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An Analysis of the Structure and Growth Trend of Government Total Expenditure in Nigeria from 1960 to 2015

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Abstract
This empirical study of the structure and growth trend of government total expenditure in Nigeria from 1960 to 2014 is more of a stock-taking exercise. The study examines the growth trend and pattern of government expenditures over the intervening period. It also investigates the items of expenditure that are potentially amenable to wide discretionary adjustments by fiscal authorities in Nigeria. The study adopts the ordinary least squares (OLS) quantitative analysis. Results show that the trend of growth of government expenditure in Nigeria was largely explained by the growth in Nigeria's per-capita GDP used as proxy for economic growth. It was also found that debt servicing and rate of inflation contributed to the bloated size of the country's expenditure. Similarly, it was found that capital expenditure programmes usually generally stand more amenable to discretionary adjustments by fiscal authorities than the recurrent expenditures particularly during difficult economic times. This is understandable because unless government resorts to lay-off workers, the easiest way out is usually to manipulate the capital expenditure profile. Several recommendations were made among which include increasing investments in the real sector and diversifying the economy to bring down the present high inflation rate and halt the total collapse of the value of the local currency.
Key words: Government expenditure, public spending in Nigeria, expenditure pattern, structure of government total expenditure, items of government expenditure
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1.0. Introduction

The role of government expenditure as one of the fiscal policy instruments used by any government to steer the course of any economy to a right and enviable path to say the least, is rather better imagined. No wonder its concern and debate has assumed a sensitive dimension especially in Nigeria which has been struggling with appropriate policy strategy to lift her out of its long skewed economic growth and developmental quagmire in the mist of plenty endowed natural resources including oil and gas. Government expenditure includes all expenditures on goods and services, transfers and capital expenditure with the exclusion of inter-governmental transfers (Mbanefoh, 1989). Government expends its resources on goods and services it considers essential to the community but which the market system is either unable or unwilling to offer (Aboyade, 1983). In Nigeria as in other countries, government expenditures have been increasing due to ever increasing national insecurity, foreign affairs, law and order, maintenance of state apparatus especially in a democratic setting with executive, legislature and judiciary arms, and public debt servicing (Igudia, 2016). The rise may be attributed to the observed rise in gross domestic product (GDP), per capita-income/GDP, increasing available government revenue particularly from oil and gas, sky-rocketing inflation rate, falling naira value, urbanisation, population growth (Igudia, 2016). Other reasons government expenditure may have risen in Nigeria over the review period include cultural and welfare needs. However, the determination of the structure and growth trend of public expenditure in Nigeria has been problematic (Edame and Akpan, 2013) and hence attracted the attention of many academics and researchers. This has also stirred a debate in public space with the intent to determine what areas government spending must cover. Wagner had postulated that the industrialisation of a nation creates a web of complex legal relationships and communications occasioned by increased division of labour (Wagner, 1993). It would seem then that industrialisation and web of complex relationships is part of the reasons public expenditures have grown in countries (Goffman and Mahar, 1971). Wagner's theory indicates that the role of government evolves and increases in the course of its development as the expenditure assignments are in such a way as to correspond with the varying needs of the different sectors of the economy (Ekpo, 1994).

Government spending has been measured differently. For example, Ezirim and Ofurum (2003) argued that the size of a government can be determined by measuring its total spending. From the perspectives of the Wagner's law of increasing state activities, Wiseman-peacock's hypothesis, critical limit hypothesis, Lerianthan's hypothesis, differential productivity hypothesis and the relative price hypothesis, it is obvious that there are a plethora of factors that determine the growth of public expenditure of any nation (Edame and Akpan, 2013). Some of the factors include inflation, total revenue of the country, total national debt servicing, per-capita income/GDP/GNP of the country, and strategic transfers from Federal government to the state governments

(Edame and Akpan, 2013; Ezirim et al, 2008). Series of empirical studies (see for example Akambi, 2014; Edame and Akpan, 2013; Aregbeyen and Akpan, 2013) have also identified factors such as population growth, urbanization effect, and taxation. Specifically, the determinants of growth of government expenditure in Nigeria over the years have been tied to increase in per-capita income, debt servicing, and GDP (Igudia, 2016). Besides these factors, it has been empirically found that inflation is a major contributor to the bloated government expenditure in Nigeria. Researchers warned that over-bloated public expenditure could among others have adverse effect on monetary stability and price level in the economy. Such warning may be sequel to the position of IMF and World Bank who as a matter of strategic policy placed stipulated threshold or a rein on deficit budgeting of countries vis-a-vis the size of their GDP/GNP. With that, the two international financial watchdogs strategically assist nations in reducing the temptation of unrestricted national spending. Researchers are however quick to observe that there is a limit to which particular expenditure item can be cut in other not to keep the economy in an uneven keel (Longe, 1984; Omoruyi, 1988).

Thus, this study aims to achieve four objectives. The first is to statistically determine factors influencing the rise in government total expenditure in Nigeria. The second is to descriptively analyse the structure and growth trend of government total expenditure in Nigeria. The third objective is to determine which of the capital or recurrent expenditure head is responsible for the observed increase in government total expenditure in Nigeria. And the fourth objective is to statistically determine the items of expenditure that are amenable to discretional manipulations by policy makers. To achieve this, the following research questions become imperative.

1. What are the major factors influencing the change in government total expenditure in Nigeria?
2. What is the structural and growth trend of federal government total expenditure in Nigeria?
3. What items of expenditure are responsible for the observed increase, if any, in government total expenditure in Nigeria?
4. Which items of expenditure components do fiscal authorities find more amenable to discretionary adjustments in times of necessity?

This study has been organised around five major parts beginning with this as part 1. Part 2 is literature review and theoretical framework. Part 3 is methodology while part 4 is the presentation and analysis of data and results of the test of hypotheses. This involves the analysis of the trend of growth of government expenditure and interpretation of results of the tested hypotheses. Part 5 is discussion and recommendations.

2.0. Conceptual/Theoretical Construct and Review of Empirical Literature

Several writers using either time series or cross-sectional data of both developed and developing countries have attempted to establish not only the existence of changing pattern in public expenditure but had also attempted to see if such pattern as do exist can be explained by the stage of development and separable from the influence of several other factors. There are streams of literature on this subject matter begun by the German economist in 1993. His name is Adolf Wagner who lived from 1835-1917. His writing was the first curious and purposeful writings on the pattern and growth of government expenditures. Wagner believed he had discovered what he called the "Law of ever-increasing state activity" after he investigated the public expenditure records of several advanced countries. His model was based on the pressures for social progress and its effect on public economy. He projected an increased allowance for social considerations in the conduct of industry. Probably unconsciously, Wagner called for the continuous expansion of the public sector and its share in the economy as he strenuously argued that within the activities of different layers of government – federal, state and local – there exist inherent tendencies to increase both intensively and extensively as the economy progresses (Musgrave and Musgrave, 1987). Thus, in the long run, government expenditure would increase at a rate disproportionately lower than the national income (GDP/GNP) despite the fact that it had increased at a faster rate in the past. In fact, history has vindicated Wagner. Several researchers especially the early writers have at various times supported Wagner's position, (see for example Beck, 1976; Reddy, 1988; Pryor, 1968; Phillips, 1971; Peacock and Wiseman, 1961; Eckstein, 1979; Musgrave and Musgrave, 1984; Aboyade, 1983; Aigbokhan, 1988; Adebayo, 1969; Aboyade, 1983; Enweze, 1973; Longe, 1984). These writers through empirical investigations found relevant justifications for Wagner's hypothesis. They variously attributed the long-term tendencies for government spending to grow to several factors including increase in urbanisation, population growth, international demonstration effect, and tendency for income elasticity of demand for certain public goods such as higher education and public health (Peacock and Wiseman, 1961; Aboyade, 1983; Aigbokhan, 1988; Igudia, 2016). The logic is that with rising urbanisation, for example, the demand for greater defence and security as in the case of Boko Haram presently ravaging Nigeria and some African countries will increase the need to provide protection (Edame and Akpan, 2013) and build more police posts and stations, prisons, courts, buy more arms and ammunition, train military and Para-military personnel, etc (Igudia, 2016).

Wagner was specific about social or public goods and services which the federal government provides. There are different forms of social or public goods and services. As far as consumption is concerned, the federal government supplies education, medical care (primary, secondary and tertiary health care), welfare services,

security and so forth, all of which have turned out to be income-elastic, meaning that the demand for them would increase faster than GDP. And until recently, the federal government of Nigeria was the sole provider of housing and electricity. Several studies have investigated these social or public goods/services either individually or collectively and the results have been anything but conflicting regarding their level of elasticity (Edame and Akpan, 2013) in relation to the level of government revenue. While some writers found elasticity between government expenditure on public goods/services such as health, education and housing and government revenue greater than unity (see for example Snyder and Yackovlev, 2000; Hesmati, 2001; Lopez-Casanovas and Saez, 2001), others (Fernandez and Rogerson, 1997; Dimatteo and Dimatteo, 1998; Gertham et al., 1994; Manning et al., 1987) who on the contrary found elasticity less than unity contend that such outcome could be underpinned by spurious relationships such as failure to utilise cross-sectional variations which could be extraneous to the items measured. A substantial number of public goods and services provided by the federal government are income-inelastic therefore consistent with a falling share of public expenditure in income over time. Dahlberg and Jacob (2000) and Ahlin and Johansen (2001) for example respectively found that education expenditure is inelastic suggesting that the demand for education is relatively higher than the expenditure in education. In the same vein, Borcherding (1985) conclude that the average income elasticity of demand for public goods and services of the United States is 0.75 (less than unity). Consistent with this finding, Borcherding and Deacon (1972) also empirically found that the elasticity of demand for social/public goods and services in the United States was 0.64 (not significantly different from 0.75).

Studies also show that spending on economic services produced various results. For example, changes in per-capita GNP/GDP/income have a direct relationship with spending on transportation and communications (Fay, 2000; Randolph et al., 1996), positive elasticity with defence (Concialdi, 1999; Okamura, 1991); no significant effect of the ratio of purchasing power for health and GDP on per capita health spending (Gardtham, et al., 1992); and inelasticity with education expenditure (Dahlberg and Jacob, 2000, and Ahlin and Johansson, 2001; Heshmati 2001) as a result of the fact that when there is a rise in the number of young population there will be pressure for an increase in public spending on education (Edame and Akpan, 2013). In a deeper and comparative analysis, Marlow and Sheirs (1999) shows that expenditure on education is complementary to that on defence and public order and security.

Beside social/public goods and services, there are empirical studies showing evidence of the secular growth of government expenditure in different countries. In India, for example, Reddy (1988) found that government expenditure grows at a rate higher than that of the national income. Using the Granger causality test, Singh and Sahni (1984) also investigated the determinants or predictors of government expenditure in India. They found causality direction between national income and public expenditure for the period 1950-1981. In the case of Nigeria, Aigbokhan (1996) found that between 1960 and 1993, federal government size which he measured as expenditure share of GDP on economic growth showed a two-way relationship with regard to the structural adjustment programmes (SAP) between government total expenditure and national income. Consistent with the argument of Reddy, Enweze (1973) in his study of fourteen developing countries based on time series data found a rising trend in the share of total government expenditure in national income without identifying the particular functional components responsible for the observed rise. Peacock and Wiseman (1979) found that the rate of increase in GNP of the United Kingdom was much slower than its public expenditures suggesting that public expenditure has the tendency to increase faster than increase in national income. Using both cross sectional and time series data sets, Lamartina and Zaghini (2003) investigated twenty-three OECD countries and found that for all the countries, public spending rose as GDP increased and that the long-run elasticity was greater than one indicating a more than proportionate increase in public expenditure in relation to economic activity. Edame and Akpan (2013) examined the factors responsible for the observed growth in government expenditure in Nigeria since the 1970s and found that fiscal deficit, GDP, government revenue and debt servicing are some of the reasons. While Akpan (2014) investigated the pattern and drivers of government expenditure in Nigeria, his approach was quite different. His analysis was captured within aggregated capital and recurrent expenditures. His result indicated that both capital and recurrent expenditures are resilient to shocks in total government expenditure in the same manner that total government expenditure is resilient in both capital and recurrent expenditures. Furthermore, he found that while total capital expenditure is resilient to government revenue, recurrent expenditure is significantly influenced by government revenue.

Another reason why government expenditure may increase according to Peacock and Wiseman (1979) is that in every decade, there is the inherent need to finance a war which eventually leads to the broadening of the already existing tax system. They contend that once the war is over, the introduced tax system does not necessarily return to the pre-war situation thus, retaining and continuing with the taxes and price hikes. This means sustaining the growth trend of revenues and expenditures. However, while raising taxes to improve government revenue may have applied in the contexts investigated by Peacock and Wiseman, the theory tended to have failed in the Nigerian context as no increased tax-policy was implemented during the Nigerian civil war due mainly to the black-gold that had been discovered in commercial quantity coupled with the favourable global oil price during the civil war.

From the brief literature review, it is clear that public expenditure of every nation whether developed and developing has risen in line with Wagner's model of increasing state activity and those other public expenditure theorists listed earlier. Although these previous writers found different specific factors responsible for increase in government expenditure, it is the intention of this study to subject some of such factors found in literature, which were mostly tested for advanced countries, to both statistical and descriptive analyses and see if they can explain why government expenditure in Nigeria has risen over the review period.

3.0. Methodology

Data were collected from the statistical publications of bureau of statistics (NBS) and central bank of Nigeria (CBN) for various years. Time series data analysis is adopted for this study. Some of the prominent factors identified in the expenditure literature to influence rise in government expenditure in countries including Nigeria and chosen statistical investigation are total government revenue (Edame and Akpan, 2013), population growth rate (Igudia, 1989), per-capita GDP (Goffman, 1968), debt servicing (Edame and Akpan, 2013) and urbanisation (researchers). Following the comprehensive literature review and the need to answer the research questions, we hypothesise as follows:

H_1: Government expenditure is positively associated with increase in per-capita GDP
H_2: Government expenditure is positively correlated with increasing debt servicing
H_3: Government expenditure is positively correlated with rise in inflation
H_4: Government expenditure is positively correlated with rise in urbanisation
H_5: Government expenditure is positively correlated with displacement/war effect

Two different statistical analyses were performed. One is the OLS multiple regression analysis to determine the causal relationships between government total expenditure (dependent variable) and the selected independent variables listed earlier. The second analysis is to determine the coefficient of variations. The model is adapted from Omoruyi (1988). This second analysis will help in identifying the items of expenditure (categorised into capital and recurrent) that are more amenable to wide discretionary adjustment by government officials and policy makers.

The model used in this study has been specified to establish the statistical structure and set an *a priori* expectation (Ojameruaye and Oaicheman, 2001). Although Wagner in his model limited investigation of the relationship between government size and the economy on the GDP, there are today several methods of statistical models based on the fact that government size and economic output can be measured differently (Huang, 2006; Igudia, 2016). As expressed in Igudia (2016), Peacock and Wiseman (1967) used the relationship between government size and the economy as follows:

$$RGE = f(RGDP) \quad \text{..... (i)}$$

Where:
RGE = real government expenditure;
RGDP = real GDP

Also, Igudia (2016) argued that a year after Peacock and Wiseman (1967) investigation, Goffman (1968) measured the relationship between government size and the economy using per-capita GDP thus:

$$RGE = f\left(\frac{RGDP}{N}\right) \quad \text{..... (ii)}$$

Where:
RGDP = real GDP;
N = population

The two models showed a noticeable difference in the measure of national economic output. However, to examine the factors influencing the structure and growth trend of total government expenditure in Nigeria, we express the identified variables in our model thus:

$$FGE_T = f(GVT_R, GDP_{PC}, INF_R, DBT_S, Urb, DV) \quad \text{..... (iii)}$$

Where:
FGE_T = Total Federal Government Expenditure
GVT_R = Government Total Revenue
GDP_{PC} = Per-Capita GDP
INF_R = Rate of Inflation measured by consumer price index (CPI)
DBT_S = Debt Servicing
Urb = Urbanisation measured by the growth of state capitals and local government headquarters since 1960
DV = Dummy variable to measure the effect of the Nigerian civil war

Therefore:

$$FGE_T = c_0 + c_1GVT_R + c_2RGDP_{PC} + c_3INF_R + c_4DBT_S + c_5Urb + c6DV + \mu \quad \text{.....(iv)}$$

Where:

c_0 = the Intercept of the model
c_1 = the coefficient of Government Total Revenue
c_2 = the coefficient of real Per-Capita GDP
c_3 = the coefficient of real Inflation (consumer price index – CPI)
c_4 = the coefficient of Debt Servicing
c_5 = the coefficient of Urbanisation
c_6 = the coefficient of War dummy
μ = unexplained error term

The *a priori* expectation is that all the coefficients of the explanatory variables would have positive values to justify the underlying economic theory of positive relationship between the predictors and federal government total expenditure i.e.

$a_0 > 0$; $a_1 > 0$; $a_2 > 0$; $a_3 > 0$; $a_4 > 0$; $a_5 > 0$ $a_6 > 0$

In the case of the included error term, it is assumed to have a mean value of zero (0) i.e. $E(\mu) = 0$ and each of the sets of values of the error term is uncorrelated i.e. $E(\mu_i, \mu_j) = 0$. It is also assumed that $E(X_i, \mu_j) = 0$ where $x_i \neq \mu_j$ for all values of i, j = (1, 2, 3, . . ., n) meaning that the error term and the explanatory variables are uncorrelated even in repeated samples. Furthermore, it is assumed that the error term is normally distributed (Koussoyianis, 1977).

The second estimation concerns the coefficient of variation, which for the purpose of this study is defined as the measure of relative dispersion expressed as the ratio of absolute dispersion to the average (Omoruyi, 1988). This is modelled as:

$$\text{Re}\,lativeDisp\,ersion\,(RD) = \frac{AbsoluteDi\,spersion\,(AD)}{Average\,(A)} = RD = \frac{AD}{A} \quad .....(1)$$

Assuming that 'AD' represents standard deviation (δ), 'A' is the mean ($\overline{X}$), and 'RD' is represented by v, then the coefficient of variation (v) is:

$$v = \frac{\sigma}{\overline{X}} \quad .....(2)$$

$$where:$$

$$N = population / sample; then$$

$$\sigma = \frac{\sqrt{\sum (X - \overline{X})}}{N} and$$

$$\overline{X} = \frac{\sum X}{N}$$

If we superimpose government Expenditure into the equation, it yields:

$$v = \frac{E_t + \frac{1}{E_t}}{\overline{E}} - 1 \quad .....(3)$$

Where:
V = Coefficient of variation
E_t = Expenditure in year t
$E_t + 1$ = Expenditure in the following year
$\overline{E}$ = Mean of $E_t + \frac{1}{E_t}$

4.0. Analysis of the Structure and Growth Trend of Government Total Expenditure

4.1. In Absolute Terms

Federal government expenditure is characterised into two broad heads – capital and recurrent – both of which are further functionally characterised into administration, economic Services, Social and Community Services and transfers. The total federal government expenditure rose in absolute terms from NGN144.5 million in 1960 to NGN4,661,580.0 million in 2015, representing more than thirty-two thousand fold increase during the fifty-five years intervening period. In percentage, it showed that government expenditure increased by a multiple of

3,226,006.9%. Specifically, the first decade (1960-1969) showed a growth rate of 218.34% while in the second and third decades recorded growth rates of 783.0% and 190.7% respectively. The fourth (1990-1999) and fifth (2000-2009) decades recorded 1,572.5% and 467.9% respectively. The first half of the sixth decade (2010-2015) recorded only 116.7% increase. Overall, between 1960-2015, it could be said that federal government total expenditure was indeed characterised by substantial increases which culminated in the 2014 figure of NGN5,211,320.0 million, the highest during the review period.

The period 1960-1965 witnessed a relatively moderate growth in expenditure. Expenditure increased by 89.1% from the figure of NGN144.5 million in 1960 to NGN273.3 million in 1965. The growth rate of government expenditure accelerated during the civil war period when total expenditure rose by 184.1% from the modest figure of NGN295.2 million in 1966 to NGN838.8 million at the end of the civil war in 1970. The rate of increase was highest in the l970s with a percentage increase of 783.0% when total expenditure rose from NGN838.8 million in 1970 to a whopping sum of NGN7,406.7 million in 1979. The bulk of the rise in the first decade 1960-1969 was accounted for by expenditures in administration and social and community services sectors. The rise can be attributed to the cost of the army and defence services which the Nigerian government had to bear from independence but which hitherto were borne by Britain (Okigbo, 1965). While the increase in the total expenditure during the civil war could be attributable to public mobilization and allocation of available resources to the relevant sectors to prosecute the war in the form of huge defence expenditure, the astronomical increase in government expenditure during the 1970s could be explained by massive spending on the capital expenditure programmes on transportation and communication, and education sub-sectors in the third development plan of 1975-1980 (Omoruyi, 1988) occasioned by a phenomenal rise in oil revenue during the period.

In the years of democratic political dispensation (1980s, 1999 to 2015), government spending has been heavily influenced by the demands of administration, and transfer payments in the form of contingency funds and non-statutory transfers to the state governments. The period 1981-1985, on the other hand, witnessed a persistent decline from the 1980 expenditure figure of NGN14,113.9 million to NGN13,220.5 million in 1985 showing a negative growth rate of 6.3% although positive increases of 13.1% and 38.4% were recorded in 1982 and 1985 figures of NGN12,940.4 million and NGN13,220 million over the 1981 and 1984 expenditure levels of NGN11,438.4 million and NGN9,553.3 million respectively (see table 1).

Table 1: Recurrent and Capital Expenditures as Percentage of Total Expenditure 1960-2015.

Year	Real GDP (NGN Million)	Recurrent Exp. (NGN Million)	Capital Exp. (NGN Million)	Total Exp. (NGN Million)	Recurrent/ Total (%)	Capital/ Total (%)	Recurrent Exp/GDP (%)	Capital Exp/GDP (%)	Total Exp/GDP (%)
1960	2,247.4	72.3	72.2	144.5	**50.0**	**50.0**	3.2	3.2	6.4
1961	2,359.6	96.2	99.2	195.4	**49.2**	**50.8**	4.1	4,2	8.3
1962	2,489.0	103.4	75.0	178.4	50.0	42.0	4.0	2.9	6.9
1963	2,501.2	119.6	90.1	209.7	57.0	43.0	4.3	3.3	7.6
1964	2,597.6	142.5	119.0	261.5	54.5	45.5	4.9	3.1	9.0
1965	2,825.6	156.9	116.4	273.3	57.4	42.6	5.1	3.7	8.8
1966	2,947.6	177.3	117.9	295.2	60.1	39.9	5.3	3.5	8.7
1967	3,146.8	116.8	131.9	298.7	55.8	44.2	4.4	3.5	10.9
1968	3,044.8	176.8	161.2	338.0	52.3	47.7	6.7	6.0	12.7
1969	2,527.3	287.8	172.2	460.0	62.6	37.4	8.1	4.9	13.0
1970	2,543.8	716.1	187.8	903.9	76.1	23.9	13.8	3.6	17.4
1971	3,225.5	823.6	173.6	997.2	77.1	22.9	12.5	2.6	15.1
1972	4,219.0	1 012.3	451.3	1 463.6	69.7	30.3	14.0	6.3	20.3
1973	4,715.5	963.5	565.7	1 529.2	60.1	39.9	8.8	6.6	15.4
1974	4,892.8	1 517.1	1 223.5	2 740.6	**41.7**	**57.3**	8.3	6.5	14.8
1975	5310.0	2 734.9	3 207.7	5 942.6	**34.6**	**65.4**	12.7	14.9	27.6
1976	15,919.7	3 815.4	4 041.3	7 856.7	**39.8**	**60.2**	14.0	15.2	29.2
1977	27,172.0	3 819.2	5 004.6	8 823.8	**30.9**	**69.1**	11.7	15.9	27.6
1978	29,146.5	2 800.0	5 200.0	8 000.0	**40.2**	**59.8**	7.8	15.1	22.9
1979	31,520.3	3 187.2	4 219.5	7 406.7	**43.0**	**57.0**	7.4	10.1	17.5
1980	29,212.4	4 805.2	10 163.3	14 968.5	**42.7**	**57.3**	9.4	20.5	29.9
1981	29,948.0	4 846.7	6 567.0	11 413.7	50.2	49.8	4.7	13.8	18.5
1982	31,546.8	5 506.0	6 417.2	11 923.2	57.3	42.7	4.4	13.1	17.5
1983	205,222.1	4 750.8	4 885.7	9 636.5	58.4	41.6	4.4	9.2	13.6
1984	199,685.3	5 827.5	4 100.1	9 927.6	65.7	34.3	4.7	6.9	11.6
1985	185,598.1	7 576.4	5 464.7	13 041.1	54.6	45.4	5.2	8.0	13.2
1986	183,561.0	7 696.9	8 526.8	16 223.7	**45.9**	**54.1**	5.4	12.3	17.7
1987	201,036.3	15 646.2	6 372.5	22 018.7	71.1	28.9	7.7	6.1	13.8
1988	205,971.4	19 409.4	8 340.1	27 749.5	69.9	30.1	7.1	6.0	13.1
1989	204,806.5	25 994.2	15 034.1	41 028.3	63.4	36.6	6.4	6.9	13.3
1990	219,875.6	36 219.6	24 048.6	60 268.2	60.1	39.9	7.3	9.0	16.3
1991	236,729.6	38 243.5	28 340.9	66 584.4	57.44	42.56	6.7	9.1	15.8
1992	267,550.0	53 034.1	39 763.3	92 797.4	57.15	42.85	5.9	7.5	13.4
1993	265,379.1	136 727.1	54 501.8	191 228.9	71.50	28.50	7.3	8.0	15.3
1994	271,365.5	89 974.9	70 918.3	160 893.2	55.92	44.08	5.9	7.9	13.8
1995	274,833.3	127 629.8	121,138.3	248 768.1	51.30	48.70	4.4	6.3	10.7
1996	275,450.6	124 491.3	212,926.3	337 217.6	**36.92**	**63.08**	3.0	7.9	10.9
1997	281,407.4	158 563.5	269,651.7	428 215.2	**37.03**	**62.97**	3.7	9.6	13.3
1998	293,745.4	178 097.8	309,015.6	487 113.4	**36.56**	**63.44**	4.3	11.4	15.7
1999	302,022.5	449 662.4	498,027.6	947 690.0	**47.45**	**52.55**	9.4	15.6	25.0
2000	310,890.1	461,600.0	239,450.9	701,050.9	65.84	34.16	6.7	5.2	11.9
2001	312,183.5	579,300.0	438,696.5	1,017,996.5	56.91	43.09	8.2	9.3	17.5
2002	329,176.7	696,800.0	321,378.1	1,018,178.1	68.44	31.56	10.9	4.6	15.5
2003	356,994.3	984,300.0	241,688.3	1,225988.3	80.29	19.71	9.7	2.4	12.1
2004	433,203.5	1,032,700.0	351,300.0	1,384,000.0	74.62	25.38	8.8	3.0	11.8
2005	477,533.0	1,223,700.0	519,500.0	1,743,200.0	70.20	29.80	8.2	3.5	11.7
2006	527,576.0	1,290,201.9	552,385.8	1,842,587.7	70.02	29.98	7.6	3.0	10.6
2007	561,931.4	1,589,270.0	759,323.0	2,348,593.0	67.67	32.33	7.0	3.6	10.6
2008	595,821.6	2,117,400.0	960,900.0	3,078,300.0	68.78	31.22	4.5	4.0	8.5
2009	634,251.1	2,127,970.0	1,152,800.0	3,280,780.0	64.86	35.14	3.4	1,8	5.2
2010	674,889.0	3,109,440.0	883,875.7	3,993,315.7	77.87	22.13	4.6	1.3	5.9
2011	718,980.0	3,314,440.0	918,546.5	4,232,986.5	78.30	21.70	4.6	1.3	5.9
2012	776,330.0	3,325,160.0	874,840.0	4,200,000.0	79.17	20.83	4.2	1.1	5.3
2013	834,000.0	3,689,070.8	1,108,390.0	4,797,460.8	76.90	23.10	4.4	1.3	6.7
2014	888,890.0	2,530,340.0	2,681,080.0	5,211,320.0	**48.55**	**51.45**	2.8	3.0	5.8
2015	950,110.0	3,971,000.0	690,580.0	4,661,580.0	85.19	14.81	4.2	0.7	4.9

Computed from Appendix 3

Ever since then, total government expenditure has been rising except for 1998, 2000 and 2015 whose figures fell from their immediate preceding years.

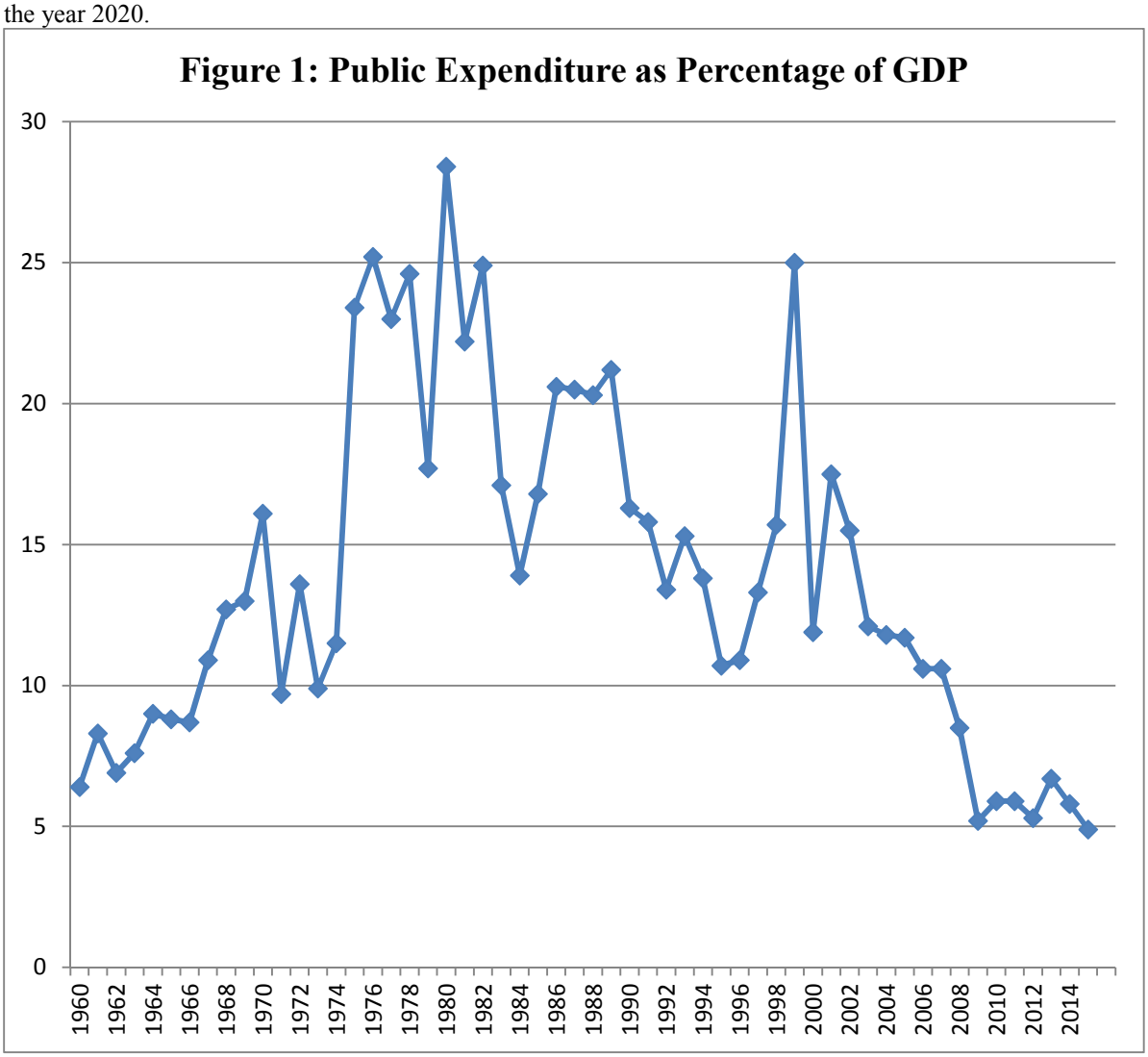
4.2. In Relation to GDP

Evidently, government total expenditure during 1960-2015 period rose drastically and impressively in absolute terms. This method of measurement leaves much to be desired as one tends to erroneously believe that the economy has grown as tremendously as it should. Hence, we look at the ratio of federal government expenditure to the GDP. In 1960, the size of the government *sector* (expenditure) in relative terms was 6.4% of the GDP. But by 2015, it had fallen to 4.9% of the GDP showing a negative increase of 1.5% point rate. In other words, the ratio of the public expenditure to GDP fell from 6.4% in 1960 to 4.9% in 2015 showing approximately a one-fold decrease in

the relative size of the public sector. This by no means leaves us with a more realistic state of government expenditure size against the picture earlier painted by the record of growth in the absolute expenditure measurement. Evidently, the annual increase in the size of the public expenditure in Nigeria was continuous during the fifty-five years review period reaching its monumental height of 28.4% in 1980. The first decade showed about 6.6% point rise from 6.4% in 1960 to 13.0% in 1969. The second decade showed a moderate increase of 1.6% point from 16.1% in 1970 to 17.7% in 1979. The third decade, however, showed a negative increase of 7.2% point from the figure of 28.4% in 1980 down to 21.2% point in 1989. The fourth decade showed a 8.7% positive increase while the fifth and final decade recorded a negative increase of -6.7%. A closer look at table 1 also reveals that throughout the review period (1960 and 2015 fiscal years), the size of the public expenditures in Nigeria has remained generally less than 20% except for 1972, 1975, 1976, 1977, 1978, 1980 and 1999 when it rose to 20.37%, 27.6%, 29.2%, 27.6%, 22.9%, 29.9%, 25.0% respectively.

Table 1 and figure 1 also show that in 1960 and 1961 fiscal years, the share of the recurrent expenditures in total expenditure averaged 49.6% whilst that of the capital expenditure averaged 50.4%. Throughout the review period, only in the periods 1960-1961, 1974-1980, 1986, and 1996-1999 did the share of the capital expenditure in the total expenditure reach 50% and above with the highest level of 69.1% in 1977 (see the bolded figures in table 1). Nigeria's expenditure profile reveals a skewed trend in favour of the recurrent expenditure especially since the return to democracy in 1999. This has had a grave consequence on the economy in the area of infrastructural developments such as regular electricity supply, motorable roads, etc. Indeed, the author is restrained to conclude that the continued paucity of capital allocation to the Social and Community services sector since 1960 indicates lack of deliberate strategic policy instrument towards human capital development in Nigeria. Hence, it is doubtful whether the government is actually sincere with its economic developmental vision and aspiration to achieving health and education for its citizenry and consequently achieving vision 20:2020 goal by the year 2020.

Figure 1: Public Expenditure as Percentage of GDP



4.3. Discussion

Results of Test of Hypotheses

The model as expressed in section 3 is:

$FGE_T = c_0 + c_1RGDP_{PC} + c_2INF_R + c_3DBT_S + c_4Urb + c_5DV + \mu$.

Result of the estimated parameters $(\hat{c}_0, \hat{c}_1, \hat{c}_2, \hat{c}_3, \hat{c}_4, \hat{c}_5)$ when fitted into the estimated regression line of the total expenditure (FGE_T) looks thus:

$FGE_T = 6681.738 + 233.162\ RGDP_{PC} - 8977.679INF_R + 3.620DBT_S - 3186.387Urb + 94732.862D_v + \mathbf{U}$

(133265.185) (0.065) (3728.444) (.274) (9147.702) (205874.446)

The results of the regression (see table 2) are consistent with the underlying theoretical *a priori* information of positive signs (correlation) preceding each of the parameter estimates except for inflation (INF_R) and urbanisation both of which have negative signs. The result shows that only three of the five tested variables – real per-capita GDP, debt servicing and inflation are statistically significant and therefore explain the change and growth of federal government total expenditure in Nigeria over the review period. From the results, a unit change in $RGDP_{PC}$, DBT_S, and INF_R will bring about a corresponding change of 233.16, -8977.68, and 3.62 units respectively in the FGE_T. Also, the test of goodness of fit in the form of the coefficient of determination (R^2) shows that the model explains 0.940 or 94% of the increase in government total expenditure over the review period. In other words, the three statistically significant explanatory variables jointly explained approximately 94% of the changes in total government expenditure during the period 1960 and 2015. From the result in table 2, hypotheses H_1, H_2 and H_3 are supported. The result relating to inflation indicates that though government may be spending relatively and absolutely higher quantum of money, the rate of inflation tends to lower the quantity and quality of public and social goods and services procured and provided by government. Partly as a consequence of the jerk-up in government expenditure and the inflow of foreign capital, the inflation rate made for the ceiling. The rate of inflation in the economy has been fluctuating since 1970 when it rose from 13.8% in 1970 to 40.9% in 1989; the highest so far. The consumer price index (CPI) shows that prices of goods and services especially food stuffs are about 700% high as against the official rates. In the same vein, debt servicing has risen from a mere NGN31.0 million in 1970 to about NGN943,000.0 million in 2015 even after some of Nigeria's debts were written off in 2003 (debt forgiveness) by the Paris club and co. The consistent rise in the public debt servicing is traceable to the fact that Nigeria owed more in 2015 than she owed both internally and externally fifty-five years ago. The country as at 2014 had a total external outstanding debt of NGN1,631.52 billion. As at 2013, Nigeria paid a whopping sum of NGN828.10 billion as interest on both domestic and external loan made up of NGN772.39 (domestic) and NGN55.71 billion (foreign). This, no doubt, has caused the expenditure of government to rise. By and large, from the fore going, it can be concluded that government expenditure has risen tremendously between 1960 and 2015 as a result of multiple reasons but has been best explained by the three factors found statistically significant in the study.

NOTE: *Figures in parentheses in the model are the standard errors*

Table 2: **Results of Regression Analysis**

Predictors	Standardised Coefficients (β)	t-value	Significance	Hypotheses Results
(Constant)	-6681.738	.067		
$RGDP_{PC}$	233.162	2.652	.011**	Supported
INF_R	- 8977.679	-2.439	.018**	Supported
DBT	3.620	13.460	.000*	Supported
Urb	- 3186.38	-.327	.745	Not Supported
DV	94732.862	.460	.648	Not Supported

R^2 = .972; Adjusted R^2 = .940; DW = 1.51. 1.544; F-Ratio = 211.236; F-test = F_t (4, 25) = 2.76 at 5% significance level.

* Significant at 0.001 (1%); ** Significant at 0.05 (5%)

4.3. Results of the Coefficients of Variation.

The analysis of the coefficients of variation was conducted around five different periods: 1960-1965; 1966-1970; 1982-1989, 1999-2015 and 1960-2015. These periods are significant because they represent different important socio-po1itical and economic events in Nigeria's chequered history. For example, the period 1960-1966 marked the beginning of a new era for Nigeria after gaining independence from Britain. The 1967-1970 period is the Nigerian civil war era. It would afford the opportunity to determine the items of expenditure that are prone to frequent manipulations by the fiscal authorities during periods of social upheavals. The periods 1971-1981 and 1999-2015 are the periods of rebuilding, reconstruction and rehabilitation of the totality of the economy immediately after the civil war and return of democratically elected civilian administration since 1999 while 1982-1989 is the period during which the economic stabilization act was introduced as well as the structural adjustment

programme (SAP) of 1986 which instigated several riots and civil disobedience in Nigeria during the General Ibrahim Babangida military junta. The calculation of the coefficients of variation of expenditure-to-GDP ratios were done for these five different scenarios permit critical observations of the dynamism in the behaviour of such coefficients.

The model states that the relative dispersion otherwise known as the coefficient of variation (v) is the standard deviation of expenditure-to-GDP ratios divided by the average of the ratio (i.e. mean of expenditure-to-GDP ratio) as already expressed section 3. The results of the analysis are as shown in tables 3a and 3b for the current and capital expenditures respectively. The higher the coefficients of variation, the more volatile and more amenable such expenditure item is to wide discretionary manipulations by fiscal authorities.

Table 3a: **Fluctuations of Federal Government Recurrent Expenditures 1960-2015**

	Coefficients of Variation					
	1960-1966	1967-1970	1960-2015	1971-1981	1982-1989	1999-2015
Administration	0.18	0.48	0.44	0.28	0.19	
Economic Service	0.34	0.13	0.31	0.81	0.27	
Soc.& Corn. Serv.	0.18	0.23	0.56	0.58	0.35	
Transfers	0.32	0.42	0.74	0.59	0.32	
Total	**0.15**	**0.36**	**0.40**	**0.25**	**0.20**	

Table 3b: **Fluctuations of Federal Government Capital Expenditures 1960-2015**

	Coefficients of Variation					
	1960-1966	1967-1970	1960-2015	1971-1981	1982-1989	1999-2015
Administration	0.33	0.48	0.65	0.41	0.48	
Economic Service	0.25	0.34	0.93	0.56	0.69	
Soc.& Comm. Serv.	0.29	0.48	0.92	0.61	0.57	
Transfers	0.41	0.55	1.34	0.93	0.85	
Total	**0.12**	**0.22**	**0.60**	**0.49**	**0.27**	

Administration Component

The degree of fluctuations of government expenditures were steeper for capital expenditures (and programmes) on administration than those of the recurrent expenditures on administration. The periods 1960-1966 and 1982-1989 witnessed the most stable and least volatile expenditures on administration in the recurrent programme (when it recorded 0.18 and 0.19 in the two sub-sectors respectively) when compared to the fluctuations of expenditure on administration in the other sub-periods. In 1967-1970 and 1971-1981 sub-periods, the coefficients of variation of expenditure on this function were 0.48 and 0.28 respectively. Therefore, the 1967-1970 sub-period marked the most volatile expenditure fluctuation of administration under the current programme which may not be unconnected with the mobilization of resources by government in terms of defence and internal security outlays to prosecute the civil war. Under the capital programme, fluctuations of expenditure on administration were least at 0.33 in the 1960-1966 sub-period while it was highest in the 1967-1970 and 1982-1989 sub-periods at 0.48 at piece. 1971-1981 sub-period recorded a coefficient of variation of 0.41. During the 1960-2015 period, administration expenditure showed a relatively less volatile and more stable fluctuation with a coefficient of variation for current programme at 0.44 while for capital programme it was 0.65. Hence, capital expenditure on administration was more amenable to wide discretionary adjustments by fiscal authorities than the recurrent expenditure on the same function during the period.

Economic Services Component

In the period 1967-1970, recurrent expenditure on economic services showed marked stability compared with the capital expenditure component of the same function in the sub-period. The coefficient of variation for this period was 0.13 the most stable ever experienced in all the expenditure categories. It was followed by the 1982-1989 sub period figure of 0.27 in terms of stability. The coefficients of variation for this sector in the other sub-periods were 0.34 in 1960-1966 period, 0.81 in 1971-1981 period and 0.31 in 1960-2015 period. The *most* violent fluctuation of expenditure on this function was recorded in 1971-1981 sub-period in the recurrent programme at 0.81. On the other hand, capital expenditure programme under this function experienced the coefficients of variation as follows: 0.25 in 1960-1966 sub-period, 0.34 in 1967-1970 sub-period, 0.56 in 1971-1981 sub-period, 0.69 in 1982-1989 sub-period and 0.93 in 1960-2015 period. The capital expenditure on the economic services was found to be very stable and less volatile in the 1960-1966 sub-period at 0.25. In the entire period under review, 1960-2015, recurrent spending on economic services component was subject to least variation at a coefficient of 0.31 as compared to the capital expenditure coefficient of 0.93 typifying a wider fluctuation that characterised capital spending on the expenditure components profiles. This result thus indicate a greater degree of stability in the recurrent expenditure programme while on the contrary, it suggests that capital expenditure components are more amenable to wide

discretionary manipulation by the authority than the recurrent expenditure.

Social and Community Services Component

Under this expenditure function, fluctuations of recurrent expenditure were lower than those of the capital expenditure in all the scenarios. For period 1960-1966, the coefficient of variation was 0.18. This was the lowest and most stable recurrent expenditure component ever recorded on social and community services function and was second only to the economic services in the order of stability in all the expenditure categories. Between 1967-1970 and 1971-1981, the coefficients of variation of the recurrent and capital expenditures on this functional component were 0.23 and 0.48, 0.58 and 0.61 respectively. The recurrent and capital programmes also recorded coefficients of variation of 0.35 and 0.57 respectively in 1982-1989 sub-period. In the entire 1960-2015 period, the coefficient of variation for this expenditure function in the recurrent programmes was 0.56 while the capital expenditure coefficient of variation was 0.92. Results indicate that the recurrent spending on this sector which comprised largely of expenditure on education and health was at the 1960-1966 least amenable to wide discretionary alteration by the fiscal authorities while on the contrary expenditure on education in particular accounted largely for the wide volatility and fluctuations of this functional component recorded for the capital programme.

Transfers Component

Under this function, the capital programme was more volatile and amenable to wide discretionary manipulation by the fiscal authorities than the recurrent programme for all the periods. While the coefficients of variation for this expenditure function (Transfers) under the recurrent programme for the 1960-1966, 1967-1970, 1971-1981, 1982-1989 and 1960-2015 periods were 0.32, 0.42, 0.59, 0.32 and 0.74 respectively, those for the capital programme for the same sub-periods were 0.41, 0.55, 0.93, 0.85 and 1.34 respectively. Under the capital programmes for the transfer spending, expenditures on the external financial obligations and internal public debt charges showed the highest degree of volatility.

From the above analysis, if we consider 1960-2015 period, clearly, the coefficients of variation of the expenditure-to-GDP ratios can be said to be, by and large, largest for Transfer at 2.08 and smallest for Administration at 1.09. Results also showed that at peace times and stable socio-political environment (1960-1966 and 1971-1981; 1999-2015) recurrent expenditure on Economic Services are more volatile and more amenable to fiscal adjustment by the authorities than the Capital Programmes on the same function while at emergency periods such as the war years (1967-1970), the Economic Stabilization cum Structural Adjustment Programmes **(SAP)** years (1982-1989), fall in oil price on the international market and during economic recession (2008-2015), Capital expenditures on Administration, Social and Community Services and Transfers together with capital expenditures on these same functional components in peace time maintain high degrees of volatility and more amenable to manipulation by the fiscal authorities compared to the recurrent expenditures on the same functions. In the 1967-1970 and 1982-1989 sub-periods, the coefficients of variation of expenditures on all the functional components under the Capital programme were consistently higher and more amenable to wide discretionary adjustments than their counterparts under the current expenditure programme. This is against what applies even during peace-time in the economic life of a nation state. During the 1960- 2015 period, Capital expenditures on Transfers and Economic Services remained most volatile and highly amenable to wide discretionary adjustments by the fiscal authorities as the two expenditure components had the highest coefficients of variation. This result corroborates the result of a similar study by Omoruyi (1988).

5.0. Conclusion

From the descriptive analysis, there were increases and declines in the rate of government total expenditure by sub-periods between 1960 and 2015 both in absolute and relative terms. The analysis revealed that the recurrent expenditure dominated the observed growth in government expenditure profile over the review period. It demonstrated evidence of the operation of Peacock and Wiseman's displacement effect hypothesis during and after the Nigerian civil war of 1967-1970.

The multiple regression statistical analysis showed that per-capital GDP (H_1), debt Servicing (H_2) and inflation rate (H_3) greatly contributed to the increase in government total expenditure in Nigeria over the 1960-2015 review period. The general increase in the size of public expenditure over the review period is consistent with the results of similar studies both in developed and developing countries (Longe, 1984; Thorn, 1967; Emweze, 1973; Musgrave, 1969; Mbanefoh, 1989; Eckstein, 1979; Ezirim and Ofurum, 2003; Ezirim et al., 2008; Edame and Akpan, 2013; Igudia, 2016. The rising size of government sector in the form of expenditure growth is an indication that government participation in the generation, mobilization and allocation of resources in the economy over the years has been rising as reflected in the per-capita income/GDP of the citizens. Furthermore, the observed growth in total expenditure especially since the 1970s reflected the quantum of debt over-hang, public debt servicing and repayment and deficit budgeting. Inflation also played a major role in the observed increase as it

made the cost of providing the same amount of social and public goods and services by government to rise tremendously over the review period.

Analysis of the coefficient of variation revealed that, in general, fiscal authorities always usually find capital expenditure components most amenable to manipulation both in times of peace and social/political and economic upheavals. This result is consistent with the findings of Omoruyi (1988).

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