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Taxation and Economic Performance: Direct and Indirect Tax Effects on Nigeria's Output Growth

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Abstract

Purpose: Historically, Nigeria relied on oil revenue while neglecting taxation as a key source of public finance, leading to macroeconomic instability due to volatile oil prices. Despite numerous tax reforms aimed at improving compliance and reducing evasion, the country has experienced inconsistent output growth, including recessions in 2016 and 2020. This study analyzed the impact of direct and indirect taxes, focusing on company income tax (CIT), petroleum profit tax (PPT), value-added tax (VAT), and customs and excise duties on Nigeria's output growth from 1994 to 2023.

Methodology: The research utilized the Autoregressive Distributed Lag (ARDL) method to examine both short- and long-term relationships between tax variables and output growth.

Result: In the short run, results indicated that all tax measures significantly influence output growth. However, none of the variables exhibit a significant long-run influence. Petroleum profit tax (PPT) has the highest average value but negatively correlates with output growth. Value-added tax (VAT) positively affects growth, while customs and excise duties have adverse effects. The Error Correction Model (ECM) confirms a long-run equilibrium relationship among variables, with a highly significant adjustment mechanism.

Novelty and contribution: This study adds to the body of knowledge by offering a thorough empirical examination of the tax system in Nigeria and its impact on output growth over a 30-year period, encompassing major economic recessions. It offers evidence-based policy recommendations for optimizing tax administration to foster sustainable economic growth.

Practical and social implications: The findings suggested that tax authorities should leverage CIT in the short run to stimulate economic activity. A review of PPT rates or the introduction of tax incentives in the petroleum sector could mitigate its negative growth effects. VAT expansion—either through rate increases or base broadening could enhance output growth, while reducing customs and excise duties may improve trade and industrial performance.

Keywords: Economic Growth, Fiscal Policy, Taxation, ARDL, GDP

1 Introduction

Global output grew at an estimated rate of 4.7 per cent in 2000, 1.3 percentage points higher than the level in the preceding year (Central Bank of Nigeria [CBN], 2022). This growth was largely due to the expansion of the US

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economy, Europe's upswing, Asia's recovery, and a rebound from the slowdown in emerging markets. In Sub Saharan Africa, output grew at an estimated rate of 3.4 per cent in 2000, compared with 2.2 per cent in 1999. The marginal rise in output growth in Sub Saharan Africa may be attributed to the rise in crude oil price during these period. While, output growth in Nigeria was put at 5.0% in 2000 (Central Bank of Nigeria [CBN], 2022).

In 2014, the global economy grew by 3.3%, the same as in 2013. While, growth in Sub-Saharan Africa declined to 4.4 per cent from 4.7 per cent in 2013, due mainly to the continuing slowdown in China, the weak performance of Russia and other commodity exporting countries. Growth in Nigeria was 6.3%, a 6.7percentage point decline from the growth in 2013, due to rising inflationary pressures (CBN, 2014). The global output growth slowed in 2022, relative to the level in the preceding year, owing to tight monetary conditions and lingering supply chain disruptions. The IMF growth forecast was 3.4 per cent in 2022, against a stronger growth of 6.2 per cent in 2021. The slow growth was induced by supply-chain disruptions caused by the impact of the Russia-Ukraine war, the implementation of the China zero-tolerance COVID-19 policy, and the hike in policy rates to curtail inflation. Nonetheless, growth varied across countries and regions owing to the idiosyncratic vulnerabilities of economies. Growth in Sub-Saharan Africa was 3.8 per cent, a 0.9 percentage point decline from the growth in 2021, due to rising inflationary pressures, tight financial conditions, and adverse weather conditions, amid rising public debt risk. In Nigeria, output growth was 3.3 per cent, against 3.6 per cent in 2021, due to the shrinking of most sectors from agriculture to mining, occasioned by infrastructure constraints, and electricity shortages (CBN, 2022).

The global economy is expected to continue on the path of recovery in 2024, amid existing and emerging challenges. Growth is projected to remain unchanged at 3.1 per cent in 2024, on account of likely moderation in interest rates, increased resilience in the United States, and key Emerging Markets and Developing Economies (EMDEs), as well as, the fiscal stimulus in China. Growth in Sub-Saharan Africa (SSA) is expected to quicken to 3.8 per cent in 2024 from an estimated 3.3 per cent in 2023. This growth, is largely, underpinned by the significant increase to 3.3 per cent expected in Angola from 1.3 per cent in the preceding year. Growth in South Africa and Nigeria is also expected to rise to 1.0 and 3.0 percent, compared with 0.6 and 2.8 per cent in the previous year, respectively (CBN, 2024).

The marginal rise in output growth in Nigeria may be attributed to the rise in crude oil price during these period. However, in terms of contribution to GDP, the oil sectors contribution has been on decline in recent years. The total annual contribution of oil to aggregate GDP in 2022, for instance was 6.40%, down from 7.33% in 2021. Its share of GDP in 2020 was 8.2%, 8.82% in 2019 and 7.06% in 2018. These trends are contrary to the earlier years when oil was discovered and formed the mainstay of the economy. In 1965, oil accounted for 3.43% to GDP and increased to 9.27% in 1970.and 19.37 in 1975. The figure increased to 38.87 in 2005 but decreased marginally to 37.44% in 2009 (NBS, 2022).

Over the years, the Nigerian economic crises since the late 1970s have been the aftermath of producer oil price crisis in the world oil market. And each price crisis has in virtually all cases followed by a mild or severe global economic recession (Akpan, 2017). Beginning from 1978/1979 through to 1981/82 and 1998/99 to 2014/2015 crisis, all have been followed by mild global economic recession. The aftermath of this oil price dwindling has been the revenue deficits relative to the expenditures needs of the country, as the country rising budget deficit is worrisome from ₦3,902.10 million in 1981 to ₦8,254.30 million in 1986, ₦15,134.70 million in 1989 but catapulted to ₦133,389.30 million and ₦301,401.60 million in 1998 and 2002 respectively (Central Bank of Nigeria [CBN], 2012). As of 2003-2006, government budget deficits witnessed a moderate declined from ₦202,724.70 million in 2003, ₦172,601.30 million in 2004, ₦161,406.30 million in 2005 and ₦101,397.50 million in 2006 (CBN, 2012). Nigeria's budget deficits rise consistently from ₦1.56 trillion in 2015 to ₦2.79 trillion in 2019 and ₦2.8 trillion in 2020 respectively. While, the budget deficits increased to whopping figure of 5.60 trillion in 2021 and ₦10.78 trillion in 2023, being the country's highest recorded deficit in recent time (PricewaterhouseCoopers [PwC], 2023).

In Nigeria, the contribution of tax revenue to GDP has not met the desires of the government because revenue continued to fall short of government expenditure requirements. The government has similarly communicated this dissatisfaction and has appropriately promised to grow the non-oil tax income (Oluwole, 2023). However, output growth of every country is a function of the nation's ability to harness internal and external revenue sources through taxation, either direct or indirect taxes. Taxation is linked to growth through the decisions of individual economic agents. A change in a tax modifies optimal choices and, via the equilibrium of the economy, ultimately affects the rate of growth. Taxation is one of the most effective means of mobilizing a country's internal resources and creating

an environment that helps to promote economic growth (Okpe et al., 2017). Thus, it is obvious that a good tax structure plays numerous roles in the process of economic growth of any country, and Nigeria is not an exception.

In both theoretical and empirical studies, the connection between taxation and growth has been extensively discussed. As predicted by standard neoclassical growth theory (Solow, 195 and Barro, 1990), for instance, greater taxes may deter people from saving, investing, and starting their own businesses, which would impede economic growth in the long run. Conversely, a lower tax burden is anticipated to encourage productive behavior and boost GDP growth. Nonetheless, the endogenous growth hypothesis argued that the relationship between taxes and growth is far subtler. It makes the case that thoughtfully crafted tax laws that support infrastructure, public goods, and the development of human resources can result in a favourable impact on economic growth, creativity and productivity. Good example of endogenous growth hypothesis is the works of Romer (1990) and Lucas (1988) that incorporate human capital and innovation, showing how taxes on returns to innovation or entrepreneurship can reduce long-term growth rates. Output growth is therefore anticipated to be impacted by the tax structure or composition of taxes, including Company Income Tax, Petroleum Profit Tax, Value Added Tax (VAT), and Customs and Excise Duties.

When choosing their tax system, transitioning nations have used a variety of tax structures. Taxes are a major source of funding for the majority of nations worldwide, and they are often made up of both direct and indirect taxes. While indirect taxes are presumed to be paid by households that purchase taxed goods, direct taxes are presumed to be paid by the factors that generate incomes (Abd Hakim et al., 2022). Corporate tax, income tax, rental income tax, and presumptive income tax are the primary types of direct taxes. Value Added Tax (VAT) and Customs and Excise fees are examples of indirect taxes that are levied on domestic goods and services.

The most important source of funding for many nations worldwide is taxation, But Nigeria has a long history of neglecting this source and focus more on oil revenue, the dwindling in the price of which has led to macroeconomic instability over the years. The Nigerian government must prioritize the welfare of its citizens and finance all activities by utilizing the nation's tax revenue potential if it is to develop in tandem with the nation's progress. Due to many forms of opposition, including evasion, avoidance, and other corrupt practices, mobilizing tax revenue as a source for funding development initiatives in Nigeria has proven to be a challenging issue. These anomalies are quickly cited as the cause of the country's underdevelopment since they are thought to be undermining the economy.

Despite the Nigerian government’s ongoing efforts to reform and fine-tune its tax policies, most recently through the introduction of annual Finance Acts that align with the country’s fiscal policy stance, output growth has remained inconsistent. This is evidenced by the economic recessions in 2016 and 2020, which highlight the challenges of achieving stable economic performance. From 1994 to 2023, this study examines the influence of both direct and indirect taxes, such as Company Income Tax (CIT), Petroleum Profit Tax (PPT), Value-Added Tax (VAT), and Customs and Excise Duty (CED), on Nigeria’s output growth. Despite these reforms, Nigeria’s growth has not been sustained, suggesting that further investigation into the effectiveness of these tax policies is necessary.

2 Literature Review

Debate surrounding impacts of indirect and direct taxes on economic growth remains prominent, especially in developing economies. Thus, the literature review presented empirical evidence from multiple country contexts (primarily Nigeria and selected global regions) spanning various periods and methodologies to analyze how Nigeria's output growth is affected by direct and indirect taxes. Using the Feasible Generalized Least Squares Method, Elshani et al. (2024) investigated the relationship between different forms of tax collection and economic development in developed nations between 1995 and 2020. The findings showed that corporate income taxes and taxes on particular commodities and services had a favorable impact on growth. In contrast, Obadiaru et al. (2024) used the Autoregressive Distributed Lag (ARDL) technique to examine how tax income affected Nigeria's economic growth from 1991 to 2021. The results showed that while corporation income tax (CIT) had a positive effect on GDP, personal income tax (PIT) and value-added tax (VAT) had a negative effect. Similar to this, Balasoiu et al. (2023) examined the effect of direct taxation on economic growth at the level of two major clusters of nations with regard to fiscal efficiency using panel data from all 27 EU countries spanning the years 2008–2020. Both dynamic GMM techniques and fixed effect models were used in the study. According to the empirical findings, corporate income taxes have a major detrimental effect on economic growth in both the high- and limited fiscal efficiency country

clusters. Alfo et al. (2023) examined the impact of taxes on the growth rate of real per capita GDP in a sample of 21 OECD nations between 1965 and 2010. The study used a finite mixture model, which is a semi-parametric method. Taxes have a detrimental effect on growth, according to the results. In the baseline model, the coefficient estimates showed that a 10% reduction in the personal income tax rate (or corporate income tax rate) could increase the GDP growth rate by 0.6% (or 0.3%, respectively). Additionally, the direct-to-indirect tax ratio has a positive correlation with income growth, according to Mamo's (2023) estimation of the links between tax systems and state per capita income development. Growth is typically negatively correlated with indirect taxes, particularly property taxes. There is no discernible correlation between growth and sales taxes, corporate income, or individual income.

Furthermore, John et al. (2023) used the Ordinary Least Squares (OLS) model to examine the impact of direct and indirect tax collections on economic growth in Nigeria. The findings demonstrated that economic growth is significantly positively impacted by direct taxes ($\beta = 0.2029$, p-value = 0.0074) and indirect taxes ($\beta = 0.1229$, p-value = 0.0086). However, Abata et al. (2023) used ARDL regression analysis to examine how direct and indirect taxes affected Nigeria's economic growth. According to the study, direct taxes (LPPT and LCIT) significantly hampered economic expansion. In addition, it showed that while LCED was deemed inconsequential, indirect tax (LVAT) had a favorable and considerable impact on Nigeria's economic growth. In a similar vein, Orji (2023) evaluated the causal relationship between economic growth and the components of indirect tax, including value added tax and customs and excise duties. Panel data from six (6) chosen African nations between 2000 and 2018 were used in the study. ARDL (Autoregressive Distributed Lag) was used to analyze the data. The results showed that while customs and excise taxes had a favorable but negligible impact on the economic growth of a few African nations in the short term, they had a positive and significant association with that growth over the long term. Additionally, the results demonstrated that, in the short-term, value-added tax had a positive but negligible impact on real GDP in the chosen African countries, but that, in the long term, it had no discernible effect on real GDP.

Kwaghfan et al. (2022) investigated how taxes affected Nigeria's economic expansion. The Ordinary Least Squares (OLS) method was used in the study to analyze the data. The findings showed that the Real Gross Domestic Product (RGDP) is negatively impacted by CIT. Value Added Tax (VAT) has a positive but negligible influence on economic growth, and Petroleum Profit Tax (PPT) has a positive but negligible effect on RGDP. While, the RGDP of Nigeria is negatively and negligibly impacted by Customs and Excise Duty (CED). Using the Autoregressive Distributed Lag (ARDL) model and time series data for the Iranian economy from 1973 to 2016, Qavami et al. (2022) determined how sensitive GDP was to direct taxes and VAT. Based on the model estimate's results, direct taxes and VAT variables have a negative and significant influence on GDP in the short term. In the long term, direct taxes have a negative impact on GDP while VAT has a positive impact on output. On the other hand, Garga and Akanegbu (2022) studied how direct taxes affected Nigeria's economic expansion between 1970 and 2020. The study employed multiple regression, linear regression, and the Ordinary Least Squares (OLS) Model as data analytic tools. The study's conclusion showed that corporate income tax had a favorable effect on Nigeria's economic expansion (R-Square = 0.0562, Prob > F = 0.0940). However, Nwachukwu et al. (2022) assessed how taxes affected Nigeria's economic expansion. The study found that VAT, PPT, CIT, and PIT all significantly increase GDP after using OLS to regress the data.

Madubuike et al. (2021) examined the effect of direct and indirect tax revenues on economic growth in Nigeria using the Error Correction Model (ECM). While there was evidence of two distinct unidirectional causalities going from GDP to PPT and CIT as well as a bidirectional causality between CED and GDP, the data showed that PPT, PIT, and VAT had a positive and negligible impact on GDP. However, Bank-Ola's (2021) study, which used the Auto-Regressive Distributed Lag (ARDL) model to analyze the effect of value added tax (VAT) on economic growth in Nigeria from 1999 to 2019, discovered that VAT significantly and negatively affects economic growth. Meanwhile, Korbi and Zani (2021) found that indirect tax revenues tend to have no significant impact in the economic growth. Hakim (2020) investigated the effects and consequences of both direct and indirect taxes on economic growth and total tax revenue in a panel of 51 countries over the period 1992 –2016. The data were estimated using the Dynamic Panel Generalized Method of Moments (GMM) estimation. The results indicated that direct taxes are significant and negatively correlated with the economic growth, while indirect taxes seem to have a positive but insignificant impact on the dependent variable. However, over time, the impact on economic growth was favorable but negligible.

Korkmaz et al. (2019) examined the effects of direct and indirect taxes on Turkey's economic growth. The Autoregressive Distributed Lag (ARDL) method was used in the investigation. According to test results, direct taxes

had a considerable and negative impact on economic growth, while indirect taxes had a positive and significant impact. In line with Ukpabi's (2019) research, there was a substantial positive correlation between economic growth and both value added tax and customs and excise duties. Conversely, there was a negative correlation between customs and excise taxes, although it was evaluated and determined to be negligible. In contrast, Owino (2018) used error correction models in Kenya and found a negative correlation between direct taxes and economic growth and a positive correlation between indirect taxes and economic growth. Akhor and Ekundayo (2016) used error correction model regression to study how indirect tax revenue affected Nigeria's economic growth. The outcome showed that real gross domestic product was significantly and negatively impacted by value added tax. Similarly, previous excise and customs taxes had a negative and marginally significant effect on real GDP. Ibadin and Oladipupo (2015) used time series data covering 34 years, from 1981 to 2014, to investigate how indirect taxes affected Nigeria's economic growth. The Error Correction Model was used in the study. The results showed that there is a positive and significant association between VAT and PPT and RGDP. Further, it was shown that VAT of two-period lags had a negative but significant association with RGDP, while CED of two-period lags had a positive relationship with RGDP.

3 Methodology

The study relied on secondary data from the Federal Inland Revenue Services (FIRS), National Bureau of Statistics (NBS), and Central Bank of Nigeria (CBN) Statistical Bulletin for the years 1994–2023. Barro (1990) Endogenous Growth Model serves as the theoretical framework for this investigation. Robert Barro published "Government Spending in a Simple Model of Endogenous Growth", article that was to reassess economists' view over the relationship between fiscal policy and economic growth. This model was also based on a consumer-producer representative agent set-up, with production function:

$$y = f(\mathrm{k}, \mathrm{g}) = \mathrm{A}\mathrm{k}^{\alpha} g^{1-\alpha} \quad (1)$$

This production function is inspired from Arrow and Kurz (1970), with g (per capita) productive public spending that enhance the private capital marginal productivity (Young, 1928 and Rosenstein-Rodan, 1943). The latter is non-decreasing (constant), thus allowing for perpetual growth. This assumption does not change the IS equilibrium $k = A\,\mathrm{k}^{\alpha} g^{1-\alpha} - c - g$, but the long-run growth rate (from the Keynes-Ramsey relation) becomes:

$$\gamma = \left(\alpha A / (g / k)\right)^{1-\alpha} - \rho) \quad (2)$$

To simplify our analysis, we directly consider the two financing ways presented above. With lump-sum taxes, the government budget constraint is $g = \tau^{L}$, while the representative agent constraint becomes $k = A\,\mathrm{k}^{\alpha} g^{1-\alpha} - c - \tau^{L}$. In this case, the growth rate is the one in (2). However, one may remark that in order to obtain a constant growth rate the ratio g / k should be constant. Denoting, as usual, the steady-state growth rate by γ, this follows that both g and k should grow at this same growth rate in the long-run. From the government budget constraint $g = \tau^{L}$ we can write $g / k = \tau^{L} / k$, thus the ratio τ^{L} / k is constant in steady-state. Let us suppose that this ratio equals $\tau^{L} / k = \rho$. Consequently, the growth rate is:

$$\gamma = S(\alpha A \rho^{1-\alpha} - \rho) \quad (3)$$

Equation (3) emphasizes that a higher ρ ratio raises steady-state growth. For example, a raise in the tax τ^{L} raises the p ratio and long-run growth. Consequently, in this set-up, government can raise long-run growth by raising taxes. Hence, τ^{L} represents tax components that impact output growth, such as Customs and Excise Duty (CED), Value-Added Tax (VAT), Petroleum Profit Tax (PPT), and Company Income Tax (CIT).

However, the model used in this analysis is based on the theoretical framework discussed above and modified model of Macek (2014), who assessed how different tax forms affected the economic growth of OECD nations between 2000 and 2011. The model applied in the study is of the form;

$$GDP_{it} = \alpha + \beta_1 RIN_{it} + \beta_2 HUM_{it} + \beta_3 GOV_{it} + \beta_4 TAX_{it} + \mu_{it} \quad (4)$$

Where, GDP is the growth in gross domestic product per resident in country I at time t, divided by the real GDP per capita in USD (the dependent variable) at purchasing power parity; RINV is the buying power parity per resident of country I at time t, which is an indication of the percentage of real investment to GDP; GOV = Government spending as a percentage of GDP in nation I at time t; HUM = Human capital, which is estimated by the proportion of

individuals with at least a secondary education to the total manpower in country I at time t; TAX = The approximate tax rate in country I at time t, as determined by the World Tax Index (WTI) and tax quota (TQ). The study further, classified different types of taxes according to the tax quota and World Tax Index as follows: PIT = Personal income taxes; CIT = Corporate income taxes; VAT = Value added tax; PRO = Property taxes and OTC = Other taxes on consumption.

However, this study model differs from the last one in that it takes into account how both direct and indirect taxes, such as the Customs and Excise Duty (CED), Value-Added Tax (VAT), Petroleum Profit Tax (PPT), and Company Income Tax (CIT), affect output growth. Equation (4) can therefore be functionally recast as follows in a semi-logarithmic equation:

$$RGDPG_t = \beta_0 + \beta_1 InCIT_t + \beta_2 InPPT + \beta_3 InVAT_t + \beta_4 InCED_t + \varepsilon_t \quad (5)$$

Where, In = Natural logarithm; RGDPG = Real gross domestic product, as the most widely used indicator for output growth; CIT = Company income tax; PPT = Petroleum profit tax; VAT = Value added tax; CED = Customs and excise duty. β_0 = intercept or autonomous parameter estimate and $\beta_1 \ldots \beta_4$ = Parameter estimate representing the coefficient of CIT, PPT VAT and CED, respectively, and ε_t - other factors not explicitly included in the model. Additionally, it is expected that each variable will have a positive coefficient. Further, this research apriori expectations of the parameters to be estimated are as expressed below:

$\beta_1 - \beta_2 < 0$; the coefficients of company income tax and petroleum profit tax are expected to have a negative impact on output growth. Reason be that higher CIT reduces after-tax profits, which can discourage investment and business expansion. While higher PPT reduces profitability of upstream petroleum firms, lowering incentives for exploration, drilling, and production. Similarly, in high-tax environments, oil companies may delay investment, reduce exploration risk-taking, or shift operations to more tax-friendly jurisdictions. Because Nigeria's petroleum industry is highly capital-intensive, tax increases can significantly affect marginal investments.

$\beta_3 > 0$; the coefficient of value added tax is expected to have a positive impact on output growth., since VAT is less distortionary compared to direct taxes (like CIT and PIT). Further, VAT does not tax savings or investment directly, so it can be growth-friendly. While, $\beta_4 < 0$; the coefficient of customs and excise duty is expected to have a negative impact on output growth. By implication, customs and excise duties are trade taxes that directly increase the cost of importing goods and producing excisable goods. Higher customs duties increase production costs for firms relying on imported inputs.

The Augmented Dickey-Fuller method was used in the current study's initial unit root test. The Autoregressive Distributed Lag (ARDL) Model was then used to examine how direct and indirect taxes affected Nigeria's output growth from 1994 to 2023. The ARDL model is specified as follows to run the bound test for cointegration:

$$\Delta Y_t = \beta_0 + \sum_{i=1}^{p} \beta_i \Delta y_{t-1} + \sum_{j=0}^{q} \partial_j \Delta X_{t-J} + \phi_1 y_{t-1} + \phi_2 X_{t-1} + \mu_t \quad (6)$$

Where μ_t represents the disturbance (white noise) term, β_i, ∂_j s, stands for the short-run coefficients, ϕ_1, ϕ_2 stands for the long-run coefficients, and Δ represents the first difference operator. The following is the outcome of converting equation (5) into an ARDL model:

$$\Delta RGDPG_t = \alpha_0 + \sum_{i=1}^{m} \alpha_{1i} RGDPG_{t-i} + \sum_{j=0}^{n} \alpha_{2i} \Delta InCIT_{t-j} + \sum_{k=0}^{o} \alpha_{3i} \Delta InPPT_{t-k} + \sum_{l=0}^{p} \alpha_{4i} \Delta InVAT_{t-l}$$

$$+ \sum_{l=0}^{r} \alpha_{5i} \Delta InCED_{t-l} + \alpha_6 RGDPG_{t-1} + \alpha_7 InCIT_{t-1} + \alpha_8 InPPT_{t-1} + \alpha_9 InVAT_{t-1} + \alpha_{10} InCED_{t-1} + \varepsilon_t \quad -----(7)$$

Using the following equations, the null hypothesis (H0) is tested against the alternative hypothesis (H1) in the bounds test:

$H_0 : \alpha_1 = \alpha_2 = \alpha_3 = \alpha_4 = \alpha_5 = 0$ and $H_1 : \alpha_1 \neq \alpha_2 \neq \alpha_3 \neq \alpha_4 \neq \alpha_5 \neq 0$

The bounds test results obtained from the calculated F-Statistic are similar to those of Pesaran et al. (2001), who rejected the null hypothesis of no cointegration and determined that cointegration between the series exists if the F-

Statistic is greater than the upper bound I (1) in each case. Additionally, the series Error Correction Model is as follows:

$$\Delta RGDPG_t = \alpha_0 + \sum_{i=1}^{m} \alpha_{1i} \Delta RGDPG_{t-i} + \sum_{j=0}^{n} \alpha_{2i} \Delta InCIT_{t-j} + \sum_{k=0}^{o} \alpha_{3i} \Delta InPPT_{t-k} + \sum_{l=0}^{p} \alpha_{4i} \Delta InVAT_{t-l} + \sum_{l=0}^{q} \alpha_{5i} \Delta InCED_{t-l}$$
$$+ ECT_{t-1} + \varepsilon_t \text{ ----------} (8)$$

Where, ECT_{t-1} = Lagged error-correction term. The ECT captures how agents evolve their outputs in response to the previous period of prediction mistakes.

Variables Description

Table 1 provides a detailed explanation of the variables, their descriptions, and the data source.

Table 1 Variable Description and Measurements

Variable	Acronym	Description	Measurement	Source
RGDP growth rate	RGDPG	This measures how fast the economy is growing. It does this by comparing one quarter of the country's GDP to the last	Annual (Percentages)	National Bureau of Statistics (NBS, 2023)
Companies Income Tax	CIT	Tax revenue from taxation of Companies other than PPT	Annual (₦' Billions)	Federal Inland Revenue Services (FIRS, 2023)
Petroleum Profit Tax	PPT	Tax revenue from Companies in Oil & Gas sector	Annual (₦' Billions)	Federal Inland Revenue Services (FIRS, 2023)
Value-Added Tax	VAT	Goods and services tax on value addition	Annual (₦' Billions)	Central Bank of Nigeria (CBN, 2023)
Customs & Excise Duties	CED	Revenue from exports and imports	Annual (₦' Billions)	Central Bank of Nigeria (CBN, 2023)

4 Results

4.1 Unit Root Test

Table 2 Traditional Unit Root Test Results (Trend and Intercept)

Variable	Method	Level	First Diff.
		Stat. (Prob.)	Stat. (Prob.)
RGDPG	ADF	-3.000378** (0.0467)	-4.509787*(0.0015)
CIT	ADF	-0.663292 (0.9991)	-5.175864*(0.0001)
PPT	ADF	-3.096561 (0.1258)	-5.035756*(0.0019)
VAT	ADF	-3.096716 (0.1264)	-7.717181*(0.0000)
CED	ADF	-2.931521 (0.1684)	-5.300135*(0.0011)

Note *, ** Indicates stationary at the 1% and 5% level.
Source Researcher's Computations using E-Views 12

Based on Table 2, RGDP growth rate variable tends to be stationary at level according to the conventional test of the Augmented Dickey-Fuller (ADF). However, all other variables are likely to be stationary in first difference, indicating that each of them becomes stable after taking its first differences. This suggested that the non-stationarity in these variables will need to be addressed in any modeling or forecasting that involves them, usually using methods like differencing or cointegration.

In the bounds method to cointegration, the stationarity properties of the variables are tested because the (ARDL) bounds testing approach is only applicable when I (1), I (0), or a combination of both variables are present. This indicates that when the I (2) variable is present, the bounds testing assumption will break down. Given that all of the variables in this study are integrated of order one, or I (1), the Augmented Dickey-Fuller (ADF) unit root results shown in Table 2 suggest that the limit's testing approach is appropriate.

4.2 Cointegration Tests

All of the variables satisfied the ARDL-bound testing approach, which requires that all of the variables in the equation be static at level or at first difference or change, since they were all determined to be integrated at integrated of order one, or I (1). Co-integration bound test serves to establish the existence of long run equilibrium relationships among variables of interest. If co-integration is discovered among variables, ARDL error correction model becomes applicable. The outcome of the cointegration test is provided in Table 3

Table 3 ARDL Cointegration Result

Null Hypothesis: No Long-run Relationships Exist		
Test Statistic	Value	K
F-Statistic	5.525452	4
Critical Value Bounds		
Significance	Lower Bound	Upper Bound
5%	2.56	3.49

Source E-Views 12-based calculations made by the researcher

It is possible to conclude that the variables are cointegrated because Table 3's cointegration test results showed that, at the 5% significance level, the F-statistic is greater than the critical values at both the lower and upper bounds. After confirming that there is a long-term relationship between the variables, the study estimated the Error Correction Model.

4.3 Model Estimation Results

In light of the cointegration of the dependent variable with the regressors, Table 4 reported the outputs of the estimated error correction and the long-term models as follows:

Table 4 ARDL Regression Outcomes - Dependent Variable: D(RGDPG)

Co-integrating Estimates (ECM Estimates)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(RGDPG(-1))	0.096686	0.110078	0.878343	0.4444
DLOG(CIT)	6.366545	0.914075	6.965013	0.0061
DLOG(CIT(-1))	6.360144	1.903883	3.340617	0.0444
DLOG(PPT)	-1.463890	0.731741	-1.000559	0.1393
DLOG(PPT(-1))	2.700080	0.795139	3.395733	0.0426
DLOG(VAT)	5.531303	1.355746	4.079897	0.0266
DLOG(VAT(-1))	-14.04553	1.646163	-8.532284	0.0034
DLOG(CED)	-3.736110	1.049432	-3.560124	0.0378
DLOG(CED(-1))	15.85117	1.663005	9.531642	0.0024
CointEq(-1)*	-0.520911	0.161756	-9.402512	0.0025
R-squared	0.962813			
Adjusted R-squared	0.883789			

Durbin-Watson stat	2.019489			
	Long Run			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(CIT)	-4.037746	5.378045	-0.750783	0.5073
LOG(PPT)	-1.023609	2.922008	-0.350310	0.7493
LOG(VAT)	10.91418	12.47337	0.874999	0.4460
LOG(CED)	-9.606576	10.16932	-0.944663	0.4145
C	18.87000	11.17078	1.689230	0.1898

Source Researcher's Computation Using EViews-12 (2025)

According to Table 4, every tax measure, including value-added tax, petroleum profit tax, business income tax, and customs and excise charges, has a statistically significant impact on the real gross domestic product growth rate, which is a short-term proxy for output growth that is either level or one period lag. However, none of the regressors statistically and significantly influence output growth in the long-run.

Furthermore, petroleum profit tax, value added tax and customs and excise charges are in conformity with the study theoretical apriori predictions in the short run. However, all the variables conform to this study apriori expectations in the long run. According to the predicted ARDL regression result, company income tax, petroleum profit tax, value added tax, and customs and excise charges are the main short-term major drivers of output growth.

The Error Correction Model is as expected, negatively signed and highly statistically significant at 1% percent level (See Table 4). About 52% of the short-run departure from the equilibrium (long-run) position is adjusted annually to preserve the equilibrium, according to the coefficient's absolute value, which ranges from zero to one. As demonstrated by the model's R-squared value of 0.962813, the explanatory variables accounted for 96% of the variation in output growth. Also, the adjusted R-squared value of 0.883789 demonstrated that the model is still highly good even after accounting for the influence of insignificant estimators. Likewise, the DW statistic of 2.019489 indicated that the problem of serial correlation does not exist. As such, the conclusions of the study can be trusted for formulating policy recommendations.

4.4 Post Diagnostic Tests

This study ran a few diagnostic tests to assess the model's stability and applicability as well as the validity of the results. The results are as provided in Table 5 as follows:

Table 5 Diagnostic Test Results

Test	**Null Hypothesis**	**T-Statistic**	**Prob**
Jarque-Bera	There is a normal distribution	4.114	0.13
Breusch-Godfrey LM	No serial correlation	14.889	0.18
Heteroskedasticity: Breusch-Pagan-Godfrey	No conditional heteroscedasticity	0.777	0.69

Source E-Views 12-based calculations made by the researcher

The results of the heteroscedasticity tests showed that the residuals are homoscedastic, and Table 5 shows that the model did not exhibit serial correlation or heteroskedasticity during the study period. According to the findings of the diagnostic tests for heteroscedasticity and serial correlation, the data behaves fairly well. Additionally, the normal distribution null hypothesis was not rejected because the p-value for the normality test for the research period is greater than 0.05, indicating that the residues are distributed normally and have a uniform distribution.

Stability Test Result

The stability test in Figure 1 also demonstrated that the economic development model is stable over the study period as the plots of the charts lie within the crucial bounds at 5% significant level. In accordance with Bahmani-Oskooee and Rehman (2005), when the plot of these data falls within the crucial bounds at the 5% significant level, the null hypothesis—which holds that the regression equation is correctly specified—cannot be rejected.

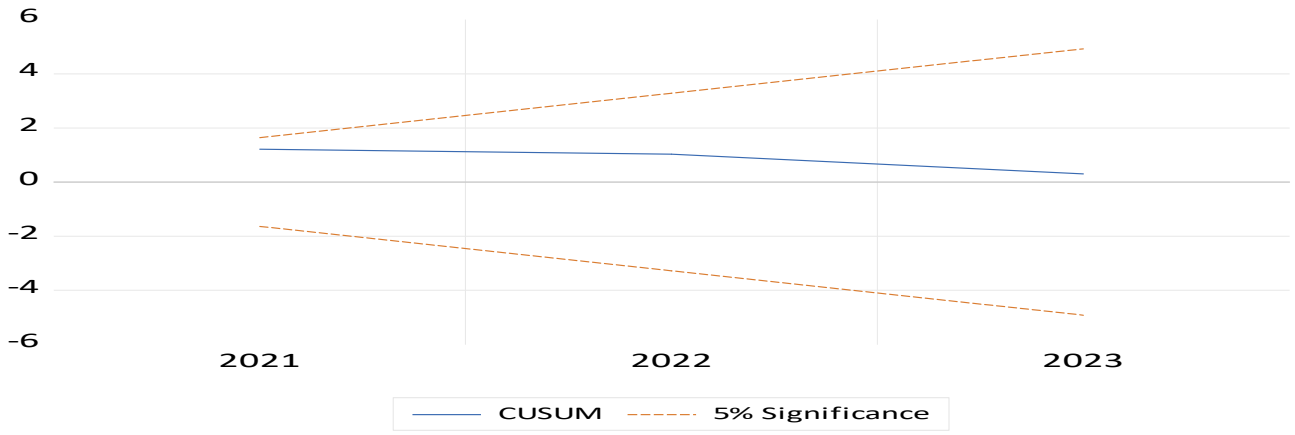

Figure 1 Stability Tests Result

Source Researcher's Plot Utilizing E-Views 12

5 Discussions

To avert erroneous results and to identify the order of integration, the variables were analyzed for their stochastic features, using the Augmented Dickey-Fuller (ADF). The results of the stationarity test in Table 2 shows that RGDP growth rate variable tends to be stationary at level according to the conventional test of the Augmented Dickey-Fuller (ADF). However, all other variables are likely to be stationary in first difference, indicating that each of them becomes stable after taking its first differences.

that all five variables (RDGP, CIT, PPT, VAT, and CED) are integrated of order one, or I(1), based on the unit root test result. This means that each variable becomes steady after taking its initial differences. This showed that the non-stationarity in these variables will need to be addressed in any modeling or forecasting that contains them, commonly utilizing approaches like differencing or cointegration.

Thereafter, the ADRL-bounds testing approach is used to assess whether a long-run cointegration relationship exists amongst direct, indirect taxes and output growth. At the 5% significance level, the null hypothesis that there is no long-term link is thus rejected. The estimated ARDL regression suggested that all tax measures such as company income tax, petroleum profit tax, value added tax and customs and excise duties have statistically significant influence on RGDP gross domestic product growth rate, measure for output growth in the short-run ether at level, or one period lagged. However, none of the regressors statistically and significantly influence output growth in the long-run. Furthermore, petroleum profit tax, value added tax and customs and excise charges are in conformity with the study theoretical apriori predictions in the short run. However, all the variables conform to this study apriori expectations in the long run. Company income tax, petroleum profit tax, value added tax, and customs and excise duties are the main short-term significant drivers of output growth, according to the estimated ARDL regression result.

Variable-by-variable study indicates that company income tax has a strong positive short-term influence on output growth; specifically, for every percentage increase in company income tax, Nigerian output growth will increase by 6.37%. This outcome is inconsistent with theoretical prediction because it is anticipated that higher CIT reduces after-tax profits, which can discourage investment and business expansion. However, this study outcome does not align with the studies of Elshani et al. (2024), Nwachukwu et al. (2022), and Madubuike et al. (2021) who all reported that company income tax has significant and positive impact on growth. However, the findings of Abata et al.

(2023) and Balasoiu et al. (2023), who asserted that company income tax significantly negatively impact growth are consistent with this finding.

The findings, on the other hand, demonstrated that the petroleum profit tax has a negative short-term impact on production growth, meaning that a one percent rise in the tax will reduce output growth by -1.46% in the short run, ceteris paribus. This outcome is consistent with the a priori expectations of the investigation as higher PPT reduces profitability of upstream petroleum firms, lowering incentives for exploration, drilling, and production. Similarly, in high-tax environments, oil companies may delay investment, reduce exploration risk-taking, or shift operations to more tax-friendly jurisdictions. Because Nigeria's petroleum industry is highly capital-intensive, tax increases can significantly affect marginal investments. Furthermore, this outcome is not the same as that of Kwaghfan et al. (2022), Garga and Akanegbu (2022) and Nwachukwu et al. (2022) who observed that Petroleum Profit Tax (PPT) had positive impact on economic growth. Over an extended period, however, there is a negative correlation between Nigeria's output growth and the petroleum profit tax. Consequently, 1% increase in petroleum profit tax, will lead to a decrease of -1.02 in output growth in the long run. This outcome is line with the studies of Qavami et al. (2022) and Owino (2018) that found negative relationship between direct tax such as petroleum profit tax and economic growth in the long run.

Value-added tax and output growth were directly correlated in both the short and long term, based on the estimated ARDL regression result. Value-added tax makes up around 5.53% and 10.91% of total output growth both the short and long run, respectively. This finding aligns with the studies conducted by Abata et al. (2023), Nwachukwu et al. (2022) Hakim (2020) Korkmaz et al. (2019), Ukpabi (2019) that suggested a positive and significant impact of indirect taxes on economic growth. However, this outcome is not the same as that of Qavami et al. (2022), Korbi and Zani (2021) and Bank-Ola (2021) who found that in the short run, VAT and direct taxes variables have a negative and significant effect on GDP in the long run.

The coefficient of customs and excise duties is negative in the short run and long run respectively. More specifically, one percentage increase in customs and excise charges will lead to a drop in growth by -3.74% in the short-run and -9.61% in the long-run. This outcome is consistent with theoretical expectations, as higher customs duties increase production costs for firms relying on imported inputs. Additionally, this finding is consistent with that of Akhor and Ekundayo (2016) and Ibadin and Oladipupo (2015) who discovered that custom and excise duties had a negative impact on growth. Meanwhile, this result contradicts the findings of a study by Orji (2023), Kwaghfan et al. (2022), Ukpabi (2019) that custom and excise duties had a positive and significant relationship with growth.

6 Conclusions

This study focused on the impact of petroleum profit tax (PPT), value added tax (VAT), company income tax (CIT), and customs and excise duties (CED) on output growth in Nigeria between 1994 and 2023. The Autoregressive Distributed Lag (ARDL) technique was employed. The estimated ARDL regression result revealed that all tax measures have statistically significant influence on growth in the short-run. None of the explanatory factors, however, have a statistically significant impact on the long-term growth of output. The no significant long term impact of tax measures on growth of output could be attributed to structural factors such as institutional quality, governance efficiency, corruption, tax administration effectiveness that may mediate the long-run effects of taxation on growth.

Hence, this study suggested that tax authorities, like the Federal Inland Revenue Services (FIRS), should leverage on Company Income Tax (CIT) in the short run to stimulate economic activity, given its significant positive impact on output growth. However, the Federal Inland Revenue Services (FIRS) should avoid over-reliance on Company Income Tax (CIT) in the long term, as excessive CIT increases could potentially hinder economic growth. Upstream Petroleum Regulatory Commission and Midstream and Downstream Petroleum Regulatory Authority of Nigeria should consider reviewing and reducing the existing Petroleum Profit Tax (PPT) rate or introduce tax incentives for investment in the petroleum sector, as increasing PPT has shown negative impacts on both short- and long-term output growth. Upstream Petroleum Regulatory Commission and Midstream and Downstream Petroleum Regulatory Authority of Nigeria can achieve this through introduction of a bill to the National Assembly to review the existing Petroleum Profit Tax (PPT) Act. The Federal Inland Revenue Services (FIRS) in conjunction with the Tax and Fiscal Policy reforms committee should consider recommending for raising VAT rates or broadening the VAT base, as VAT positively impact output growth in both the short and long term. This will help generate more revenue without hurting economic

performance. Also, the Nigeria Customs Service should reassess and reduce customs and excise duties, as these taxes currently have a negative impact on output growth. Streamlining these duties could enhance trade flows and boost industrial activity. However, a long-term strategy for tax reform in Nigeria calls for alignment of tax-policy design with stronger institutions and public-spending quality. Tax reform alone is insufficient; only when revenue is raised transparently and spent effectively will taxes support sustained growth.

Further, since this study found no long-run significant impact of all tax variables on output growth, future studies could investigate structural factors (institutional quality, governance efficiency, corruption, tax administration effectiveness) that may mediate the long-run effects of taxation on growth. Also, further studies could apply models that capture non-linear and threshold effects (e.g., Threshold ARDL, Markov-switching models), to determine whether tax-growth relationships change beyond specific tax burden thresholds.

6.1 Social and Managerial Implications

The findings of this study carry important social and managerial implications for fiscal authorities, policymakers, and economic managers in Nigeria. First, the evidence that tax instruments significantly affect output growth in the short run underscores the need for strategic and responsive tax management, rather than uniform tax increases. Managers within revenue-generating agencies such as the Federal Inland Revenue Service (FIRS) and the Nigeria Customs Service must prioritise efficiency, transparency, and optimal tax mix, ensuring that tax policies stimulate productive economic activities rather than constrain them.

Socially, the negative growth effects associated with petroleum profit tax and customs and excise duties suggest that excessive taxation in capital-intensive and trade-dependent sectors may indirectly affect employment, income generation, and welfare. When firms face higher production and import costs, the burden is often transferred to consumers through higher prices, potentially exacerbating inequality and reducing purchasing power. Therefore, tax policy must balance revenue mobilisation with social welfare considerations to ensure inclusive growth.

From a managerial perspective, the absence of long-run tax-growth significance highlights the importance of institutional quality, governance effectiveness, and sound public expenditure management. Tax administrators and public-sector managers must focus on strengthening tax administration systems, reducing leakages, and ensuring that tax revenues are channelled into productive infrastructure, human capital development, and social services that support sustainable growth.

6.2 Implications for Nigeria's 2026 Tax Regime

The results of this study provide timely insights for shaping Nigeria's 2026 tax regime. Given the significant short-run positive impact of Company Income Tax (CIT) on output growth, policymakers may utilise CIT as a short-term countercyclical tool to stimulate economic activity. However, caution is required to avoid excessive reliance on CIT, as persistent increases could discourage private investment and business expansion in the long run.

The consistently negative effects of Petroleum Profit Tax (PPT) on output growth, both in the short and long run, suggest the need for urgent reforms in the petroleum tax framework. For the 2026 tax regime, reducing PPT rates, introducing targeted tax incentives, or adopting more flexible fiscal terms could enhance investment, production, and competitiveness in the petroleum sector, especially in a global environment characterised by energy transition and capital mobility.

The positive and significant contribution of Value Added Tax (VAT) to output growth in both time horizons indicates that VAT remains a relatively growth-friendly revenue source. Consequently, the 2026 tax regime could focus on broadening the VAT base, improving compliance, and strengthening administration, rather than aggressive rate hikes that may fuel inflationary pressures.

Furthermore, the negative impact of customs and excise duties implies that trade-related taxes should be rationalised. Reducing excessive import duties on productive inputs and streamlining excise charges can support industrial growth, improve trade competitiveness, and align Nigeria's tax system with regional and global trade objectives.

6.3 Future Research Directions

Given the absence of significant long-run effects of taxation on output growth, future studies should explore structural and institutional mediating factors such as governance quality, corruption, public spending efficiency, and tax administration effectiveness. Understanding how these factors interact with tax policy can provide deeper insights into why tax revenues fail to translate into sustained economic growth.

Further research could also apply non-linear and regime-switching models, such as Threshold ARDL, Smooth Transition Regression, or Markov-switching models, to determine whether the tax-growth relationship changes beyond certain tax burden thresholds. This would help identify optimal tax ranges that support growth without imposing excessive distortions.

Additionally, future studies may expand the scope by incorporating other fiscal and macroeconomic variables, including government expenditure composition, public debt, inflation, and monetary policy interactions. Cross-country or regional comparative studies could also offer valuable lessons by benchmarking Nigeria's tax-growth dynamics against peer economies. Finally, disaggregated sectoral analyses would be useful to assess how different taxes affect specific sectors such as manufacturing, agriculture, and services, thereby supporting more targeted and evidence-based tax reforms.

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Data Availability Statement

The study relied on secondary data from the Federal Inland Revenue Services (FIRS), National Bureau of Statistics (NBS), and Central Bank of Nigeria (CBN) Statistical Bulletin for the years 1994–2023 which are publicly available.

Conflict of Interest

The authors declare that there are no conflicts of interest related to this study.

Declaration of Generative AI Use

Generative AI tools were used solely for language editing, including grammar and formatting. AI was not used in the study design, data collection, analysis, interpretation, or conclusions. The author(s) take full responsibility for the content and integrity of this manuscript.

References

Abata, M. A., Osamor, I. P., & Elluh, C. C. (2023). The effect of direct and indirect taxes on economic growth: Evidence from Nigeria. *EPRA International Journal of Economics, Business and Management Studies, 10*(6), 87–97.

Abd Hakim, T., Karia, A. A., David, J., Ginsad, R., Lokman, N., & Zolkafli, S. (2022). Impact of direct and indirect taxes on economic development: A comparison between developed and developing countries. *Cogent Economics & Finance, 10*(1), Article 2141423. https://doi.org/10.1080/23322039.2022.2141423

Akhor, S. O., & Ekundayo, O. U. (2016). The impact of indirect tax revenue on economic growth: The Nigeria experience. *Igbinedion University Journal of Accounting, 2*, 62–87.

Akpan, M. S. (2017). *On the need to devalue the naira: Let me take up the gauntlet* (Policy Enlightenment Essay No. 4).

Alfò, M., Carbonari, L., & Trovato, G. (2023). On the effects of taxation on growth: An empirical assessment. *Macroeconomic Dynamics, 27*(5), 1289–1318. https://doi.org/10.1017/S1365100521000386

Bahmani-Oskooee, M., & Rehman, H. (2005). Stability of the money demand function in Asian developing countries. *Applied Economics, 37*(7), 773–792. https://doi.org/10.1080/0003684052000343753

Balasoiu, N., Chifu, I., & Oancea, M. (2023). Impact of direct taxation on economic growth: Empirical evidence based on panel data regression analysis at the level of EU countries. *Sustainability, 15*(9), Article 7146. https://doi.org/10.3390/su15097146

Bank-Ola, R. F. (2021). Value added tax administration and economic growth in Nigeria. *Global Journal of Education, Humanities and Management Sciences, 3*(1), 88–106.

Barro, R. J. (1990). Government spending in a simple model of endogenous growth. *Journal of Political Economy, 98*(5), S103–S125. https://doi.org/10.1086/261726

Central Bank of Nigeria. (2000). *Annual report and statement of accounts for the year ended 31 December*. CBN Digital Commons.

Central Bank of Nigeria. (2012). *Economic and financial review* (Vol. 50, No. 1). Central Bank of Nigeria.

Central Bank of Nigeria. (2014). *Annual report and statement of accounts for the year ended 31 December*. CBN Digital Commons.

Central Bank of Nigeria. (2022). *Annual economic report*. https://www.cbn.gov.ng/Out/2024/RSD/2022%20ANNUAL%20REPORT.pdf

Central Bank of Nigeria. (2024). *Annual report and statement of accounts for the year ended 31 December*. CBN Digital Commons.

Elshani, A., Shaqiri, V., & Ahmeti, S. (2024). The effect of direct and indirect taxes on economic growth in developed countries. *Ekonomika, 103*(2), 123–139.

Garga, M. I., & Akanegbu, B. (2022). An analysis of the impact of direct taxes on the economic growth of Nigeria (1970–2020). *Journal of Global Economics and Business, 3*(9), 39–52.

Hakim, T. A. (2020). Direct versus indirect taxes: Impact on economic growth and total tax revenue. *International Journal of Financial Research, 11*(2), 146–153. https://doi.org/10.5430/ijfr.v11n2p146

Ibadin, P. O., & Oladipupo, A. O. (2015). Indirect taxes and economic growth in Nigeria. *Ekonomska Misao i Praksa, 24*(2), 345–364.

John, S. A., Shehu, M. T., & Nwaoko, C. (2023). Effect of direct and indirect taxes on economic growth in Nigeria. *Metropolitan Journal of Business & Economics, 2*(8), 264–279.

Korbi, A., & Zani, B. (2021). The impact of direct and indirect taxes on economic growth: An empirical study in Albania. *Journal of Danubian Studies and Research, 11*(2), 48–61.

Korkmaz, S., Yilgor, M., & Aksoy, F. (2019). The impact of direct and indirect taxes on the growth of the Turkish economy. *Public Sector Economics, 43*(3), 311–323. https://doi.org/10.3326/pse.43.3.4

Kwaghfan, A., Ujah, A., & Kwanum, I. (2022). An analysis of taxation and economic growth in Nigeria. *UMYU Journal of Accounting and Finance Research, 3*(1), 154–169.

Lucas, R. E. (1988). On the mechanics of economic development. *Journal of Monetary Economics, 22*(1), 3–42. https://doi.org/10.1016/0304-3932(88)90168-7

Macek, R. (2014). The impact of taxation on economic growth: Case study of OECD countries. *Review of Economic Perspectives, 14*(4), 309–328. https://doi.org/10.2478/revecp-2014-0015

Madubuike, K. O., Nwaoha, W. C., Onwuka, O. O., Chukwu, M. K., & Atanu, E. Y. (2021). A unit root approach of the impact of direct and indirect taxes on Nigeria economy. *Academic Journal of Current Research, 8*(4), 55–73.

Mamo, M. (2023). Direct versus indirect taxes and state income growth in the USA: 1991–2015. *Eastern Economic Journal, 49*, 516–548. https://doi.org/10.1057/s41302-022-00236-7

Nwachukwu, R. C., Nwoha, C., & Inyama, O. (2022). Effect of taxation on economic growth in Nigeria. *International Journal of Innovative Finance and Economic Research, 10*(4), 179–193.

Obadiaru, E., Okon, B., & Ayeni, A. (2024). The impact of tax revenue on economic growth in Nigeria. *International Journal of Multidisciplinary Research and Growth Evaluation, 5*(1), 566–571.

Okpe, I. I., Duru, A. N., & Ezeoma, S. (2017). Effect of tax revenue on economic growth in Nigeria. *Journal of Arts and Management, 2*(3), 85–103.

Oluwole, A. (2023). Re-assessing the relationship between tax revenue and economic growth in Nigeria (1980–2020). *World Scientific News, 176*, 1–26.

Orji, U. O. (2023). Indirect tax components and economic growth of selected African countries: Panel autoregressive distributed lag approach. *Journal of Management and Accounting, 6*(1), 69–84.

Owino, O. B. (2018). The trade-off between direct and indirect taxes in Kenya: An empirical analysis. *Journal of Economics and Development Studies, 6*(4), 187–201. https://doi.org/10.15640/jeds.v6n4a18

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics, 16*(3), 289–326. https://doi.org/10.1002/jae.616

PricewaterhouseCoopers. (2023). *Tax data card: Nigeria*. https://www.pwc.com/ng/en/assets/pdf/nigeria-tax-data-card-2023.pdf

Qavami, H., Shabani, M. A., & Rahimi, R. (2022). Comparison of the effect of value added tax and direct taxes on Iran's economic growth. *Journal of Business & Economic Policy, 9*(4), 51–61.

Romer, P. M. (1990). Endogenous technological change. *Journal of Political Economy, 98*(5), S71–S102. https://doi.org/10.1086/261725

Solow, R. M. (1956). A contribution to the theory of economic growth. *Quarterly Journal of Economics, 70*(1), 65–94. https://doi.org/10.2307/1884513

Ukpabi, A. L. (2019). Impact of indirect taxation on economic growth in Nigeria. *International Journal of Advanced Engineering Research and Science, 6*(5), 54–60. https://doi.org/10.22161/ijaers.6.5.8