

Towards Sustainable Growth: Does Indirect Tax Revenue Enhance Nigeria's Economic Growth?

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ARTICLE INFO

Submitted: 25 Dec 2024

Received: 18 Feb 2025

Accepted: 28 Feb 2025

ABSTRACT

This study investigates the impact of indirect tax revenue on Nigeria's economic growth using the Autoregressive Distributed Lag (ARDL) model. Employing quarterly data from the period between 2011q1 and 2023q4, we evaluate both the short-run and long-run contribution of indirect tax revenue to Nigeria's growth trajectory. The short-run results reveal that company income tax (CIT) and petroleum profit tax (PPT) are significant drivers of economic growth. In the long run, PPT and capital gain tax (CGT) positively influence gross domestic product (GDP), whereas CIT, gas income (GI), and stamp duty (SD) have negative effects. Furthermore, the error correction term (ECM) coefficient of -0.84, which is statistically significant at the 1% level, confirms a strong short-run adjustment mechanism, indicating that 84% of disequilibria are corrected within one period. The study concludes that while indirect tax revenue can positively affect economic growth, poor administration and mismanagement, particularly in CIT and SD, hinder their developmental impact. Therefore, we recommend modernising the tax system, enhancing transparency, and aligning fiscal policies with 21st-century demands to improve efficiency, accountability, and inclusive economic growth in Nigeria.

Keywords: ARDL, Economic Growth, Tax Revenue, Nigeria

1 Introduction

Nigeria is currently facing a revenue crisis that affects all levels of government. The country's low tax-to-GDP ratio significantly limits its fiscal space, forcing increased reliance on borrowing to finance public expenditures and resulting in chronic underfunding of critical socio-economic sectors. Despite some recent progress, revenue generation remains insufficient to meet national development needs, highlighting the urgency for comprehensive and sustainable fiscal reforms.

With oil prices experiencing significant fluctuations in recent years, Nigeria's dependence on oil revenue has become increasingly untenable. The sharp decline in oil prices has reduced government earnings, making it imperative to strengthen domestic revenue sources. Taxation emerges as a viable and dependable alternative, not only due to its revenue-generating potential but also because of its consistency and predictability (Mac-Ozigbo & Igbokwe-Ibeto, 2024).

Many developed and emerging economies rely primarily on taxation to meet fiscal obligations and drive national development. Despite its potential, Nigeria's tax system is undermined by poor administration, under-assessment, weak enforcement mechanisms, and widespread evasion. Tax compliance remains low, exacerbated by loopholes in tax laws and corrupt practices (Zolt & Bird, 2008). These systemic inefficiencies have led to an understatement of income tax revenues. Accordingly, effective tax systems, when properly managed, and implemented, can generate adequate revenue to support national development (Nguyen, 2019).

While non-oil tax revenues have recently improved, exceeding expectations in 2022 and 2023, structural weaknesses persist. Corporate Income Tax (CIT) and Value Added Tax (VAT) collections performed strongly, achieving 141.9% and 102.9% of targets in 2022 and 221.4% and 111% in 2023, respectively. However, customs collections consistently underperformed, reaching only 83.6% in 2022 and 73% in 2023. Additionally, debt servicing consumed 64% of total government revenue in 2022, limiting the government's capacity to invest in infrastructure and human capital.

To address these fiscal imbalances, the Nigerian government has implemented various tax reforms. Legislative instruments such as the VAT (Amendment) Act, 2007; the Companies Income Tax (Amendment) Act, 2007; and the Personal Income Tax (Amendment) Act, 2011, aimed to improve tax administration and broaden the tax base. More recently, the Economic Stabilisation Bills (ESB), under the Accelerated Stability and Advancement Plan (ASAP), propose reforms to over 15 tax and fiscal laws to promote economic stability, reduce inflation, and support inclusive growth. New initiatives like the 2024 Withholding Tax Regulations and VAT Modification Order seek to reduce the tax burden on SMEs and incentivise investments in clean energy.

Nevertheless, the country still struggles to expand its tax net and reduce its dependence on volatile oil revenues. Nigeria's projected fiscal deficit of N13.79 trillion for 2023 underscores the urgency of sustainable revenue generation. This study, therefore, investigates the impact of indirect tax revenues, specifically Personal Income Tax (PIT), Corporate Income Tax (CIT), Value Added Tax (VAT), and Stamp Duties, on Nigeria's economic growth between 2011q1 and 2023q4. By analysing performance in these key tax areas, the study aims to inform fiscal policy strategies that promote revenue sustainability, reduce fiscal deficits, and enhance economic resilience in Nigeria.

2 Literature Review

2.1 Theoretical Review

Musgrave's Theory of Public Finance

Musgrave's theory emphasises the role of the government in allocating resources, redistributing income, and stabilising the economy through fiscal tools, particularly taxation and public spending. According to Musgrave (1959), taxation is not only a mechanism for generating revenue but also a policy tool for promoting economic stability and growth. This theory is relevant as it provides a foundational framework for understanding how indirect taxes (like VAT, stamp duties, and excise duties) can be used to achieve macroeconomic objectives, especially in developing economies like Nigeria. Indirect taxes, being consumption-based, can influence aggregate demand and resource allocation without significantly distorting production. Musgrave's theory supports the idea that if properly designed and administered, indirect taxes can enhance fiscal sustainability and economic growth by funding public investments in infrastructure, education, and healthcare.

Endogenous Growth Theory (New Growth Theory)

Endogenous Growth Theory, developed by Romer (1986) and Lucas (1988), posits that economic growth is primarily driven by internal factors, particularly investments in human capital, innovation, and knowledge. Unlike neoclassical models that treat technological progress as exogenous, this theory sees policy decisions (such as taxation and government spending) as key determinants of long-term growth. This theory is particularly relevant because it links tax policy with long-term growth outcomes.

If effectively utilised, indirect tax revenues can finance critical investments in education, health, digital infrastructure, and clean energy, drivers of productivity and innovation. Furthermore, this theory supports the hypothesis that reforming the structure of indirect taxation to reduce distortionary effects and improve compliance can create a more growth-enhancing fiscal environment in Nigeria.

In this study, we adopt the Endogenous Growth Theory, which offers a robust theoretical foundation for analysing the impact of indirect tax revenue on Nigeria's economic growth. The theory highlights how these revenues when channelled into productive investments, can lead to sustained economic growth.

2.2 Empirical Review

Several studies have examined the impact of various tax components on Nigeria's economic growth. Osamor et al. (2023) found that Petroleum Profit Tax (PPT), Company Income Tax (CIT), Value Added Tax (VAT), and Customs and Excise Duties (CTD) all had positive but insignificant effects on GDP growth in Nigeria using ARDL analysis over 2011–2020. Similarly, Agunbiade & Idebi (2020), using VECM and Johansen co-integration, observed that a long-run relationship exists between tax revenues and GDP, with causality tests confirming interlinkages among them. Other studies, such as Abomaye-Nimenibo et al. (2018) and Aliyu & Mustapha (2020), revealed mixed results; some tax components, like customs duties, showed significance, while others, like CIT and PPT, did not.

A focused study on individual tax categories by Izedonmi & Okunbor (2014) found a strong positive correlation between VAT revenue and GDP, with VAT explaining over 90% of GDP variations in some models. Similarly, Dibia and Onwuchekwa (2019) highlighted the significant positive impacts of VAT and PPT on economic growth, reinforcing the argument that certain tax components are more growth-responsive than others.

Studies beyond Nigeria, including Onakoya et al. (2017), explored the effects of tax revenues on economic growth in broader African and ECOWAS contexts. That although total tax revenue clearly and significantly affected growth, direct taxes had a negative effect, suggesting that indirect taxes (like VAT) might be more growth-enhancing. Maganya (2020) found similar results in Tanzania, where taxes on goods and services were positively related to GDP, whereas income taxes showed a negative relationship.

Some research reveals potential negative consequences of taxation on growth. Keho (2010) and Saibu (2015) argued that higher tax burdens are inversely related to GDP growth in Côte d'Ivoire, Nigeria, and South Africa. Ugwunta and Ugwuanyi (2015) also noted the negative and insignificant effects of various taxes on growth in sub-Saharan Africa, emphasising that direct taxes may stifle growth if not efficiently managed.

Global evidence from OECD and developing countries further complements the African perspective. Studies by Simionescu & Albu (2016) using panel data and GMM approaches shows a relationship that is positive between VAT and GDP growth, although VAT could negatively affect capital accumulation. Jalata (2014) found that VAT outperformed sales tax in enhancing GDP in Ethiopia, while Njogu (2015) reported a negative relationship between VAT rates and GDP in Kenya, indicating that the rate and administration of taxes also matter.

Beyond GDP, tax revenues also show relationships with broader development indicators. Ibadin and Oluwatuyi (2021) stated correlation that is positive between tax revenue and the Human Development Index (HDI), though GDP had a stronger influence. Ukeme and Olayinka (2020) also observed that tax revenue positively and significantly influenced public debt and capital expenditure, suggesting that taxation can indirectly support development through infrastructure and services.

The review underscores the importance of efficient tax policy and administration in maximising the tax growth-enhancing potential. However, despite extensive research, the findings on the impact of indirect tax on economic growth remain mixed and inconclusive, particularly in the Nigerian context. To address

this gap, the present study re-examines the impact of indirect tax revenue on Nigeria's economic growth using quarterly frequency data from 2011q1 to 2023q4.

3 Methodology

3.1 Data and Data Sources

The study used a quarterly time series data which were obtained from the World Bank Development Indicators (WDI) and the Federal Inland Revenue Service (FIRS) for 52 quarters (2011-2023). Table 1 below presents the variable description and sources.

Table 1: Variables, Sources and Expectations

Variables	Description	Apriori Expectation	Sources
RGDP	Real Gross Domestic Product		World Bank Development Indicator (WDI)
CIT	Company Income Tax	Positive	Federal Inland Revenue Service (FIRS)
GI	Gas Income	Positive	Federal Inland Revenue Service (FIRS)
CGT	Capital Gain Tax	Positive	Federal Inland Revenue Service (FIRS)
PPT	Petroleum Profit Tax	Positive	Federal Inland Revenue Service (FIRS)
SD	Stamp Duty	Positive	Federal Inland Revenue Service (FIRS)

Sources: Authors Compilation

3.2 Model Specification

This paper adopts the ARDL analysis because most data in the analysis have been shown to have a mixture of being significant at level and first difference. The ARDL can be expressed in the short-run and long-run form, according to Pesaran (2001). Also, by adopting ARDL (3,1,0,0, 0), the optimum lag was selected based on our criteria. The long run model is specified in equation 1 below.

$$RGDP_t = \alpha_1 + \sum_{j=0}^{q1} \beta_1 CIT_t + \sum_{k=0}^{q2} \beta_2 GI_t + \sum_{l=0}^{q3} \beta_3 CGT_t + \sum_n^{q4} \beta_4 PPT_t + \sum_n^{q5} \beta_5 SD_t + \varepsilon_t \quad (1)$$

Where α_0 is the intercept, and $\beta_1 \beta_2 \beta_3 \beta_4 \beta_5$ are the long-run coefficients of company income tax, gas income, capital gain tax, petroleum income tax, stamp duties, and ε_t is the error term. Once the long-run relationship between the dependent variables and the independent variables is established, the ECM model equation is as follows:

$$RGDP_t = \alpha_1 + \sum_{i=1}^p \delta_1 \Delta RGDP_t + \sum_{j=0}^{q1} \delta_2 \Delta CIT_t + \sum_{k=0}^{q2} \delta_3 \Delta GI_t + \sum_{l=0}^{q3} \delta_4 \Delta CGT_t + \sum_n^{q4} \delta_5 \Delta PPT_t + \sum_n^{q5} \delta_6 \Delta SD_t + \mu ECT_t + \varepsilon_t \quad (2)$$

Where Δ is the first difference of variables, δ_i is the coefficient of the lagged changes in the dependent variable and $\delta_1, \delta_2, \delta_3, \delta_4, \delta_5$ are the coefficients of the lagged changes in the independent variables. ECT_t represents the error correction mechanism, which measures the speed of adjustment made every year

towards long-run equilibrium. It is expected to be negative and significant for co-integration to hold. Akaike's lag selection criteria determine the optimal lag length of the ECM model. In addition, the Augmented Dickey-Fuller and Philip Perroni unit root test established the order of integration in this study.

4 Findings and Discussion

4.1 Descriptive Statistics and Correlation Matrix

The descriptive statistics results presented in Table 2 indicate that GDP in Nigeria during the period from 2011 quarter one to 2023 quarter four. The variable shows that GDP has a maximum value of 21423437 and a minimum value of 13621793, the median showed to have a value of 16898753 and an average of 17104005, whereas the standard deviation has a value of 1734833, which shows a great difference between the mean and standard deviation. PPT, on the other hand, has a mean value of 576.6, a median of 538.66, a maximum value of 1476.44, a minimum value of 176.75, and a standard deviation of 262.61. The value of the independent variable CIT has 325.98 as the mean, with a median value of 299.23, a maximum value of 778.29, a minimum value of 112.36 and a standard deviation of 158.59. GI showed a mean value of 20.58, a median of 9.69, a maximum of 107.09, a minimum of 0.83, a standard deviation of 24.38, and an observation of 48. CGT and SD have a mean of 5.11 and 6.17, respectively. A median of 1.24 and 2.26, a maximum of 72.59 and 62.58, respectively, and a minimum value of 0.00 and 0.48 for CGT and SD. Standard deviation, on the other hand, has a value of 11.65 for CGT and 11.42 for SD.

Table 2: Descriptive Statistics

Variable	GDP	PPT	CIT	GI	CGT	SD
Mean	17104005	576.6	325.98	20.58	5.11	6.17
Median	16898753	538.66	299.23	1.24	1.24	2.26
Maximum	21423437	1476.44	778.29	107.09	72.59	62.58
Minimum	13621793	176.75	112.36	0.83	0.00	0.48
Standard dev.	1734833	262.61	158.59	24.38	11.65	11.42
Observation	48	48	48	48	48	48

Source: E-Views 12 Output

Table 3 displays the correlation coefficient for the variables used. The estimated correlation coefficient reports that none of the variables is correlated with each other. According to Muhammad et al. (2020), when variables are correlated and estimated in the same regression, there are likely to be multicollinearity issues, and as such, to rescue such a situation, it is desirable to estimate correlated variables independently. The situation from the estimated correlation does not warrant such a scenario; rather, all the variables can be estimated at once.

Table 3: Correlation Matrix

	GDP	CIT	CGT	PPT	GI	SD
GDP	1	0.53635	0.01312	0.00985	0.19414	0.3100
PPT	0.53635	1	0.20033	0.30462	0.47465	0.20632
CIT	0.01312	0.20632	1	-0.04203	0.40896	-0.03678
GI	0.00985	0.30462	-0.04203	1	-0.01833	0.02580
CGT	0.19414	0.47465	0.40896	-0.01833	1	0.32577
SD	0.3100	0.20632	-0.03678	0.02580	0.32577	1

Source: E-Views 12 Output

4.2: Stationarity Test

The unit root results presented in Table 4 are the Augmented Dicky Fuller and Phillip Perroni test proposed by Im et al. (2003). The stationarity test findings demonstrate that all variables are stationary at either the first difference or at level, with no variables stationary at the second difference. This outcome makes the ARDL method of estimation appropriate for the study. At a 5% level of significance, the findings shown that RGDP and CIT are stationary at level while CGT, GI, and SD are stationary at first difference. Thus, this mixed order of integration confirms that the variables are appropriate and reliable for estimation using the ARDL technique.

Table 4: Augmented Dickey-Fuller and Philip-Perron Unit-root Test Results

Variables	ADF T-Statistics	Prob.	PP T-Statistics	Prob.	Remark
RGDP	-1.52322	0.51247	-3.73861	0.00647	Stationary
CGT	-5.64933	1.86E-05	-5.59829	2.19E-05	Non-stationary
CIT	1.796051	0.0999639	-3.26287	0.022354	Stationary
GI	-1.13005	0.69556	-5.67687	1.70E-05	Non-stationary
PPT	-2.02739	0.27447	-2.28549	0.18073	Non-stationary
SD	-2.43146	0.13889	-6.01276	5.75E-06	Non-stationary

AT First Difference

GDP	-2.14178	0.23001	-11.5856	7.17E-11	Non-stationary
CGT	-6.74651	7.27E-07	-24.0206	0.0001	Stationary
CIT	-3.16217	0.029359	-13.9106	3.36E-10	Non-stationary
GI	-9.8157	5.48E-10	-23.4192	0.0001	Stationary
PPT	-2.18724	0.21382	-8.97073	2.05E-09	Non-stationary
SD	-15.4654	7.84E-09	-22.8992	0.0001	Stationary

Source: E-Views 12 Output

4.3: Auto-regressive Distributed Lag Model Bounds Test

Table 5 reports the bounds co-integration test of the ARDL approach. Thus, since the F-statistic (13.71) exceeds all the critical values for the upper bound at 1%, 5% and 10% levels of significance, respectively, there is proof of a long-run relationship or linear combination among the variables.

Table 5: ARDL Bound Test Result

Test Statistics	Value	Significant	1(0)	1(1)
F-statistics	13.713131	10%	2.27	3.29
K	6	5%	2.694	3.83
		1%	3.67	5.02

Source: E-Views 12 Output

4.4: Auto-regressive Distributed Lag Model, Long-run and short-run results

In Table 6, we estimate the error correction mechanism using the ARDL method to examine the short-run relationship between the variables. The error correction term (ECM) coefficients conform to a priori expectations: they are negative and statistically significant at the 1% level. This indicates the existence of a short-run dynamic adjustment process toward the long-run equilibrium. The ECM coefficient, specifically -0.84, suggests that approximately 84% of the disequilibrium from the previous period is corrected in the current period, implying a relatively fast convergence to equilibrium.

The high magnitude of the ECM coefficient illustrates the economy's responsiveness in adjusting back to the long-run path. This result reinforces the stability of the model and confirms that shocks or imbalances in the system will be rapidly corrected over time, returning the economy to its equilibrium trajectory.

Furthermore, the analysis shows that Company Income Tax (CIT) and Petroleum Profit Tax (PPT) are the primary drivers of economic growth in the short run. This is not surprising, given the significant contributions these taxes make to government revenue and, by extension, the Gross Domestic Product (GDP) in Nigeria. The result aligns with fiscal realities where oil-related revenues and corporate taxation form a major component of national income. Specifically, the results reveal that a one-unit increase in CIT leads to an increase in GDP by 2,584.05 units. Similarly, a one-unit increase in PPT results in a 165.79-unit rise in GDP. These effects are both positive and statistically significant, indicating that government tax policies, particularly around oil revenues and corporate income, have a substantial impact on short-run economic performance.

The model's overall strength is also demonstrated by a coefficient of determination (R^2) of 0.71. This suggests that 71% of the variation in the dependent variable (GDP) is explained by the independent variables included in the model, confirming the model's adequacy and robustness in capturing the essential dynamics of the Nigerian economy.

The ARDL long-run analysis, estimated based on the bounds test and the Wald test, further investigates the relationships between the variables. As indicated, the results show that PPT, CIT, Government Investment (GI), Capital Gains Tax (CGT), and Stamp Duty (SD) are all statistically significant at the 1% level in explaining long-run changes in GDP. However, the nature of these impacts varies across the different variables.

In the long run, PPT and CGT have a positive and significant impact on GDP. A unit increase in PPT is associated with a 56.28 billion naira increase in GDP, while a unit rise in CGT leads to an 85,844.43 billion naira boost. Conversely, CIT, GI, and SD have negative long-run impacts. A unit increase in CIT results in a 40,476.9 billion-naira decrease in GDP; GI reduces GDP by 256,469.3 billion naira, and SD leads to a decline of 52,082.53 billion naira.

Overall, the findings demonstrate that CIT and PPT significantly influence economic growth in the short run, while PPT, CIT, GI, CGT, and SD are significant in the long run. The prominence of PPT in both time horizons underscores Nigeria's dependence on oil revenues and the economic importance of multinational corporations like Shell, Chevron, Agip, and Mobil, which pay royalties and taxes that contribute substantially to the nation's GDP.

Table 6: Long-run and Short-run Impacts

ARDL Long-run Impact

Variable	Coefficient	Standard Error
PPT	56.28***	6982.24
CIT	-40476.90***	90941.77

GI	-256469.3***	431093.5
CGT	85844.43***	164372.1
SD	-52082.53***	101046.1

ARDL Short-run Impact Result

Variable	Coefficient	Std.Error	t-Statistics	Prob.
D(CIT)	2582.051	891.4135	2.89882	0.00582
D(PPT)	165.7917	672.53	0.24561	0.00643
ECM (-1)	-0.8425	0.079910	-10.5427	0.0000
R-squared	0.726017			
Adj. R-squared	0.713563	Akaike Criterion	30.17706	
Durbin-Watson stat	2.40592	Log-likelihood	-7706.161	
F-statistics	58.29687			
Prob(F-statistic)	4.27E-13			

Source: E-Views 12 Output

4.5 Post-Diagnostic Tests Result

The post-estimation tests include the Serial Correlation test and heteroscedasticity. As shown in Table 7, there is absence of Serial Correlation, as the probability of the F-statistic is above the 5% level of significance. Additionally, the Breusch-Pagan-Godfrey heteroskedasticity test result validates the robustness and reliability of our model.

Table 7: Breusch-Godfrey Serial Correlation LM Test Result

F-Statistic	2.76545	Prob. F(2,36)	0.076339
Obs*R-Squared	6.2593	Prob. Chi-Squared (2)	0.043733

Breusch-Pagan-Godfrey Heteroskedasticity Test Result

F-Statistic	1.353333	Prob. F(4,13)	0.2759
Obs*R-Squared	26.31753	Prob. Chi-Squared (4)	0.2861
Scaled explained SS	2.756024	Prob. Chi-Squared (4)	1.0000

Source: E-Views 12 Output

5 Conclusion and Recommendations

This study concludes that petroleum profit tax (PPT), company income tax (CIT), capital gains tax (CGT), and stamp duty (SD) significantly influence economic growth in Nigeria. While taxes can positively affect the economy if properly integrated, the study notes that, in practice, the impact of CIT and SD has been largely negative. This is attributed to the mismanagement of tax revenues, which are often misappropriated rather than invested in infrastructure and public services, thereby weakening their developmental impact.

Based on the study's findings, it is recommended that the Nigerian government reform and modernise the tax system to meet 21st-century economic demands, ensuring tax revenues are judiciously used to

fund critical sectors such as education, healthcare, infrastructure, housing, agriculture, and transportation. Effective tax administration and accountability are crucial to preventing the misuse of public funds and promoting national development. Specific strategies include implementing transparent reporting systems and sustainability-linked incentives for Petroleum Profit Tax (PPT); reducing Company Income Tax (CIT) rates for SMEs, offering tax holidays for strategic sectors, and enhancing compliance through digitalisation; introducing a progressive Capital Gains Tax (CGT) regime with reinvestment incentives and expanded real estate coverage; and reforming Stamp Duty (SD) by digitising processes, exempting low-value transactions to support financial inclusion, and broadening the tax base to include more digital and financial services. Thus, these reforms will create a more inclusive, efficient, and growth-oriented tax system.

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