South Asian Journal of Social Studies and Economics

Volume 20, Issue 4, Page 35-52, 2023; Article no.SAJSSE.108893
ISSN: 2581-821X

Public Spending and Economic Growth in Nigeria: Assessing Recurrent Expenditure's Neutrality and Monetary Policy Interaction

Ubong Ekerete Udonwa [a] and Ubong Edem Effiong [a*]

[a] Department of Economics, University of Uyo, P.M.B. 1017, Uyo, Akwa Ibom State, Nigeria.

Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/SAJSSE/2023/v20i4741

Open Peer Review History:
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://www.sdiarticle5.com/review-history/108893

Original Research Article

Received: 05/09/2023
Accepted: 09/11/2023
Published: 14/11/2023

ABSTRACT

In this study, we explored the influence of public spending on economic growth in Nigeria by testing the neutrality/non-neutrality of recurrent expenditure, as well as checking for the effect of interaction of the two expenditure components with monetary policy (interest rate) to see how they would influence economic growth. Data which covers the period 1981 to 2021 were analyzed using the technique of Autoregressive Distributed Lag (ARDL) model which was selected based on the fact that our variables were stationary at mixed order of levels and first difference. From the ARDL bounds test, the study revealed that there is a long-run relationship among the variables in the model which prompts the estimation of the error correction model. From the result, the findings suggest that recurrent expenditure exerts a positive and significant effect on economic growth, thereby signifying the non-neutrality of the recurrent expenditure component on economic growth. Further, the interactive terms indicates that an interaction of recurrent expenditure and interest rate on economic growth generated a negative effect though its one-period lag yields a positive and

**Corresponding author: Email: ubongeffiong3@gmail.com;*

significant effect. Also, the long-run result indicates that recurrent expenditure yielded a positive but insignificant effect, thereby indicating the validity of the recurrent expenditure in the long-run. This is further confirmed as it exerted a negative but insignificant effect on economic growth when interacted with monetary policy. The policy implication of the findings centres on the fact that recurrent expenditure can only be non-neutral in influencing the macroeconomy just in the short-run.

Keywords: Monetary policy; fiscal policy; lags; neutrality; public spending; interest rate.

1. INTRODUCTION

The essence of macroeconomic management underlies the importance of government as an important economic agent [1] and qualitative government intervention, particularly in policy conceptualisation and formulation is crucial for the robust management of an economy to minimise pains of depression, recession, poverty and other unwanted economic circumstances in any country. The need for government expenditures to help ameliorate these economic circumstances embraces the need for appropriate and proper alignment of expenditure priorities to meet up with the essential macroeconomic objectives. Government spending is still a crucial tool used in the process of development. At practically all stages of growth and development, it is crucial to the operation of any economy. The majority of emerging and developed nations currently employ public spending to alter the composition of national income, improve income distribution, and steer resource allocation in desirable directions [2,3]. For instance, in developing nations, variations in government spending patterns are anticipated to not only provide stability but also to promote economic growth and increase job possibilities [4,5].

Government expenditure is calibrated into both recurrent or capital components. Recurrent expenditure is said to be recurring or what could be claimed to be consumption spending and it last only within a limited period of time which at most could be a year. Ahuja, (2011) calls it non-development expenditure of the government as it seems not to relate to the development activities of the government and is asserted not to raise the productive capacity of the nation as it is seen as expenditure on goods and services which does not result in the creation or acquisition of fixed assets but majorly of social security expenditure such as on wages, salaries; consumables like stationeries, drugs, bandages, purchases, scholarships, unemployment allowance, administration, police and military, law and order, collection of taxation, interest on loans, payment of old age pensions and consumption of fixed capital (depreciation) and so on. So, it could be said to be used in acquiring items that are used up in the process of providing a good or service. Pigou [6] calls it transferable expenditure as it is not related to the production of goods and services or generation of income in the economy rather the expenditure cause transfer of income from government to the individual and households. Scholarships and unemployment allowance by the government are also two notable examples of this expenditure category.

The expenditure is included as argument in private agent utility functions hence seen to be a non-productive expenditure whereas capital expenditure is categorised in the literature according to Barro [7] as productive expenditure. Government capital expenditure is included as arguments in private production functions which imply that they have a direct effect upon the rate of economic growth and development hence on the standard of living of the people and in eliminating poverty. The categorisation of recurrent expenditure as non-productive implies that the expenditures have no direct effect in improving the people's welfare and may even retard it. Endogenous growth theory however, claims it to have a neutral effect on the welfare of private agents and should therefore have neither mitigating nor aggravating effect on standard of living within the society hence there is the need to ruminate its effect on the economy. Intuitively, excessive spending on consumption at the expense of investment is said to possibly deter growth and vice versa.

The recurrent expenditure category has been rising over the years in Nigeria (see Fig. 1) and sometimes over and above its capital expenditure counterpart.

The issue is, if the expenditure item of government would not impact on welfare and may even retard it according to the literature,

why then do governments across the world keep allocating rising vote to it and sometimes the provisions on it rise far and above the capital expenditure portfolio. It could however, be acclaimed that the rising portfolio of the recurrent expenditure category is as result of the rising size of the government, as there is the need to accommodate increased economic activities. Nevertheless, the increased activities can also be inferred to its counterpart (capital expenditure) hence be rising. In line with Fig. 1, the proportion of recurrent expenditure has been more than that of the capital expenditure right from 1999 (see Fig. 2).

The proportion of recurrent expenditure to total expenditure was 42.46% in 1981 and keep on rising to 58.70% in 1984 before it declined up to 47.44% in 1986. Meanwhile, it picked up a rising trend reaching 71.06% in 1987 and subsequently declined sharply to 36.56% in 1998. During the period of 1996 to 1999, the capital expenditure component was taking the lead as it reached 63.44% as at 1984 after which it declined sharply till date. Recent trend indicates that the recurrent expenditure component accounts for 74.13% of total expenditure in 2010; 76.81% of total expenditure in 2015; and 80.03% of total expenditure in 2020 before declining slightly to 75.18% in 2021. It is worth noting that given this massive recurrent expenditure component of the total expenditure of the Federal government of Nigeria, the capital expenditure only account for only 11.16% of total expenditure in 2016 with a mild increase to 20.74% in 2021. This massive increase in the recurrent expenditure component signifies more expenditure on consumption than on investment on the part of the government. Sometimes extra budgetary provisions are made on the recurrent expenditure causing huge budget deficits that are inflationary and these deficits run over several years with huge debt servicing costs if financed by borrowing, and this could be problematic for the economy and as such, some items of recurrent expenditure would have to be pruned to reduce public debt yet the Federal Government of Nigeria finds it difficult and very rigid to prune expenses on these category but would rather prefer to reduce the capital expenditure component.

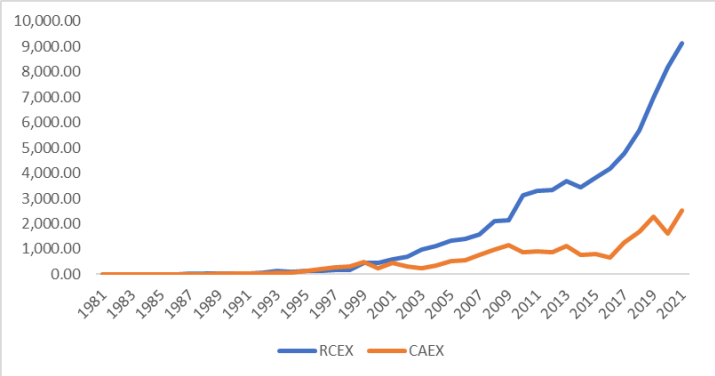

Fig. 1. Trend of recurrent expenditure (RCEX) and capital expenditure (CAEX)

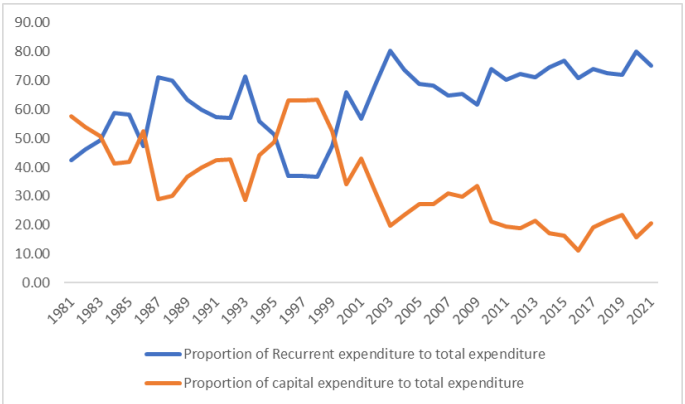

Fig. 2. Trend of the proportion of capital and recurrent expenditure in Nigeria.

However, the reduction of this assumed unproductive consumption expenditure could cause great consequence to the economy especially when it is associated with realising public investment project as to undermine the operations and maintenance expenditures needed to run projects at a level consistent with its expected use, and to maintain the capacity of the investment during their expected lifetime and even in administrative activities as it helps in ensuring that the basic administrative needs and standards are in place and therefore the basis for recurrent expenditure requires an understanding of the grave fiscal consequence to cause a serious resolve to be discreet in government expenditure needs. The main objective of this study is to examine the influence of public expenditure on economic growth of Nigeria from 1981 to 2021. Specifically, the study seeks to: (i) examine the neutrality/non-neutrality of recurrent expenditure on economic growth of Nigeria, and (ii) ascertain the effect of interaction of public expenditure with monetary policy on economic growth of Nigeria.

2. LITERATURE REVIEW

Adam Smith and other classical economists promoted minimal government involvement in the provision of public goods, law and order, and those investments that the private sector was unable to effectively offer owing to their high risk or unprofitable nature [8]. The classical system was shown as being ineffective by the unprecedented Great Depression of the 1930s, which ended the dominance of this philosophy over the global economy. The Keynesian economists, on the other hand, favoured the use of public spending to encourage growth and development by raising aggregate demand, particularly during economic downturns. This is the clear justification for government involvement in economic activity in the contemporary era. This is due to the fact that government is required to rectify short-term alterations in an economy [9,8,5] as well as to construct a socially optimum path for a country's growth and development [10]. Government also exists to provide basic services such as health, education, communication, and transportation, among others, through expenditures that affect citizens' well-being and the business atmosphere for the private sector (Ukwueze 2015, Aladejare 2019), [8].

Consistent with the underlying assumptions of the Neoclassical growth models of Solow [11], Cass [12], and their following revisions, discount factors (rates of capital depreciation, population increase, and technological advancement) have a significant role in determining long-run or steady-state economic growth. Although distortionary taxation and productive government spending may influence people's propensities to invest, these changes only have an impact on steady-state factor ratios rather than the rate of economic growth, as the rate of economic growth only changes temporarily before stabilizing at either the old or new steady state [13]. The neoclassical growth models draw the conclusion that government expenditure only has a short-term impact on economic growth rate. Contrarily, endogenous growth models – especially those of Barro [7,14] and King & Rebelo [15] – suggest that distortionary taxation and productive spending will have a significant impact on the long-run level output path and growth rate as the rate of distortionary taxation changes and as the amount of government productive spending rises. According to endogenous growth models, non-discriminatory taxes and wasteful government spending have no impact on the steady-state growth rate [16,17].

In exploring the linkages between public expenditure and economic growth, we employ the Keynesian theory. Keynes classified government spending as an exogenous element. According to Keynes, government spending boosts economic growth. As a result, a rise in government consumption is likely to lead to an increase in employment, profitability, and investment via multiplier effects on aggregate demand. As a result, government spending augments aggregate demand, resulting in increased production depending on expenditure multipliers. In analyzing the role of government in income stabilization, Keynes looked at the budget as a tool for government influence on the economy. Taking cognizance of the aggregate demand function which is expressed as:

$$AD = C + I + G \tag{2.1}$$

Where AD is aggregate demand, C is private consumption expenditure, I is private investment expenditure, and G is government expenditure.

Following Equation (2.1), C and I are usually expressed as a function of income; and G is assumed to be autonomous. This gives the following set of equations:

$$C = a + b(Y - T) \tag{2.2}$$

Where a is autonomous consumption, b is the marginal propensity to consume, Y is the level of income, and T is taxes; where Y – T represents the personal income. Also,

$$I = I_0 + kY \tag{2.3}$$

Where I_0 is the autonomous investment, and kY captures the induced investment.

Given that $G = G_0$, and AD = Y, substituting Equation (2.2) and Equation (2.3) into Equation (2.1) yields:

$$Y = a + b(Y - T) + I_0 + kY + G_0 \tag{2.4}$$

$$Y = a + bY - bT + I_0 + kY + G_0 \tag{2.5}$$

By collecting like terms,

$$Y - bY - kY = a + I_0 + G_0 - bT \tag{2.6}$$

$$Y(1 - b - k) = a + I_0 + G_0 - bT \tag{2.7}$$

$$Y = \frac{a + I_0 + G_0 - bT}{1 - b - k} \tag{2.8}$$

Equation (2.8) represents the equilibrium level of income in the economy. Consistent with Equation (2.8), any change in government expenditure will bring about a change in the equilibrium level of income through the multiplier effect which is expressed as:

$$\frac{\Delta Y}{G_0} = \frac{1}{1 - b - k} \tag{2.9}$$

Equation (2.9) is the multiplier, and the change in the level of national income will be given by

$$\Delta Y = \frac{1}{1 - b - k}\Delta G_0 \tag{2.10}$$

Therefore, an increase in government expenditure will lead to an increase in the level of national income through the multiplier effect. Thus, it can be stated that government expenditure increases aggregate demand in the economy. Therefore, *ceteris paribus*, a rise in government expenditure will raise aggregate demand in the economy hence, the level of income. A reduction in government spending has a corresponding contractionary impact on the level of national income. Taxes, like savings, are known to represent leakages in the income stream, whereas government spending, like investment, is an injection [18]. In order to boost the amount of income and increase employment during a recession or depression, John Maynard Keynes argued that the government should continually maintain a deficit budget.

Empirical studies on the influence of public expenditure on economic growth have been examined over the years. Ogar, Eyo, and Arikpo [19] investigated the influence of government spending on Nigerian economic growth. This research looked precisely at the influence of government capital, government recurrent spending, and government fiscal deficit on Nigerian economic growth from 1980 to 2017. The VAR approach, among others, was used to analyze the data. According to the findings, government capital spending had a favourable but negligible influence on Nigerian economic development. Furthermore, the study found that in the short term, government recurrent expenditure has a negligible positive influence on Nigerian economic growth, but in the long run, it has a positive but insignificant effect on economic growth.

The Maximum Likelihood Cointegration was used by Agu and Nyatanga [20] to examine the connection between Nigeria's fiscal and monetary policies and economic growth. The study discovered evidence for a long-run connection between economic growth, level of openness, government spending, and broad money supply. Also, Onifade et al. [21] employed Pesaran's ARDL technique to study the effects of government spending on economic growth in Nigeria from 1981 to 2017. According to the study, recurrent spending had a considerable negative influence on Nigerian economic growth, whereas capital expenditure had a positive but minor effect. In summary, government recurrent spending was shown to have a negative influence on economic growth, but public capital expenditures had no beneficial impact on economic growth over the research period.

Aluthge, Jibir, and Abdu [5] used time series data for the years 1970–2019 to examine the effects of Nigerian government spending (divided into capital and recurrent) on economic growth. In this investigation, the study used the Autoregressive Distributed Lag model. The study takes structural breaks into consideration in the unit root test and co-integration analysis to assure the reliability of the results. The study's main conclusions are that although recurrent spending does not have a major short- or long-term influence on economic growth, capital

spending does, both positively and significantly affecting economic growth.

The effects of monetary and fiscal policies on Nigeria's economic productivity from 1981 and 2020 were examined by Agu, Okoli, and Olaosebikan [22]. The study analyzed the short- and long-term effects of the variables on Nigeria's economic development by using the Autoregressive Distributed Lag (ARDL) estimating technique, the Bound Test approach, and other post estimation tests. According to the study, when applied separately, both policies have a detrimental influence on economic growth. However, the long-term impact of the combined (interaction model) effect of both policies on economic growth is large and favourable. According to the paper, interactive monetary and fiscal policies should be used by decision-makers to manage the economy.

In order to reevaluate the claim made by the Keynesian and Endogenous Growth Models that public spending boosts economic growth, Okpabi, Ijuo, and Akiri [23] looked into the effect of government spending on economic growth in Nigeria over the years 1984 to 2015. Error correction modelling and Johansen co-integration were used in the study. The empirical findings supported the Keynesian and Endogenous Growth Models' contention that public expenditure stimulates economic growth in Nigeria over the long term by having a significant positive impact on growth of the economy in the long run and a negligible negative impact on the economy in Nigeria in the short run.

Between 1981 and 2020, Ugochukwu & Oruta [24] investigated the impact of various government expenditure components on economic growth in Nigeria. The Granger Causality Test and Error Correction model were used in the investigation. The short-run model showed that the components of government spending, such as recurrent expenditures on health, education, and agriculture, have a negligible adverse effect on economic growth. Recurrent spending on debt servicing, road construction, and other expenses had a favourable but insignificant influence on economic growth. It has been demonstrated that government capital spending on social services has a negative and considerable influence on economic growth. On the other hand, government investments in economic services had a beneficial but minor influence. Over time, every aspect of the employed government spending had a substantial impact on economic expansion.

Using yearly time series data from 1981 to 2018, Magaji [25] investigated the role of government spending (capital and recurrent) in fostering economic growth in Nigeria over the three-decade period. The variable's stationarity was examined using the unit root test, and the link between the variables was examined using the Autoregressive Distributed Lag (ARDL) model. The results demonstrated that capital spending and economic growth in Nigeria have a negative and statistically significant long-run connection. The outcome also shows that recurrent expenditure and economic growth in Nigeria have a statistically significant and long-term beneficial connection. The study came to the conclusion that economic growth in Nigeria is not correlated with capital expenditures.

Using a bound test under the ARDL technique, Ekpo, Daniel & Okon [26] used a modified and extended aggregate production model to assess the impacts of government spending at the aggregate level on economic growth in Nigeria over the period 1981-2018. The co-integration analysis demonstrates a long-term link between total government spending and Nigerian economic growth. According to Keynesian theory, the ARDL analysis demonstrate that total government spending had a favourable influence on economic growth in Nigeria. In line with Wagner's Law, the Granger causality test result shows a one-way causal link between total government spending and economic growth.

Several studies focused on the effect of public expenditure on economic growth [27,28,29,30,31,32]. Meanwhile, the debate on the neutrality/non-neutrality of the recurrent expenditure on economic growth has remained an issue of contention in the literature. Further, studies who tries to explore the interaction of monetary and fiscal policies in influencing the macroeconomy [33,34,22,35] were only interested in the aggregate expenditure. To bridge this gap, this study resorts to exploring the neutrality/non-neutrality of recurrent expenditure on economic growth; as well as examining the interaction of monetary policy with each of the expenditure components (capital and recurrent expenditures) as it affects economic growth. The study employs the technique of the autoregressive distributed lag (ARDL) model which aids in the examination of both the short-run and long-run estimates based on the

information provided by the stationarity test. Our analysis also utilize data from 1981 to 2021 which is long enough to capture different political and economic events that could influence aggregate output in the economy.

3. METHODOLOGY

3.1 The Model and Analytical Technique

Endogenous growth theory nonetheless has that fiscal policy can affect both the level and growth rate of per capita output [7,16]. The model for this study is based on the traditional Cob-Douglas production function where Y is defined to be a function of two variables incorporating capital stock (K) and labour (L) with productivity parameter represented by A, thus yield Equation (1)

$$Y_t = AK_t^{\alpha} L_t^{\beta} \quad (1)$$

By transforming Equation (1) into its linear form, we introduce the natural log of the variables and this gives Equation (2)

$$lnY_t = lnA + \alpha lnK_t + \beta lnL_t \quad (2)$$

Where ln represents the natural log, ant t is time.

By expanding Equation (2), Y is represented by RGDP, K is represented by GFCF, and L is represented by LABF; and by incorporating the expenditure components and adapting the model of interactive term by Agu, Okoli & Olaosebikan [31] we have:

$$RGDP_t = f(GFCF_t, LABF_t, CAEX_t, CXIN_t,$$

$$RCEX_t, RXIN_t, MGDP_t, PLNR_t, FGDP_t, INFR_t) \quad (3)$$

Where RGDP is the natural log of real gross domestic product (representing economic growth); GFCF is the natural log of gross fixed capital formation (representing capital); LABF is the natural log of total working population (a proxy for labour), CAEX is the natural log of capital expenditure; CXIN in the interaction term of log of capital expenditure with interest rate (prime lending rate); RCEX is the log of recurrent expenditure; RXIN is the interaction term of log of recurrent expenditure with interest rate (prime lending rate); MGSP is the ratio of broad money supply to GDP (measuring financial deepening); PLNR is the prime lending rate (measuring monetary policy); FGDP is foreign direct investment (% of GDP; and INFR is inflation rate (consumer prices).

By transforming Equation (3) into an econometric model and incorporating the error term, we then have:

$$RGDP_t = \varphi_0 + \varphi_1 GFCF_t + \varphi_2 LABF_t + \varphi_3 CAEX_t + \varphi_4 CXIN_t + \varphi_5 RCEX_t + \varphi_6 RXIN_t + \varphi_7 MGDP_t + \varphi_8 PLNR_t + \varphi_9 FGDP_t + \varphi_{10} INFR_t + \mu_t \quad (4)$$

Where φ_0 is the constant of the function (portraying that we are not running a regression through the origin), $\varphi_0 \; to \; \varphi_{10}$ are the partial slope coefficients of the explanatory variables, and μ_t is the error term which upon assumption, is normally distributed.

Given that our study employs time series data in its analysis, it is pertinent to explore the unit root properties of the variables. This is done by deploying the Augmented Dickey-Fuller (ADF) unit root test developed by Dickey & Fuller [36]. With the constant and deterministic trend assumption deployed, the Equation for the test is specified as follows:

$$\Delta Z_t = \delta_0 + \delta_1 Z_{t-1} + \gamma t + \sum_{i=1}^{p} \theta_i \Delta Z_{t-i} + \varepsilon_t \quad (5)$$

Where Z_t is the time series variables of interest in the study, δ_0 is the constant of the evaluation, δ_1 is the coefficient to be tested for unit root, γ measures the coefficient of the trend variable (t), p captures the lag length which is automatically selected using the Schwarz Information Criterion (SIC), θ_i captures the coefficients of the lagged value of the changes in the time series variable and it such aids in ruling out serial correlation in the model, and ε_t is the error term. The unit root test is based on the null hypothesis that $\delta_1 = 1$. The rejection of the null hypothesis is based on the condition that the ADF must be negative and statistically significant at the 5% level otherwise, e accept the null hypothesis and conclude that the variable contains a unit root.

The key analytical technique of the study follows the autoregressive distributed lag (ARDL) technique which helps in the estimation of both the short-run and long-run models with utmost simplicity. According to Banerjee et al. [37], Charemza & Deadman [38], Johnston & DiNardo [39], there is the need to capture the short run and long run responses before estimating the static long run equation to avoid generating

imprecise coefficient estimates. Enders [40] acknowledges that using that approach would yield valid t-statistics even when some of the right-hand variables are endogenous. The ARDL model associated with the error correction mechanism is specified below:

$$\Delta RGDP_t = \vartheta + \beta_i X_t + \sum_{i=0}^{p} \gamma_i \Delta RGDP_{t-i} + \sum_{i=0}^{q} \delta_i \Delta X_{t-i} + \theta ECM_{t-1} + \mu_t \quad (6)$$

Consistent with Equation (6), ϑ is the constant term of the function, β_i captures the respective long-run coefficients of the explanatory variables (X_t), γ_i measures the short-run slope coefficient of the lagged changes in the dependent variable on itself, p and q are the lag length of the changes in the dependent and explanatory variables respectively (which is automatically selected based on the Schwarz Information Criterion – SIC), δ_i measures the short-run partial coefficient of the changes in economic growth given the changes in the explanatory variables, θ is the error correction mechanism which is the slope of the one-period lag of the residuals in the model, and μ_t is the disturbance term. The error correction mechanism measures the speed of adjustment of the model from the short-run disequilibrium in order to achieve a long-run equilibrium. The coefficient (θ) must be negative and statistically significant for any adjustment to take place in the model.

3.2 Sources of Data

Data for this study are time series in nature and covers the period of 1981 to 2021. Some of the variables, especially the interaction terms, were constructed. For instance, the interaction term CXIN was constructed by multiplying the log of capital expenditure by interest rate, by the interaction term RXIN was constructed by multiplying the log of recurrent expenditure by interest rate. These two interaction terms measure the joint effect of monetary and fiscal policy within the economy. Data for the study were obtained from the Central Bank of Nigeria (2021) as well as from the World Bank [4] database concerning World Development Indicators. Data on variables such as labour force, foreign direct investment, and inflation rate were obtained from the World Bank database while data on all other variables were gotten from the Central Bank of Nigeria statistical bulletin.

4. EMPIRICAL FINDINGS

4.1 Trend Analysis

The analysis of trend of the variables over the years is done based on the two components of government expenditure (capital expenditure and recurrent expenditure) as they relate with economic growth (real gross domestic product). Fig. 3 captures the trend of recurrent expenditure (RCEX) and real gross domestic product (RGDP).

As could be observed from Fig 1, recurrent expenditure of the Federal Government of Nigeria was somewhat sluggish between 1981 to 2002 as it maintained a stable increase. Subsequently, it rose slightly from 2003 and reaching N9,145.15 billion in 2021 against N4.85 billion in 1981. The real gross domestic product has been maintaining an upward trend from 1981 to 2021, though the sharp increase was recorded from N26,935.32 billion in 2001 to N69,780.69 billion in 2015, and then to N73,382.77 billion in 2021. One common trend between recurrent expenditure and real GDP is that they both maintained an upward trend in recent years.

Going for the trend in capital expenditure and real gross domestic product, Fig. 4 captures the trend over the years.

It is evident from Fig. 4 that the capital expenditure component has been sluggish compared to the recurrent component. The trend in the recurrent expenditure has been on a very slow rise over the years, though the real GDP has been maintaining a sharp upward trend.

4.2 Descriptive Statistics

The descriptive properties of the variables are portrayed in Table 1 where both the measures of central tendency and measures of dispersion are captured for each of the variables. The discussion of Table 1 is done based on the key variables of interest namely, real GDP (RGDP), recurrent expenditure (RCEX), and capital expenditure (CAEX).

It is evident from Table 1 that RGDP averaged 10.41% over the forty-one (41) years under consideration. It has a standard deviation of 0.53%, and it is positively skewed (given the skewness coefficient of 0.27) and platykurtic (given that the coefficient of kurtosis being 1.496 is less than 3.0). Given that the Jarque-Bera

statistic of 4.352 and its accompanied p-value of 0.114 portraying its insignificance, it can be stated that RGDP is normally distributed during the study period. Capital expenditure averaged 5.12% with a standard deviation of 2.05% and it is negatively skewed with a coefficient of -0.59, platykurtic with a 1.899 coefficient of kurtosis (being less than +3), and it is normally distributed given that the Jarque-Bera statistic of 4.479 is insignificant at the 5% level. Similarly, recurrent expenditure averages 5.80% with a standard deviation of 2.46% and it is negatively skewed given the -0.39 coefficient of skewness. The distribution is platykurtic since the coefficient of kurtosis being 1.784 is less than 3, and it is normally distributed since the Jarque-Bera statistic of 3.580 is insignificant at the 5% level.

4.3 Correlation Analysis

The correlation analysis is conducted to ascertain the direction of association between variables utilized in the study. For emphasis, the correlation analysis will be discussed based on the key variables of interest along with the interaction terms. Table 2 captures the computed Pearson correlation coefficient for the variables.

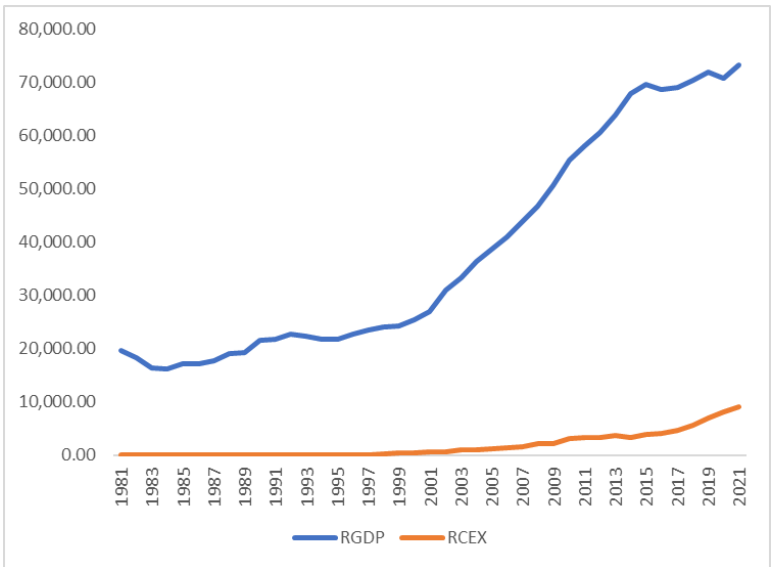

Fig. 3. Trend of recurrent expenditure and Real GDP in Nigeria, 1981 – 2021

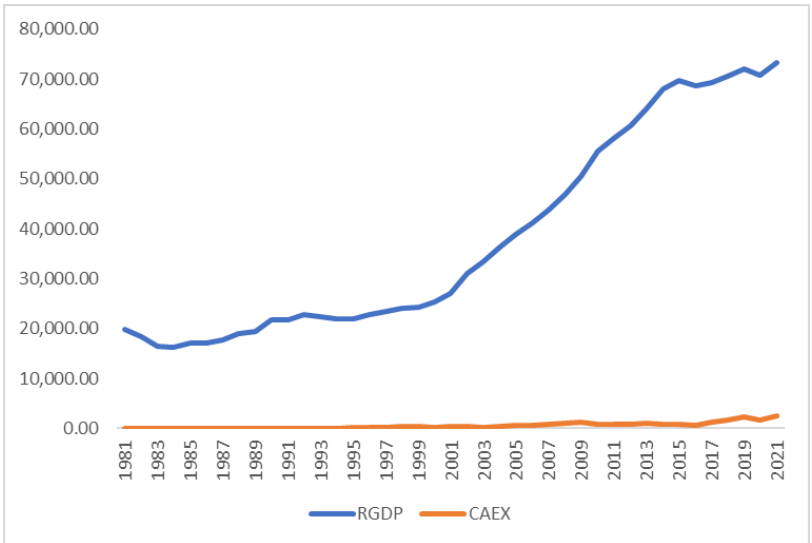

Fig. 4. Trend of capital expenditure and GDP in Nigeria

Table 1. Descriptive Properties of the Variables

Variables	Mean	Maxi-mum	Mini-mum	Standard Deviation	Skewness	Kurtosis	Jarque-Bera	Probability
RGDP	10.41	11.20	9.69	0.53	0.27	1.496	4.352	0.114
GFCF	7.63	10.97	4.47	1.97	-0.23	1.768	2.941	0.230
LABF	18.02	18.55	17.50	0.32	0.002	1.797	2.472	0.291
CAEX	5.12	7.83	1.41	2.05	-0.59	1.899	4.479	0.106
CXIN	90.12	143.56	14.59	38.32	-0.89	2.587	5.711	0.058
RCEX	5.80	9.12	1.56	2.46	-0.39	1.784	3.580	0.167
RXIN	101.99	167.06	12.23	44.40	-0.79	2.502	4.709	0.095
MGDP	15.42	24.90	8.46	5.35	0.55	1.625	5.254	0.072
PLNR	17.31	29.80	7.75	4.64	0.27	3.518	0.953	0.621
FGDP	0.33	1.92	-0.08	0.45	2.24	7.784	73.222	0.000
INFR	18.95	72.84	5.39	16.66	1.85	5.307	32.582	0.000

Source: Researchers' Computation (2023).

Table 2. Correlation matrix of the variables

	RGDP	GFCF	LABF	CAEX	CXIN	RCEX	RXIN	MGDP	PLNR	FGDP	INFR
RGDP	1.00										
GFCF	0.95	1.00									
LABF	0.97	0.99	1.00								
CAEX	0.88	0.98	0.95	1.00							
CXIN	0.69	0.82	0.78	0.88	1.00						
RCEX	0.94	0.99	0.98	0.98	0.85	1.00					
RXIN	0.77	0.85	0.83	0.88	0.98	0.89	1.00				
MGDP	0.91	0.78	0.85	0.70	0.49	0.79	0.59	1.00			
PLNR	-0.02	0.07	0.06	0.16	0.56	0.15	0.54	-0.13	1.00		
FGDP	-0.23	-0.19	-0.20	-0.12	0.10	-0.14	0.06	-0.23	0.54	1.00	
INFR	-0.35	-0.31	-0.31	-0.29	-0.13	-0.29	-0.14	-0.29	0.34	0.55	1.00

Source: Researchers' Computation (2023)

Table 3. Augmented Dickey-Fuller (ADF) Unit Root Test Result

Variable	ADF Statistic at Level	ADF Statistic at First Difference	Probability	Order of Integration
RGDP	-1.4472	-3.8912	0.0219	I(1)
GFCF	-2.2289	-3.9286	0.0201	I(1)
LABF	0.1537	-3.6201	0.0315	I(1)
CAEX	-1.4554	-6.7674	0.0000	I(1)
CXIN	-2.3215	-7.6892	0.0000	I(1)
RCEX	-0.672	-8.7697	0.0000	I(1)
RXIN	-2.084	-6.5621	0.0000	I(1)
MGDP	-2.1979	-5.7079	0.0000	I(1)
PLNR	-3.2596	-6.3678	0.0000	I(1)
FGDP	-4.4301	--------	0.0069	I(0)
INFR	-4.1023	---------	0.0131	I(0)

Source: Researchers' Computation (2023).

Table 4. ARDL bounds test result

Test Statistic	Value	Significance	I(0)	I(1)
F-statistic	5.8803	10%	1.76	2.77
k	10	5%	1.98	3.04
		2.5%	2.18	3.28
		1%	2.41	3.61

Source: Researchers' Computation (2023)

It can be observed from Table 2 that all the expenditure components and their respective interaction terms are positively correlated with RGDP, and such correlations are very strong. For instance, the correlation between CAEX and RGDP is +0.88 and the correlation between RCEX is +0.94. Similarly, the correlation between CXIN and RGDP is +0.69 while that of RXIN and RGDP is +0.77. These strong correlations does not in any way portray a cause-effect relationship hence, further analysis will be conducted to ascertain whether such strong correlations imply any significant effect on economic growth.

4.4 Unit Root Test

The conduct of unit root test is geared towards ascertaining the order of integration of the time series variables in the study. The Augmented Dickey-Fuller (ADF) test is employed in this regard, with the constant and trend assumption being utilized. Table 3 presents the test result, where I(0) indicates that the variable is stationary at level and I(1) portrays that the variable is stationary at first difference.

The result in Table 3 portrays that the variables utilized in the study are in mixed order of integration. That is, some of the variables are stationary at level while others are stationary at first difference. Given the result, foreign direct investment (FGDP) and inflation rate (INFR) are both stationary at level while all other variables are stationary only after first differencing. The stationarity of the time series variables in mixed order of I(0) and I(1) calls for the detection of the existence of long-run (levels) relationship among the variables in the model.

4.5 Test for Cointegration

For the reason that the time series variables are stationary in mixed order of levels and first difference, the cointegration test is conducted to detect whether any long-run relationship exists in the model. In order to achieve this, the ARDL Bounds test for levels relationship is conducted and Table 4 presents the result. The test is conducted using the 5% level of significance in comparing the upper and lower bounds. The null hypothesis is that there is no levels relationship in the model.

The Bounds test for levels relationship is conducted using the F-statistic which is often compared with the lower bound, I(0), and upper bound, I(1) values. With k=10 indicates that the model estimates ten (10) parameters. From the result is Table 4, the F-statistic is 5.8803, the lower bound is 1.98, and the upper bound is 3.04. Since the F-statistic lies outside the lower and upper bounds, the null hypothesis of no levels relationship is rejected. Consequently, there is cointegration in the model and we will have to estimate both the short-run and the long-run models.

4.6 Short-Run Autoregressive Distributed Lag (ARDL) Model Estimates

The existence of cointegration in the model requires the estimation of both the short-run and the long-run models under the ARDL framework. The short-run error correction model is estimated, and Table 5 presents the result for the study. The result indicates that the previous year's growth significantly influences the current year's growth. Thus, the one-period lag of RGDP increase the current value by 0.2885% hence, RGDP is strongly endogenous in nature. It can also be noted that at the 5% level, GFCF and its one-period lag generated a negative and significant influence on economic growth during the study period. A one unit increase in changes in GFCF could lead to a 0.0533% decrease in economic growth, while its one-period lag reduces economic growth by 0.0704% on the average. The reason for such negative effect could be associated with capital consumption which is not being accounted for as could be seen from infrastructural decays.

Changes in the labour force is observed to exert a negative but insignificant influence on economic growth while its one-period lag exerts a negative and significant effect. Therefore, the previous year's labour force reduces the current year's growth by 18.3778% on the average. This could be linked to low labour absorptive capacity as could be seen from the rising unemployment rate in the country in recent times. The result further indicates that while financial deepening exerts a negative and significant influence on economic growth, interest rate yields a positive and significant effect. This is against a priori expectation, and could be linked to lack of prudential regulation with attendant financial repression in the country.

The short-run ARDL model result presents the error correction term of -0.2975 which is also statistically significant at the 5% level. It follows that only 29.75% of the total short-run distortions

in the model is corrected annually for equilibrium to be restored. That is, it will take about three years and six months for equilibrium in the model to be fully restored. The r-squared of 0.9146 indicates that the explanatory variables in the model jointly explain 91.46% of the total variation in economic growth during the study period; and by accounting for degree of freedom, the explanatory variables still explain 85.89% of the total variation in economic growth as revealed by the adjusted r-squared. The model is free from autocorrelation given that the Durbin-Watson statistic of 2.2576 is within the appropriate range.

The result in Table 5 reflects that while changes in capital expenditure exerts a negative and significant effect on economic growth, its one-period lag exerts a positive and significant influence on growth. This is an indication that capital spending will take time before it could translate to meaningful growth driver through its impacts on capital formation and infrastructural development within the economy. From the coefficient, the previous years' capital expenditure increases economic growth by 0.1536% on the average. However, its current value leads to a 0.1492% decrease in economic growth on the average. Given that these coefficients are less than unity, it is an indication that economic growth responds slowly to changes in capital expenditure within the economy. By interacting fiscal policy, that is, capital expenditure and monetary policy, that is, interest rate (CXIN) to see how successful monetary-fiscal coordination could spur growth, findings from the study indicates that changes in such interaction will lead to a positive and significant effect on economic growth; while its one period lag will have a negative and significant effect. From the coefficient, a unit increase in changes in CXIN will lead to a 0.0113% increase in economic growth; while its one period lag will lead to a 0.0071% decrease in economic growth.

For changes in recurrent expenditure, it could be observed that it exerts a positive and significant influence on economic growth while its one-period lag exerts a negative and significant influence. This negative effect aligns with the findings of Bencivenga (2018) who reported a negative effect of recurrent expenditure on economic growth. The significant effect of the recurrent expenditure component in influencing economic growth portrays the fact that recurrent expenditure is not neutral in influencing economic growth in Nigeria. It is clear from its coefficient that a unit percent increase in recurrent expenditure leads to a 0.1654% increase in economic growth; while the previous year's recurrent expenditure reduces economic growth by 0.1353% on the average. By looking at the changes in the interactive term (RXIN), recurrent expenditure interacting with interest rate exerts a negative and significant effect on economic growth; while its one-period lag yields a positive and significant effect. Thus, a unit percent increase in changes in RXIN will lead to a 0.0127% decrease in economic, while the previous year's interaction leads to a 0.0075% increase in economic growth. This finding is a clear indication of the importance of lags in both monetary and fiscal policy actions in the economy.

The implication of the above findings is that while recurrent expenditure is not neutral in influencing economic growth in Nigeria during the study period, it is only an effective interaction (coordination) of monetary policy with capital expenditure that could bring the desired positive effect on economic growth. This arises from the negative effect of the interaction of recurrent expenditure and interest rate on economic growth. However, it is also worth noting that though the interaction of capital expenditure with interest rate yields positive effect, the negative one-period lag effect on growth points to the fact that previous year's interest rate effect could be detrimental to growth. Further, though the interaction of interest rate with recurrent expenditure yields a negative effect, the positive effect of its one-period lag on growth signifies the fact that it takes time before policies of increasing recurrent expenditure could have the desired effect on the overall economy.

4.7 Long Run ARDL Estimates

In the long-run, the estimates of the model are presented in Table 6 where it is observed that GFCF still exerts a negative but insignificant influence on economic growth in the long-run, while LABF generated a positive but insignificant effect.

Without interaction with interest rate, capital expenditure exerted a negative but insignificant effect on economic growth (which is in line with the findings of Magaji [24], while its effect becomes positive but insignificant upon interaction. On the contrary, the effect of recurrent expenditure on economic growth without interaction with interest rate is positive but insignificant, but becomes negative and

insignificant upon interaction. Financial deepening is observed to yield a positive but insignificant influence on economic growth in the long-run, while the effect of interest rate is positive and significant. A 1% increase in interest rate leads to a 0.0675% increase in economic growth on the average. The positive and significant effect of interest rate on economic growth is against a priori expectation, but could be as a result of the need to maintain a positive real interest rate which is a pre-requisite for growth. however, the effect of foreign direct investment and inflation rate are both negative but insignificant in influencing economic growth in the long-run.

4.8 Stability Test

In order the ascertain the stability of the parameters of the model, the stability test is conducted based on the Cumulative Sum (CUSUM) approach as shown in Fig. 5.

Table 5. ARDL Short-Run Error Correction Model Result

Dependent Variable: Δ(RGDP)				
Selected Model: ARDL (2, 2, 2, 2, 2, 2, 2, 1, 1, 0, 0)				
Variable	**Coefficient**	**Standard Error**	**t-Statistic**	**Probability**
Δ(RGDP(-1))	0.2885	0.0698	4.1322	0.0014*
Δ(GFCF)	-0.0533	0.0272	-1.9614	0.0734
Δ(GFCF(-1))	-0.0704	0.0269	-2.6190	0.0224*
Δ(LABF)	-3.1880	2.3601	-1.3508	0.2017
Δ(LABF(-1))	-18.3778	2.7385	-6.7109	0.0000*
Δ(CAEX)	-0.1492	0.0365	-4.0843	0.0015*
Δ(CAEX(-1))	0.1536	0.0321	4.7842	0.0004*
Δ(CXIN)	0.0113	0.0022	5.2365	0.0002*
Δ(CXIN(-1))	-0.0071	0.0017	-4.1169	0.0014*
Δ(RCEX)	0.1654	0.0349	4.7361	0.0005*
Δ(RCEX(-1))	-0.1353	0.0300	-4.5085	0.0007*
Δ(RXIN)	-0.0127	0.0022	-5.8176	0.0001*
Δ(RXIN(-1))	0.0075	0.0016	4.7825	0.0004*
Δ(MGDP)	-0.0093	0.0019	-4.7571	0.0005*
Δ(PLNR)	0.0124	0.0025	5.0273	0.0003*
ECM_{t-1}	-0.2975	0.0256	-11.6296	0.0000*
R-squared	0.9146	Mean dependent var		0.0355
Adjusted R-squared	0.8589	S.D. dependent var		0.0446
S.E. of regression	0.0168	Akaike info criterion		-5.0463
Sum squared residual	0.0065	Schwarz criterion		-4.3638
Log likelihood	114.4026	Hannan-Quinn criterion		-4.8014
Durbin-Watson stat	2.2576			

*Note: * indicates significance at the 5% level.*
Source: Researchers Computation (2023)

Table 6. The ARDL long-run result

Variable	**Coefficient**	**Standard Error**	**t-Statistic**	**Probability**
GFCF	-0.1153	0.2689	-0.4287	0.6757
LABF	1.2686	1.3689	0.9267	0.3723
CAEX	-0.9642	0.8990	-1.0726	0.3046
CXIN	0.0534	0.0481	1.1116	0.2881
RCEX	1.2098	0.7979	1.5163	0.1553
RXIN	-0.0605	0.0446	-1.3543	0.2006
MGDP	0.0106	0.0136	0.7838	0.4484
PLNR	0.0675	0.0248	2.7175	0.0187*
FGDP	-0.0606	0.0796	-0.7611	0.4613
INFR	-0.0021	0.0019	-1.1036	0.2914
C	-11.5236	22.7754	-0.5060	0.6220

*Note: * indicates significance at the 5% level.*
Source: Researchers Computation (2023)

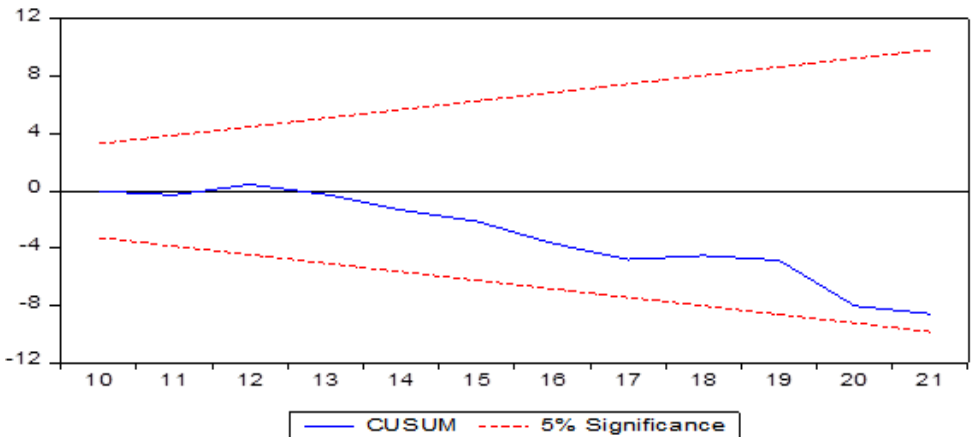

Fig. 5. Cumulative sum test for stability

For the reason that the 5% line lies within the upper and lower bounds, we have clear evidence that the parameter estimates of the model are stable for inference.

4.9 Robustness Check

In order to conduct a robustness check, the recurrent expenditure component is disaggregated into recurrent expenditure on administration (RADM), recurrent expenditure on Social and Community Services (RSCS), recurrent expenditure on Economic Services (RESC), and recurrent expenditure on transfers (RTRF). Table 7 presents the regression result.

In the short-run, the regression result in Table 7 indicates that all the recurrent expenditure components exerted a negative and significant effect on economic growth. A 1% increase in recurrent expenditure on administration will lead to a 0.0676% decrease in economic growth; a 1% increase in recurrent expenditure on social and community service will lead to a 0.0313% decrease in economic growth; and a 1% increase in recurrent expenditure on transfers will lead to a 0.0108% decrease in economic growth – all in the short-run. This is an indication that recurrent expenditures exert a dampening effect on overall economic activity. The error correction model indicates that 37.50% of the short-run distortions in the model is corrected annually.

We also explore the long-run effect of recurrent expenditure components on economic growth in Nigeria where Table 8 present the result.

Table 7. Robust ARDL result for disaggregated recurrent expenditure

Dependent Variable: Δ(RGDP)				
Selected Model: ARDL(1, 0, 1, 2, 0, 1, 2, 2, 0, 1, 0)				
Variable	**Coefficient**	**Standard Error**	**t-Statistic**	**Probability**
Δ(LABF)	8.4808	0.6211	13.6539	0.0000*
Δ(RADM)	-0.0676	0.0136	-4.9640	0.0001*
Δ(RADM(-1))	-0.0830	0.0121	-6.8836	0.0000*
Δ(RSCS)	-0.0313	0.0076	-4.1152	0.0006*
Δ(RTRF)	-0.0108	0.0125	-0.8616	0.4002
Δ(RTRF(-1))	-0.0736	0.0142	-5.1810	0.0001*
Δ(MGDP)	0.0052	0.0017	3.0696	0.0066*
Δ(MGDP(-1))	-0.0119	0.0022	-5.3368	0.0000*
D(INFR)	-0.0034	0.0003	-12.2705	0.0000*
ECM_{t-1}	-0.3750	0.0287	-13.0835	0.0000*
R-squared	0.8802	Mean dependent var		0.0355
Adjusted R-squared	0.8430	S.D. dependent var		0.0446
S.E. of regression	0.0177	Akaike info criterion		-5.0158
Sum squared residual	0.0091	Schwarz criterion		-4.5892
Log likelihood	107.8080	Hannan-Quinn criterion		-4.8627
Durbin-Watson stat	2.0710			

*Note: * indicates significance at the 5% level.*
Source: Researchers Computation (2023)

Table 8. The ARDL long-run result for disaggregated recurrent expenditure

Variable	Coefficient	Standard Error	t-Statistic	Probability
GFCF	-0.2134	0.1089	-1.9598	0.0657
LABF	-0.0916	0.9112	-0.1005	0.9210
RADM	0.4955	0.1499	3.3048	0.0039*
RESC	0.0461	0.0595	0.7758	0.4479
RSCS	-0.4444	0.0986	-4.5053	0.0003*
RTRF	0.2592	0.0831	3.1189	0.0059*
MGDP	0.0486	0.0144	3.3801	0.0033*
FGDP	0.0001	0.0505	0.0025	0.9980
INFR	-0.0055	0.0017	-3.2341	0.0046*
PLNR	0.0111	0.0055	2.0081	0.0599
C	10.4522	15.2006	0.6876	0.5005

*Note: * indicates significance at the 5% level.*
Source: Researchers Computation (2023)

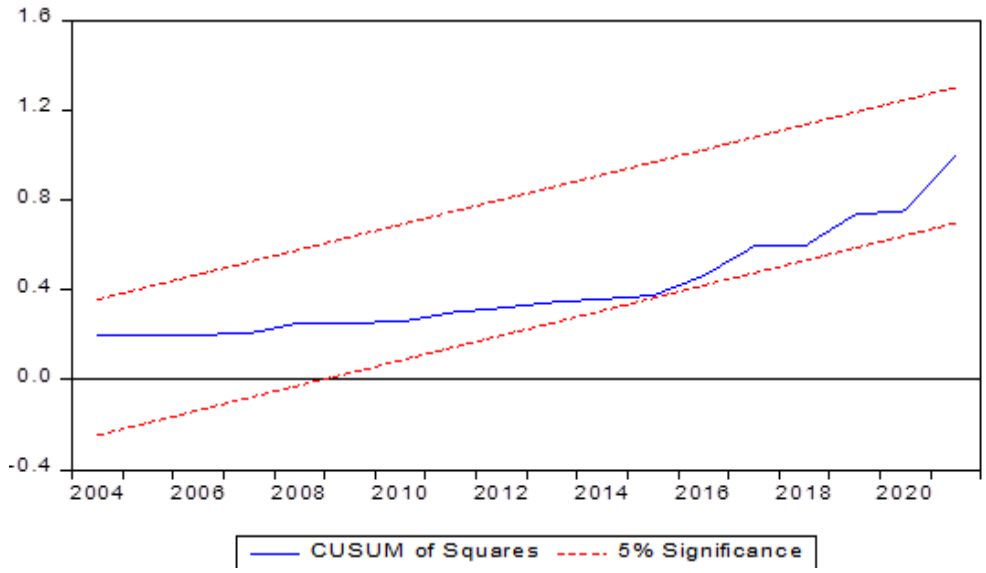

Fig. 6. Cumulative Sum (CUSUM) of squares test for stability

The result in Table 8 presents the long-run result of the disaggregated model in the long-run. It is observed that the result is different in some aspect from the short-run result in Table 7. For instance, the long-run effect of recurrent expenditure on administration, recurrent expenditure on economic services, and recurrent expenditure on transfers now exert a positive effect on economic growth. A 1% increase in recurrent expenditure on administration will lead to a 0.4955% increase in economic growth, while w 1% increase in recurrent expenditure on transfers will lead to a 0.2592% increase in economic growth. However, the long-run result on the effect of recurrent expenditure on social and community service is negative and significant. Thus, a 1% increase in recurrent expenditure on social and community services will lead to a 0.4444% decrease in long-run economic growth.

The stability of the result in the disaggregated model is presented in Fig. 6.

Since the CUSUM line lies within the 5% critical upper and lower bounds, the parameter estimates of the disaggregated model is stable and are therefore suitable for inferences.

5. CONCLUSION

This study has been concerned about exploring the recurrent expenditure neutrality postulation, as well as venturing into examining the interaction effect of monetary and fiscal policy in influencing economic growth in Nigeria. Time

series data for the period 1981 to 2021 was utilized, and the analysis follows the autoregressive distributed lag approach. Findings from the study indicate that there is a long-run relationship between economic growth and the explanatory variables in the model. In the short-run, it was discovered that the recurrent expenditure neutrality postulation does not hold, as it exerts a positive and significant effect on economic growth. However, the one-period lag of the recurrent expenditure generated a negative and significant effect on economic growth in the short-run. By interacting the recurrent expenditure with monetary policy (measured by interest rate), our result indicates that recurrent expenditure has a negative and significant influence on economic growth in the short-run, while its one-period lag exerted a positive and significant effect on economic growth of Nigeria during the study period. In the long-run, recurrent expenditure exerted a positive but insignificant effect on economic growth in Nigeria indicating the validity of the recurrent expenditure in the long-run. by interacting the recurrent expenditure with monetary policy, the effect now becomes negative but still insignificant. Based on the findings, it can be concluded that recurrent expenditure neutrality in Nigeria is only valid in the long-run and not in the short-run. The implication of this is that recurrent expenditure can only be utilized on the short-run basis to improve the macroeconomy.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Ekpo AH. The macroeconomic framework: Issues and challenges, Central Bank of Nigeria, 3rd Annual Monetary Policy Conference on Issues in Fiscal Management. 2003;1-10.
2. Assi R, Dimson J, Goodman A, Andersen JS. Spending reviews: A more powerful approach to ensuring value in public finances. Public and Social Sector Insights, London: McKinsey & Company; 2019.
3. Vtyurina S. Effectiveness and equity in social spending: The case of Spain. IMF Working Paper, No. WP/20/16; 2020.
4. World Bank. Introduction to public sector governance and accountability series: Public Expenditure analysis. The World Bank Group, Washington, D.C; 2015.
5. Aluthge C, Jibir A, Abdu M. Impact of Government Expenditure on Economic Growth in Nigeria, 1970-2019. CBN Journal of Applied Statistics. 2021;12(1): 139-174.
6. Pigou AC. A study in public finance. London: Macmillan; 1928.
7. Barro RJ. Government spending in a simple model of endogenous growth. Journal of Political Economy. 1990;98: S103–S125.
8. Jibir A, Aluthge C. Fiscal policy operation in Nigeria: Trends, magnitude and challenges. Turkey: KSP Book Publishers; 2019.
9. Singh B, Sahni BS. Causality between public expenditure and national income. The Review of Economics and Statistics. 1984;66:630-644.
10. Ram R. Government size and economic growth: A new framework and some evidence from cross-section and time-series data. American Economic Review. 1986;76(1):191-203.
11. Solow R. A contribution to the theory of economic growth. Quarterly Journal of Economics. 1956;71:65-94.
12. Cass D. Optimum growth in an aggregative model of capital accumulation. Review of Economic Studies. 1965;32(3):233-240.
13. Bleaney M, Gemmell NF, Kneller R. Testing the endogenous growth model: Public expenditure, taxation, and growth over long run. Canadian Journal of Economics. 2001;34(1):36-57.
14. Barro RJ. Economic growth in a cross section of countries. Quarterly Journal of Economics. 1991;106:407-443.
15. King R, Rebelo S. Public policy and economic growth; developing neoclassical implications. Journal of Political Economy. 1990;98:S126-S1511.
16. Sala-i-Martin X, Barro RJ. Technological diffusion, convergence and growth. Centre for Economic Policy Research, London (United Kingdom). NBER Working Paper, Cambridge, 1995;16.
17. Barro RJ, Sala-i-Martin X. Public finance in models of economic Growth. The Review of Economic Studies. 1992;59(4): 645-661.
18. Iyoha MA. Macroeconomics theory and policy. benin city, Nigeria: Mindex Publisher; 2004.

19. Ogar A, Eyo IE, Arikpo OF. Public expenditure and economic growth in Nigeria: VAR approach. European Journal of Economic and Financial Research. 2019;3(3):36-60.
20. Agu OC, Nyatanga P. An investigation into the crude oil price pass-through to economic growth in Nigeria. Acta Universitatis Danubius O Economica. 2020;16(1):82-99.
21. Onifade ST, Savas C, Savas E, Asongu S, Bekun FV. An Empirical retrospect of the impacts of government expenditures on economic growth: New evidence from the nigerian economy. Springer Journal of Economic Structure; 2020.
Retrieved from:https://doi.org/10.1186/s40008-020-0186-7
22. Agu OC, Okoli BC, Olaosebikan O. Interactive influence of monetary and fiscal policies on economic growth in Nigeria. FUOYE Journal of Finance and Contemporary Issues. 2021;1(1):49-60.21
23. Okpabi AS, Ijuo AO, Akiri SE. Government expenditure and economic growth in Nigeria. IOSR Journal of Economics and Finance (IOSR-JEF). 2021;12(1, Series II):28-35.
24. Ugochukwu SD, Oruta LI. Government expenditure and economic growth in Nigeria: A disaggregated analysis. Traektoriâ Nauki (Path of Science). 2021; 4022-4035.
25. Magaji A. The influence of government expenditure on economic growth in Nigeria. SSRN; 2022.
Available:https://doi.org/10.2139/ssrn.4181642
26. Ekpo UN, Daniel EJ, Okon IM. Government expenditure and economic growth in Nigeria: Aggregate level analysis using the Bound test approach. International Journal of Developing and Emerging Economies. 2022;10(1):1-20.
27. Kolluri BR, Panik M, Wahab M. Government expenditure and economic growth: Evidence from G7 countries. Applied Economics. 2000;32(8):1059 – 1068.
28. Yasin M. Public spending and economic growth: Empirical investigation of Sub-Saharan Africa. South western Economic Review. 2011;30:59–68.
29. Ono H. The government expenditure-economic growth relation in Japan: An analysis by using the ADL test for threshold cointegration. Applied Economics. 2014; 46(28):3523–3531.
30. Emori EG, Duke SB, Nneji ID. Impact of public expenditure on economic growth in Nigeria. International Journal of Scientific Research and Management (IJSRM). 2015;3(2):3694–3700.
31. Agu SU, Okwo IM, Ugwunta OD, Idike A. Fiscal policy and economic growth in Nigeria: emphasis on various components of public expenditure. Sage (October – December). 2015;1–12.
DOI:10.1177/2158244015610171
32. Effiong UE, Inyang NF. Public expenditure and economic growth in West African countries: An empirical examination. International Journal of Social Sciences and Conflict Management. 2020;5(1):49–59.
33. Effiong UE, Okon JI. The effectiveness of monetary and fiscal policies in stimulating real sector output in Nigeria: The need for monetary-fiscal coordination. American Journal of Economics and Business Management (AJEBM). 2020; 3(5):94–127.
Available:https://www.grnjournals.us/index.php/AJEBM/article/view/206/193
34. Ekong CN, Effiong UE. monetary policy and inflation targeting in Nigeria: The Need for Monetary-Fiscal Coordination. American Journal of Theoretical and Applied Business (AJTAB). 2020;6(3):37–46.
Available:https//dx.doi.org/10.11648/j.ajtab.20200603.14
35. Effiong UE, Arinze NP, Okon JI. Monetary and fiscal policy interactions and exchange rate movements in Nigeria. International Journal of Novel Research in Marketing Management and Economics (IJNRMME). 2022;9(2):46–64.
Available:https://www.noveltyjournals.com/issue/IJNRMME/Issue-2-May-2022-August-2022
36. Dickey D, Fuller WA. Distribution of the Estimates for Autoregressive Time series with Unit Root. Journal of the American Statistical Association. 1979;74(June):427–431.
37. Banerjee A, Dolado J, Galbraith D, Hendry D. Cointegration, error correction, and the econometric analysis of non-stationary data: Advanced texts in econometrics, oxford university press; 1993.

38. Charemza WC, Deadman DF. New directions in econometric practice: General to specific modelling, cointegration and vector autoregression (2nd Edition). Cheltenham, UK: Edward Elgar Publishing Ltd; 1997.
39. Johnston J, DiNardo J. Econometric methods (4th edition). Singapore: McGraw-Hill; 1997.
40. Enders W. Applied econometric times series. USA: John Wiley & Sons, Inc; 1995.

Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle5.com/review-history/108893