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Modeling Fiscal Operations and Balance of Payments Positions Nexus in Nigeria

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ABSTRACT: Fiscal operations are essential tools of macroeconomic policy whereby governments generate revenue, spend public money, balance fiscal accounts and raise funds to repay public debts for stability purposes. In Nigeria, problems of balance of payments instability, import dependency, unstable revenues from crude oil exports and external borrowing have questioned the efficiency of fiscal operations for external sector stability. Despite the significance of fiscal policies, the degree of influence of selected fiscal indicators on Nigeria's balance of payments has remained an empirical issue. This paper investigated the impact of government revenue, government expenditure, fiscal balance and public debt on Nigeria's balance of payments position over the period from 1981 to 2024. The annual time series data were analyzed using the autoregressive distributed lag (ARDL) approach. The results indicated that the effect of the combination of all fiscal operations was statistically significant on the balance of payments position. Government revenue had a negative and statistically significant effect, while government expenditure and fiscal balance had positive and statistically significant effects. Public debt had a positive but statistically insignificant effect, showing that the role of public debt in enhancing external sector performance was not well confirmed within the estimated model. From the results, it can be noted that the performance of the external sector of Nigeria is not only influenced by the size of the government but also the composition and effectiveness of the fiscal operations. Therefore, the paper recommends that there should be a diversification of the sources of non-oil revenue, channeling of public spending to areas that increase productive capacity and exports, and also the prudence in fiscal operations.

Keywords: Fiscal operations, balance of payments, government revenue, government expenditure, and public debt

1. INTRODUCTION

Fiscal operations serve as one of the most vital tools of macroeconomic policy through which governments derive revenue, conduct expenditure allocation, control fiscal balances and finance through borrowing their development needs. Fiscal activities affect aggregate demand, output, investment, prices and international transactions, affecting thus

external stability. Revenue from government finances the resources available for expenditure on public activities, while government expenditure influences domestic consumption, productive potential and import demand. Fiscal balance indicates the difference between government revenue and expenditure, while public debt offers further means of finance with obligations of repaying such debt in the future. Thus, the impact of fiscal activities transcends the domestic economy and reaches the balance of payments (BOP). This is more so in developing countries owing to their limited productive capacity, their high import needs and the need for external funding. The case of Nigeria is not an exception, given that petroleum export revenues form one of the major sources of foreign exchange in the country, coupled with high dependence on imports of goods and capital equipment (Inimino et al., 2020).

The balance of payments represents the economic transactions that take place between the people of a country and the rest of the world involving the sale and purchase of goods and services, primary and secondary income, and financial transactions. A balanced BOP position is crucial for ensuring external payments ability, exchange rate stability, and enhancing external resilience against shocks in the international economy. External instability might result from the occurrence where the domestic expenditure results in an import demand that surpasses foreign exchange earnings or the situation where foreign exchange earnings are constrained by external debt-servicing requirements. The fiscal activities are capable of affecting the BOP in a number of interrelated ways. Increase in government expenditure might lead to domestic production and exports where such expenditure is channeled towards productive infrastructure while it also leads to import demands where the domestic supply is not enough to meet the rising demands. Moreover, increase in government revenue may decrease the consumption and import demands, though it depends on the structure of taxes and the way the revenues are used. Finally, government borrowing may enhance productive investments and export capacity, though excess borrowing may affect the external position negatively through increased debt-servicing requirements.

Prior evidence evidences the applicability of these nexus. Fosu (2024) examined the dynamic connection between macroeconomic variables and the current account position in 28 African countries, noting the role of macroeconomic variables in determining external sector behaviour. Liu & Ren (2024) have tested the link between budget deficit and current account deficit in countries, adding another chapter to the debate regarding the twin-deficit thesis.

Furthermore, Lebrand et al. (2024) have estimated the consequences of energy price shocks on the current account balance in emerging market and developing countries, showing how important the price dynamics in external environment is to external adjustment process. These findings provide valuable international perspective, but cannot be automatically generalized to Nigeria due to different fiscal systems, productive capacity and vulnerability to external shocks. For Nigeria, Inimino et al. (2020) found that corporate income tax, capital expenditure and external debt had positive and statistically significant impact on the BOP in the long run. Meanwhile Osisanwo (2018) identified positive influence of government expenditure, investments and output on BOP adjustment and negative impact of tax revenues. These contrasting results highlight the importance of separating individual fiscal operations from a consideration of them as one policy variable.

Nevertheless, it is still necessary to have more country-level evidence to determine how government revenue, government expenditure, fiscal balance, and public debt affect Nigeria's BOP position in the long-run individually. First, all these variables constitute different, yet related aspects of government operations, and their impact can vary based on domestic productive capacity, composition of expenditures, sources of revenue, and the way fiscal deficit is financed. Analyzing them together in an econometric model will help reveal their separate impacts on foreign sector operations. Therefore, the objective of this research is to estimate the linear effect of government revenue, government expenditure, fiscal balance, and public debt on the balance of payments position in Nigeria for the period of 1981–2024. Thus, separating the effects of these fiscal operations will enable us to obtain some evidence about their influence on Nigeria's external sector stability. Specifically, the study seeks to:

i. examine the effect of government revenue on the balance of payments position in Nigeria;
ii. assess the effect of government expenditure on the balance of payments position in Nigeria;
iii. determine the effect of fiscal balance on the balance of payments position in Nigeria; and
iv. investigate the effect of public debt on the balance of payments position in Nigeria.

This paper contributed to earlier discourse in the following ways. First, the research uses an eclectic theoretical framework that is a combination of Keynesian theory, the Mundell-Fleming model and the Fiscal Reaction Function to capture the mechanisms through which fiscal operations influence Nigeria's balance of payments. Secondly, the study captures the independent linear effects of government revenue, government spending, fiscal balance and public debt on Nigeria's balance of payments between 1981 and 2024. Lastly, the study contributed to the understanding of the fiscal-external sector nexus using a country-specific time series data set.

2. LITERATURE REVIEW AND HYPOTHESES FORMULATION

The balance of payments (BOP) position is coonsidered as an organized account of all the economic activities between citizens of one nation and the rest of the world that involves goods and services trades, capital movements, and transfer payments (Barro & Bianchi, 2025). In terms of concept, BOP is a crucial measure of the economic stability of the country and its budgeting, because any imbalances have their implications on government finances and debt payments (Ogundipe & Lawal, 2024).

There are clear imbalances on Nigeria's BOP from 1981 to 2024, especially during the period from 1981 to 2008, when the BOP positions had negative values, and the maximum value of deficit was -42.89% recorded in 1992. Such kind of imbalances could be due to such structural problems as the over-reliance on the export of oil, poor performance of the export of other goods, and small foreign reserves, which required the country to borrow externally, increase debts, and face financial difficulties (Ekanayake & Dissanayake, 2025; Ighosewe et al, 2021). After 2009, deficits reduced, and there were even some surpluses, especially in 2019 (5.94%), 2023 (8.23%), and 2024 (6.80%) (Figure 1).

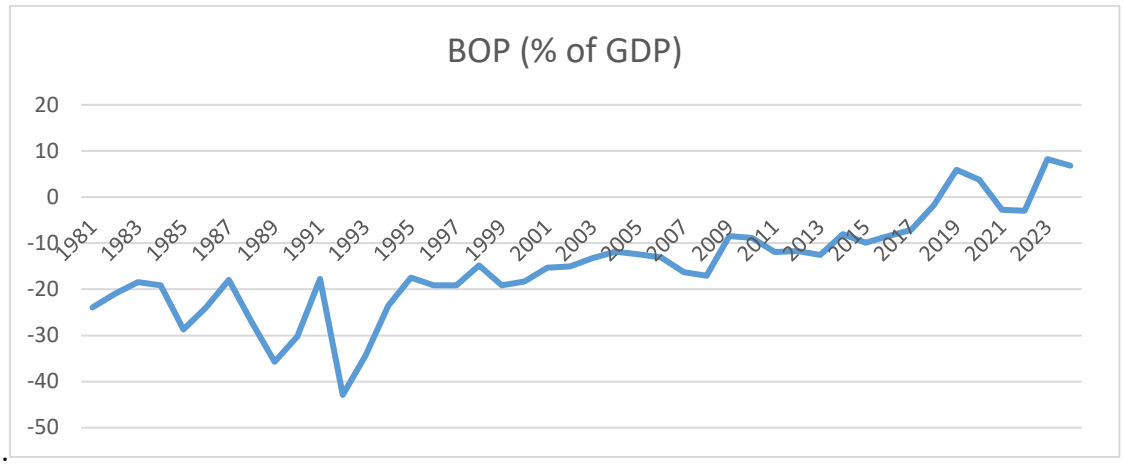


Figure 1: Stylized Fact on BOP (%) in Nigeria from 1981 to 2024

2.1 Government Revenue and Balance of Payments Position

Government revenue include funds collected through various means such as taxes, levies, fees, grants and others used to pay for public expenditure and development programs (Chugunov and Makohon, 2021; Ejinkonye et al., 2025). In Nigeria, sources of government revenue are broadly classified as either oil revenue or non-oil revenue. Sources of oil revenue include petroleum taxes, royalties and oil & gas production while those of non-oil revenue include company income taxes, personal income taxes, customs and excise duties, value added taxes and others (CBN, 2024).

Analysis of CBN statistical bulletin (2024) reveals significant variation in government revenue in relation to the GDP of Nigeria within the period of 1981 – 2024. Sources of government revenue were high in the years where there was favourable oil price but faced setbacks owing to oil market shocks and poor revenue mobilization in some other periods. Increase in revenue in 2023 and decrease in 2024 needs to be verified through the original figures.

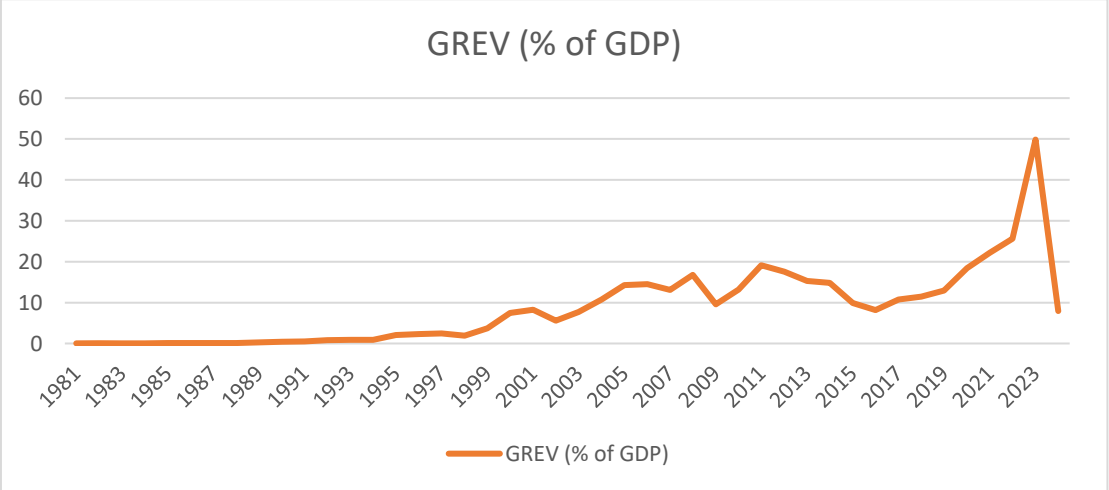


Figure 2: Stylised Fact on Government Revenue (% of GDP) in Nigeria, 1981–2024
Source: CBN Statistical Bulletin (2024).

Government revenue influence the balance of payments through taxation, petroleum income, and financing by the public sector. According to the Keynesian theory, changes in public revenue will impact disposable income, aggregate demand, and import expenditure. Inimino et al. (2020) have observed positive and significant effects of public revenue on the balance of payments position in Nigeria, but Osisanwo (2018) has found a negative impact of public revenue on balance-of-payments adjustment. This shows that the impact of government revenue on external sector performance is still uncertain. Thus, the study hypothesizes that:

H_{01}: Government revenue has no significant linear effect on the BOP position

2.2 Government Spending and the Balance of Payments Position

Government expenditure involves the use of public money to fund administrative activities and economic development. Recurrent expenditure comprises salaries and wages of employees, administration, and debt servicing, while capital expenditure refers to spending on infrastructure and other investments (Adegoriola, 2023; Onafowokan and Owoye, 2023). Whereas recurrent expenditure supports public organizations, capital expenditure may spur investments and promote economic development.

Data from CBN Statistical Bulletin (2024) reveal that there has been an increase in government expenditure in Nigeria from 1981 to 2024, showing the growing importance of the government in economic governance. Nevertheless, an increasing recurrent expenditure and debt servicing may limit the amount of money available for capital expenditure. The 2025–2027 Medium-Term Expenditure Framework and Fiscal Strategy Paper outlines the guidelines for managing expenditure in line with budgetary and development priorities.

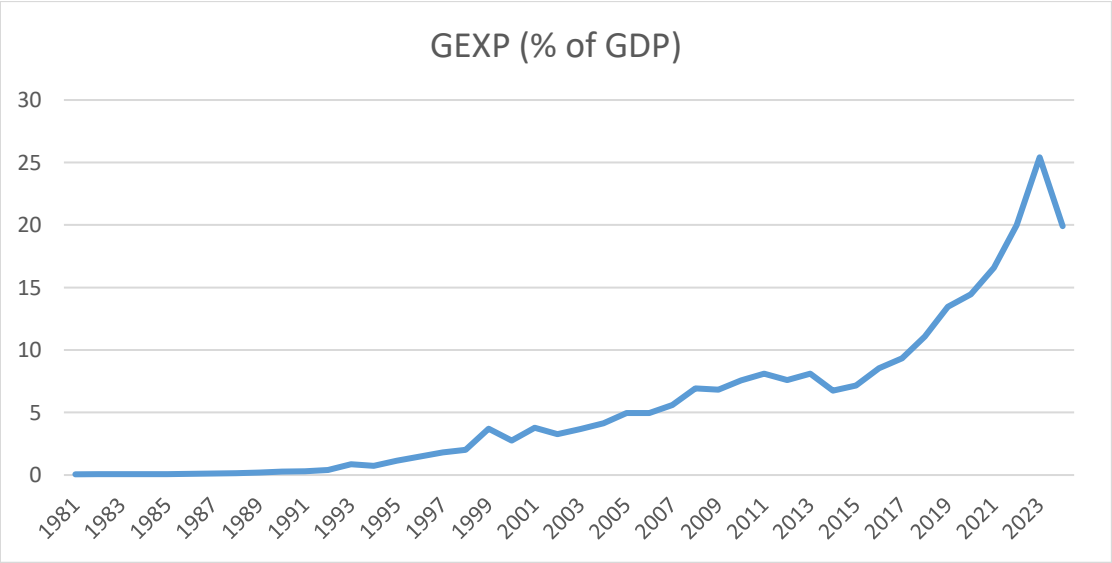


Figure 3: Stylised Fact on Government Expenditure (% of GDP) in Nigeria, 1981–2024
Source: CBN Statistical Bulletin (2024).

Drawing from the Keynesian theory, higher levels of government revenue through taxes will lower aggregate demand and spending on imports, resulting in an improvement in the country's balance of payments. Likewise, according to the Mundell-Fleming model, the influence of government revenue on the balance of payments will depend on the exchange rate regime and the relationship between fiscal and monetary policy. Hence, government revenue can either improve or deteriorate the country's balance of payments.

Empirically, Aiyedogbon (2024) showed that in the short run, government administration capital expenditure in Nigeria (GACE) and government transfer capital expenditure in Nigeria. (GTCE) are positively insignificant on Balance of Payment in Nigeria (BOPN), while government economic services capital Expenditure in Nigeria (GECE) and government social and community services capital expenditure in Nigeria (GSCE) have a negative and insignificant impact on balance from 1990–2022. In the same vein, Osisanwo (2018) reported that government expenditure, investment, and output positively impacted BOP adjustment, while tax revenue negatively influenced BOP in Nigeria. Again, Onuchuku and Obayori (2018) evidenced that government capital expenditure and external debt contributed to improving Nigeria's BOP, while corporate tax worsened BOP. However, Taiwo et al. (2025) reported that, government revenue has a negative insignificant effect on BOP in Nigeria from 1971 to 2023 . Inimino et al. (2020) reveal positive effects of government capital spending on the balance of payments of Nigeria, suggesting that fiscal policy is effective in achieving a satisfactory balance of payments in the country. However, Sultani and Faisal (2024) have discovered a negative effect on Afghanistan's balance of payments in the long run. The above-stated contradictory evidence proves the need for testing the following hypothesis.

H_{02}: Government spending does not have a statistically significant linear effect on the BOP position

2.4.3 Fiscal Balance and Balance of Payments Position

The fiscal balance indicates the relationship between the government's income and expenses. When government income is more than expenses, there is a fiscal surplus, while when expenditures exceed income, the situation is referred to as the fiscal deficit. While the former needs to be financed by such measures as borrowing and selling assets, the latter can finance productive investments but may lead to debt servicing problems, higher inflation and economic instability (Ezeabasili et al., 2012; Ekpo et al., 2025).

Fiscal balance in Nigeria from 1981 to 2024 has varied greatly as there have been both surpluses and deficits for some years. The reported large deficits in the last years are related to various fiscal problems associated with the expenditure and income of the country. However, the reported change in fiscal balance in 2024 and the direction of yearly balances need to be verified using the original CBN series.

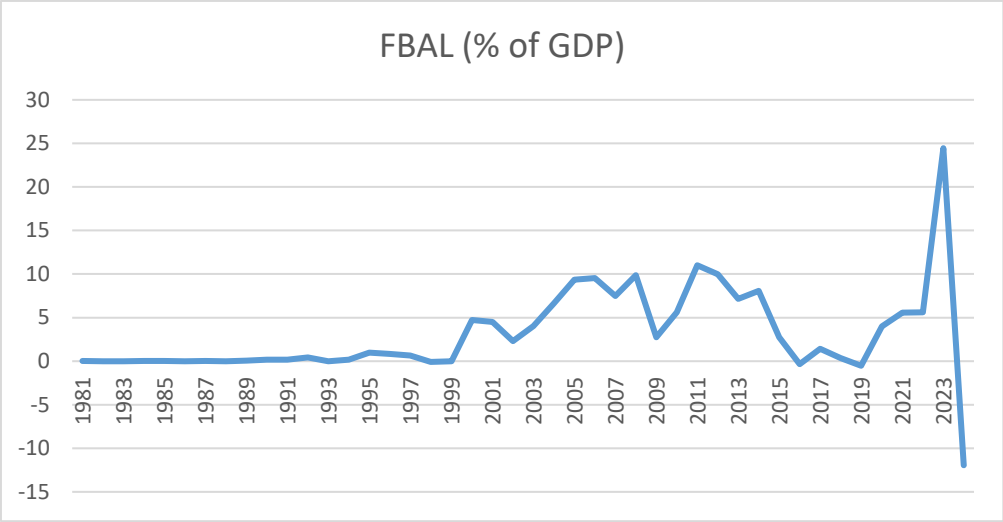


Figure 4: Stylized Fact on Fiscal Balance (% of GDP) in Nigeria, 1981–2024
Source: CBN Statistical Bulletin (2024).

Fiscal balance represents the balance between the income and expenses of the government and reveals whether the government runs a surplus or deficit. The theory of twin deficits postulates that fiscal deficits may result in external deficits as they boost absorption and import demands. The Mundell-Fleming approach further discusses how fiscal deficits may affect the external sector through interest rates, capital movements, and exchange rate changes. According to Manasseh et al. (2025), there was a significant negative relationship between fiscal deficits and current account deficits of the selected countries.

Nonetheless, the balance of payments is distinct from the current account, calling for an empirical investigation. Khah and Ahmad (2025) reported that fiscal balance has a positive and significant impact on the current account balance across all quantiles except the lower quantiles (first to third) from 1985 to 2021. Al-Sawaie et al (2025) that there is a significant negative association between real GDP and the budget deficit, with all other variables showing positive relationships in Jordan from 2008 to 2023. The above-stated contradictory evidence proves the need for testing the following hypothesis.

H_{03}: There is no significant linear relationship between fiscal balance and the BOP position.

2.4. Public Debt and Balance of Payments

Public debt involves borrowing by the government for domestic and foreign sources to finance deficits and development spending (Obaro et al, 2026). While borrowing for domestic sources and external debt could add to development investments, their usefulness is hinged on proper utilization of such borrowed funds, borrowing costs and capacity to repay (Ezeabasili et al., 2012). However, the effect of public debt at the macroeconomic level will be determined by the level of the debt, source of finance, and uses of the borrowed money (Yusuf & Mohd, 2023; Alenoghena et al., 2025; Nyong et al., 2025).

The public debt of Nigeria rose sharply during the period under discussion due to borrowings, exchange rates and changes in the composition of debts reported. The Debt Management Office report indicates that total public debt was ₦97.34 trillion by the end of 2023, while the debt-to-GDP ratio in terms of debt reported was 40.57% in 2023 and rose to 52.25% in 2024. These statistics indicate the total public debt position and not only the external debt

position. The rising debt level makes it necessary to ensure sustainability and prudent borrowing.

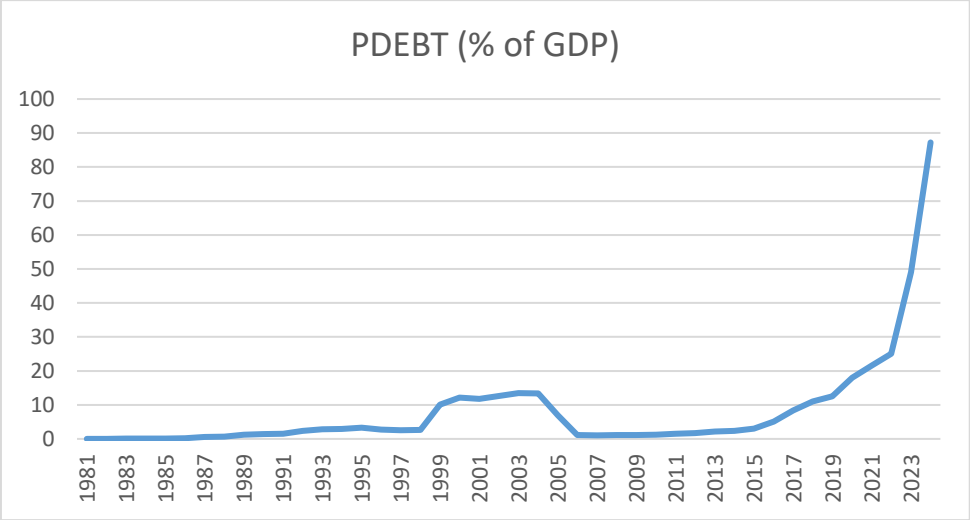


Figure 5: Stylised Fact on Public Debt in Nigeria, 1981–2024
Source: CBN Statistical Bulletin (2024) and Debt Management Office (2024).

Public debt may influence the balance of payments via external borrowings, debt service costs, and capital financing. From the Keynesian point of view, borrowings may facilitate the creation of productive public spending and economic activity, which will make Nigeria able to increase its exports. In turn, the Mundell–Fleming model emphasizes the effect of the budget policy expansion on the movement of funds and the external sector adjustment. According to Inimino et al. (2020), there is a positive and statistically significant long-run influence of external debt on the balance of payments in Nigeria and a negative and statistically significant short-run one.

H_{04}: Public debt does not have any statistically significant linear impact on the balance of payments position in Nigeria.

3. METHODOLOGY

The research adopted the longitudinal study design for its research method. This is an appropriate study design because it enabled the researcher to observe trends, patterns and structural change in measures of the fiscal operations and they influence macroeconomic variables (Omotosho et al, 2016). Data was sourced from the CBN statistical bulletin (financial, real and public sector) on yearly basis. The data sourced includes government revenue, government expenditure, fiscal balance and public debt, and balance of payments position (Table 1).

Table 1: Variables: Description, Unit of Measurement and Data Sources

S/N	Variables	Description	Unit of Measurement	Sources

1	Government Revenue	Ratio of government revenue to Nominal GDP	Percentage	CBN Statistical Bulletin: Public finance statistics (2024)
2	Government Expenditure	Ratio of government expenditure to Nominal GDP	Percentage	CBN Statistical Bulletin: Public finance statistics (2024)
3	Fiscal Balance	Ratio of government revenue less government expenditure to Nominal GDP	Percentage	CBN Statistical Bulletin: Public finance statistics (2024)
4	Public Debt	Ratio of external debt to Nominal GDP	Percentage	CBN Statistical Bulletin: Public finance statistics (2024)
5	Balance of Payment Position	Current account Balance to GDP	Percentage	CBN Statistical Bulletin: External sector statistics (2024)

Researcher's Compilation (2026)

The approach used in estimating the four hypotheses generated is the ARDL approach. This approach was chosen because it allows for an analysis of the dynamic and long-term impacts of fiscal operations on the selected macroeconomic variables by employing a robust, flexible, and theoretically sound approach. In contrast to the conventional cointegration approaches such as the Engle-Granger and Johansen procedures, ARDL approach has the ability to work on a combination of stationary I(0) variables and first-difference I(1) variables, and none of them should be integrated of order two, I(2). This property of ARDL is especially significant in macroeconomic analysis where some of the variables might be of different levels of integration (Omotosho et al, 2016; Agbogun et al, 2026). Moreover, through ARDL approach, it is possible to estimate the error correction term that determines the speed of adjustment from short-run dynamics to long-run equilibrium. The criteria used to test for the ARDL model are based on the following five (5) major steps. The first step involved checking for the order of integration of the various variables such that none of them were integrated of the second order (I(2)). This is because the ARDL model can only handle variables that are either integrated of order zero (I(0)) or order one (I(1)). This is expressed as:

$$\Delta Y_t = \alpha + \beta t + \gamma Y_{t-1} + \sum_{i=1}^{p} \delta i \Delta Y_{t-1} + \varepsilon t \text{----------} \quad \text{Equation 1}$$

Where:

$$\Delta Y_t = Y_t - Y_{t-1}$$

α = constant,
β = deterministic trend (if included),
γ = coefficient testing for unit root,
(p) = lag length,
εt = white-noise error.

In the case where H0:γ=0 represents unit root (non-stationarity) and (H1:γ< 0) represents stationarity. Determining the order of integration is crucial for correct model specification in the subsequent regression.

Since we have established that the model exhibits mixed integration, the next thing to do is to specify the ARDL model whereby each macroeconomic variables is selected against the selected fiscal operation variables. The third step involves determining the optimal lag length of each variable using the Akaike Information Criterion (AIC). The fourth step is the determination of the existence of long run relationship through ARDL Bounds Testing. The calculated F-statistic was compared to the critical bounds to establish if there exists a stable long-run equilibrium relationship among the variables (Owolabi & Dauda, 2017). In cases where the calculated F-statistic exceeds the upper bound, the null hypothesis of no long-run relationship is rejected indicating the existence of cointegration while in cases where the calculated F-statistic is below the lower bound, the null hypothesis of no long-run relationship cannot be rejected. Values in between the two bounds cannot be conclusive.

The econometric form of ARDL Bound test can be represented as:

$$\Delta Y_t = \alpha + \sum_{i=1}^{p} \beta_i \Delta Y_{t-1} + \sum_{j=0}^{q} \beta_j \Delta X_{t-j} + \phi Y_{t-1} + \theta X_{t-1} + \varepsilon_t \text{----------Equation 2}$$

Where:
Δ is the first difference operator,
Yt is each of the chosen macroeconomic variables,
Xt is each of the chosen fiscal operation variables, φ and θ determine the long-run relationship, and εt is the error term.

After establishing that there is indeed a long-run relationship in the model, the next phase would be to determine the long-run coefficient of the fiscal operation variables, paying particular attention to how fast the short-run equilibrium deviation is corrected by using the error correction term (ECT). The ECT, which determines the rate of convergence back to equilibrium, is given as:

$$\Delta Y_t = \alpha + \sum_{i=1}^{p} \beta_i \Delta Y_{t-1} + \sum_{j=0}^{q} \beta_j \Delta X_{t-j} + \lambda \mathrm{ECT}_{t-1} + \varepsilon_t \text{---------- -Equation 3}$$

If Δ is the first difference operator, then Yt represents the selected macroeconomic variables, Xt represents the selected fiscal operations variables, λ is the coefficient of the error correction term measuring the rate of adjustment, and εt is the error term.

Finally, the model was subjected to post-estimation diagnosis and stability tests including test of heteroskedasticity and model specification errors to ensure that the model is homoscedastic, well specified and stable in the period between 1981 and 2024. This is to

confirm the reliability of the estimates obtained from the models. The model examined the impact of fiscal operations on external reserve in Nigeria, which is an important macroeconomic stability variable. The model used was based on the models of Taiwo et al (2025). Their model is represented as follows:

$DEFGDPt=\beta_0+\beta_1 DEFGDP_{t-1}+\beta_2 \Delta DEBTGDP_t+\beta_3 T\Delta GEt+\beta_4 T\Delta GDP_t+\varepsilon_t$----------Equation 4

Where:

DEFGDPt= primary fiscal balance-to-GDP ratio (or deficit-to-GDP ratio, depending on the authors' definition)
ΔDEBTGDPt= change in debt-to-GDP ratio
TΔGEtT= temporary change in government expenditure
TΔGDPt= temporary change in GDP
However, the implicit form of the adapted model is expressed as:

BOP =F(GREV, GEXP, FBAL, PDEBT)

$$BOP = f(GREV, GEXP, FBAL, PDEBT) - Model\ 1$$

The explicit form of the BOP expanded model is expressed as:

$$BOP_t = \beta_0 + \beta_1 GREV_t + \beta_2 GEXP_t + \beta_3 FBAL_t + \beta_4 PDEBT_t + \varepsilon_t - - - -$$Equation 5

From the equation above, β0=Constant/Intercept; β1- β4= Coefficients of Fiscal Operations' Measures; εt = Stochastic error term/noisy variable. The dependent variable is the balance of payment (BOP) whereas the independent variable is fiscal operations (GREV, GEXP, FBAL, and PDEBT). Nevertheless, the ARDL model is expressed as:

$$\Delta BOP_t = \alpha + \sum_{i=1}^{p} \Delta BOP_{t-1} + \sum_{j=0}^{q1} \boldsymbol{\delta_J} \Delta GREV_{t-j} + \sum_{k=0}^{q2} \gamma_k \Delta GEXP_{t-K} + \sum_{l=0}^{q3} \phi_l \Delta FBAL_{t-l} + \sum_{m=0}^{q4} \boldsymbol{\psi}_l \Delta PDEBT_{t-l} + \varepsilon t$$----------Equation 6

Where:

Δ represents the first difference operator, which measures short-run dynamics.
βi, δj, γk, ϕl, ψm are the short-run coefficients of BOP and the fiscal operation variables.
λ is the coefficient of the ECT and represents the speed of adjustment from short-run deviations to the long-run equilibrium.
θ1 to θ4 are the long-run coefficients of the fiscal operation variables.
εt is the stochastic error term.

The above specification enables the model to measure both the short-run effects (immediate effects) of fiscal operation variables on the inflation rate and the long-run relationships, thereby giving a complete model to understand the effects of fiscal operations on BOP in terms of dynamic and equilibrium considerations. It is expected that GREV and FBAL would have a positive effect on BOP, but GEXP and PDEBT would have a negative effect on BOP. This is shown as follows:

$$GREV>0, FBAL>0, GEXP<0, PDEBT<0$$

Rationale for theory is the observation that fiscal deficits, which are usually caused by high levels of government spending and low government revenues, affect the current account and thus balance of payments adversely through the Twin Deficits Theory. On the other hand, increased revenues and sound fiscal position are an indication of fiscal prudence, reduced borrowing abroad, and increased investors' confidence, and thus contribute positively to the balance of payments. Moreover, the Intertemporal Budget Constraint Theory indicates that high levels of public debt may lead to capital outflows and vulnerability to external imbalances.

4. RESULTS AND DISCUSSION

4.1. Preliminary Analysis

The descriptive statistics of the fiscal operations and balance of payments of Nigeria between 1981 and 2024 were analyzed in this section using 44 observations (1981 to 2024). This section further covered the process of Spearman's rank correlation test, unit roots tests, and ARDL methodology. Table 2 reported that, the average government revenue was 8.69% of GDP and average government expenditure was 5.56%. Fiscal balance had a mean value of 3.13% of GDP, which implies an average balance with surplus, but with deficits in certain years. Average public debt was 8.18% of GDP and had high variability. Balance of payments had a mean value of −14.93% of GDP, which means that there was an average deficit of the balance of payments during the sample period.

Table 2: Descriptive Statistics

Variables	Mean	Std. Dev.	Maximum	Minimum	OBS
GREV	8.6888	9.5481	49.8678	0.0619	44
GEXP	5.5576	6.1714	25.4162	0.0577	44
FBAL	3.1312	5.3190	24.4516	-11.9453	44
PDEBT	8.1837	15.1774	87.2267	0.0118	44
BOP	-14.9279	10.9156	8.2299	-42.8938	44

Researcher's Computation (2026)

Table 3 reported that, government revenue, government expenditure, fiscal balance, and public debt have probability values of less than 0.05; thus, the null hypothesis of normality is rejected for these variables. However, the BOP has a probability value of 0.8970, suggesting that the variable's distribution is not significantly different from normality at the 5% level. Due to the presence of variables with non-normal distribution, Spearman's rank correlation test was found to be appropriate in studying the relationship between the variables. Due to the presence of non-normal distribution of the series, Spearman's rank correlation was undertaken as indicated in Table 3:

Table 3: Normality Test Estimate

Variables	Jarque-Bera	Probability	Conclusion
GREV	91.42883	0.000000	Deviated from Normality
GEXP	19.50080	0.000058	Deviated from Normality
FBAL	58.42681	0.000000	Deviated from Normality
PDEBT	564.7766	0.000000	Deviated from Normality
BOP	0.217332	0.897030	Normally Distributed

Researcher's Computation (2026)

Table 4 evidenced that, there is high positive correlation between BOP and the majority of the fiscal variables, namely government expenditure (GEXP), which is 0.907, government revenue (GREV), which is 0.855, and public debt (PDEBT), which is 0.785. Thus, high levels of fiscal operations seem to lead to improvement of BOP. There is moderate positive correlation between fiscal balance (FBAL) and BOP, which is 0.453. On the other hand, there is very low correlation between the fiscal variables. For instance, REV does not correlate with GEXP and FBAL, their correlation coefficients are 0.062 and 0.016, respectively. At the same time, the correlations between GEXP and both FBAL (0.145) and PDEBT (0.152) are somewhat higher. All these mean that fiscal operations, including expenditure and revenue mobilization, may have considerable influence on the external sector, which implies the importance of the former for shaping Nigeria's BOP from 1981 to 2024.

Table 4: Spearman's rank Correlation

Sample: 1981 2024

Included observations: 44

Correlation	BOP	GREV	GEXP	FBAL	PDEBT
BOP	1.000000				
GREV	0.855280	1.000000			
GEXP	0.906656	0.061804	1.000000		
FBAL	0.453082	0.015856	0.145173	1.000000	
PDEBT	0.784876	0.083087	0.152431	0.368992	1.000000

Researcher's Computation (2026)

Further preliminary assessment with the multicollinearity diagnostics suggests that the regression models are statistically valid. The multicollinearity test results reported in Table 5 were tested based on the use of Variance Inflation Factor (VIF) and Tolerance (TOV). The statistics are useful in assessing the degree of linear relationship between the explanatory variables, with VIF greater than 10 (or TOV less than 0.10) suggesting strong multicollinearity. VIF is between 3.0073 and 3.5676 while the tolerances range between 0.2803 and 0.3325. The average of VIF and tolerance is 3.2006 and 0.3137 respectively, which means that there is moderate multi-collinearity. The similarity of VIF for all the variables shows the balanced relationship among the regressors without any of them being too dependent. Since multi-collinearity is not detected in the variables, the second step in the initial data analysis involves testing the stationarity of the series through the Augmented Dickey Fuller (ADF) test.

Table 5: Multi-collinearity Tests for Fiscal Operations- Nigeria

Variables	VIF	TOV
BOP(-1)	3.5676	0.2803
GREV	3.0667	0.3261
GEXP	3.0667	0.3261
FBAL	3.0073	0.3325
PDEBT	3.2949	0.3035
Average	3.2006	0.3137

Note: Variance Inflation Factor (VIF) and Tolerance (TOV)

Researcher's Computation (2026)

Table 7 reported that, BOP is stationary at level while government revenue, government expenditure, fiscal balance, public debt, are stationary at first difference, with ADF test statistics ranging from -4.9288 to -10.8224, critical values at 5% approximately -2.933, and p-values effectively zero ($p < .001$). This

indicates that, the model exhibit mixed integration.

Table 7: Augmented Dicker Fuller Test (First Difference)- Nigeria

Variables	ADF Test Statistics	Test critical values @ 5%	p-value	Order of integration	Decision
GREV	-7.8569	-2.9332	0.0000	1(1)	Stationary
GEXP	-7.7983	-2.9332	0.0000	1(1)	Stationary
FBAL	-8.6281	-2.9332	0.0000	1(1)	Stationary
PDEBT	-4.9288	-2.9332	0.0002	1(1)	Stationary
BOP	-8.5216	-2.9301	0.0000	1(0)	Stationary

Researcher's Computation (2026)

The model selectin criteria table in Table 8 reported a preferred specification of ARDL(1, 0, 0, 0, 0)**,** with LogL = **-**130.71**,** AIC **=** 6.358, and adjusted R-squared = **0.752**. The high adjusted R-squared indicates that the model explains a substantial portion of the variation in Nigeria's external sector, while the low AIC and BIC values confirm it as the most suitable specification for the dataset.

Table 8: Model Selection Criteria Table- Nigeria

Model	LogL	AIC*	BIC	HQ	Adj. R-sq	Specification
1	-130.707359	6.358482	6.604231	6.449106	0.752383	ARDL(1, 0, 0, 0, 0)

Researcher's Computation (2026

The F-statistic rises to 7.435, well above the upper critical bound, providing strong evidence that fiscal operations are long-run determinants of Nigeria's external sector. Collectively, these results demonstrate that fiscal operations (government revenue, government expenditure, fiscal balance and public debt has long run effects on economic growth, inflation rate and balance of payments positions (external sector stability). The findings underscore the importance of prudent fiscal management in sustaining economic growth, controlling inflation, and maintaining balance of payments stability over the long run.

Table 9: ARDL Bounds Test- Nigeria

Fiscal Operations and Balance of Payments Position					
			Critical Value Bounds		
Test Statistic	Value	K	Significance	I0 Bound	I1 Bound
F-statistic	7.434821	4	5%	2.86	4.01

Researcher's Computation (2026)

4.2. Discussion

From Table 10, it is evident that fiscal policies have a statistically significant impact on the BOP situation in Nigeria (F = 26.52334; p = 0.0000), thus leading to the rejection of the null hypothesis. It is clear that in the fiscal context in which Nigeria operates and where revenues are raised, expenditures are incurred, there are deficits and debts have to be serviced, these factors are important determinants of the external sector performance. The long run adjustment process is confirmed by the error correction term (−0.5533; p = 0.0000). Every year, about 55.33% of short run imbalance is corrected.

Government revenue has a negative and statistically significant effect on the BOP (β = −0.2575; p = 0.0171). This means that an increase in revenue mobilization does not necessarily imply a strengthening of Nigeria's external balance and can happen with an increase in the domestic absorption rate or import demands among others. This does not mean that government revenues should not be mobilized, but rather that the policies in terms of taxes and non-taxes revenue generation should go hand-in-hand with other measures such as an increase in the productive capacity of the country, increasing local content and minimizing imports that are avoidable. It becomes particularly crucial for Nigeria where the government needs to mobilize revenue sustainably without compromising its external competitiveness.

Government expenditure has a positive and statistically significant effect on the BOP (β = 0.2835; p = 0.0053). This means that government expenditure has the potential to boost the external competitiveness of a country if it increases the productive capacity, investments and exports among others. The implication for Nigeria is to use the budget resources efficiently to increase non-oil exports and minimize import dependency. The finding is supportive of a Keynesian interpretation, where productive public spending enhances domestic production, but the positive sign does not necessarily mean that all types of government spending enhance the BOP.

Furthermore, there is a positive and statistically significant relationship between fiscal balance and BOP (β = 0.2434; p = 0.0390). This shows that a better fiscal balance will lead to a better external performance, showing how important it is for governments to match expenditures with their income-generating ability. In Nigeria, better budgeting, controlling of expenditure, better revenue management, and less deficit spending may be used to ease macroeconomic problems. However, fiscal consolidation must not undermine productive capital spending, since this might undermine domestic production and future exportability. However, public debt has a positively significant but statistically insignificant long-run effect on BOP (β = 0.0792; p = 0.5592). Consequently, there is no statistically significant long-run relationship between public debt and BOP established in the study based on the regression model under analysis. Thus, the results imply that borrowing may not necessarily lead to improved external performance, depending on how the funds borrowed have been used. Specifically, such use may involve funding productive ventures, creation of foreign exchange earnings or carrying out activities to reduce import dependency. As such, debt management in Nigeria needs to consider cost of borrowing, borrowing capacity, project viability, and foreign exchange consequences of debt obligations.

Table 10: ARDL Cointegrating and Long Run Form

Dependent Variable: BOP

Selected Model: ARDL(1, 0, 0, 0, 0)

Sample: 1981 2024 (43 Observations)

Cointegrating Form-Short Run

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GREV)	-0.272112	0.100899	-2.696878	0.0105
D(GEXP)	0.285318	0.091366	3.122816	0.0035
D(FBAL)	0.277302	0.120873	2.294161	0.0276
D(PDEBT)	0.043805	0.076521	0.572457	0.5705
CointEq(-1)	-0.553310	0.128789	-4.296238	0.0001

Cointeq = BOP - (-0.2576*GREV + 0.2835*GEXP + 0.2434 *FBAL + 0.079*PDEBT -0.4716)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GREV	-0.257548	0.103181	-2.496068	0.0171
GEXP	0.283520	0.095618	2.965130	0.0053
FBAL	0.243361	0.113706	2.140269	0.0390
PDEBT	0.079169	0.134336	0.589336	0.5592
C	-0.471589	0.088385	-5.335606	0.0000

Joint Significant Test			
F-statistics	**26.52334**	**Prob. (F-Statistics)**	**0.00000**

Researcher's Compilation (2026)

5. CONCLUSION AND RECOMMENDATIONS

This research investigated modeling fiscal operations on the balance of payments nexus in Nigeria between 1981 and 2024 using the ARDL approach. The results have shown that

government revenue has a negative and significant effect, while government expenditure and fiscal balance have positive and significant effects, while public debt does not have a statistically significant effect. Even though the positive effect of expenditure does not align with the conventional prediction in the Mundell-Fleming model, it could be due to domestic supply reactions and resource allocation. Hence, the research recommends the widening of the revenue base beyond oil, reducing the fiscal leakages and ensuring that the government expenditure is allocated towards the sectors of power generation, transportation, agricultural and manufacturing industries to ensure increased domestic output and non-oil exports. Fiscal discipline will be strengthened by budgeting and expenditure controls, proper forecasting of the revenues. Public borrowing should target projects that can increase foreign exchange and enhance export capability and not the funding of the fiscal deficit only.

It is worth mentioning that this research is only carried out on Nigeria during the period of 1981–2024, and therefore, the findings might lack generality in other countries. The analysis has been done only with regard to four fiscal variables and has not taken into consideration other external factors like exchange rates, prices of oil and foreign investments. It should be noted that the ARDL approach only reveals dynamic relations but does not provide causality on its own. Future researches should conduct the same analysis for other African countries or compare different nations. Additionally, other macro and institutional factors should be taken into account to evaluate the influence of various variables on the balance of payments of the country.

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