

Public Expenditure, Tax Revenue and Fiscal Deficits in Nigeria

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Abstract- *The study investigated Public Expenditure, Tax Revenue and Fiscal Deficits in Nigeria. Data from 1981 to 2023 was used in the study. The error correction mechanism was employed in the study. The result showed that in the longrun public expenditure has a positive and significant impact on fiscal deficit. Tax revenue has a negative and significant impact on fiscal deficit. In the shortrun both public expenditure and tax revenue has negative impact on fiscal deficit, although only tax revenue is statistically significant. The error correction term is negatively sign and statistically significant. The study recommend therefore that government should broaden the tax base, improve efficiency in tax collection, and minimize leakages through digital tax administration and stronger enforcement mechanisms. The government should prioritize productive and capital expenditures that yield long-term economic growth rather than recurrent expenditures that largely widen fiscal deficits. Strict monitoring of budget implementation will also help in ensuring efficiency and value for money. Strong institutional frameworks should be established to ensure transparency in public expenditure. Reducing wasteful spending, corruption, and mismanagement will help curb the widening fiscal deficit.*

Keywords: *Public Expenditure, Tax Revenue, Fiscal Deficits, ECM.*

I. INTRODUCTION

Fiscal sustainability in Nigeria remains precarious, shaped by the persistent interplay between public expenditure, tax revenue, and fiscal deficits. Nigeria's weak revenue generation relative to its growing expenditure obligations has exacerbated fiscal instability in recent decades. According to the International Monetary Fund (2023), Nigeria's general government revenue amounted to only 7.3% of GDP in 2021 well below the ECOWAS average and among the lowest globally. Non-oil revenue has also stagnated at 4-5% of GDP, leaving the economy highly vulnerable to external shocks and undermining fiscal sustainability. On the expenditure side, studies indicate inefficiency in resource allocation between recurrent and productive outlays. Agu et al (2015) found that recurrent expenditure consistently outpaces revenue growth, while capital

expenditure which is crucial for infrastructure and long-term growth remains comparatively low. Similarly, Onifade et al (2020) observed that recurrent expenditures exert a negative impact on economic growth, while capital spending provides no significant positive contribution. This suggest that deficit-financed fiscal expansion often stimulates increases in government spending and domestic investment. Increases in tax revenue precede and drive increases in government expenditure (Shehu & Adamu, 2017). This suggests that mobilizing more tax revenue may be pivotal in reducing Nigeria's dependence on deficit financing. Fiscal deficits arise because public spending rises while revenue remains unchanged (Onwioduokit, 2005).

According to Ogunsakin and Lawal (2015), fiscal deficit as an excess of government spending over its revenue. It arises from the government's expansionary fiscal policy that leads to revenue falling short of expenditure in a given fiscal year. Also stated that countries that achieved noticeable economic growth were those that have attained significant decline in their debts. It is no exaggeration to claim that Nigeria's huge debt burden was one of the hard knots of the Structural Adjustment Programme (SAP) introduced in 1986 by the Babangida administration. The high level of debt service payment prevented the country from embarking on a large volume of domestic investment, which would have enhanced growth and development.

Fiscal deficits reduce national savings, consequently domestic investment which in the long run have the following effect: increased foreign borrowing, which can erode confidence in the economy both locally and internationally. Keynesian school of economic thought stated that government intervention is urgently needed when the government is unable to match her tax revenue with her public expenditure (Ogunsakin and Lawal, 2015). According to this school of thought, an increase in government spending will help stimulate demand, increase

domestic production, make the private sector better-off, and then lead to economic growth (Aero et al., 2018). The aims of a budget deficit according to O'Dwyer et al. (2011), includes full employment, price stability, a better environment for public and private investment, and poverty reduction.

Based on these challenges, this current study investigates the effect of public expenditure and tax revenue on fiscal deficits in Nigeria. By investigating the link between public expenditure, tax revenue and fiscal deficits in Nigeria, this study highlights the urgent need for fiscal sustainability in Nigeria and ways by which the government can reduce or totally eliminate the effect of tax revenue shortfall in the presence of an ever increasing government expenditure. The rest of the research is structured this way; section two covers the literature review, section three has to do with the methodology adopted for the study. In section four data analysis and the results are presented. In section five the conclusion as well as recommendations are presented.

II. LITERATURE REVIEW

2.1 Conceptual Review

Fiscal Deficit: fiscal as a policy under which the government uses its expenditure and revenue programs to produce desirable effects and avoid undesirable effects on the national income, production, and employment (Jhingan et al. 2008). The term fiscal policy has conventionally been associated with the use of taxation and public expenditure to influence the level of economic activities. Fiscal policy through variations in government expenditure and taxation profoundly affect national income, employment, and output (Ogunsakin & Lawal, 2015). Fiscal deficit can be financed through domestic borrowing and external borrowing. It is expected that when the fiscal deficit is properly harnessed, there will be infrastructural and human capital development reduction in unemployment and recovery from depression/recession which in turn increase the average standing of living of the populace and consequently promotes economic growth.

Tax Revenue: Tax is a mandatory, non-repayable remittance made to the government for products and services intermittently. It is normally paid by private businesses and consumers to the government (Agunbiade & Idebi, 2020). The government is

empowered to control, administer and make provisions for law, rules, regulations and policies that will regulate and guide tax system so as to ensure all taxes are properly administered and all revenue generated is reimbursed to the government (Abomaye-Nimenibo et al., 2018). Nigeria's government being one of those countries that has the legal authority to impose any type of tax on its population at any rate it deems fit (Amadi & Alolote, 2019). Macek (2014) opinionated that utilizing taxation as a fiscal policy tool to help attain economic development is complex for developing countries as there is a reduction in the rate of tax revenue generated.

Taxes can be grouped into direct taxes and indirect taxes. Direct tax is a type of tax that is charged exactly on an individual or an organisation, and which the individual or organisation is required to pay by way of a notice known as an assessment notice. A taxpayer must have been informed of such tax payments. They are taxes that are remitted directly to the government by companies and individuals (Omodero et al., 2021).

Government Expenditure: This refers to the spending done by the public authority of a country regarding general or particular demands for public goods and services like pension, healthcare, security, etc. It is the expenditure incurred by government at all levels to cater for the aggregate needs of individuals in their territories (Odinakachi et al., 2021; Bhatia, 2008).

2.2 Empirical Review

Nduka et al. (2023) showed that capital expenditure on infrastructure and recurrent expenditure positively affect SMEs, recommending sustainable borrowing and investment. Similarly, Okonkwo (2023) found a positive long-run relationship between government expenditure on administrative and economic services and economic growth, recommending continued evaluation and reallocation of spending. Erasmus et al. (2023) empirically investigated the effect of public expenditure on economic development in Nigeria from 1970 to 2020 using Ordinary Least Squares (OLS) regression. The findings showed that capital expenditure positively and significantly affects gross domestic product in Nigeria.

OdumusuIdor & Michael (2023) examined the impact of public expenditure accounting on the growth of the Nigerian economy between 1981 and

2020. It adopted the Multivariate Ordinary Least Squares (OLS) Regression Model, and the findings revealed that Expenditure on administration and transfers is statistically significant. At the same time, social and community services and economic services do not significantly impact Nigeria's gross domestic product (GDP).

Jibir et al. (2023) examined the disaggregated impact of the expenditures on economic growth in Nigeria for the period 1986-2021 using the ARDL model as a tool for analysis. The findings from the study suggest that capital and recurrent expenditures on community, social, and economic services significantly boost economic growth in both the short and long runs, but the recurrent expenditure is negatively significant in the short run. Samson et al. (2022) examined the relationship between public expenditure and economic growth in Nigeria from 1991 to 2020. The study used the Johanson cointegration analysis and the parsimonious error correction analysis. The findings show that there is a long-run relationship between the variables. Adefolake and Omodero (2022) assessed the effects of tax revenue on the economic growth of Nigeria utilizing time series data spanning from year 2000 till 2021. The study used Johansen co-integration test is also conducted and it reveals a long-run relationship. Consequently, the study utilizes the Vector Error Correction Model. The findings reveal that PPT and VAT have positive and significant effects on GDP. It also reveals that CIT has a negative and significant effect on GDP.

Etim et al. (2021) used a descriptive and inferential statistical technique, correlational and regression statistics, in their study to compare the effects of direct and indirect taxation on the growth of the Nigerian economy. The study demonstrated that indirect taxes have a greater detrimental impact on economic growth. Mukolu and Ogodor (2021) in their study examined the impact of VAT on the Nigerian economic growth for the year 1994 till 2018 using an Augmented Dickey Fuller analysis method. The result showed that there is a positively significant impact of Value Added Tax on Gross Domestic Product. It also showed that VAT has to a great extent given rise to the total revenue of the nation and has helped in tax evasion by taxpayers. John and Dickson (2020) using Error Correction Models analyzed the influence of tax revenue on economic growth using both unadjusted and adjusted Gross Domestic

Product from 1984 to 2018. When GDP was not adjusted for inflation, PPT had a minor but beneficial effect on economic growth, whereas VAT and CIT had a large but negative impact on GDP. PPT had a negative and insignificant impact on adjusted GDP, but VAT had a positive and considerable impact, and CIT had a negative and significant one. Yadawananda and Achal (2020) investigated the long-run and short-run relationship between tax structure and state-level growth performance for the year 1991 till 2016 using the panel regression method. The findings revealed that commodity and service tax were bad for the economy and an increase in those taxes will lead to inflation while income taxes were found to be significant for the economy as it mostly impacts the savings and labour supply which is regarded as the drive for economic growth. Adeusi et al. (2020) investigated the impact of non-oil revenue of the economic growth of Nigeria where company income tax, value added tax, personal income tax and custom and excise duties where the non-oil revenue for the period 1994-2018 with data gotten from Federal Inland Revenue Service and National Bureau of Statistics. Ordinary Least Square Regression Techniques was used for data analysis. The study revealed that Value Added Tax and Custom and Excise duties have more significant positive impact on economic growth while Company Income Tax and Personal Income Tax have a negative but significant effect on economic growth.

III. METHODOLOGY

The study used the Ex post facto research design. The data employed were retrieved from the Central Bank of Nigeria statistical bulletin covering the study period. The aim was to evaluate the effect of government tax revenue and public expenditure on fiscal deficit in Nigeria for 1981 to 2023. The model used in the study adopts that of Chinyere (2021), Adefolake & Omodero (2022) and Igwebuike & Nwachukwu (2025) with some modification.

The functional form of the model is as follows;

$$FICD = f(TREV, PEXD)$$

The econometric form is given as;

$$FICD = \beta_0 + \beta_1 TREV + \beta_2 PEXD + \epsilon;$$

Where; FICD is fiscal deficit, TREV is tax revenue and PEXD public expenditure, β_0 is the estimate of intercept of the dependent variables or regression constant; β_1 to β_4 is the estimate of parameters of

independent variables or Regression Coefficient. ϵ is the error term. Data for the study will be sourced from the CBN statistical bulletin. The data will be from 1981 to 2023.

IV. RESULT AND DISCUSSION

Descriptive Statistics

The descriptive features of the data set used in the study is discussed in this section.

Table 1: Descriptive Statistics

	FICD	PEXD	TREV
Mean	-1386.959	3186.499	1719.362
Median	-133.3893	1018.178	500.9863
Maximum	32.04940	19808.44	13587.50
Minimum	-12371.60	9.636500	2.984100
Std. Dev.	2732.481	4475.380	2737.908
Skewness	-2.519324	1.925273	2.544228
Kurtosis	8.947862	6.601357	10.32260
Observations	43	43	43

Source: Author's computation with EVIEWS

The descriptive statistics result is presented in table 1, from the result we observed the average value of fiscal deficit (FICD) for the study period was 1386.959 billion naira, signifying that on average the government borrowed that amount to fund budget deficit. Public expenditure (PEXD) is 3186.499 billion naira while tax revenue (TREV) is 1719.362 billion naira on average during the period of the study. Fiscal deficit has negative skewness which implies that most of its observations are lower than

its mean. PEXD and TREV have positive the skewness which implies that most of their observation lies above their mean. All the variables of the study have a leptokurtic kurtosis implying that they all have higher values.

In order to address the objectives of the study we will proceed with the longrun and shortrun model estimation.

Table 2: Long run estimates

Dependent Variable: FICD				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
FICD(-1)	1.203089	0.071717	16.77558	0.0000
PEXD(-1)	0.215692	0.089471	2.410745	0.0209
TREV(-1)	-0.470344	0.148768	-3.161588	0.0031
C	7.936432	66.65462	0.119068	0.9058
R-squared	0.989078	Mean dependent var		-1419.889
Adjusted R-squared	0.988216	S.D. dependent var		2756.954
F-statistic	1147.059	Durbin-Watson stat		2.151358
Prob(F-statistic)	0.000000			

Source: Author's computation with EVIEWS

It can be observed from the long run estimates presented in table 2 that the lagged dependent variable has a positive and significant impact on the dependent variable. Public expenditure has a positive and significant impact on fiscal deficit. This implies that a 1% increase in public expenditure will cause fiscal deficit to reduce by 22%. Tax revenue has a negative and significant impact on fiscal deficit. This implies that a 1% increase in tax revenue will cause

fiscal deficit to decrease by approximately 47%. The R square shows that the independent variables explains about 98 percent of variation in the dependent variables. Although, it can also be observed from the Prob(F-statistics) that there exist a joint significance of the variables used in the study at the 1% level. Durbin-Watson stat indicated no presence of autocorrelation in the model.

Table 3: Short run estimates

Dependent Variable: LE				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FICD(-1))	0.938309	0.188401	4.980390	0.0000
D(PEXD(-1))	-0.157511	0.157280	-1.001469	0.3233
D(TREV(-1))	-0.291318	0.149691	-1.946129	0.0595
ECM(-1)	-0.948145	0.219625	-4.317099	0.0001
C	35.75933	52.00632	0.687596	0.4961
R-squared	0.840302	Mean dependent var		-301.5973
Adjusted R-squared	0.822558	S.D. dependent var		676.0794
F-statistic	47.35632	Durbin-Watson stat		1.952474
Prob(F-statistic)	0.000000			

Source: Author's computation with EVIEWS

From table 3 above, in the shortrun both public expenditure and tax revenue has negative impact on fiscal deficit, although only tax revenue is statistically significant. The error correction (ECM) term is negatively sign and statistically significant at 1% in line with expectation. The absolute value of the error correction term 95% indicate that fiscal deficit adjust very fast towards its long-run equilibrium position when there are short-run distortions. The result suggests that about 95% short-run distortions is

recovered annually; hence it takes about a year for any disequilibrium in fiscal deficit to be restored in the long run.

The R-squared 0.840302, indicates that the variables used in the model explains approximately about 84% of changes in the dependent variable fiscal deficit. The Durbin-Watson Statistics of 1.95 indicates absence of serial correlation. There is also joint significance among the variables used in the study.

Model Diagnostic

Table 4: Variance Inflation Factors

Variable	Coefficient	Uncentered	Centered
	Variance	VIF	VIF
D(FICD(-1))	0.035495	5.556993	4.630686
D(PEXD(-1))	0.024737	6.571521	4.912263
D(TREV(-1))	0.022407	3.747002	3.176386
ECM(-1)	0.048235	2.022055	2.022002
C	2704.658	1.367236	NA

Source: Author's computation with EVIEWS

In table 4, the result of the Variance Inflation Factors are reported. It is evident from the result that the model is free from multicollinearity as the centered variance inflation factors is less than 10.

Table 5: Test for Normality, Heteroskedasticity and Autocorrelation

Test	F-Statistics	P-value
Serial correlation LM Test	0.111878	0.7400
Heteroskedasticity	0.764055	0.6330

Source: Author's computation with EVIEWS

From the table 5 above, it is evident that the model formulated and estimated for the study is free from serial correlation as well as the heteroscedasticity in the model based on the probability values of 0.7400 and 0.6330 respectively which is clearly greater than the 5% level. The null hypothesis of the presence of

autocorrelation and heteroscedasticity is therefore rejected.

V. CONCLUSION AND RECOMMENDATIONS

The study examined the relationship between public expenditure, tax revenue, and fiscal deficit in Nigeria. The long-run results revealed that public expenditure exerts a positive and significant impact on the fiscal deficit, implying that rising government spending tends to widen fiscal imbalances over time. Conversely, tax revenue has a negative and significant long-run effect on fiscal deficit, indicating that improved revenue mobilization reduces fiscal imbalance in the economy. In the short run, both public expenditure and tax revenue exert negative impacts on fiscal deficit; however, only the effect of tax revenue is statistically significant. This suggests that short-term fiscal adjustments through taxation are more effective than expenditure changes in managing fiscal deficits. The significance and negative sign of the error correction term confirm the existence of a stable long-run relationship among the variables, as fiscal disequilibria adjust back to equilibrium over time.

The study therefore recommends that government should broaden the tax base, improve efficiency in tax collection, and minimize leakages through digital tax administration and stronger enforcement mechanisms. The government should prioritize productive and capital expenditures that yield long-term economic growth rather than recurrent expenditures that largely widen fiscal deficits. Strict monitoring of budget implementation will also help in ensuring efficiency and value for money. Strong institutional frameworks should be established to ensure transparency in public expenditure. Reducing wasteful spending, corruption, and mismanagement will help curb the widening fiscal deficit.

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