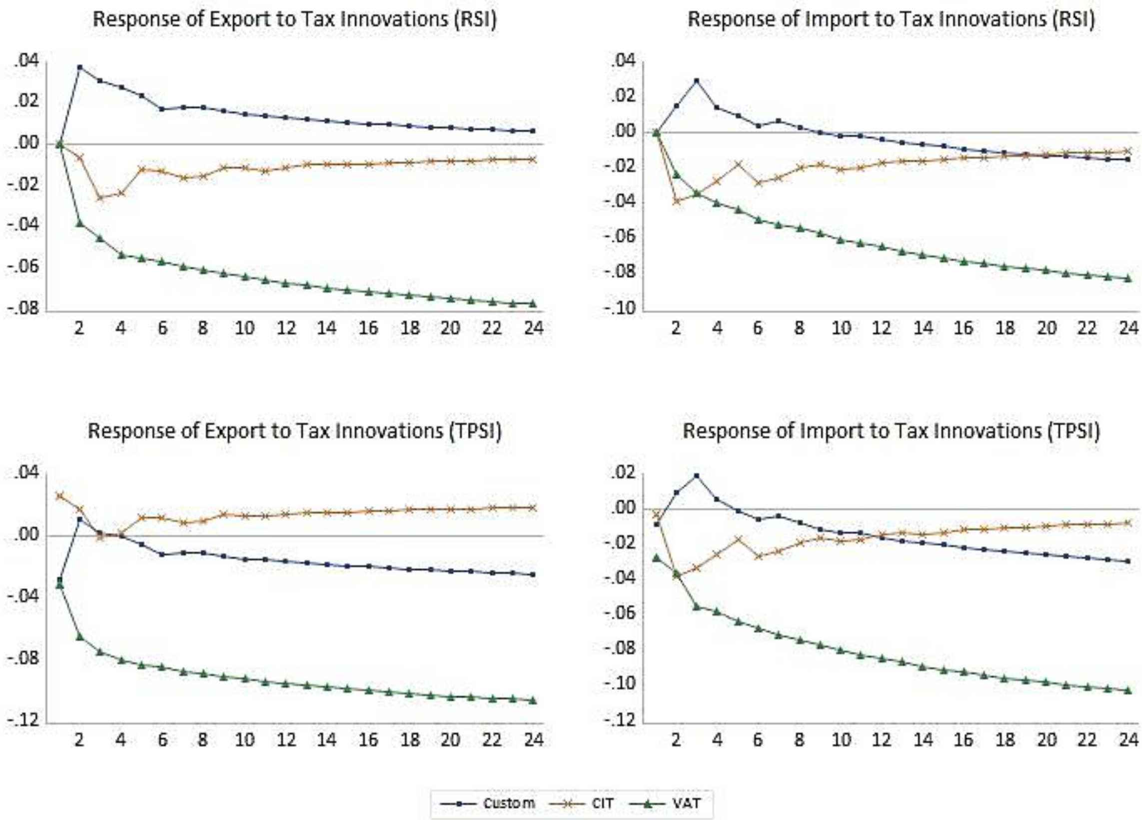

Figure 1. Response of exports and import tax shock.

Source: Estimated VECM.

Figure 1 illustrates the impulse responses of exports and imports to a positive shock to the tax variables; custom duties, corporate tax, and import-VAT. The positive shock is equivalent to expansionary fiscal policy relating to these tax variables. In the figure, the effect of a customs duty shock appears mixed across identification schemes. Under the Revenue-Surprise Identification (RSI), a positive customs duties shock raises exports above the steady state, whereas under the Tax-Policy Shock Identification (TPSI), the same shock reduces exports. A similar divergence is observed for corporate income tax: under the RSI framework, a corporate tax shock depresses exports below the steady state, while under the TPSI scheme it leads to a temporary increase in exports. However, both identification assumptions converge on the finding that a VAT shock exerts a persistent and pronounced negative effect on exports, driving them permanently and sharply below the steady-state level. A comparable pattern emerges for imports. Under the RSI and TPSI structures, a customs duty shock initially increases imports but subsequently drives them below the steady state as the effect dissipates over time. For corporate income tax, both identification schemes show a consistent decline in imports following the shock, keeping them below the steady-state path. Likewise, in line with the export response, the VAT shock produces a permanent and explosive reduction in imports under both RSI and TPSI assumptions, indicating that VAT innovations significantly and persistently constrain import demand.

5. DISCUSSIONS

The results show that customs duties (CDT) exert a significant positive long-run effect on exports in Nigeria. The impulse response analysis further demonstrates that a positive CDT shock increases exports in the short run, implying that when the government adjusts CDT primarily to mobilize revenue, export activity may expand due to broader fiscal-induced economic adjustments in the Nigerian economy. However, if the policy intent is to restrict trade by raising CDT rates, the same shock can produce a contractionary export response over time. This dual behavior is consistent with evidence from Metelli and Natoli (2021) who find that certain tax shocks permanently raise trade flows, but it contrasts with results from Hayo and Mierzwa (2023) and Bussy (2023) who show that higher tax burdens often suppress exports. The Nigerian outcome also aligns only marginally with the limited African evidence, such as Nwagu et al. (2022) which reports that tax-related fiscal variables tend to weaken Nigeria's external position rather than strengthen it. For imports, CDT similarly exhibits a significant positive long-run effect in Nigeria. The impulse response results reveal a cyclical adjustment pattern in which imports initially rise following a positive CDT shock and subsequently fall. This suggests that although higher CDT may temporarily stimulate import activity, possibly reflecting anticipatory inventory purchases or short-run price pass-through, its longer-term effect becomes restrictive when the policy is aimed at import control. This pattern partially corroborates the findings of Keskin and Bağcı (2024) who note that trade taxes reduce import volumes in OECD countries, and aligns with the broader evidence from Bussy (2023) showing negative tax effects on import flows. At the same time, the temporary increase in imports observed for Nigeria mirrors the short-run import-raising effects reported by Hayo and Mierzwa (2023) for the US and UK following PIT shocks. Overall, the Nigerian evidence reinforces the mixed and context-specific nature of tax–trade dynamics, highlighting that the economic and policy environment strongly shapes how CDT shocks transmit through both export and import channels.

The corporate income tax (CIT) exhibits a long-run reduction effect on exports in Nigeria. The impulse response results further show that a positive CIT shock suppresses export performance when the government raises CIT primarily for revenue generation, indicating that higher corporate tax burdens weaken firms' capacity to engage in export-driven production. However, when the policy objective is trade control rather than revenue mobilization, the export response becomes less adverse and may even improve over time. This nuanced behavior contrasts with evidence from Metelli and Natoli (2021) who find that certain tax shocks increase trade flows, and aligns more closely with the findings of Holzner et al. (2021) and Jovanović (2021) who demonstrate that corporate taxes reduce exports, especially when FDI stocks are high. It also reinforces the conclusion by Bussy (2023) that higher effective tax rates in the EU context dampen both export and import activity. Within the Nigerian literature, this result is consistent with Nwagu et al. (2022) who show that fiscal burdens weaken Nigeria's external position. For imports, both the long-run estimates and impulse response patterns indicate that a positive CIT shock has a consistently detrimental effect, regardless of the policy motive behind the increase. This suggests that corporate tax hikes impose cost pressures that contract import demand in Nigeria, likely through reduced investment spending and weaker firm-level purchasing power. This finding aligns with the negative import responses reported in Holzner et al. (2021) and Hayo and Mierzwa (2023) for several advanced economies, as well as with the general conclusion by Bussy (2023) that higher corporate taxation suppresses international trade flows. However, the Nigerian response diverges from cases where certain tax shocks raise imports in the short run, such as the US and UK evidence documented by Hayo and Mierzwa (2023). Overall, the Nigerian results underscore that corporate income tax shocks transmit primarily through contractionary channels, adversely affecting both export competitiveness and import activity.

Import-VAT emerges as a significant long-run driver of both exports and imports in Nigeria, indicating that VAT-related charges at the border shape the country's trade dynamics through price and cost-transmission channels. Despite this long-run significance, the impulse response results show that a positive Import-VAT shock has a detrimental effect on both export and import performance. This implies that when the government increases

Import-VAT, either for revenue mobilization or trade regulation, the immediate and medium-term effect is contractionary, as higher VAT rates raise production costs, weaken external competitiveness, and reduce import demand. This Nigerian evidence aligns with the findings of Benzarti and Tazhitdinova (2021) who show that VAT changes tend to dampen trade flows across EU economies. It also corresponds with Bussy (2023) who reports that value-added tax and related corporate tax burdens exert negative effects on both imports and exports. Likewise, the negative trade response to VAT shocks resonates with the contractionary effects identified by Auclert et al. (2025) when import taxes tighten trade conditions in the US economy. However, the Nigerian results differ from studies such as Metelli and Natoli (2021) where certain tax shocks stimulate both import and export in the long run, and from Adarov et al. (2021) who find that labour-related taxes generate heterogeneous effects depending on domestic value-added composition. Overall, the evidence suggests that Import-VAT operates as a restrictive tax instrument within the Nigerian trade environment, exerting downward pressure on both sides of the trade account when shocked.

6. CONCLUSION

This study empirically analyzed the effects of taxation on Nigeria's international trade. The short-run impulse response results showed that customs duties (CDT) can temporarily boost exports and imports when aimed at revenue mobilization but may reduce exports and generate cyclical import effects when intended for trade control. Corporate income tax (CIT) shocks were found to reduce exports under revenue-driven policy and consistently depress imports, while positive import-VAT shocks had a detrimental effect on both exports and imports. In the long run, CDT remains a significant driver of trade, but CIT and import-VAT continue to constrain trade flows. A key limitation of the study is its exclusive focus on aggregate trade flows, which may mask sector-specific variations. Future research should incorporate sectoral trade data, examine interactions with exchange rate and investment dynamics, and conduct comparative studies across other developing economies to capture broader policy implications.

REFERENCES

Adarov, A., Holzner, M., Jovanović, B., & Vukšić, G. (2021). *Labour taxes and international trade: The role of domestic labour value added*. Retrieved from Working Paper. No. 205:

Auclert, A., Rognlie, M., & Straub, L. (2025). *The macroeconomics of tariff shocks*. Retrieved from National Bureau of Economic Research. No. w33726:

Benzarti, Y., & Tazhitdinova, A. (2021). Do value-added taxes affect international trade flows? Evidence from 30 years of tax reforms. *American Economic Journal: Economic Policy, 13*(4), 469-489.

Bond, E. W., Duan, Y., Ji, T., & Lu, Y. (2023). Trade and welfare effects of export tax: Theory and evidence from China's incomplete export VAT rebate. *Journal of Economic Behavior & Organization, 214*, 542-560. https://doi.org/10.1016/j.jebo.2023.08.007

Bussy, A. (2023). Corporate tax evasion: Evidence from international trade. *European Economic Review, 159*, 104571. https://doi.org/10.1016/j.euroecorev.2023.104571

Hayo, B., & Mierzwa, S. (2023). The effect of legislated tax changes on the trade balance: Empirical evidence for the United States, Germany, and the United Kingdom. *Journal of Macroeconomics, 78*, 103564. https://doi.org/10.1016/j.jmacro.2023.103564

Holzner, M., Jovanović, B., & Vukšić, G. (2021). *How do corporate taxes affect international trade?* Retrieved from Vienna Institute for International Economic Studies Working Paper, 212:

Ikechi, K. S., & Nwadiubu, A. (2020). Exchange rate volatility and international trade in Nigeria. *International Journal of Management Science and Business Administration, 6*(5), 56-72.

Ikpe, M. E., Ubom, A., & Johnson, G. (2024). Effect of exchange rate volatility on international trade in Nigeria. *International Journal of Research in Finance and Management, 7*(2), 441-451. https://www.doi.org/10.33545/26175754.2024.v7.i2e.392

Jovanović, B. (2021). *New insights into the relationship between taxation and international trade*. Retrieved from Policy Notes and Reports. No. 54:

Keskin, M., & Bağcı, S. A. (2024). The impact of taxation on international commerce and exchange rate on imports. *Politik Ekonomik Kuram, 8*(3), 798-813. https://doi.org/10.30586/pek.1504659

Kirfi, M. M., Aliyu, A. A., & Solomon, O. (2025). Nigeria's tax reforms and the quest for economic stability: A conceptual narration. *Kashere Journal of Politics and International Relations, 3*(3), 142-150.

Klein, M., & Linnemann, L. (2024). Tax shocks, firm entry, and productivity in the open economy. *Journal of International Money and Finance, 149*, 103203. https://doi.org/10.1016/j.jimonfin.2024.103203

Le, T.-H., Ngoc, P. T. B., & Van, P. H. (2025). International trade and tax performance. *eJTR, 23*, 162.

Lütkepohl, H. (2005). *New introduction to multiple time series analysis*. Berlin: Springer.

Lütkepohl, H., & Krätzig, M. (2004). *Applied time series econometrics*. Cambridge: Cambridge University Press.

Metelli, L., & Natoli, F. (2021). The international transmission of US tax shocks: A proxy-SVAR approach. *IMF Economic Review, 69*(2), 325. https://doi.org/10.1057/s41308-021-00136-6

Mordecai, U., & Akinsola, A. (2021). Navigating economic dynamics: Trade liberalization and demographic trends in Nigeria. *Journal of Business and Economic Options, 4*(4), 30-36.

Nomkuha, J. K., Asooso, A., & Abachi, P. T. (2024). Value added tax rate variation, import demand and sectoral output in Nigeria. *CBN Journal of Applied Statistics, 15*(1), 33-53.

Nwagu, G. U., Orji, A., Jude, I. O., Ogbuabor, J. E., Anthony-Orji, O. I., & Nwufo, L. C. (2022). Fiscal policy, monetary policy, and trade balance nexus in Nigeria: A new empirical evidence. *Unisia, 40*(1), 129-146. https://doi.org/10.20885/unisia.vol40.iss1.art6

Oats, L. (2023). *Principles of international taxation*. London: Bloomsbury Publishing.

Onoriode, H., & Nwagu, U. G. (2025). Fiscal policy and macroeconomic stability in Nigeria. *Mosogar Journal of the Humanities, 2*(1), 21-33. https://doi.org/10.5281/zenodo.15465587

Rangkuty, D. M., Nasution, L. N., Hasyyati, Z., Siregar, S. D., & Firmansyah, D. (2024). The monetary and fiscal policies on international trade in Indonesia. *The Es Economics and Entrepreneurship, 3*(1), 1-11.

Sharma, R. (2025). *Domestic taxes and international trade (September 03, 2025)*. Retrieved from https://ssrn.com/abstract=5483106

Silva, E. M., Martinez, A. L., Zanoteli, E. J., & Sarlo Neto, A. (2024). Impact of tax policies on foreign direct investment: A decade of bibliometric analysis and systematic review. *Latin American Business Review, 25*(3-4), 235-262. https://doi.org/10.1080/10978526.2024.2421539

Simpasa, A. (2024). Nigeria: Challenges and opportunities to avoid the middle-income trap. *Avoiding the Middle-Income Trap in Africa: Economic Challenges and Policy Responses*, 169-205. https://doi.org/10.1007/978-3-031-69248-2_6