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Tax Revenue, Domestic Investment, and Economic Growth: Evidence from Private and Public Investment Moderation

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Abstract: *Fluctuations in the economic growth of developing countries have raised concerns about the effectiveness of tax revenue mobilization and its relationship with domestic investment. This study examines how taxation policy affects economic growth using Jorgenson's neoclassical investment theory and Laffer's taxation theory. Economic growth (RGDP) is used as the dependent variable, while corporate income tax revenue (CIT), value-added tax revenue (VAT), private investment, public investment, and macroeconomic control variables serve as explanatory variables. Private and public investments are also treated as moderating variables. The study employs the Autoregressive Distributed Lag (ARDL) model to analyze both short-run and long-run relationships. Diagnostic tests confirm the robustness of the model, including the absence of autocorrelation, homoscedastic residuals, and stability confirmed by the CUSUM test. Empirical results indicate that CIT positively affects GDP (0.308), while VAT has a small negative effect (-0.006). Private investment significantly increases GDP (4.55), with an adjustment speed toward equilibrium of 43%. Overall, stable fiscal policy and effective investment allocation strengthen the relationship between tax revenue and sustainable economic growth.*

Introduction

The relationship between tax revenue, domestic investment, and

economic growth remains central to modern fiscal policy debates, particularly in developing economies where governments struggle to balance revenue mobilisation with investment incentives. Tax revenue constitutes the primary source of government finance and influences both public investment decisions and private sector behaviour. Domestic investment, whether public or private, plays a crucial role in capital formation, productivity improvement, and economic growth. However, the effect of tax revenue on growth is complex and may depend on how tax revenue interacts with different forms of investment within an economy (Kareemzada et al., 2026).

In many developing countries, tax-to-GDP ratios are relatively low and domestic investment levels remain limited, contributing to slow economic growth and structural development gaps. Governments often attempt to increase tax revenues to finance infrastructure and social programmes. However, excessively high or poorly designed taxes may discourage investment, weaken entrepreneurial activity, and reduce capital accumulation (Rashid et al., 2025). Conversely, insufficient tax revenue restricts government spending on capital projects that could stimulate private investment. This creates an important fiscal policy dilemma: whether governments should prioritise higher tax mobilisation or provide stronger incentives for investment. Furthermore, it raises the question of how public and private investments influence the relationship between tax revenue and economic growth.

Tax revenue can both constrain and stimulate economic growth. On one hand, taxation provides governments with the resources needed to finance infrastructure, human capital development, and other public goods that enhance productivity. In Nigeria, empirical evidence suggests that tax revenue is positively associated with investment and economic performance, particularly through components such as company income tax and value-added tax which significantly influence investment activities (Ogbonnaya et al., 2025). These findings suggest that effective tax

mobilisation can support economic expansion when revenues are channelled into productive sectors.

However, the growth effect of tax revenue largely depends on the tax structure, fiscal policy consistency, and the overall investment climate. Frequent policy changes, administrative inefficiencies, and high compliance costs may create uncertainty and discourage long-term investment. Studies indicate that while tax revenue can influence economic growth, the magnitude and direction of the effect depend significantly on policy implementation and institutional conditions (Adamkulova and Tynaliev, 2023). Similarly, research on oil-related tax revenue in Nigeria demonstrates that certain forms of taxation may contribute positively to long-run GDP growth when properly managed (Momah et al., 2025).

Nevertheless, a key limitation arises when tax revenue is largely allocated to recurrent government expenditure rather than productive investment. In such cases, the growth-enhancing potential of taxation may be significantly weakened. This suggests that the effectiveness of tax revenue in promoting growth depends not only on the amount generated but also on how it is allocated within the economy.

Domestic investment remains widely recognised as a major driver of economic growth. Increased investment expands productive capacity, generates employment, and promotes technological progress. Empirical evidence based on ARDL analyses across African economies confirms that both public and private investments exert strong long-run effects on economic growth (Abdulle and Abdulle, 2025). Public investment is particularly important in improving infrastructure, energy supply, transportation systems, and human capital development, which collectively enhance the investment climate and stimulate private sector activity. In addition, fiscal incentives such as tax credits and investment allowances can encourage private capital formation and expand investment opportunities (Olugbenga and Adepeju, 2025). The moderating role of domestic investment suggests that the impact of tax revenue on economic

growth may depend on the size, productivity, and structure of investment. When tax revenue is channelled into productive infrastructure projects, it can crowd-in private investment by improving the business environment and signalling policy stability. Conversely, if tax revenue is directed toward unproductive expenditure or implemented through unstable fiscal policies, private investment may be discouraged, weakening the overall growth effect.

Despite extensive research on taxation and economic growth, several important research gaps remain. First, empirical findings on the relationship between tax revenue and economic growth remain inconsistent. While some studies report positive growth effects through improved government financing capacity (Nguyen et al., 2022; Acosta-Ormaechea and Morozumi, 2023), others argue that distortionary taxation may discourage private investment and reduce long-term economic performance (Challoumis, 2024). These conflicting results highlight a significant gap regarding the conditions under which tax revenue promotes or hinders economic growth.

Second, although domestic investment is widely acknowledged as a key driver of economic growth, much of the existing literature treats investment primarily as a direct determinant of growth rather than examining its interactive or moderating role within the tax-growth relationship. Recent studies emphasise the growth-enhancing role of productive public investment (IMF, 2023), yet limited empirical attention has been given to how both public and private investments jointly influence the effectiveness of tax revenue mobilisation. Therefore, this study seeks to address these gaps by examining whether private and public domestic investments moderate the relationship between tax revenue and economic growth. By analysing these interaction effects, the research aims to provide deeper insights into how fiscal policy can be structured to promote sustainable domestic investment and inclusive economic growth.

Hypotheses

The research hypotheses, following the research questions and objectives, are formulated thus:

H1: CIT and VAT have no significant impact on economic growth in Nigeria.

H2: PRIV and PUIV investment have no significant impact on economic growth in Nigeria.

H3: PRIV has no moderating effect on the impact of selected tax revenue on Nigeria's economic growth.

H4: PUIV has no moderating role on the impact of selected tax revenue on Nigeria's economic growth.

Empirical literature widely recognises taxation and investment as important determinants of economic growth, yet the strength and direction of their relationships vary across institutional and macroeconomic contexts. A large body of research suggests that tax revenue can contribute to economic growth when it provides governments with the resources needed to finance productive public investments. Such investments in infrastructure, public services, and institutional development can enhance productivity and stimulate private sector activity (Belov, 2018; Mkadmi et al., 2021). However, the growth effect of taxation is not automatic. Its effectiveness depends on how tax revenues are mobilised, administered, and allocated within the economy.

Several studies highlight that well-designed tax systems can stimulate domestic investment, which in turn supports long-term economic expansion. Evidence shows that efficient taxation, particularly corporate income taxation, can encourage capital formation when it is accompanied by transparency and predictable policy implementation (Umeokwobi & Nkoro, 2019). From this perspective, tax revenue functions not only as a fiscal instrument for government financing but also as a mechanism for mobilising domestic resources that can sustain investment and development. Land and property taxation provide an additional

example of how tax systems can strengthen fiscal capacity and stimulate economic activity. When effectively administered, such taxes expand internally generated revenue and create fiscal space for infrastructure and productive investment (Odimegwu et al., 2018).

Despite these potential benefits, empirical findings also demonstrate that weaknesses in tax administration and policy implementation can undermine the positive link between tax revenue and economic performance. Inefficient tax assessment, weak enforcement, and inconsistent policies reduce revenue mobilisation and discourage private investment (Odimegwu & Odumodu, 2020). Consequently, improving compliance, transparency, and administrative efficiency has been identified as critical for strengthening investor confidence and enhancing the developmental role of taxation (Odimegwu & Igwe, 2020). In addition, external shocks may weaken the relationship between tax revenue and investment. For example, disruptions associated with the COVID-19 pandemic negatively affected property development activities and reduced tax inflows, thereby constraining capital formation (Ikechukwu, 2021). Similarly, climate-related risks can affect taxable assets such as land and property, reducing the stability of tax bases and investment returns (Akanwa et al., 2024). In response, scholars argue that strengthening climate-resilient policies and environmental maintenance systems can protect property values and sustain revenue generation (Anyakora et al., 2025; Munonye et al., 2022).

Beyond the direct influence of taxation on growth, the literature emphasises the role of investment as a key transmission channel through which fiscal policy affects economic performance. Both public and private investments are considered essential for expanding productive capacity and improving economic efficiency. Public investment often plays a catalytic role by providing infrastructure and institutional support that enhance the productivity of private capital. In this regard, infrastructure development, urban services, and environmental management can create conditions that support private sector expansion and economic growth.

Evidence from environmental and urban management studies further illustrates how public investment can indirectly enhance economic performance. Effective waste-management systems, for instance, reduce environmental externalities that hinder productivity and economic efficiency (Okafor et al., 2022). Similarly, regulatory policies that address environmental challenges such as industrial noise pollution contribute to improved labour productivity and urban living conditions (Onwuka et al., 2017). Infrastructure development in telecommunications also demonstrates how public regulatory support can encourage private investment, particularly in technologically driven sectors such as smart cities (Anyakora et al., 2021). In the housing and real estate sector, collaboration between governments and private developers has been shown to strengthen capital mobilisation and expand housing supply (Ikeotuonye & Efobi, 2022). Furthermore, urban planning and neighbourhood quality influence property values and investment returns, reinforcing the importance of coordinated public and private sector participation in development processes (Okafor et al., 2022). Climate adaptation and green maintenance strategies also play a role in protecting real estate assets and reducing investment risks (Odimegwu & Ikeotuonye, 2023).

The literature suggests that the interaction between taxation and investment is critical in determining economic growth outcomes. Public expenditure financed through tax revenue can crowd-in private investment when it addresses infrastructural and institutional constraints. However, the effectiveness of this interaction depends on broader macroeconomic conditions and the structure of investment within the economy (Akinlo, 2022; Jalles, 2024). Consequently, an optimal fiscal framework must balance revenue mobilisation with policies that sustain private investment incentives in order to achieve long-term economic growth.

Research Methods

This study employed a mixed-methods approach, integrating qualitative and quantitative techniques to obtain a comprehensive analysis of strategies for improving the profitability of pottery Micro, Small, and Medium Enterprises (MSMEs). The research design combined a literature review, secondary data analysis, and case study methods to ensure both theoretical depth and empirical relevance.

The literature review was conducted to examine and synthesize relevant theories and empirical findings related to financial management efficiency, production process optimization, and risk management in MSMEs. This stage provided a conceptual foundation for identifying key variables and analytical indicators used in the study.

Secondary data were collected from financial statements, production records, and survey documentation of pottery MSMEs. These data were analyzed to identify core operational and financial issues, including the predominance of traditional production methods, high operational costs, inefficient resource utilization, and fluctuating market demand. Quantitative analysis focused on key performance indicators such as production costs, production volume, and profitability trends.

In addition, this research incorporated case studies of selected pottery MSMEs to examine the practical implementation of financial efficiency and production optimization strategies. A comparative descriptive analysis was applied by comparing business performance conditions before and after the adoption of improvement measures, including the use of simple production technologies, product diversification initiatives, and the application of digital marketing strategies.

This methodological integration enabled the study to assess changes in profitability, income stability, and business competitiveness in a structured manner. By combining qualitative insights with quantitative

performance indicators, the research provides a comprehensive understanding of the challenges faced by pottery MSMEs and proposes practical, evidence-based solutions that support business sustainability and enhance their economic contribution.

The research is based on two significant economic theories, namely the neoclassical theory of investment (1963) by Dale Jorgenson and the theory of taxation (1974) by Arthur Laffer. Those models offer a theoretical basis to examine the relationship between tax revenues, national investment (public and private), and economic development (Wanniski, 1978). The neoclassical theory of investment explains how companies set the amount of capital stock they wish to hold and change investment levels. Jorgenson model articulates that investment is a product of output and cost of capital to users. Simply, companies will invest more when output increases and the cost of using capital decreases. The model can be stated as: I = f(Y, UCC) where investment is a factor of output and user cost of capital. The cost of capital as such is a variable, determined by a number of variables, such as relative cost of capital goods, real interest rate, depreciation rate, investment tax credit, tax depreciation allowance, and corporate income tax rate. Taxation has a direct impact on the cost of capital; therefore, any change in corporate income tax or tax incentive will have an impact on investment decisions made by firms.

The Laffer theory of taxation supplements this framework by focusing on the correlation between tax rates and tax revenue. It claims that the optimal tax rate is one that maximises revenue. When tax rates are too high, they will decrease production and investment and hence the tax base thereby decreasing incomes. On the other hand, extremely low tax rates can produce too little revenue. Therefore, tax policy influences government income and investment behaviour of the private sector. The combination of these theories explains the effects of tax revenue on domestic investment and eventually the growth of the economy.

Explanation and Justification of Variables.

The dependent variable in this research is Real Gross Domestic Product (RGDP) which is used as a proxy variable of economic growth. RGDP is a measure of all the final goods and services that the economy produces, which is adjusted to inflation. It is used to capture the overall economic performance and acts as an indication of aggregate demand through consumption and investment as well as government spending and net exports. Corporate Income Tax Revenue (CITR) is one of the main independent variables that reflect direct taxation. It reflects government income that is obtained through taxation of corporate earnings and is anticipated to have a positive impact on economic growth when used efficiently towards productive government investment.

Value-Added Tax Revenue (VATR) is indirect taxation and is used to estimate the amount of revenue paid in the form of consumption taxes at various production and distribution phases. VAT is common in different parts of the world and is one of the major sources of revenue. According to the theory of Laffer, when tax rates are maintained at optimal levels VAT revenue can actually encourage the growth but on the other hand too high rates can inhibit consumption and economic activity.

Privat Investment (PRIV) refers to the expenditure by individuals and companies on capital goods including machinery, equipment, and technology. It helps in increasing productive capacity and innovation. In this research, the variable of private investment serves as an independent variable and also as a moderating variable. It softens the connection between tax revenue and economic growth by the fact that tax policy has an impact on the decisions made by the people in terms of their investments in the economy even before such decision has an impact on growth.

Public investment (PUIV) refers to government spending on capital

projects (infrastructure and social services). Its expenditure improves productive potential and well-being in the long term and is also partly funded using tax revenues. PUIV has the ability to crowd in private investment when allocated efficiently, which can then encourage growth. Just like the case of private investment, PUIV is also a moderating variable. RINR is a control variable, the actual interest rate (RINR) which reflects the cost of borrowing, at an inflation-adjusted rate. High real interest rates discourage investment and throttle economic activity and thus creates a negative relationship with economic growth.

Political stability and absence of violence (PSAV) is used to capture the level of institutional stability and security in the economy. The instability in politics discourages investment and undermines the efficiency of tax revenue. Labour force participation rate (LFPR) is the measure of the percentage of the working age population that participates in the labor market; the more people are working the larger productive capacity and economic activity. The balance of trade (BoT) is considered as a control variable since it captures the external economic performance. Trade surplus can strengthen the local production and growth.

It includes the inflation rate because of the effects it has on purchasing power, real returns, and investment decisions. The level of high inflation may misrepresent economic signals and hurdle growth. The introduction of interaction terms is made to incorporate the moderating roles of both the private and public investment on the forecasting relationship between the tax revenue and the economic growth. These terms assist in establishing whether tax revenue and investment are complements or substitutes.

Rationale of the estimation method

The current research follows the Autoregressive Distributed Lag (ARDL) model due to its versatility and capability to analyse time-series data. The ARDL model includes lagged values both of the dependent and independent variables, thus, capturing both the short-run and long-run

dynamics. ARDL unlike the other models is dynamic and allows adjustments in economic relationships. The main benefit of ARDL is that it can be applied to variables that are formed of varying orders, i.e. I(0) and I(1), under the condition that none of them are formed of order I(2). When mixed integration orders are involved, it avoids the restriction of standard cointegration methods like EngleGranger. Moreover, ARDL works well in small samples and the short to medium run estimates are unbiased.

Evaluation process

To determine the stationarity of variables, pre-estimation tests begin with the stationarity test of the Augmented Dickey Fuller (ADF) test. Such variables are non-stationary, and thus can cause spurious regression outcome; it is important to establish their sequence of integration. The cointegration test measures the existence of a long-run equilibrium relationship between variables. When the calculated statistics are higher than the critical values, the null hypothesis of no cointegration is rejected. Post-estimation tests provide reliability of the model. Breusch Godfrey test tests autocorrelation and the Breusch Pagan Godfrey test tests heteroskedasticity. A correlation matrix is used to determine multicollinearity; above 0.8, there might be some issues. Stability tests CUSUM and CUSUMSQ identify whether the parameters of the model are stable with time.

Test of hypothesis

Both hypothesis one and two involve the t-test in establishment of individual variable significance. Hypotheses three and four test the effects of interaction using the coefficient of the interaction term (bi). A positive β is a sign of complementarity between the investment and tax revenue, and a negative β is a sign of substitutability.

Sources of data and software

The analysis uses time-series data every year since 1994 up to 2023. The sources of data include the World Development Indicators of the

World Bank, the Central Bank of Nigeria (CBN), the Federal Inland Revenue Service (FIRS), and the World Governance Indicators. Econometric analysis is performed on the EViews Version 10.

Result and Discussion

Diagnostic Test

Tests for Autocorrelation

The stated Models below are tested for autocorrelation using the Breusch-Godfrey Serial Correlation LM Test. This test ascertains if the model's residuals are free from serial correlation, which would undermine the potency of the assumptions of the model. The hypothesis to be tested is given in the null form.

H_0: There is no autocorrelation

Table 1: Test for Autocorrelation for Models 1 to 4

Model	Test	Test Statistic	P-Value
Model 1	F-Statistic	0.355947	0.7067
	Observed R^2	2.080433	0.5204
	Durbin-Watson Test Statistic	1.306505	—
Model 2	F-Statistic	3.925163	0.1139
	Observed R^2	13.24913	0.0813
	Durbin-Watson Test Statistic	2.357611	—
Model 3	F-Statistic	0.203374	0.8182
	Observed R^2	0.765617	0.6819
	Durbin-Watson Test Statistic	2.087801	—
Model 4	F-Statistic	1.20250	0.3342
	Observed R^2	4.507828	0.1050
	Durbin-Watson Test Statistic	1.975184	—

Source: Author's Computation using **E-Views 10**

The decision from Table 1 is that we fail to reject the null hypothesis

and conclude that, with both p-values greater than 5%, the models are free from autocorrelation. This is confirmed by the Durbin-Watson test statistic from the primary estimations of the ARDL Models.

Test for Heteroscedasticity

The Heteroscedasticity test is conducted to ascertain if the variance of the error term is constant for all observations. This forms one of the assumptions of the ordinary least squares (OLS), which, if the assumption does not hold, we face the problem of heteroscedasticity. Therefore, to confirm that the variance of the error term is constant, the heteroscedasticity test was adopted. The estimations are also summarized in Table 2.

H_0: The residuals are homoscedastic

Table 2: Test for Heteroscedasticity for Models 1 to 4

Model	Test	Test Statistic	P-Value
Model 1	F-Statistic	0.014763	0.9043
	Observed R^2	0.015983	0.8994
Model 2	F-Statistic	2.832412	0.1145
	Observed R^2	2.692341	0.1008
Model 3	F-Statistic	1.246468	0.3309
	Observed R^2	12.94720	0.2968
Model 4	F-Statistic	0.230235	0.9925
	Observed R^2	4.450094	0.9739

Source: Author's Computation using **E-Views 10**

With the p-value greater than 0.05, we fail to reject the null hypothesis and conclude that the residuals are homoscedastic, thus no presence of heteroscedasticity.

Model Stability Test

The diagnostic test to be conducted for model 1a is the CUSUM test to certify the stability of the model. The null hypothesis being tested here is that the $CUSUM_t$ statistic is drawn from a $CUSUM_{(t-k)}$ distribution; thus,

the $CUSUM_{(t-k)}$ is a symmetric distribution centered at 0 with its dispersion increasing as t-k does.

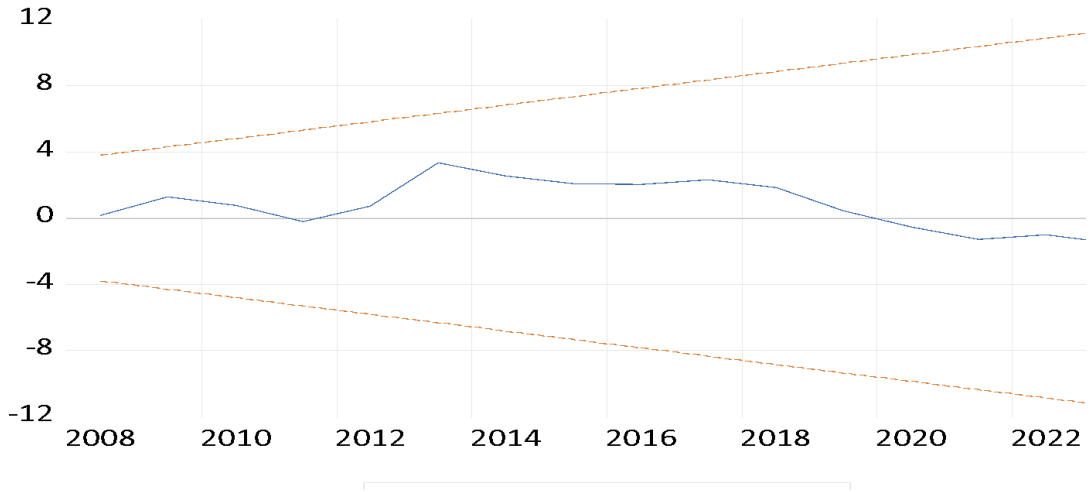

Figure 1: The CUSUM Stability Test for Model 1

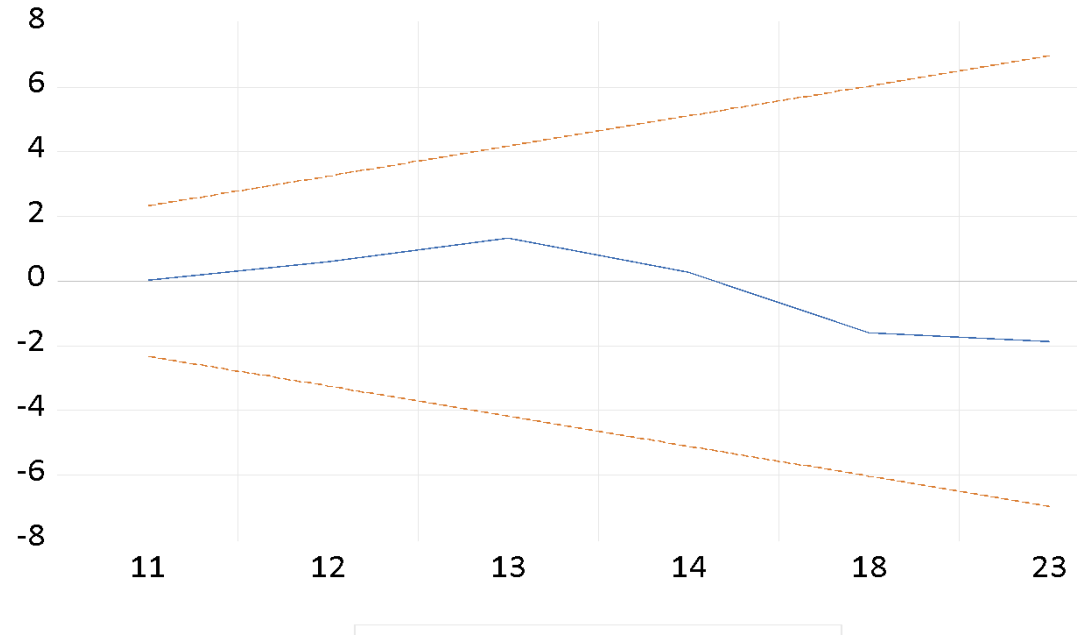

Figure 2: The CUSUM Stability Test for Model 2

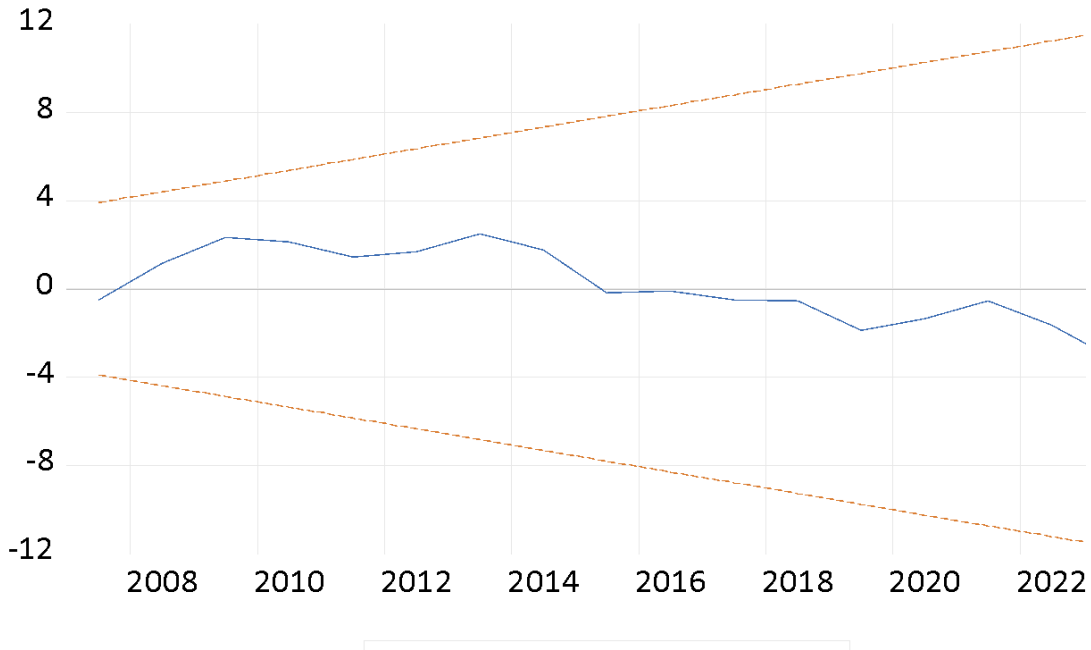

Figure 3: The CUSUM Stability Test for Model 3

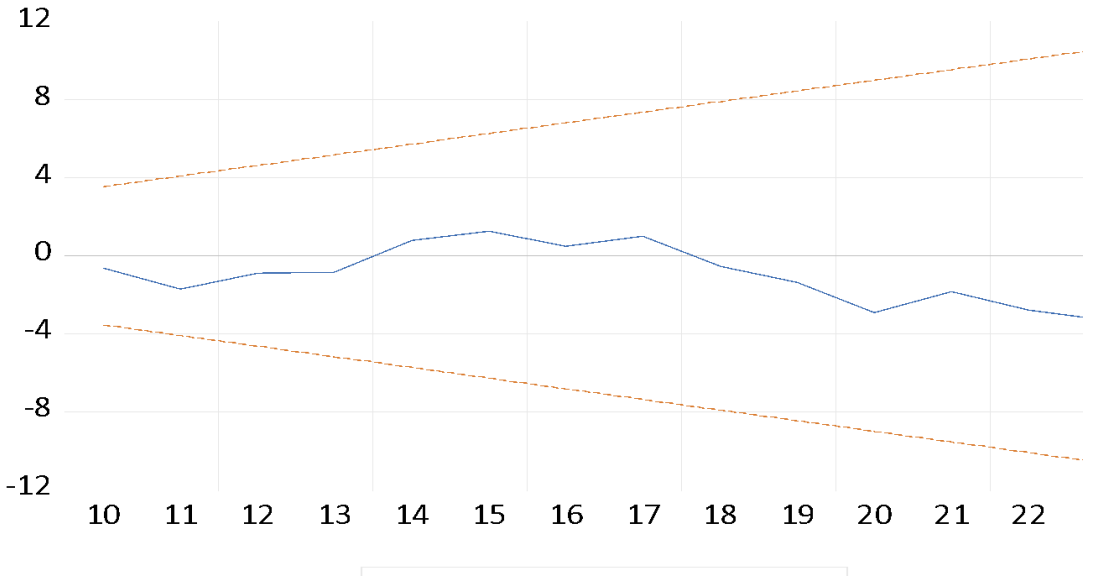

Figure 4: The CUSUM Stability Test for Model 4

From Figures 1 to 4, it is justified that the model is stable; thus, the $CUSUM_{(t-k)}$ is a symmetric distribution and centered at 0, with its dispersion increasing as t-k does.

Policy Implications

The policy implications based on the findings for each of the four research objectives are:

a) The study's finding that corporate income tax (CIT) exerts a strong, positive effect on private investment, while value-added tax (VAT) shows a small but statistically significant negative impact on growth, emphasizes the importance of tax structure in shaping investment dynamics. In Nigeria's constitutional tax framework, where CIT and VAT are the principal federal tools alongside the petroleum profit tax, these differential effects imply that direct taxation mechanisms are inherently more conducive to stimulating private sector capital formation, whereas indirect taxes may dampen consumption and investment responsiveness.

b) Despite rising tax revenues, CIT has grown faster than VAT over 2011–2022; inefficiencies in tax administration and fragmented authority have meant that increased revenue has not fully translated into productive public spending. This administrative complexity, highlighted in the 2022 FIRS Strategic Plan and PEBEC's ongoing efforts to streamline electronic filing, implies that bottlenecks in collection and compliance processes can materially weaken the capacity of tax mobilization to catalyze economic growth.

c) Public investment emerged as a key moderator of the tax growth nexus, with infrastructure and social spending either reinforcing or, when misallocated, undermining the impact of revenue on GDP. The observed positive moderation by public investment, particularly via agencies like the Ministry of Works, suggests that aligning fiscal capacity with targeted capital projects has a multiplier effect on growth, indicating that the sequencing and composition of public expenditures critically shape the efficacy of tax policy.

d) Nigeria's strategic incentives, embodied in the Nigerian Investment Promotion Act (NIPA), NSIA-led PPP co-investments, and NEPZA's

Free Trade Zone tax holidays, reflect a policy environment that privileges domestic investment through guarantees and concessional support. Given the study's evidence that private investment significantly drives long-run GDP growth, this framework implies that such incentive regimes are pivotal in directing capital flows, yet their design must account for the nuanced responses of different tax instruments to ensure they reinforce, rather than offset, broader fiscal objectives.

Evaluation of Research Hypotheses

To achieve the specific objectives of the study and to make a valid evaluation of the research hypothesis, an ARDL estimation technique was used as an estimation technique. Here is an evaluation of the four research hypotheses based on the findings:

Corporate income tax revenue and value-added tax revenue have no significant impact on economic growth in Nigeria

The findings from Model 1 reject the null hypothesis. Corporate income tax revenue positively and significantly impacts economic growth, with a 1% increase leading to a 0.308-point rise in real GDP in the long run. Conversely, value-added tax revenue has a significant negative impact, reducing GDP by 0.006% for every 1% increase. These results align with some prior studies but diverge from others. Short-run analyses corroborated the positive impact of corporate income tax and highlighted a significant adjustment mechanism, with a 43% speed of adjustment to equilibrium. The analysis concludes that both tax types significantly influence growth, though their impacts diverge.

Private investment and public investment have no significant impact on economic growth in Nigeria

The findings from Model 2 reject the null hypothesis. Private investment has a significant positive effect, increasing real GDP by 4.55 points for every unit rise. Public investment, while positive, was not

statistically significant in the long run. The short-run analysis revealed mixed results, with private investment negatively impacting growth in the short term but positively moderating over time. Public investment's positive role was supported by past research, but it was less impactful compared to private investment. These results highlight the crucial role of private investment in fostering economic growth.

Private investment has no moderating role on the impact of selected tax revenue variables on Nigeria's economic growth

The findings from Model 3 reject the null hypothesis. Private investment positively moderates the impact of corporate income tax on economic growth, with a positive coefficient value that is greater than zero in the long run. Conversely, the interaction between private investment and value-added tax negatively affects GDP, reducing growth by having a value less than zero. These outcomes suggest that enhancing private investment strengthens the benefits of corporate taxes but exacerbates the adverse effects of VAT on growth. In the short run, similar trends were observed, emphasizing the moderating role of private investment in shaping tax revenue impacts.

Public investment has no moderating role on the impact of selected tax revenue variables on Nigeria's economic growth

The findings from Model 4 partially reject the null hypothesis. Public investment negatively moderates the effect of corporate income tax on GDP, with a negative coefficient value that is less than zero in the long run. In contrast, it positively moderates the impact of VAT, enhancing GDP with a positive coefficient value that is greater than zero in the long run. The short-run results supported these trends, showing that public investment can either impede or enhance tax effectiveness depending on the type of tax. These findings imply that the structuring and allocation of public investment are critical to maximizing tax revenues' developmental potential.

Discussion

The Breusch-Godfrey Serial Correlation LM Test values of the four models show that they all have p-values that are more than 0.05, thus supporting the null hypothesis that there is no autocorrelation. This observation is aligned with a recent ARDL diagnostic exercise in Nigeria, in which the Breusch-Godfrey test equally indicated that there was no serial correlation among residuals, which confirms that the estimated dynamic relationships were statistically credible (Tahir, 2022). Likewise, an investigation of the natural resource wealth and economic complexity in Nigeria did not detect serial correlation in the ARDL errors, hence, confirming proper model specification and reliable coefficient inference (Okpala and colleagues, 2024). Conversely, even though incorrectly specified, most ARDL studies fail to find any evidence of serial correlation, some studies warn that falsely selected lag-lengths may result in false autocorrelation results, requiring further model respecification or lag adjustments (Tahir, 2022).

The study observed that all four models have homoscedasticity (constant error variance) because the p-values of Breusch-Pagan tests or other tests are not significant. This observation is in line with the ARDL diagnostics reported by Tahir (2022), who did not observe signs of heteroscedasticity thus indicating that standard errors and hypothesis tests can be considered reliable. In an analogous ARDL study, the authors also found no evidence to reject the homoscedasticity assuming Breusch-Pagan-Godfrey tests, which confirms that properly specified dynamic models can therefore fulfil this requirement (Okpala et al., 2024). Other empirical studies, in contrast, underline that the heteroscedasticity may tend to be manifest in panel or high-frequency data, so that strong standard errors would be needed to make valid inferences- a point less salient in the annual time-series studied here.

The CUSUM stability tests showed that the CUSUM plots were within critical limits thus showing parameter stability over time. This result

is consistent with several ARDL results that utilize CUSUM and CUSUMSQ tests to ensure that the dynamics of estimated parameters remain constant across sample periods, thereby confirming the consistency of both short-run and long-run dynamics (Tahir, 2022). Stability was also supported by the CUSUM procedures in a related study of ARDL models in Nigeria, which meant that structural changes did not invalidate model estimates (Okpala et al., 2024). Conversely, studies which identify instability tend to propose alternative modelling strategies e.g. threshold or time-varying parameter models when CUSUM statistic rises beyond critical values, which did not occur in the current analysis. The obtained diagnostic results thus support current empirical results of ARDL studies, which generally do not indicate autocorrelation or heteroscedasticity and show stability in the parameters of the model when the model is properly specified and lag structures are properly selected

Conclusion

This paper explored the association between tax revenue, domestic investment, and economic growth in Nigeria with specific focus on the mediating effects of both the private and the government investment. Based on the neoclassical theory of investment and the Laffer theory of taxation, the analysis utilized ARDL to model the two short-run and long-run dynamics with annual time-series data between 1994 to 2023. The results indicate that tax revenue has varied impacts on economic growth. The revenue of corporate income taxes showed a long run effect on real GDP which was positive and significant implying that direct taxation with proper management can improve economic performance. Conversely, the value added tax revenue bore a negative correlation with growth, meaning that indirect-taxation can weaken the responsiveness of consumption and investment unless designed in the most effective manner possible. These findings highlight the significance of tax structure and not only revenue growth.

Domestic investment became a key to growth. The effect of private investment on economic growth was observed to be high and positive hence confirming the central role it plays in increasing productive capacity and triggering long-term development. The positive but less significant direct importance of public investment is a sign that efficiency and distribution of public capital expenditure are very important in the growth effect. Notably, the paper determined that the relationship between tax revenue and economic growth is moderated by both to the extent of privately and publicly funded investments. Increased investment in the privately owned economy enhanced the positive growth effect of corporate income tax but worsened the negative effect of value-added tax. The moderating effects of public investment were mixed in that it increased or diminished the effectiveness of tax depending on the nature of the tax in question. These interaction effects indicate that the result of tax policy depends upon the transmission of revenue through the domestic investment channels.

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