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Article

Government Generated Revenue and Per Capita Income in Nigeria

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Abstract: This research looks at the connection between Nigeria's per capita income and government-generated revenue. Because of Nigeria's very low income levels, increasing government revenue via taxes, borrowing, and public investment has caused economists to question how effectively fiscal resources are used to improve the welfare of the populace. To understand how government income and investment contribute to economic development and the welfare of people, we examined the Wagner law of public spending, the Keynesian theory of public expenditure, and endogenous growth theory. The study employs a positivist research philosophy and an ex post facto research design. Nigeria's macroeconomic fiscal statistics make up the study population, while yearly time series data from 1986 to 2024 make up the sample. The World Bank Development Indicators and the Central Bank of Nigeria Statistical Bulletin were the primary secondary sources from which the data were gathered. For the data analysis at a five percent significance level, we used descriptive statistics, the Augmented Dickey-Fuller unit root test, the Johansen cointegration test, and a parsimonious error correction model. The findings indicate a positive but negligible correlation between government taxes and per capita income. In Nigeria, government investment and per capita income are positively and significantly correlated, whereas government debt and per capita income are negatively and significantly correlated. Based on these results, we draw the conclusion that raising income levels requires effective government investment. The report recommends more investment in the productive areas of the economy, careful debt management, and better tax administration. By providing actual data on the impact of government-generated revenue on Nigeria's per capita income level, the study advances knowledge.

Keywords: Public revenue, government taxation, government debt, government investment, per capita income, Nigeria.

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1. Introduction

One way that governments support economic growth and enhance the quality of life for the citizenry is via internally generated income (IGR). Fiscal capacity, or government income, is what gives governments in developing nations like Nigeria the money they need for social welfare programs, infrastructure, and public services. Taxes, government investments, and borrowing, including foreign loans, are common sources of publicly produced revenue. These financial resources assist governments in boosting economic activity and raising residents' standards of life. Per capita income, which is the average income received by an individual in an economy and is a key indication of economic well-

being and living standards, is one crucial metric used to assess or ascertain the welfare impact of government revenue [1].

The most dependable and long-term source of funding for the government is still taxes. Value-added tax (VAT), corporation income tax, petroleum profit tax (PPT), and personal income tax are examples of taxes that provide the government the money it needs to undertake development initiatives and make public goods possible. According to empirical research, tax revenues are crucial for boosting government investment capacity and economic growth [2]. For instance, the way Nigeria's tax system operates reveals that non-oil tax revenue contributes significantly to the country's economy and may influence income levels via social expenditure and government infrastructure. Despite these advantages, Nigeria's tax structure is very weak and has historically had a low tax-to-GDP ratio when compared to other countries; however, recent changes have raised the ratio to around 13.5 percent [3]. This suggests that the nation still struggles to raise enough taxes to fund its growth.

Another important component of government-generated revenue is debt. In developing nations, where domestic revenue sources might not be sufficient to meet development needs, governments turn to borrowing to finance fiscal deficits and large-scale infrastructure projects. Over-reliance on foreign debt, however, may have negative effects, such as hefty debt payment costs. This might have an effect on income growth by reducing the resources available for development expenditure in an economy [4]. Nigeria's national debt has increased recently, reflecting government deficits and efforts to fund economic initiatives. If used appropriately, foreign borrowing may aid in economic growth, but policymakers are very concerned about the sustainability of such borrowings. Additionally, government investments are essential for transferring public funds for the welfare of the economy. The government makes investments in businesses that create income, which increases the total amount of money made over time. Infrastructure, education, healthcare, and technology are examples of economic areas where public investment boosts income levels, increases productivity, and creates job possibilities. Research demonstrates that capital investment and government income have a significant role in Nigeria's economic expansion and development [5].

Despite all these sources of revenue avaukable to the government, a significant portion of Nigerians continue to live in poverty and have relatively low incomes. The efficiency of public income in enhancing citizen welfare has been limited by issues such as ineffective revenue mobilization, corruption, fiscal mismanagement, and the growing debt load. Therefore, understanding how fiscal resources can be effectively used to improve living standards in Nigeria requires an examination of the nature of the relationship between government-generated revenue, which is proxied by government taxation, foreign debt, and government investments, and per capita income [6].

The relationship between government revenue and macroeconomic performance in Nigeria and other emerging nations has been examined in a number of scholarly publications. Taxation as an incentive for economic growth and development has been the subject of several academic works. For example, Ogbonna and Ebimobowei [7],Saibu and Sinbo [8] and Omodero [9] discovered that tax income contributes significantly to economic growth by funding government spending and development initiatives. More recent research, such as Osamor et al [10] and Okereke et al[11], shows that tax-generated revenue is crucial for fostering economic growth, but how much impact it has relies mostly on how well public revenues are used and how efficiently they are administered. Studies on the effects of borrowings on economic development and growth have also been conducted. Empirical studies by Ezeabasili et al [12], Ajayi and Oke [13] and Oluwadare et al [14] on foreign debt may be a source of development if it is deployed profitably, but it could also add to fiscal burdens if an economy is overburdened by debt payment obligations [15].

Even though these contributions exist, a number of current studies focus more on welfare-oriented metrics like per capita income, which are more directly related to citizens' financial well-being, than on aggregate economic growth indicators like GDP [16], [17]. Additionally, rather than placing government taxes, foreign debt, and government investments in a cohesive framework of government-generated income, a number of studies examine taxation, public debt, and government spending separately [18]. Studies like Nurudeen and Usman and Oyinlola and Akinnibosun [19],focused on economic growth and government spending without specifically evaluating the combined impact of several public revenue sources on per capita income. Because more research is required, there is still a significant vacuum in the empirical literature about the impact of various publicly produced revenue streams on Nigeria's per capita income [20].

Research Hypotheses

In consonance with the research questions posed above, the underlisted research hypotheses are fomulated in the null form:

H_{01}: Government taxation does not significantly influence per capita income in Nigeria

H_{02}: There is no significant relationship between government debt and per capita income in Nigeria

H_{03}: No Significant relationship exists between government investments and per capita income in Nigeria.

The money that the government raises from both internal and external sources to finance public expenditures and development is known as government-generated income. The government is able to offer public goods and services because of the revenue it receives from taxes, borrowing, investments, and other fiscal initiatives. According to economists, state revenue is a crucial instrument for promoting economic stability, wealth redistribution, and sustainable development. These funds help governments build infrastructure, provide healthcare, education, security, and other social services that improve welfare provision and economic productivity. Taxation, which involves the government receiving mandatory payments from people and organizations without a reciprocal exchange, remains one of major sources of government-generated revenue. In many nations, a large fraction of government revenue comes from taxes, including value-added tax (VAT), corporation tax, and income tax. Governments that generate fund domestically with the aid of efficient tax systems, become less dependent on outside borrowings, and support to fund their long-term development plans.Despite a number of fraudulent tax practices: tax frauds, inefficient tax administration, tax evasion and an over reliance on oil income, taxes are an essential tool for funding government programs in Nigeria.

Foreign debt, or money borrowed from international financial institutions, foreign governments, and foreign creditors, constitutes another major source of government income. Borrowed funds are often utilized to assist governments in funding capital projects and budget shortfalls. However, improper debt management may lead to fiscal vulnerabilities and debt-servicing responsibilities when there is an excessive reliance on foreign debt. Another significant source of government income is government investments, particularly when it comes to profits from public sector and state-owned firm investments. These investments have the potential to increase government income while simultaneously fostering employment and economic expansion. When handled rightly, public revenue is a veritable tool that increases both national income and citizen welfare.

The average income of an individual in a nation or area during a certain period of time (usually a year) is known as per capita income. It is computed by dividing a nation's gross domestic product (GDP) or total national income by its total population. Many

people view per capita income as a key measure of a nation's economic performance, quality of life, and degree of economic progress [21]. This metric is often used by economists and policymakers to compare economic wellbeing across nations, and to assess gains in citizen welfare. A country's per capita income provides information on how its economic resources are distributed. Per capita income rises when national income exceeds population growth, suggesting an improvement in living standards. However, per capita income may decline when population expansion outpaces economic development, implying a decline in economic wellbeing. As a result, improved access to infrastructure, healthcare, education, and other critical services required for human development is often associated with steady rise in per capita income [22].

Per capita income is one of the important metrics for evaluating the effectiveness of fiscal and policy initiatives in developing nations like Nigeria. It is anticipated that public funds obtained from taxes, foreign borrowing, and government investments would be used in a way that will promote economic expansion and increase income levels. Government revenue may boost productivity, generate employment, and eventually raise per capita income when it is allocated to productive areas like infrastructure, education, and industrial growth [23], [24]However, since per capita income measures average income rather than income dispersion, it has certain limitations as a welfare metric. Due to uneven income distribution, a nation with a high per capita income may have a sizable portion of her citizen living in poverty. However, it continues to be one of the most widely used metrics for evaluating the state of the economy and the welfare effects of governmental actions [25].

Wagner's Law of Public Expenditure is a fundamental hypothesis that explains the connection between government-generated revenue and per capita income. Adolph Wagner, a German economist, proposed the notion in the late 1800s. According to Wagner's theory, government spending tends to increase both proportionally and absolutely as an economy grows. The demand for public services, including infrastructure, education, healthcare, and social welfare programs, rises as a result of economic expansion [26]. Wagner's Law states that the flow of governmental operations is a normal result of economic growth. Citizens want improved living conditions and public services as income levels rise. In order to satisfy these expectations, governments raise their spending and revenue-generating requirements. Financing these expanding government services requires government-generated cash, particularly from taxes and investments [27].

Therefore, increased government revenue may lead to more public investments, which would raise economic welfare and raise per capita income [28]. Wagner's Law, which applies to the Nigerian economy, states that if government revenue is raised through taxes, foreign borrowing, and government investments, this should lead to a corresponding increase in government spending on public services and infrastructure, which will raise the social welfare and economic well-being of the populace. Wagner's Law is relevant in emerging countries where government investment is crucial to economic growth, according to a wealth of empirical research [29].Critics contend that the theory ignores the opposite effect of government spending on economic development and instead posits a one-way link between government spending and economic growth. Wagner's Law remains a crucial theoretical framework for understanding the growth of government income and its impact on economic wellbeing in spite of this critique.

The Keynesian theory presented in his groundbreaking 1936 book The General Theory of Employment, Interest Rate, and Money serves as another theoretical basis for this essay. Keynes supports the use of fiscal policy by the government to stabilize the economy and promote growth, particularly during periods of economic contraction or a lack of private sector investment [30].Keynesian economics holds that government spending and revenue have a significant impact on an economy's level of aggregate demand. A shift in aggregate demand can result in economic activity that raises income

levels and creates more jobs when governments use the money they receive from taxes and borrowing to fund other economic sectors like industries, healthcare, and education. Therefore, increasing per capita income may result from efficient use of public funding.

Keynesian economists also emphasize the need of foreign borrowing and deficit financing in fostering economic development in emerging nations when indigenous resources may be scarce. It is also possible to finance capital projects, boost economic activity, and encourage output using borrowed cash, such as foreign debt. Proper management of these assets might lead to higher living standards and national revenues. For example, in Nigeria, the Keynesian framework offers the fundamental theoretical knowledge of how public investment and government revenue collection contribute to economic development and the wellbeing of the populace. An economy's income level may rise as a result of government spending, which is funded by taxes and borrowing [31]. However, detractors of the Keynesian theory argue that improper management of gross government borrowing and spending may result in inflation, fiscal deficits, and long-term debt. However, the Keynesian view is also important in understanding how government spending and income contribute to economic growth [32].

Endogenous Growth Theory

The endogenous growth hypothesis is another significant theory that attempts to explain the relationship between government-generated revenue and per capita income. The economists Paul Romer and Robert Lucas [33] established this idea. These academics contended that both internal and external forces contribute to economic progress. In order to sustain long-term economic growth, endogenous growth theory emphasizes the significance of public investments, technical innovation, and human capital development. This theory states that government policies and public investments may have a significant impact on the pace of economic development by promoting productivity increases, technical advancements, and knowledge accumulation [34].

Government-generated income enables governments to finance expenditures in infrastructure, technology, education, and research and development—all of which are essential forces behind economic expansion. These investments raise the domestic economy's potential for production and lead to steady growth in income levels. Per capita income rises in tandem with economic production and productivity. According to the endogenous growth paradigm, infrastructure and human capital investments might be used efficiently in emerging nations like Nigeria to make use of public funds and guaranty long-term economic development and living standards. Long-term increases in per capita income may result from government expenditures funded by borrowing and taxes that increase productivity and foster innovation. Despite its advantages, endogenous growth theory has come under fire for overemphasizing the role of government intervention while undervaluing the significance of institutional and market forces in economic development. However, the theory is still useful for comprehending how investments, government policies, economic growth, and income levels are related [34], [35].

By concentrating on tax structure rather than total tax income, Willie and Micah [36], expanded the tax literature. The time series data of Nigeria's collected taxes from 1996 to 2024 were analyzed using the ARDL model, which included both direct and indirect taxes as explanatory factors and GDP growth rate and per capita income as dependent variables. Empirical research revealed that direct taxes had a negative and substantial impact on per capita income, but indirect taxation had a positive and statistically significant effect. Because it demonstrates that different types of taxes have different impacts on welfare, this study is very useful to the current research. Therefore, it emphasizes the need of breaking down government taxes in terms of government-generated revenue and how it affects citizen welfare and per capita income [37].

Using GDP and per capita income as development indicators, and foreign and domestic debt data as the primary explanatory variable, Odey investigated governmental

debt and economic growth in Nigeria from 2007 to 2022. The study used canonical correlation in the SPSS statistical program for data analysis and causal-comparative research. The findings showed a strong correlation between governmental debt levels and economic growth, including per capita income. As a result, the author suggested that the Debt Management Office make sure that loans be allocated to investments. This research is particularly pertinent to the current study because it shows a direct correlation between debt and per capita income and can bolster the claim that foreign debt can only be used to improve welfare conditions if it is transformed into productive assets rather than being continuously utilized for recurrent or consumptive purposes.

Okereke et al used information technology as a moderating element in tax administration and looked at tax revenue and sustainable economic growth in Nigeria. The authors analyzed time-series data from 1990 to 2021 using partial correlation and regression techniques, using real GDP and the Human Development Index as measures of development and company income tax, petroleum profit tax (PPT), and tertiary education tax as proxies for tax revenue. According to their results, tax income has the potential to boost Nigeria's economic growth, but information technology improved the link by having a positive moderating impact that was not statistically significant. This research is pertinent to this article because it bolsters the claim that government taxation could boost citizens' well-being; however, the degree of this effect depends on how well taxes are administered [38].

Oluwadare et al used GDP, HDI, and the misery index as development indicators to examine how foreign debt affects Nigeria's economic growth. Ex post facto descriptive techniques, unit root testing, and cointegration analysis were used in the design of study. The Central Bank of Nigeria (CBN) provided secondary data. The study made the case that although foreign debt might be a useful tool for development projects if properly managed, there are hazards associated with debt buildup, such as opportunity costs for current and future generations and debt repayment. Since foreign debt is one of the main proxies of government-generated income in our model, the study is pertinent to the present endeavor because, it demonstrates that debt-financed development is contingent upon prudent debt management and effective debt deployment [39].

Onyendi et al examined the impact of public debt servicing costs on Nigeria's per capita production, advancing the welfare dimension. The study found that debt servicing cost contributes to population poverty. The study used secondary data from the Central Bank of Nigeria (CBN) and econometric tools such as the Granger causality test, ARDL, and unit root test. This suggests that per capita output can only increase if the debt servicing burden is reduced. This study is very pertinent to the present research because it shows that public and external borrowing may provide fiscal resources in the near term, but over time, as the service load grows, the same debt can restrict welfare and lower per capita income.

By examining public sector investment and poverty reduction in Nigeria from 1981 to 2022, Akpan examined this topic. The research used the ARDL approach and utilized per capita income as a well-being proxy. This finding demonstrates that, whereas government expenditures in education have a negative and negligible impact on per capita income, government spending on building, construction, and health had a positive and considerable impact. Because government investment is one of the explanatory factors and the results show that the welfare effect of investment relies on the mix of sectors, this study is closely related to the present one. To put it another way, the kind of investment matters just as much as the amount spent.

Obriki and Onuora investigated public investment and economic development in Nigeria between 1981 and 2022. The study found that investments in education and social/community services have positive and significant effects on economic growth, while investments in transportation, communication, and health services had no significant

effects on economic growth. The study used the error correction model and indicators of public investment, including education, transportation, communication, health, and social and community services. The research is important because persistent economic development is one of the primary transmission channels via which public investment might ultimately lead to an increase in average income and living standards, even though the dependent variable examined was GDP rather than per capita income.

Using capital and recurrent expenditure as the primary fiscal indicators, Joseph et al investigated the effect of government spending on economic growth in Nigeria. They employed conventional least square multiple regression and an ex post facto research design on 33 years of data from the Central Bank of Nigeria (CBN). According to the study, Nigeria's economic development was positively and significantly impacted by capital and recurrent spending. The authors suggest better monitoring of recurrent expenditures and improved resource allocation to profitable capital projects. This finding is useful to the current study because it shows that if government spending is funded by domestically generated revenue, the macroecony could improve However, whether or not government spending can lead to high per capita income, depends on its composition and oversight.

A more recent analysis on the effects of federal government taxation on Nigeria's economic development, foreign direct investment, and per capita income is published by Ogbonna et al. Despite the model being statistically significant, the study found that the combined tax variables have no significant impact on Nigeria's per capita income using the petroleum profit tax (PPT), company income tax, value-added tax (VAT), and customs and excise duties as tax proxies. This finding is crucial to the current study because it implies that tax revenue generation might not be enough to raise average income per person; the outcome of this welfare effect depends on how tax revenues are distributed, managed, and transferred into social welfare and profitable public investment.

2. Methodology

This study employs an ex post facto research approach, which is often used in historical data-based empirical economics and finance research. The ex post facto design is predicated on analyzing data that already exists without the researcher changing the independent variables. In order to determine possible causal linkages, the researcher uses this approach to examine correlations between variables using historical data. Because the variables employed in this study—government taxes, foreign debt, government investments, and per capita income are macroeconomic variables that the researcher cannot control or modify, this methodology was chosen. The analysis is carried out by analyzing historical economic data produced by governmental organizations. Ex-post facto design has been widely used in financial and economic research to examine and comprehend how macroeconomic and fiscal factors affect development indicators. As a result, the approach enables the researcher to experimentally investigate the long-run relationship between Nigeria's per capita income and government-generated revenue.

The positivist research philosophy, which stresses objectivity, empirical observation, and quantitative analysis in the generation of scientific knowledge, is the foundation of this work. Saunders, Lewis, and Thornhill notes that positivism assumes that social and economic phenomena could be investigated using the same scientific procedures as applied in natural sciences, based on observable and quantifiable evidence to evaluate hypotheses. The quantitative technique, which stresses statistical testing and objective measurement of variables, is used by the researcher with this philosophical viewpoint. The positivist philosophy is suitable for this study because it allows the researcher to apply econometric tools to analyze the correlations between the publicly produced revenue factors and the per capita income. Additionally, the philosophy encourages the use of statistical models and secondary data to draw empirical conclusions about economic

linkages. Adopting positivism thereby improves the results' generalizability and dependability.

Secondary time series data from 1986 to 2024 are used in the research. The availability of trustworthy macroeconomic data and the period's significance to Nigeria's economic changes after the implementation of the Structural Adjustment Program (SAP) in 1986 guided the selection of this time frame. The information comes from reliable sources, including the World Bank World Development Indicators, the National Bureau of Statistics (NBS), and the Central Bank of Nigeria (CBN) Statistical Bulletin. These organizations are well-known for providing reliable macroeconomic data for empirical economic studies.The study's variables include government taxes, foreign debt, and government investments as stand-ins for government revenue, while per capita income serves as the dependent variable. The data is good econometric analysis since it is quantitative in character and is recorded in yearly data values.

Several econometric approaches for modeling data analysis are used in this study's methodologies. The properties of the data, such as the mean, standard deviation, minimum and maximum values, and distribution patterns of the variables, are first summarized, using descriptive statistics. According to Gujarati and Porter (2009), descriptive statistics provide first insights into the behaviour and patterns of the data series. Second, the stationarity of the time series variables is investigated using the unit root test. Since macroeconomic time-series data are often non-stationary, failing to prove stationarity might result in misleading regression. To determine the variables' order of integration, we used the Augmented Dickey-Fuller (ADF) unit root test.Thirdly, to determine if the variables have a long-term equilibrium connection, the Johansen cointegration test is used. In order to determine if there is a stable long-term link between non-stationary variables, cointegration analysis is essential.Lastly, the short-run dynamics and the rate of transition from short-run disequilibrium to long-run equilibrium are approximated using the Parsimonious Error Correction Model (ECM). Additionally, the researcher ascertain the rate at which departures from the long-run equilibrium are rectified over time using the ECM framework. This method provides a thorough grasp of the immediate and long-term connections between Nigeria's per capita income and government-generated revenue.

The study' model demonstrates the following specifications:

$$PCI = f(GOTA, GODE, GOIV) \quad 3.1$$

$$PCI_t = \delta_0 + \delta_1 GOTA_t + \delta_2 GODE_t + \delta_3 GOIV_t + \epsilon_t \quad 3.2$$

Apriori δ_1, δ_2, and $\delta_3 > 0$

Where, PCI = Per capita income, GOTA = Government taxation, GODE = Government debts, GOIV = Government investments, t = Annual time series, δ_1, δ_2, and δ_3 = Constant Parameters

3. Results

Table 1. Descriptive Statistics of the Study Variables

	PCI	GOTA	GODE	GOIV
Mean	2211.309	827.9934	639.4397	71.10969
Median	1390.200	811.0500	480.3508	50.08646
Maximum	8121.640	2422.160	2029.873	320.7100
Minimum	53.03410	20.07102	12.57882	0.534900
Std. Dev.	2203.879	636.8383	640.8108	89.23535
Skewness	1.044692	0.477068	1.042422	1.570240
Kurtosis	2.345652	2.475261	2.396751	1.700510
Jarque-Bera	5.419377	1.432755	5.252122	1.541150
Probability	0.066558	0.488519	0.092363	0.785450

Source: E-views 10 Output

The descriptive statistics of the variables in this study: per capita income (PCI), government taxes (GOTA), government debt (GODE), and government investment (GOIV) in Nigeria are shown in Table1. above. Preliminary information on the behaviour of variables, central tendency, and dispersion of the various variables during the study period are reported in the descriptive statistics reported in Table 4.1 above. The findings indicate that the mean per capita income (PCI) is 2211.309. This suggests that the average Nigerian earned an income of 2211.309 during the period of this study. The fact that the median income of 1390.200 is lower than the mean income, could suggest that PCI distribution is positively skewed, implying that a few very high income levels have raised the average value. The highest figure of 8121.640 is evidence that high income levels exist in some years. Conversely, the figure 53.03410 indicates that throughout the early years of the research period, per capita income was very low. The comparatively high standard deviation of 2203.879 suggests that the PCI fluctuated significantly over time.

The average amount of tax income collected by the government throughout the research period is represented by government taxation (GOTA), which has a mean value of 827.9934. The data distribution seems to be quite symmetrical around the mean, as shown by the median value of 811.0500, which is not very different from the mean number. The highest number of 2422.160 and the lowest value of 20.07102 indicate that tax revenue increased significantly over time, reflecting Nigeria's increased fiscal activity and tax changes. The moderate variability in government tax income over the study period is shown by the standard deviation of 636.8383.

Government debt (GODE) has an average of 639.4397 and a median of 480.3508, indicating a significant growth in government borrowing throughout the research period. While the minimal value of 12.57882 indicates that the amount of debt was relatively modest at the beginning of the research period, the highest value of 2029.873 depicts the times when the Nigerian government borrowed substantially. The high degree of volatility in government debt over time is shown by the standard deviation of 640.8108.

Government investment (GOIV) has the lowest mean value (71.10969), suggesting that it performs poorly in comparison to other fiscal variables. While the lowest of 0.534900 indicates virtually little investment in certain times, the greatest of 320.7100 suggests that government investment increased significantly in other years. All of the variables' skewness values are positive, suggesting a right skewness distribution, while the kurtosis values are fewer than three, indicating a platykurtic distribution. All of the Jarque-Bera values are more than 0.05, suggesting that the variables seem typical.

Table 2. Augmented Dickey–Fuller (ADF) Unit Root Test Results

Variables	T-Stat @ Level	T-Critical @ level	P-value @ level	T-Stat @ 1st Diff.	T-Critical @ 1st Diff.	P-value @ 1st Diff.	Order of Integration
PCI	0.526453	-2.981038	0.9497	-5.664223	-2.981038	0.0001	I(1)
GOTA	2.124553	-2.971853	0.9899	-6.791021	-2.981038	0.0000	I(1)
GODE	-0.422467	-2.971853	0.8682	-8.043331	-2.976263	0.0000	I(1)
GOIV	0.547113	-2.971853	0.9754	-5.213533	-2.976263	0.0004	I(1)

Source: EViews 10 Output

Per capita income (PCI) in particular has a t-statistic of 0.526453 at level with a probability of value of 0.9497. This suggesting that the variable is not stable at level. Government taxation (GOTA) is also non-stationary at level, with a t-statistic of 2.124553 and a probability of 0.9899. Government investment (GOIV) has a t-statistic value of 0.547113 with a probability value of 0.9754, while government debt (GODE) has a t-statistic of 0.422467 with a p-value of 0.8682. These findings indicates that the unit root null hypothesis cannot be rejected at the level of all the variables. Nevertheless, the data demonstrate that all variables became stable after measuring the first difference. For

instance, PCI found the following t-statistic values: [zero.664223] with a p-value of 0.000,t the five percent level. We could conclude that this is statistically significant. The t-statistics for GOTA, GODE, and GOIV are likewise -6.791021, -8.043331, and -5.213533 with probability values less than 0.05. In other words, all of the variables are integrated at I. This conclusion suggests that there could be a long-run equilibrium connection between the variables when integrated in a regression model, despite the fact that the variables are non-stationary individually.

Table 3. Johansen Cointegration Test Results

Trend assumption: Linear deterministic trend
Series: PCI GOTA GODE GOIV
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.769303	47.74173	29.79707	0.0002
At most 1	0.180136	6.675534	15.49471	0.6156
At most 2	0.039013	1.114251	3.841466	0.2912
At most 3	0.164382	3.267288	4.256523	0.3425

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.769303	41.06619	21.13162	0.0000
At most 1	0.180136	5.561284	14.26460	0.6699
At most 2	0.039013	1.114251	3.841466	0.2912
At most 3	0.218181	3.114574	4.066523	0.4322

Source: E-views 10 Output

There is one cointegrating equation in the variables, according to the trace statistic shown in Table 4.3 above. This is due to the fact that, at the five percent significance level, the trace statistic for the hypothesis of no cointegration is 47.74173, which is more than the threshold value of 29.79707. Therefore, the null hypothesis that there is no cointegrating equation is rejected at the 5 percent level since the probability value of 0.0002 is less than 0.05. Nevertheless, the trace statistic for the hypothesis that there is only one cointegrating equation is 6.675534, which is less than the critical value of 15.49471, indicating that the variables have only one cointegrating connection. The presence of a single cointegrating equation is also verified using the maximum Eigen value test. With a probability value of 0.0000, the highest eigenvalue statistic for the hypothesis of no cointegration is 41.06619, which is higher than the critical value of 21.13162. This provides further support for the conclusion that the null hypothesis of no cointegration is rejected. This result implies that there is a long-run equilibrium condition between Nigeria's per capita income and publicly generated revenue variables. Therefore, over time, changes in government investment, debt, and taxes are likely to have an impact on per capita income.

Table 4. Parsimonious Error Correction Model (ECM) Estimation Results

Dependent Variable: PCI
Method: Least Squares
Date: 03/06/26 Time: 08:45
Sample: 1987 2024
Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GOTA(-1)	0.103488	0.271256	0.381513	0.7062
D(GODE(-1))	-4.749453	0.836243	-5.679514	0.0000
D(GOIV(-1))	3.165434	0.383322	8.257898	0.0000
ECM(-1)	-0.651798	0.064721	-10.07091	0.0000
C	0.120041	0.161503	0.743275	0.4645

R-squared	0.951100	Mean dependent var	1897.080
Adjusted R-squared	0.947478	S.D. dependent var	1778.533
S.E. of regression	407.5987	Akaike info criterion	14.95308
Sum squared resid	4485691.	Schwarz criterion	15.09320
Log likelihood	-221.2962	Hannan-Quinn criter.	14.99791
F-statistic	262.5746	Durbin-Watson stat	1.762661
Prob(F-statistic)	0.000000		

Source: E-views 10 Output

Table4 displays the outcomes of the parsimonious error correction model (ECM), which represents the short-term dynamics and rate of adjustment to the long-term equilibrium. The coefficient of D (GOTA(-1)) is 0.103488, indicating a short-term positive correlation between government taxes and per capita income. Nevertheless, the association is not statistically significant, as shown by the likelihood value of 0.7062. The coefficient for government debt D(GODE(-1)) is 4.749453, indicating a negative correlation between government debt and per capita income. A probability value of 0.0000 indicates statistical significance in the association. The probability value is 0.0000 and the coefficient of government investment D (GOIV (-1)) is 3.165434, indicating a statistically significant and positive correlation with per capita income.

The error correction term ECM (-1) has a statistically significant negative coefficient of -0.651798. This indicates a rather rapid rate of adjustment toward long-run equilibrium, with around 65.18% of short-run disequilibrium being rectified annually. Government taxes, government debt, and government investment account for about 95.11% of the change in per capita income, according to the R-squared value of 0.951100. A probability value of 0.0000 and an F-statistic of 262.5746 demonstrate the statistical significance of the model as a whole. Additionally, the Durbin-Watson statistic of 1.762661 shows that the model has no autocorrelation.

Hypotheses Testing

H_{01}: Government taxation does not significantly influence per capita income in Nigeria

H_{A1}: Government taxation significantly influences per capita income in Nigeria

From the parsimonious ECM results, the t-statistic for the government taxation coefficient is 0.103488, with a probability of 0.7062 at the 5 percent significance level. Therefore, we accept the null hypothesis and conclude that government taxation has a positive but insignificant relationship with per capita income in Nigeria.

Hypothesis Two

$H0_2$: Government investments do not have a significant relationship with per capita income in Nigeria. While the alternative hypothesis says:

H_{A2}: Government investments do have a significant relationship with per capita income in Nigeria.

From the parsimonious ECM results, the t-statistic value of the regression coefficient of government investments is 3.165434 with a probability of 0.0000 at the 5 percent probability level. Therefore, we reject the null hypothesis and accept the alternative hypothesis. We therefore conclude that there is a positive and significant relationship between per capita income and government investment.

Hypothesis Three

$H0_3$: Government debt has no significant relationship with per capita income in Nigeria.

HA_3: Government debt has a significant relationship with per capita income in Nigeria.

From the parsimonious ECM results, the t-statistic value of the regression coefficient of government debts is -4.749453 with a probability of 0.0000 at the 5 percent significant probability level. Therefore, we reject the null hypothesis and accept the alternative hypothesis. We conclude that there is a positive and significant relationship between government debts and per capita income in Nigeria.

Discussion of Findings

Government taxation (GOTA) has a positive coefficient of 0.103488 but a probability value of 0.7062, according to the parsimonious ECM result. This suggests a positive but statistically insignificant link with per capita income (PCI) in Nigeria. It also tells us that though there is a correlation between rising government taxes and rising per capita income, the impact is too small to be deemed significant over the study period. Significantly, the outcome indicates that while tax revenue in Nigeria may have the potential to improve welfare, problems like tax leakages, tax evasion, poor tax administration, limited tax coverage, and an inability to effectively direct tax revenue into productive economic sectors hinder the transfer of tax proceeds into higher average per capital income. Therefore, tax by itself is insufficient; the quality and applications of tax revenue are just as crucial. This result is in line with Ogbonna, Azubike, and Okezie's findings, which recorded no discernible effect of federal government taxation on Nigeria's per capita income. It also has a general connection to Willie and Micah's findings that the welfare impact of taxes depends on how they are structured; that is, indirect taxes raise per capita income while direct taxes lower it. Because both Keynesian and endogenous growth perspectives believe that public money may boost both income and productivity when judiciously used, this result only marginally supports both. Additionally, this indicates that Nigeria's tax effort has not yet adequately converted into the type of profitable public expenditure that would raise per capita income in a manner that is statistically significant.

With a coefficient of -4.749453 and a probability value of 0.0000, the coefficient of government debt (GODE) in Nigeria exhibits a statistically significant negative correlation with per capita income. This indicates that throughout the research period, an increase in government debt significantly lowers per capita income. Economically speaking, this suggests that Nigeria's debt buildup has not been self-liquidating or productivity-boosting; rather, the burden of debt payment and the diversion of state resources from sectors that promote development may have eroded average per capita income. Borrowing may discourage development expenditure and constrain incomes if it is unrelated to infrastructure, profitable investments, or the advancement of human capital. Onyendi, Ibeabuchi-Animm, and Onuegbu discovered that public debt servicing has a negative

impact on GDP and per capita income, which strongly supports this conclusion. They came to the conclusion that residents' poverty is exacerbated by debt servicing. Alenoghena, Adewale, Adebisi, and Ifarajimi's research that government public debt significantly and negatively affects Nigeria's per capita income supports this conclusion. In this instance, deficit financing seems to have increased budgetary pressure rather than welfare benefits, which contradicts the optimistic side of Keynesian theory that views deficit financing as potentially growth-stimulating. Given that debt has not been shown to increase the productive capacity required for sustainable income development, it is also at odds with the predictions of endogenous growth theory. Rather, it alludes to the threat of unproductive borrowing in an economy that lacks institutional and absorptive ability.

Government investment (GOIV) has a positive coefficient (3.165434) and a probability value (0.0000), suggesting that government investment and per capita income in Nigeria have a positive and statistically significant association. This indicates that the average income per person is greatly increased by government investment. improved economic activity, more employment, improved productivity, and welfare advantages will all be passed on to families if resources are allocated to productive investments, especially in the social and infrastructure sectors. Practically speaking, of the publicly produced income sources examined in this study, the request for government investment seems to be the most effective. This result is in line with findings that government spending on health care and building development has a favorable and considerable influence on Nigeria's per capita income.

It is also in line with Nzechukwu and Onodi's assertion that, despite their varied results, proper use of capital and ongoing spending might increase development and per capita income. In theory, the current discovery provides compelling evidence in favor of the Keynesian theory of the economy. According to Keynesian economics, government spending may have multiplier effects on income and aggregate demand. Additionally, it supports the endogenous growth theory, which emphasizes the value of public spending on health, infrastructure, and other areas to increase productivity and eventually raise income levels due to the capacity-building and efficiency gains these investments produce. More broadly, the result is consistent with Wagner's Law as the government's extension of its powers to include developmental investment is in line with the growing demand for public goods in expanding economies. Therefore, the data indicates that Nigeria may increase her per capita income more effectively if the publicly produced cash is allocated to profitable investments rather than the buildup of excessive debt.

It is important to acknowledge the limitations of this research. First, just three proxies of government-generated revenue: government taxes, government debt, and government investment were taken into account in the study. Numerous other important fiscal variables- the composition of government expenditures, oil revenue, and fiscal deficit- were not considered. Second, the study's findings could involve measurement mistakes or distortions in official records since it only used secondary time-series data from 1986 to 2024. Third, since the research was restricted to Nigeria, it is difficult to extrapolate the findings to other economies. To get broader findings, future studies may use comparative cross-country analysis and other fiscal factors.

4. Conclusion

Using government taxes, government debt, and government investment as proxies for government-generated revenue, this study evaluates the link between self-generated revenue and per capita income in Nigeria. The findings demonstrate an upward, startlingly negligible positive correlation between government taxes and per capita income, indicating that tax revenue has not significantly raised Nigeria's per capita income. However, per capita income was shown to be adversely and strongly correlated with government debt, suggesting that excessive borrowing and debt payments may have

burdened nations, decreasing economic wellbeing. On the other hand, there is a positive and substantial correlation between government investment and per capita income. This suggests that productive public investments contribute significantly to the rise of per capita income. Overall, the research comes to the conclusion that Nigeria's income level won't rise if public funds are not used effectively, particularly for profitable investments. Instead of focusing on revenue collection, the government should first overhaul trade administration via productivity-oriented taxes. This should involve expanding the tax base, reducing tax leakages and tax evasion, digitizing tax assessment, and collecting and allocating a quantifiable percentage of non-oil-generated tax income to infrastructure, health care, and education. Second, Nigeria needs to implement stricter debt management regulations that restrict new borrowing to self-liquidating and productivity-boosting projects. Project assessment, cost-benefit analysis, post-disbursement monitoring, and a cap on loans for recurring expenses should all be applied to both domestic and foreign loans.

Third, via an open public investment framework, the government should protect and increase capital investment in health, infrastructure, and other important areas. Annual budgets should prioritize expenditures with significant effects on employment and productivity, disclose project-by-project performance statistics, and ring fence capital spending.

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