POLAC INTERNATIONAL JOURNAL OF ECONOMICS
AND MANAGEMENT SCIENCE (PIJEMS)
DEPARTMENT OF ECONOMICS AND MANAGEMENT SCIENCE
NIGERIA POLICE ACADEMY, KANO

ASSESSING THE DRIVERS OF GOVERNMENT RECURRENT EXPENDITURE IN NIGERIA

Adamu Jibir Department of Economics, Gombe State University, Nigeria

Chadrach Caesar Department of Economics, Gombe State University, Nigeria

Bashir Bappayaya Economics Unit, School of Basic and Remedial Studies, Gombe State University, Nigeria

Nayuni Charles Sabe Economics Unit, School of Basic and Remedial Studies, Gombe State University, Nigeria

Abstract

The study investigates the drivers of government recurrent expenditure in Nigeria using time series data spanning between 1980 and 2022. The study employs Autoregressive Distributed Lag (ARDL) model. The study incorporate variables such as; Inflation, population of age 15 to 65, sum of population age of under 15 and above 65, recurrent expenditure, real gross domestic growth and total debt- to examine their effect on government expentditure size. The findings of the study reveal that total debt, total revenue have positive and significant impact while sum of population age of under 15 and above 65, inflation have negative and significant impact on recurrent expenditure in Nigeria. Gross domestic product and population age of 15-65 have negative and insignificant impact in determining recurrent expenditure in Nigeria. The study recommends among others that the revenue base of the country should be diversified beyond oil sector, strengthening of fiscal and monetary policies to ensure stability in price level and exchange rate, the use of fiscal rule through excess crude oil account should also be strengthened to create buffer against fluctuation in oil price and as well appropriate population reduction policies should be undertaken to curtail rapid population growth, private investment should be encourage as it boost public spending while public debts might be counterproductive.

Key-words: ARDL, Recurrent Expenditure, Government Expenditure, Wagner's Hypothesis

JEL Codes: C34, O41, H50

1. Introduction

Every government is saddled with the responsibility to provide for its citizens in order to better their lives. In Nigeria and other countries, there has been an increasing concern as to the pattern government spent part of its income (World Bank, 2017). This spending is known as expenditure. Public spending is when a country's government spends money on things that the population as a whole requires or desires, such as infrastructure, security, provisioning (which includes housing, healthcare, and education), and pensions and so forth (Harriet *et. al.*, 2023). In developing countries like Nigeria, expenditure needs exceed the available resources and the bulk of the expenditure is channeled to the recurrent aspect of the budget and mostly financed through debt.

In Nigeria, recurrent expenditure has been on the increase from the 1970's to date. Recurrent expenditure was more than double in the 1980's at N10.1 billion (Adamu & Babayo, 2015; CBN, 2018; Oseghale, 2018; Okech & Linge, 2018). The 2019 budget showed that

recurrent budget constitute about 45.75% which is N4.04 trillion with N2.14 trillion going to debt servicing and N497 billion to statutory fund (Budget Office of Federation, 2019). In 2020 proposed budget, recurrent expenditure is expected to be N4.88 trillion which shows an increase of 11.28% reflecting increase in salaries and pensions including provision for implementation of the new minimum wage (Budget Office of Federation, 2019). Whilst recurrent expenditure of 2022 stood at N 6.9 trillion which is equivalent to 62% of the total budget.

The high percentage increase in recurrent expenditure imply that out of the public revenue collected, more than half is allocated to recurrent expenditure and other related items. If other variables such as increase in population, debt servicing etc are considered in public expenditure, this will imply that an insignificant percentage will be available for development expenditure. The high percentage of public revenue spent on debt servicing and recent increase in salaries and pension will be expected to be taking a greater part of the resources that could otherwise been used in development priorities such as infrastructure and development (Parashina & Oleny, 2017).

There is, however, no robust empirical study that has been done to evaluate the effectiveness of the determinant of recurrent expenditure since public sector recurrent expenditure continue to increase currently accounting to over 70% (Onuba, 2019) of the country's budget. Whereas few such as Okech and Leligwe (2015) have attempted to explain this, but no robust work have empirically examined the significant of the causes, other than Parashina and Olweny (2017) which only looked at wages, salaries, allowances and macroeconomic variables such as inflation, and also Okech and Linge (2018) who looked at salaries/wages, social contribution and non-wages related variables such as rent and utility, travelling expenses, hospitality, and other consumables in Kenya. It is against this background that this study intends to conduct an anatomy of the drivers of recurrent expenditure in Nigeria.

The rest of the paper is organized as follows; Section two contains theoretical and empirical literatures. Section three methodology. Section four and five provides analysis of result and conclusion and recommendations respectively.

2. Literature Review

2.1 Theoretical Literature

Adolph Wagner (1835 – 1917) a Gorman economy; derived his famous law of increasing state activities primarily from historical facts of Gorman. Wagner claimed that every government (whether national or sub-national) has an inherent tendency to expand its activities (and therefore, public expenditure), both intensively and extensively, such that the government sector tends to grow faster than the economy as a whole. From the original version of this theory, it is not clear whether Wagner was talking of an increase in (a) absolute level of public expenditure, (b) the ration of government expenditure to GNP or (c) proportion of public sector in the total economy.

However, Wagner was not interested in the mechanism of increase in public expenditure. Since his study was based on historical facts. The precise quantitative relationship between the extent of increase in public expenditure and time taken by it was not expressed in any logical or functional manner. Although there are many theories that discuss the possible reasons for expansion in government size, but Wagner's hypothesis seems to be superior in the context of this study. This is because the law has received wide attention from economists and researchers, and many empirical investigations found its validity in both developed and developing economies. Following the political independence of Nigeria in 1960, the successive governments started to take the primary responsibility of building capital and infrastructure base to promote economic growth and social wellbeing of the people. This led the government to increase its spending on social and welfare activities.

2.2 Empirical Review

Numerous studies have been conducted on the drivers of government recurrent expenditure in Nigeria. In this section, a few of these empirical investigations are discussed. Callistar (2020) found that economic services and social and community services are not growth drivers of the Nigerian state. The study applied vector error

correction model technique for Nigerian data spanning between 1980 and 2017 to examine the effect of some selected government recurrent expenditure on economic growth, with emphasis on social and community services, economic services and transfers.

Jibir and Aluthge (2019), also examines the determinants of size of government expenditure in Nigeria. Incorporating new variable such as oil revenue, trade openness, public debt, exchange rate, oil price, taxation and inflation. Using time series data for Nigeria between 1970 and 2017. Times series data were analyzed using Auto regressive distributed Lag (ARDL) model. The findings of the study reveal that oil revenue, GDP, population, trade openness, oil price, taxation and inflation are important determinants of size of Nigeria's government expenditure.

Omokri, et al. (2018) examined the empirical factors influencing recurrent spending that serve as intermediaries for economic growth in Nigeria. Traditional least squares multiple regression analysis techniques were employed by the researchers. The finding shows that recurrent spending on administration (M1), social and community services (M2), and transfers are the main mediators between crude oil prices, a significant source of government revenue, and economic growth in Nigeria (M4). The government should therefore strengthen recurrent spending, especially on administrative, social, and community services, as well as transfers, all of which have been shown to be drivers of recurrent expenditure in Nigeria.

Firoj and sultana (2018) studied the determinants of the size at Government expenditure in Bangladesh for the period 1973 to 2016 using Error correction Modelling technique for short run dynamic equation and ordinary least square (OLS) for long-run static equation. The result of the short-run static equation showed that External debt, real GDP, urbanization, tax and non-tax government revenue positively influence the government expenditure where dependency on foreign aid trade openness adversely affect it.

In the same way, Maluleke (2017) studied the determinant of government expenditure from 1995 to 2016. The result indicates that the government expenditure relationship with its determinants is significantly position but in some instances it was found to be negative.

Ukwueze (2015) examines the determinant of the size of public expenditure in Nigeria. Short – run error correction model and long – run static equation to compere the influence of those variables on the size of government spending. The result of the study show that the size of revenue and growth rate of national income (output) and private investment significantly influence the size of government expenditure only in the short run.

Aregbeyen and Akpan (2013) investigate the long-term determinants of government expenditure in Nigeria. Using annual time service data for a period of 51years (1960 – 2010) and a single equation estimation approach found out that inflow of foreign aids contribute to expansion of government recurrent expenditure at the expense of capital spending; debt servicing reduces all component of government expenditure; higher population leads to higher government spending and election periods are associate with higher government expenditure.

Okafor and Eiya (2011) on their part seek to ascertain the growth in government Expenditure and determinants factors for this growth. The result indicate that: inflation has a negative relationship with government expenditure while population, public debt and tax revenue are major determinants of growth in Government expenditure.

It is very clear from the reviewed literature that numerous studies have queried about what actually influence public expenditure, mostly from the developed economies to emerging and developing countries' counterpart. However, the studies focused either on economic, political and institutional or demographic factors. Some of these factors thought to shift the demand or supply of public spending. Therefore, a change in these variables brings about a corresponding change in the demand and supply of public goods – which call for proper exploration of the drivers of these changes for better policy prescription.

3. Methodology

3.1 Method of Data Collection

The study is quantitative and uses secondary data collected from several sources such as the Central Bank

of Nigeria (CBN) statistical Bulletin, National Bureau of Statistics and World Bank publication.

3.2 Model Specification

Koutsoyiannis (1977) opines that in attempting to study any relationship between variables, it is very important to express the relationship in mathematical form which is to specify the model with which the economic phenomenon will be explored especially. For a better and deep understanding of the analysis of this work, mathematics and econometric model will be used to evaluable the preposition given in the research work.

In examining the derivers of recurrent expenditure in Nigeria, some macro-economic variables are captured and included in the model to enable the modeling relationship between recurrent expenditure and its determinants. To gauge the relationship between the derivers of recurrent expenditure, a mathematical expression of the relationship is formulated thus:

$GREC = F (POP_1, POP_2, INF, GDP, TOR, TOD)$ (1)

Where:

GREC = general recurrent expenditure

POP_1= population age of 15 to 65 years

POP_2= sum of population age under 15 and above 65 years

INF = inflation

GDP= gross domestic product

TOR= total government revenue

TOD= total debt

The Econometric form of the model is shown as

$$GREC = \beta_o+\beta_1POP_1t+\beta_2POP_2t+\beta_3INF_t+\beta_4RGDP_t+\beta_5TOR_t+\beta_6TOD_t+\mu_t \quad (2)$$

Where:

RX = Total Recurrent expenditure

β_o = the Coefiicient of lagged dependent variable

β_1POP_{1t}= Sum of Population age under 15 and above 65 years

β_2POP_{2t}= Population age of 15 to 65 years

β_3INF_t= Inflation

β_4GDP_t = Gross Domestic Product

β_5TOR_t =Total revenue

β_6TOD_t =Total debt

μ_t= Error term of lagged dependent variable

The study will applied Autoregressive Distributive Lag (ARDL) popularized by Pesaran and shin (1995) the model can be transformed into:

$$GREC = \beta_o+\beta_1POP_{1t-1}+\beta_2POP_{2t-1}+\beta_3INF_{t-1}+\beta_4GDP_{t-1}+\beta_5TOR_{t-1}+\beta_6TOD_{t-1}+\mu_t \quad (3)$$

Table1: Variable and their Measurement

Variable	Description and Measurement
General recurrent expenditure	This is measured by the sum of all recurrent spending by federal government of Nigeria
Population age of 15 to 65 years	Population of labour force measured by age of 15 to 65 years in the country.
Sum of population age under 15 and above 65 years	Population of children and old age measured by age of below 15 years and above 65 years in the country.
Inflation	This is measured by annual inflation rate in the country.
Real gross domestic product	This is measured by annual norminal values of GDP.
Total government revenue	This is measured by annual norminal values of oil and non-oil revenue of the country.
Total debt	This is measured by the total annual outstanding debt of the country.

Source: Authors

3.4 Method of Data Analysis

This research work has applied techniques of data analysis such as autoregressive Distribution lag (ARDL) to analyze the numerical estimates of the co-efficient of the equation after which Granger causality test will be applied to determine the causation between the independent variables; population, public debts, unemployment, Pensions and Gratuity, inflation and dependent variable, recurrent expenditure.

3.4.1. Unit Root Test

Unit root tests are tests for stationary in a time series. A time series has stationary if a shift in time doesn't cause a change in the shape of the distribution; unit roots are one cause for non-stationary (Statisticshowto.com, ND).Augmented Dickey – fuller (ADF) test proposed in Dickey and Fuller (1979) is used to determine the order of integration of the time series.

3.4.2 Procedure for autoregressive Distribution Lag (ARDL)

The Autoregressive Distribution Lag popularized by Pesaran, Shin and Smith (2001) will be used on a time series data for period of 1981 to 2022. This approach is chosen over other approaches because of its several advantages. First, ARDL approach can be applied without taking into account whether the explained variables are I(1) or I(0). This implies that the combination of I(1) and I(0) or mutually co-integrated are possible using ARDL approach. Second, it yields unbiased estimates in regression analysis and can be applied on small sample data while the Johansen co-integration requires large sample data for validity. Lastly, ARDL approach allows estimation of different variables with dissimilar optimal number of lags. The short run and long run relationship can be estimated using this method and also appropriate with small size. Even though the order of integration of the variables is not an issue while using such method, it is necessary to aortal that none of the variable is integrated beyond what is expected aid lience the need to test for stationary of the series

3.4.3 Long Run Relationship

Equation below will be used to determine the long run relationship among the variable of interest

$$\Delta GREC_t = \beta_0 + \beta_1 LnGREC_{1t-1} + \beta_2 LnPOP_{1t-1} + \beta_3 LnPOP_{2t-1} + \beta_4 LnINF_{t-1} + \beta_5 LnRGDP_{t-1} + \beta_6 TOR_{t-1} + \beta_7 LnTOD_{t-1} + \mu \quad (4)$$

The covariance of the co-efficient estimate can only be asymptotically uncorrelated in a situation where the regressors are known to be integrated of order one without counteraction in the long run. The dynamism is explained by the error correction term which further processes the existence of long run relationship with its significant negative value.

3.4.4 Short Run Relationship

The short run relationship is determined using ARDL Error correction term specified by the equation below

$$\Delta LnGREC_{t-1} = \beta_{0+} \sum_{I=1}^{q} \beta_1 \Delta LnGREC_{1t-1} + \sum_{I=1}^{q} \beta_2 \Delta LnPOP_{1t-1} + \sum_{I=1}^{q} \beta_3 \Delta LnPOP_{2t-1} + \sum_{I=1}^{q} \beta 4 \Delta LnINF_{t-1} + \sum_{I=1}^{q} \beta 5 \Delta LnRGDP_{t-1} + \sum_{I=1}^{q} \beta_6 \Delta LnTOR_{t-1} + \sum_{I=1}^{q} \beta_7 \Delta TOD_{t-1} + \lambda ECT + \mu_t \quad (5)$$

The term ECT stands for error correction term which determines the speed of adjustment. It measures the effectiveness of the feedback or adjustment mechanism in stabilizing disequilibrium in the model.

4. Results and Discussion

The results based on the objectives of the study have been represented and discussed in this section.

Table 2: Descriptive statistics

	IFL	POP_1	POP_2	GREC	TOR	RGDP	TOD
Mean	18.8997	2.5721	5.0301	-2461.127	-2851.203	8.3859	-1847.017
Median	12.1559	2.5943	4.9861	14.6166	11.1543	4.6341	14.0375
Maximum	72.8355	2.9072	6.9287	61.2117	56.1051	98.6515	64.5972
Minimum	5.3822	2.0561	3.8045	-9904.75	-114519.5	-7.5901	-74453.01
Std. Dev.	16.9120	0.2203	0.7286	15662.63	18109.5	19.8923	11774.40
Skewness	1.8239	-0.7555	0.3465	-6.0849	-6.0848	3.8488	-6.0848
Kurtosis	5.1513	2.9793	2.6962	38.0255	38.0255	16.8499	38.0253
Jargue-bera	28.8900	3.8806	0.9544	2291.482	2291.472	418.4562	2291.455
Probability	0.0000	0.1492	0.6205	0.0000	0.0000	0.0000	0.0000
Sum	755.9885	102.8837	201.2020	-98445.10	-114048.1	335.4368	-73880.68
Sum Sq. Dev.	11154.59	1.8929	20.7024	9.5700	1.2800	15432.36	5.4100
Observations	40	40	40	40	40	40	40

Source: Researchers computation using E-views 10.0.

Table 2 present the summary of descriptive statistics of the variables. Given the scope of the studies (1980-2022) and the frequency of annual data, all the variables have equal number of observations, that is, forty three observations. The average values of the variables and standard deviation values of all the series show high level of volatility with standard deviation far from the average. The skewness statistics results reveal that some of the variables are negatively skewed while others are positively skewed. Population age of 15-65, recurrent expenditure, total revenue, total debt are negatively skewed while sum of population age of under 15 and above 65, inflation and real gross domestic product are positively skewed. The kurtosis statistics further revealed that only two variables have light tail as their kurtosis value are less than three, while the reverse is the case for the rest of the variables, and this depicts that the data are relatively peaked (leptokurtic distribution). The probability values of Jargue-Bera statistics, further show that the observations of the variables are not normally distributed. The series under study exhibit a typical feature of time series data.

4.2 Unit Root Test Results

The test for stationary is one of the pre-requisites in estimating time series model. Unit root tests are test for stationarity in a time series. A time series have stationarity if a shift in time does not cause a change in the shape of the distribution. In this study, the researcher employs the Augmented Dickey-full (ADF) test for testing the stationary of the time series. The result is presented in table 3 and discuss respectively.

Table 3: Results of ADF Unit Root Test

Variable	Level	Difference	Probability Value	Status
INF	-2.8782***	-10.7013***	0.0000	I(1)
POP_1	-2.4761***	-10.1671***	0.0000	I(1)
POP_2	-2.8192***	-9.6557***	0.0000	I(1)
GREC	-6.2460**	-15.1190**	0.0000	I(0)
TOR	-6.2443**	-15.1153**	0.0000	I(0)
RGDP	-6.3124**	-15.3503**	0.0000	I(0)
TOD	-6.2472**	-15.1123**	0.0000	I(0)

Note: the level of significance are indicated as follows * at 1%, ** at 5% and *** at 10%
Source: Researchers computation using E-views 10.0.

INF, POP_1, POP_2, GREC, TOR, RGDP and TOD stand for Inflation, population of age 15 to 65, sum of population age of under 15 and above 65, recurrent expenditure, real gross domestic growth and total debt respectively.

The results of the ADF test is presented in table 3. The results show that the variables are stationary at different order, I(0) and I(1). The results show that recurrent expenditure, total debt, real gross domestic growth and total revenue are stationary at order one I(1). while recurrent expenditure, real growth domestic product, total debt and total revenue are stationary at order zero I(0) making it possible for the application of ARDL co-integration technique for the analysis of the derivers of government recurrent expenditure. Furthermore, when PP test is conducted, the result obtained is in consonance with ADF result.

4.3 Co-integration Result Using Bound Test

Having found the variable to be stationary at different order, the study tested the co-integration using bound test in order to know whether the variables have long run relationship or not. The long run relationship does not exist when the F-statistics is found less than the lower critical bound value. However, if the F-statistics lies in between the range of lower and upper bound values, the long run relationship cannot be determine using ARDL bound co-integration approach (Umar & Musa, 2015). The result is presented in tables 4.

Table 4: Result of F- Bound Test to Co-integration

Test statistic	**Value**	**K**
	10.9971	**6**
Critical Value Bonds		
Significance	**I(0) Bond**	**I(1) Bond**
10%	2.12	3.23
5%	2.15	3.61
2.5%	2.75	3.99
1%	3.15	4.43

Source: Researchers computation using E-views 10.0.

The above table shows the result of the ARDL Bound Test. The results of the test shows that the F-Statistics value is clearly greater than the value at upper and lower bound test at 10%, 5% and 1% levels of significance. This gives us a statistical evidence to reject the null hypothesis and accept the alternative hypothesis and concludes that the variables will move in the same direction in the long run.

4.4 Long-run relationship of the determinants of Recurrent Expenditure

Results of the bound test clearly show that long-run co integration relationship exists between the variables in the model.

Table 5: Long Run Coefficient of the Model

Variable	**Coefficient**	**Standard Error**	**T-Statistic**	**Probability Value**
TOD	0.2077	0.0918	2.2621	0.0339
TOR	0.5262	0.0924	5.6925	0.0000
RGDP	-0.0463	0.1151	-0.4018	0.6917
POP_2	-8.1603	4.7065	-1.7338	0.0969
POP_1	-7.8653	15.2986	-0.5141	0.6123
INFL	-0.2360	0.1169	-2.0197	0.0558
C	71.2069	55.6972	1.2785	0.2144

Source: Researchers computation using E-views 10.0.

The coefficient of inflation in the long run shows a negative relationship with government recurrent expenditure and is significant at 10%. This runs in line with the theoretical postulation that inflation increases the prices of goods and services which in turn push government expenditure upwards through government's efforts in providing publicly produced goods and services.

The coefficient of sum of population age of under 15 and above 65 in the long run shows a negative relationship but significant at 10% level. The finding provides support for Wagner's law. In the same vein, the population aged between 0 and 14 has been on increase in Nigeria over the years. This may have necessitated increasing government spending especially in the area of education and health. The population of Nigeria is on the increase which means more public utilities. The finding is in line with the result of previous studies like Aregbeyen and Akpan (2013), Obeng and Sakyi (2017) and Okafor and Eiya (2011). This also connotes that further expansion in the level of population will increase the size of government recurrent expenditure in the future. For example, a population structure with a high proportion of 0 to 14 years suggests that the government will be compelled to channel more budget allocation to education to provide the necessary educational resources and health spending to provide for the primary health care. However, a high proportion of the population above 65 years will occasion a shift of the budget to the social services to provide for old age pension and grants. On the other hand, the coefficient of population of age 15 to 65 shows negative relationship and insignificant.

The coefficient of total debt shows positively significant relationship of public debt on total government recurrent expenditure. This explains that modern day governments have become so used to borrowing in the execution of policies and with the interest payment on debt, public expenditure increases. Public debt impacts on the allocation of the public budget to the extent that it favors government spending in some sectors and not others. There is also positive relationship between total revenue and recurrent expenditure at 1% level of significance, one percent increase in total revenue leads to 0.5262 increase in recurrent expenditure. The finding indicates that there is a long-run relationship between total revenue and government expenditure in Nigeria.

Real gross domestic product depicts negative and insignificant nexus with government size in the long run. An explanation of this outcome is not far from the fact that often times when policymakers claim to be planning for sustainable real growth, through the use of the budget, they end up derailing by pursuing other anti-growth ventures (Aladejare, 2019; Ari, Jibir & Hassan, 2022). For instance, since 1970, Nigeria has been running her budgets in the deficits, as part of the efforts to promote sustainable growth and development through development of infrastructural base and higher welfare among its citizens. However, these objectives have not been achieved due to corruption, inefficiencies in the budgetary process and unhealthy competition between different ethnic groups, religious affiliations and regions in the country (Jibir & Aluthge, 2019).

4.5 Short-run Relationship of the Drivers of Recurrent Expenditure

The result of the short run relationship of the determinants of Recurrent Expenditure in Nigeria is presented in Table 6

Table 6: Short run analysis of error correction mechanism

Variable	Coefficient	Standard Error	T-Statistic	Probability Value
D(GREC(-1)	0.2141	0.1644	1.3015	0.2065
D(TOD)	0.4122	0.1519	2.7135	0.0127
D(TOD(-1)	0.2259	0.1268	1.7818	0.0886
D(TOR)	0.2421	0.1098	2.2054	0.0382
D(TOR(-1))	-0.3321	0.1276	-2.6030	0.0162
D(RGDP)	-0.0806	0.1986	-0.4060	0.6887
$D(POP_2)$	26.5645	16.0874	1.6573	0.1129
$D(POP_1)$	144.9452	77.9230	1.8601	0.0763

D(INFL)	-0.0515	0.2200	-0.2341	0.8171
ECT (-1)	-1.7426	0.2583	-6.7455	0.0000
Cointeq=RX-(0.2077*TD+0.5262*TR-0.0463*RGDP-8.1603*P2-7.8653*P1-0.2360*IFL+71.2069				
R-squared	0.6100	Mean Dependent Variable	14.8679	
Adjusted R-squared	0.3443	S.D Dependent Variable	19.7459	
S.E of Regression	15.9899	Akaike Information Criterion	8.6774	
Sum of Squared of Residual	5624.901	Schwarz Criterion	9.3668	
Log Likelihood	-148.8697	Hannan-Quinn Criterion	8.9227	
F-Statistic	2.2949	Durbin-Watson Statistic	2.6325	
Prob(F-Statistic)	0.0374			

Source: Researchers computation using E-views 10.0.

From the table 6, the results obtained from the model indicate that the overall coefficient (R^2) shows that 0.6100 (61%) recurrent expenditure was due to the influence of the explanatory variables included in the model. It can also be seen from the above table, that the error correction term (ECT) which determines the degree of adjustment when occurred. The coefficient has the expected negative sign and also statistically significant at 1%. The long run relationship is further estimated by the negative sign of the ECM and its significance. It shows that if disequilibrium happened from shock in the short run is adjusted automatically to the equilibrium position in the long run.

4.7. Diagnostic Test

The study conducted diagnostic test for serial correlation, heteroskedasticity, Ramsey Reset test, normality test and cussum tests to confirm the reliability of the findings.

Table 7: Diagnostic Tests Result

Test	Statistics	P-value
Serial correlation	3.1085	0.0668
Heteroskedasticity	0.8896	0.5846
Ramsey reset test	1.2790	0.1248
Normality test	5.5575	0.0621

Source: Researchers computation using E-views 10.0.

Based on the probability value of 0.0668 obtained from the table, it gives us statistical evidence that there is problem of serial correlation. The table gives us the probability value of 0.5846. This is an evidence to accept that there is relationship between the variables of the drivers of recurrent expenditure. The probability value of 0.1248 indicates a statistical evidence to conclude that there is relationship between the drivers of recurrent expenditure in Nigeria. The normality test also indicates a statistical evidence to conclude that the variables are normally distributed as they cluster towards zero.

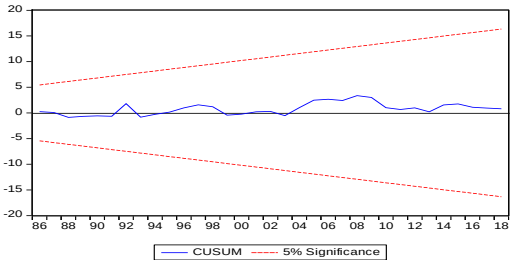

Figure 1 CUSUM stability test
Source: Researchers computation using E-views 10.0.

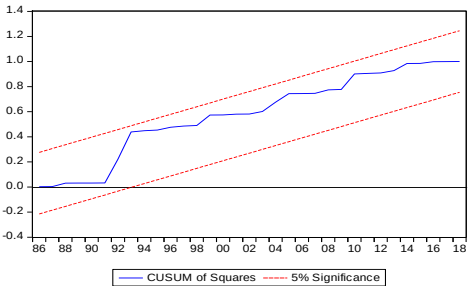

Figure 2 CUSUM square test
Source: Researchers computation using E-views 10.0.

Finally, CUMSUM test is applied to assess the parameter structural stability which is structured on a plotting line of the sum of the recursive residuals. If the plotting line goes outside of the critical bound, then there exists a structural break. Figures 1 and 2 display tests for stability of the ARDL models using the CUSSUM and CUSSUM square techniques proposed by Brown, Durbin and Evans (1975). The result reveals that the models lie within the 5% significant level indicating the model is stable. Thus, the model for the drivers of recurrent expenditure in Nigeria is stable at 5% level of significance.

5. Conclusion and Recommendations

The study attempts to identify the drivers of government recurrent expenditure in Nigeria using time series data spanning between 1980 and 2022. To achieve this, the study applied autoregressive distributed lag (ARDL) model for data analysis. The stationary properties of the time series data were checked. At level, only four variables were stationery. However, the remaining variables become stationery after taking their first difference which pave way for ARDL co-integration analysis. The bounds test revealed a long-run co-integration among the variables.

Further, the study finds that inclusion of other control variables in the model provides fairly consistent results, suggesting that the sum of population of age under 15 and above 65, total revenue, inflation, total debt are strong determinants of government recurrent expenditure size. This may likely be explained through the fact that government may use debt as a means to cover the revenue shortfall more than as a means of increasing spending, which means that the Nigerian government usually increases debt financing (budget deficit) whenever the revenue is short falling to maintain the existing spending. It may also be as a result of huge revenue generated from export of crude oil and income from taxes. Other variables population of person age 15 to 65 years and gross domestic products is found to have no significant effect on the share of government recurrent expenditure size.

The study recommends that there is need for government to make a giant effort in diversifying the revenue base of the country to curtail the long-term effect of oil revenue fluctuation in the economy -since oil is the major source of revenue to the government and is exogenously determined by oil price in the international market.

There is also need for proper use of debt in financing-efficient projects in the economy. This can be done by strengthening the anti-graft agencies so that they can be vigilant on the way and manner public debt is manage in the country. Given the strong positive correlation between dependent population and government size, it is therefore important for government to encourage less family size through population reduction policies and legislations. This can be done to lessen the pressure of population explosion which is always accompanied by large demand of public utilities including education, health, pollution control, transfers, among others.

In addition, since debt service obligation reduces all components of government expenditures in the long-run, then to ensure fiscal sustainability in Nigeria, the country should be careful in entering into any further foreign debt to avoid the long-term fiscal constraints on critical sectors of the economy. To curtail the effect of price level on government expenditure decision, it is paramount for government to strengthening its monetary and fiscal policies towards ensuring stability in price level in the country.

The empirical analysis was conducted using aggregate data of government recurrent expenditure. An area of fruitful future research would be to analyze the data using disaggregate components of government recurrent expenditure. Such disaggregation will provide useful and robust findings for policy decisions. The political aspects of the drivers of government recurrent expenditure is not captured in this study despites its significance in today's context. Therefore, another useful extension of this study is to consider political variables.

References

Adamu, J., & Hajara, B. (2015). Government expenditure and economic growth nexus: Empirical evidence from Nigeria (1970–2012). *IOSR Journal of Economics and Finance*, 6(2), 61-69.

Adegboyo, S. O. & Olaniyan, N. O. (2021). The viability of public expenditure in stimulating economic growth in Nigeria. Acta Universitatis Danubius. Economica, Danubius University of Galati, issue 17(1), 70-86.

Aladejare, S. A. (2019). Government spending and economic growth: evidence from Nigeria. MPRA Paper, 43916. Retrieved from http://mpra.ub.uni-muenchen.de/43916/

Aluthge, C., Jibir, A., & Abdu, M. (2021). Impact of government expenditure on economic growth in Nigeria, 1970-2019. *CBN Journal of Applied Statistics*, 12(1), 139-174.

Ari, Y. O., Jibir, A., & Hassan, A. A. (2022). The Impact of Trade Openness and FDI on Nigeria's Economic Growth: Revisiting the Unsettled Debate. *Review of Market Integration*, 14(2-3), 133-163.

Aregbeyen, O. O. & Akapan, U.F. (2013). Long-term determinations of government expenditure: A Disaggregated Analysis of Nigeria. *Journal of Student in social Sciences*, 5(1), 31-87.

Asiagwu, H., Ugherughe,J. E. & Ezeabasili, N. V.(2023). Disaggregated analysis of public expenditure and economic development on the Nigerian economy. *International Journal of Management & Entrepreneurship Research*, 5 (1).

Budget office of the federal (2022). Breakdown of 2019 Federal Government of Nigeria Budget.

Central Bank of Nigeria (2018). Statistical Buletin 2018. Retrieved from www.cbn.gov.ng.outecopyof2018.....ics final – 5. X15x.

Chappelow, J. (2019). Keynesian Economics. Retrieved from https://www.investopefia.com/terms/k/Keynesian economics.asp.

Dickey, D., & W. Fuller (1979), Distribution of the Estimators for Autoregressive Time Series with a Unit Root, Journal of American Statistical Association, 74, 427-431.

Emejor, C. (2020). FG saves over N296 bn annually through 1PP15, TSA implementation – NITDA. Retrieved from https://www.independent.ng/fg-saves-over-n296-annually- throgh-1PP15-tsa- implemutation-netda/.

Firoj, M. & sultana, N (2018). Determinants of the size of Government Expenditure: AN Empirical Study on Bangladesh. *International Journal of Economics and Finance, Canadian Center of Science and Education*, 10(11), 149-149.

Jibir, A. & Aluthge, C. (2019). Modelling the determinants of government expenditure in Nigeria. *Journal of Cogent Economic and Finance*, 7(1).

Maluleke, G. (2017). The Determinants of Government Expenditure: Analysis of the Empirical Literature from 1995 To 20161. *Acta Universitatis Danubius. Œconomica*, *13*(2), 212-219.

Musgrave, R. (1975). *Fiscal Systems*, Yale University Press.

Nwaeze Chinweoke & Avoaja Paul Chinagorom (2022). An assessment of the impact of government recurrent expenditure on economic growth of Nigeria. *Quest Journals Journal of Research in Business and Management*, 10(4), 58-71.

Obeng, S. K. & Sakyi, D. (2017). Explaining the growth of public spending in Ghana, *The Journal of Developing Areas*, 51(1), 104-128.

Obi, C. K. (2020). Government recurrent expenditure effect on economic growth: Evidence from expenditure on some selected variables. Acta Universitatis Danubius, 16(1).

Ofori-Abebrese, G. (2012). A Co-Integration Analysis of Growth in Government Consumption Expenditure in Ghana. *Journal of African Development*, 14(1), 12-23.

Okafor, C. & Eiya, O. (2011). Determinants of Growth in Government Expenditure: An Empirical Analysis of Nigeria. *Journal of Business Management*, 5(1), 44-50.

Okech, C.T & Linge, K.T. (2018). Empirical analysis of determinants of recurrent public spending in Kenya. *International Journal of Economics, Commerce and Management*, 6(11), 230-247.

Okech, C.T.& letegwe, S. (2015). Dissecting the kenya's wage Bill Dilemma: What is the way to Go? International Journal of commerce, economics and management 3(12), 738-753

Omokri, P. A., Agbedeyi, O. D., & Nwajei, A. (2018). Mediating effects of recurrent expenditure on economic growth. IOSR *Journal of Mathematics* (IOSR-JM), 14(1), 81-86.

Onoruoiza, S. I., Musa, A., Umar, B. D., & Kunle, Y. S. (2015). Using health beliefs model as an intervention to non compliance with hypertension information among hypertensive patient. *Int Organ Sci Res J Human Soc Sci*, *20*(9), 11-16.

Onuba, I. (2019). Recurrent expenditure takes 70% of consolidated revenue inflow. Retrieved from https://www. Punchng.com/recurrent – expenditure-taka-70-of-cosolidated-revenue-fund-inflow- fg/.

Parashina, S. & Olwany, T. (2017). Determinants of Real wage in public sector in Kenya, *International Journal of Economics, commerce and management*, 5(11), 474 – 497

Pesaran, H. M., & Shin, Y. (1995). Long-run structural modelling (No. 9419). Faculty of Economics, University of Cambridge, UK.

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing to approaches to analysis of level relationships. *Journal of Applied Econometrics*, 16, 289–326.

Samuel Daniel Ugochukwu and Lawrence Igwe Oruta (2021). Government Expenditure and Economic Growth in Nigeria: a Disaggregated Analysis. Traektoriâ Nauki, Path of Science. 2021. (7), 11.

Singh, S. K. (2019). Territoriality, task performance, and workplace deviance: Empirical evidence on role of knowledge hiding. *Journal of Business Research*, *97*, 10-19.

World Bank (2017), World Development Indicators & Global Development Finance.

Ukweze, E.R. (2015). Determinants of the size of public Expenditure: Analysis of the empirical literature from 1995 to 2016. Acta University Danubius, 13(2).

Wagner, A. (1883). Finnanzwissenchaft.Germany: Leipzig.