

# DRIVERS OF FEDERAL GOVERNMENT EXPENDITURE ON AGRICULTURE IN NIGERIA

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## ABSTRACT

*The slow rate of Nigeria's development outcomes, bordering on food insecurity, poverty, inequality unemployment, deplorable infrastructure, low diversification of the economy and slow structural transformation of the agricultural sector spurred renewed interest in the drivers of public agricultural investments in Nigeria by Nigeria's Agricultural Policy Stakeholders. This study therefore analysed the trend of Federal Government agricultural expenditure in Nigeria and ascertained the drivers of agricultural investment outlay using qualitative and quantitative approaches. The scope of the study spans 35 years (1981-2015). Descriptive statistics, pictorial analysis and the co-integration approach were employed. The outcome of the study revealed that expenditure patterns fluctuated, rose and become fairly premeditated and consistent with the return of civilian administration, probably due to the priority attention to agriculture and sustained economic management. Also, past agriculture expenditures were observed to be long run driver of current agriculture expenditure, thus, affirming the garbage can or incrementalism approach (probabilistic strategy) to federal government agriculture expenditure in Nigeria, while the outcome on content analysis noted the influences of actors, institutions and ethical state of the country on government agricultural expenditure. The study recommended sustenance of democratic tenets, given the expenditure priority focus on agriculture and innovative expenditure programming based on needs and results, rather than random approach to resource allocation and expenditure programming.*

**KEY WORDS:** Agriculture, expenditure programming, policy, resource allocation

## INTRODUCTION

In spite of the significant potentials of the agriculture sector in improving development outcomes, including inclusive growth, poverty alleviation, as well as malnutrition (United States Agency for International Development, 2018) and evidence of public investment in enhancing development outcomes (Mogues, Fan and Benin, 2015), the Nigerian situation has been paradoxical, despite the estimated ₦824 billion spent on the agriculture sector between 1981 and 2015 (National Bureau of Statistics, 2018). Though, the Federal Ministry of Agriculture and Rural Development (2016) noted that public agriculture expenditure was barely 2%, with the country falling short of the 10% minimum budgetary



allocation to the agriculture sector as prescribed by the Maputo and Malabo Declarations. The Regional Strategic Analysis and Knowledge Support System (ReSAKSS) (2016) further affirmed that the 1.9% intensity of public spending in Nigeria was low to sustain the country's investment requirements in agriculture. Never-the-less, the United States Agency for International Development (2018) affirmed that the poverty level in Nigeria has risen as high as 53.3% of the population, while the mean national stunting rate (a measure of malnutrition) stands at 32% for children under five years old. These developments necessitated a re-think of the determinants of federal government expenditure in Nigeria, with the view to ascertaining what really drives agriculture sector expenditure in the country. Recent qualitative review by Mogues (2012); Mogues and Olofinbiyi, (2016), identified the drivers of public expenditure in agriculture to include behaviours of actors and political institutions, corruption, while quantitative studies by; Fosu (1994); Mbanefo and Anyanwu (1995); Ojo and Akanji (1996); Birner and Palaniswamy (2006); Coker (2010); Bello, (2013), narrowed down to one of, fiscal constraint, macroeconomic factors, political factors, perception of agriculture sector, competing demands of other sectors, manner of expenditure amendments amongst others.

Although, several research work had focused on the determinants of public expenditure policy on agriculture in Africa (Fosu 1994; Coker, 2010; Mogues, 2012), the body of theories and empirical analyses on the workings of policy making are yet to be effectively applied to government expenditure decision making in the agriculture sector within the African continent (Mogues (2015); Mogues and Olofinbiyi, (2016). Further justification for the study stems from the need to unearth how the public sector will support country level development outcomes of growth enhancement, poverty alleviation, increased nutrition and health through effective determination of agriculture expenditure requirements. Nonetheless the variants of identified drivers of public expenditure in the agriculture sector, this study largely focused on quantitative approach.

### **Purpose and hypothesis**

This study therefore attempts to ascertain the trend and drivers of Federal Government expenditures in Nigeria's agriculture sector. The study hypothesised that macroeconomic variables in the model were not drivers of federal government agriculture expenditure in Nigeria. Macroeconomic variables retained from the pool of quantitative and qualitative variables considered were the agriculture sector GDP, population, exchange rate, total federal revenue, consumer price index, loan and advances.

### **Theoretical and Conceptual Insights**

The review of theory on agricultural investment is undertaken from two dimensions. The first covers theories which focused on the justification, need and effectiveness of public expenditure in the society, while the second relates mainly to the theories of resource allocation decision and the roles of actors and institutions in influencing public investment decisions. From the former, the theories of public expenditure cover contributions from the classical, neo-classical and Keynesian schools of economic thought (Zawojka 2013; Ewuare and Eyitope (2015). Musgrave and Musgrave (1989) for instance premised justification for public expenditure on the allocation, stabilization



and distribution functions of government. The study stressed the need for government expenditure effectiveness, given the tendency to impact negatively on growth and argued that the demand for public goods has direct relationship with the per capita income. Likewise, Wagner (1890), in the novel contribution on increasing state activity, affirmed that the functions of the state have direct relationship with public expenditure, while also arguing that a rise in public expenditure will increase national income. Peacock and Wiseman (1961) on the other hand averred that government expenditure rises in jerks and step manner causing public expenditure to rise. From the neoclassical angle, government expenditures have inverse relationship with economic growth in the long run, while also discouraging private investments. Meanwhile, Keynes (1936) affirmed that public expenditure can be deployed to achieve several development outcomes with the view to achieving economic stability, job creation and poverty alleviation.

With respect to the theories of resource allocation decisions, Mogues (2012) in the seminal qualitative work on the determinants of public expenditure allocations and their implications for agricultural public investment, identified numerous resource allocation theories, covering theories of budgeting process, garbage can budgeting model, veto-player theory, budget trade-off theory and budgetary model of incrementalism. The theory of budgetary process and its associated activities largely described the budgetary process and identified factors that influenced the process.

The Garbage can budgeting model on the other hand posited that budget outcomes are borne out of probabilistic process in which government expenditure in a given year is equal to the preceding year's spending plus a random addition, either positive or negative. The theory affirms that budgeting emanates through four processes covering the actors, problems perceived by the actors, solutions identified by actors and actions taken in the form of initiatives (Mogues 2012; Cohen, March and Olsen, 1972). Budgetary model of incrementalism sees budget allocation as increasing or declining by same proportion from year to year. The veto player theory on its part emphasized the roles of actors and institutions in investment allocations through their actions on the budget process. On this, Mogues (2012) argued that the gulf of ideology between successive governments spur budget composition. The budget trade-off theory rest mainly on the prioritization of investment among competing sectors of the economy. This, according to Mogues (2012) was a response to the arguments of the garbage out and the incremental theories. Another key theoretical framework which supports the determinants of investment decision is the theory of actor-centred institutionalism framework proposed by Magnt and Scharpf (1995). In this, Scharpf (1997) posited that actors are capable of making purposeful choices among alternative courses of action and are seen as rational in the sense that they maximise self-interest though without prejudice to payoffs. Mogues and Olofinbiyi (2016) deployed this framework in their review of institutions and public agricultural investment. The study argued that actors and political institutions can influence investment in the agricultural sector or impact on how public funds are allocated. According to the study, political and budget actors can allocate strategic influence and create or hamper opportunity for collusion or ensure the accountability of individual actors. Alesina (1999) noted that the characteristics of project procedure strongly influence the budget outcome.



Meanwhile, Bello (2003) alluded to the use of across the board expenditure adjustment as a key model adopted within the Nigerian context.

### **Rationale and drivers of public investment in agriculture**

Adducing from the various schools of economic thought, Zawojaska (2013) noted that the acclaimed justification for public expenditure as deduced from the neoclassical theory were due largely to economic inefficiencies created by market failures and undesirable low material welfare among the poorest of the poor. The former can be redressed through stabilization, provision of public goods and regulations, while the latter can be rectified through public policy. However, specific rationale for public expenditure as compiled by Zawojaska (2013) included correction of market failure, control of externalities, redressing information gap, reducing imperfect competition, provision of public and merit goods, influencing resource allocation and efficiency and social redistributive function of the government.

In the studies on the drivers of government expenditure on agriculture, researchers have adduced several reasons premised on the outcomes of their studies. Bello (2003) for instance, affirmed that the manner of capital expenditure adjustment (across the board budget cut) was the key determinants. Birner and Palaniswamy (2006) identified numerous constraints to include political challenges, limited empowerment of farmers, legislative factors, fiscal constraints, perception of agriculture as a backward sector, negative notion with past investment, limited duration for policy makers to act and competing demands from other sectors as key drivers. The Department for International Development (DFID) and World Bank (2007) narrowed down to the issue of structural adjustment policy, ideological shift from state intervention in agriculture and increased intervention by the development partners. Fosu (1986); Saez and Sinha (2010) isolated economic and political reasons and combination of policy objectives to be achieved, while Ojo and Akanji (1996) identified the size of government budget and allocation to other sectors of the economy as key factors. Coker (2010) identified government revenue and capital formation as key determinants; while Mogues (2012); Mogues and Olofinbiyi (2016); Salinas-Jemenez (2009); Bohn and Inman, (1996) affirmed that the behaviours of actors and political institutions substantially influenced budget outcomes globally. Mogues and Olofinbiyi (2016) made justification with the scenario in Nigeria where the legislators have unrestricted amendment rights on draft budget bills; possess ability to veto appointment of Auditor General and the ability to investigate executive appropriation. Arising from this review, it is evident that both qualitative and quantitative factors drive public expenditure on agriculture in Nigeria. However, the focus of this study is largely on the quantitative macroeconomic variables, though without prejudice to the few qualitative variables covered. These variables are detailed under the sub-section covering the scope and sources of data.

Following other contributors on the public expenditure dialogue, the International Food Policy Research Institute (2018) in its food policy report posited that non-adherence to Maputo agreement was a constraint hindering the progress towards the continent's development goal of poverty eradication. Though, the report noted that the sub-Saharan



Africa witnessed decrease in rates of poverty hunger and children malnutrition, the 2017 Global Hunger Index rated hunger situation in most African countries as serious. Coker (2010) on the basis of time series analysis revealed that federal government expenditure on agriculture in Nigeria varied according to the type of government in power and along the line economic sectors. While Alesina (1999) showed that the characteristics of budget procedure strongly influenced the budget outcome, Mogues and Olofinbiyi (2016) argued that in governments with weak institutions and governance quality, policy makers can strategically use off-budget funds for government expenditure allocations. Alesina (1999) however argued that the characteristics of budget procedure strongly influenced the budget outcome.

Meanwhile, Mogues *et al.* (2008) noted that agriculture expenditure was far lower than those of the other social sectors and the regional and international standards. The researchers affirmed that only few projects accounted for 81% of Federal capital spending and many of Presidential Initiatives which differ in implementation modalities have identical budgetary provisions.

On the conceptual front, Akrani (2011) refers to government expenditure as government spendings incurred by the central, state and local government authorities to meet the collective social wants of the populace. In a related development, the Regional Strategic Analysis and Knowledge Support System (ReSAKSS) (2009) defined public expenditure as one of the most effective instruments in promoting agricultural growth and reducing poverty in developing countries. Meanwhile, Akrani (2011) noted that the categorisation of public expenditure has undergone numerous transformations as, diverse lines, including the functions of government (government's economic sectors), transfer and non-transfer expenditure as categorised by (Pigou, 1989). From the classical end, expenditure classification covers productive and unproductive expenditures. Classification has also been undertaken according to perceived benefits to cover common, special and social benefits. Dalton (1954) meanwhile categorised expenditure into sub-themes such as politics, general administrations, security, administration of justices, developmental purposes, social and for public debt charges. The outcome of this review shows the diverse nature of the drivers of public expenditure on agriculture in Nigeria, as well as their categorization and purpose. These have serious implications for this study, even though focus is largely of quantitative macroeconomic variables.

## METHODOLOGY

### Study Area

The study covers the Federal Republic of Nigeria, located in the West of Cameroon, East of Republic of Benin, South of Niger and around the Southwest of Chad Republic. The country lies on Latitude 10.00 N and Longitude 8 00 E (Index Mundi, 2018). Nigeria covers an area of 924,000 square kilometres, an estimated population of 191.8 million, comprising 49.7% females and 51.3% males. The Gross Domestic Product stood at US\$581.6 billion, Gross National Income per Capita is estimated at US\$ 2,820 as at 2015. Inflation rate is put at 14.27% while the nation ranks 152 in the Human Development Index



(African Development Bank, 2018). The country comprises 36 states and a Federal Capital Territory, Abuja. According to the Federal Ministry of Budget and Planning (2017), the country remains highly import and consumption dependent, with little diversification. Oil accounts for over 95% of its export and foreign exchange, while the manufacturing sector accounts for less than one per cent of the country's export. Growth rate hovers around 4.8% between 2011 and 2015, driven largely by higher oil prices, with agriculture sector contribution to Gross Domestic Product (GDP) put at 22% (USAID, 2018). Currently, majority of Nigerians are faced with poverty, inequality and unemployment. The country currently faces the twin challenge of inability to meet domestic food demand, and low export at levels required to stimulate growth (Federal Ministry of Budget and Planning, 2017). Nigeria comprises six agro-ecological zones, namely mangrove swamp, rainforest, derived savannah, guinea savannah, Sudan savannah and Sahel savannah. The country is blessed with vast land and water resources supportive of agricultural development. However, agriculture is still at subsistent level, with smallholder farmers dominating. Key agricultural activities across the country comprise crop farming, livestock production, fisheries, apiculture, among others. Irrigated agriculture is also extensive, particularly in the northern parts of the country. Key crops grown include rice, cassava, yam, maize, sorghum and millet. Cash crops such as cocoa, cotton, oil palm, kola nut are also available mainly across the southern parts of the country with the exception of cotton.

### **Scope and sources of data**

The study covers 1981 - 2015; secondary data used for the study were largely from the on-line data bank of African Development Bank and Nigeria's National Bureau of Statistics. In all, data on 21 variables were sourced for the study, covering Federal Government agriculture expenditure (capital and recurrent), type of government, corruption index, Federal Government revenue, interest rate, loans and advances. Other data collected included consumer price index, oil revenue, external reserve, foreign direct investment, total debt, agriculture sector share of export, agricultural production index, economically active population, gross domestic ratio, forex reserve, migration, population and self sufficiency ratio. However, given the problems of collinearity and dummy trap, only seven variables were retained for the analysis. These are the federal government expenditure on agriculture, agriculture sector GDP, exchange rate, total federal revenue, loans and advances, consumer price index and Nigerian population.

### **Method of data analysis**

The method of data analysis comprises descriptive statistics such as mean, standard deviation, minimum and maximum; augmented Dickey Fuller (1979) test of stationarity, Johansen (1988) test of co-integration and the vector error correction model.

### **Model specification**

#### **Augmented Dickey Fuller (ADF) test**

The first requirement of co-integration test is to ensure the stationarity of the data proposed for data analysis. Consequently, ADF unit root test was used to ascertain the order of integration of each variable, following which the stationary data were employed for subsequent analyses undertaken under this study. The model was specified as follows:

$$\Delta G_t = \alpha_0 + \alpha_1 t + \beta G_{t-1} + \sum_{k=1}^n \delta_k \Delta G_{t-k} + \epsilon_t \quad (1)$$

Where:

$\Delta$  = Change Operator

$G_t$  = Value of the variable of interest at current time

$\alpha_0$  = Constant

$\alpha_1$  = Coefficient of the trend series

$\beta$  = Coefficient of lagged values of variable of interest

$G_{t-1}$  = Lagged value of order one of the variables of interest

$t$  = Time variable

$n$  = Lag order of the autoregressive process

$\epsilon_t$  = White noise

The  $H_0$  is that  $G = 0$  implies the existence of a unit root in  $gt$  or that the time series is non-stationary. The three equations considered are as follows:

$$\Delta G_t = \beta_1 + \hat{c}G_{t-1} + a_t + e_t \quad (\text{Intercept only}) \quad (2)$$

$$\Delta G_t = \beta_1 + \beta_{2t} + \hat{c}G_{t-1} + a_t + e_t \quad (\text{Trend and Intercept}) \quad (3)$$

$$\Delta G_t = \hat{c}G_{t-1} + a_t + e_t \quad (\text{No intercept}) \quad (4)$$

### Co-integration test

According to Engle and Granger (1987), co-integration exist when a linear combination of a set of time series is stationary, if it is taken that the individual series are non-stationary. Ama (2003) explained that co-integration of two or more time series implies that long run or equilibrium relationship exists between them. For two variables to be co-integrated, the individual variables must be non-stationary and there must be a linear combination of the non-stationary variables. The model is specified as follows as applied by (Ibrahim, 2017):

$$F_t = \emptyset + A_1 F_{t-1} + \dots + A_p F_{t-p} + \epsilon_t \quad (5)$$

The VAR is rewritten as;

$$\Delta F_t = \emptyset + \sum_{i=1}^p \Gamma_i \Delta F_{t-i} + \Pi F_{t-1} + e_t \quad (6)$$

Where;

$\Pi = \sum_{i=1}^n A_i - 1$ ,  $\Gamma_i = \sum_{j=i+1}^p A_j$  and  $F_t$  will be  $(n \times 1)$  vectors of all the non-stationary  $I(1)$  variables in the study.

$\emptyset$  =  $(n \times 1)$  vector of parameter (intercept),

$\epsilon_t$  =  $K \times 1$  vector of innovations or random shocks.

$\Gamma$  and  $\Pi$  are  $(n \times n)$  matrices of parameters, where  $\Gamma$  is  $(n \times 1)$  vector of coefficients of lagged  $F_t$  variables. The  $\Pi$  is a  $(n \times 1)$  represents long-run impact matrix which is fallout of two  $(n \times 1)$  matrices.

### Specification of the Vector Error Correction Model (VECM)

Arising from the outcome of the cointegration test, the VECM was used to analyse causal influence among non-stationary variables and to reveal long run and individual short run relationship between the independent variables modelled and federal government agriculture expenditure, which is the dependent variable. Specifically, the fitted model is given algebraically as:



$$\Delta FGE_t = \varphi_0 + \sum_{i=1}^n \beta_i \Delta AGDP_{t-i} + \sum_{i=1}^n \Delta POP_{t-i} + \sum_{i=1}^n \Delta EXR_{t-i} + \sum_{i=1}^n \Delta TFR_{t-i} + \sum_{i=1}^n \Delta LAD_{t-i} + \beta CPI + \alpha ECT_{t-1} + \varepsilon_t \quad (7)$$

Where:

FGE - Federal Government Expenditure on Agriculture

AGDP - Agricultural Sector GDP

POP - Population

EXR - Exchange Rate

TFR - Total Federal Revenue

CPI - Consumer Price Index

LAD - Loan and Advances

ECT - Error correction term,

$\Delta$  - Difference in operator

and  $\varepsilon_t$  is the error term which takes care of other variables that could have effect on public agriculture expenditure but not included in the model, while n is the lag length.

## RESULTS AND DISCUSSION

### Trends of Federal Government Agriculture Expenditure in Nigeria

Figure 1 depicts the trend of the current nominal and lagged nominal (changes between the current and preceding period data) Nigeria's Federal Government expenditures. The figure shows that federal agriculture expenditure had been on the rise, though without consistency and devoid of logic between 1981 and 2015. Specifically, a sharp rise of over 600% was witnessed in 1999 with the re-commencement of democratic governance in 1999. Expenditure growths of over 100% were also witnessed in 2001, 2004 and 2008, implying that there may have been a rise in agriculture sector investment during the civilian era. However, the height of federal agriculture expenditure was in 2006, put at ₦107.46 billion. Agriculture sector expenditure subsequently nose dived and is yet to attain this level thereafter, though without prejudice to isolated yearly growth and increases. Also, evidence from the one-year lagged nominal data however showed stability in expenditure between 2000 and 2008, this may not be unconnected to the stability in policies and political administration. Several researchers and institutions affirmed the falling trend of agricultural expenditures across Africa (IFPRI, 2018; Olomola *et al.* 2014), probably in view of the low policy priority accorded the agriculture sector, as reflected by low budgetary allocations. While Olomola *et al.* (2014) wondered why budgetary allocation to agriculture was nose diving despite the sector's mandate in redressing poverty, hunger, unemployment in pursuit of economic development, IFPRI (2018) noted that the decline in agriculture spending growth is a problem that threatens the region's progress in poverty reduction and food security.



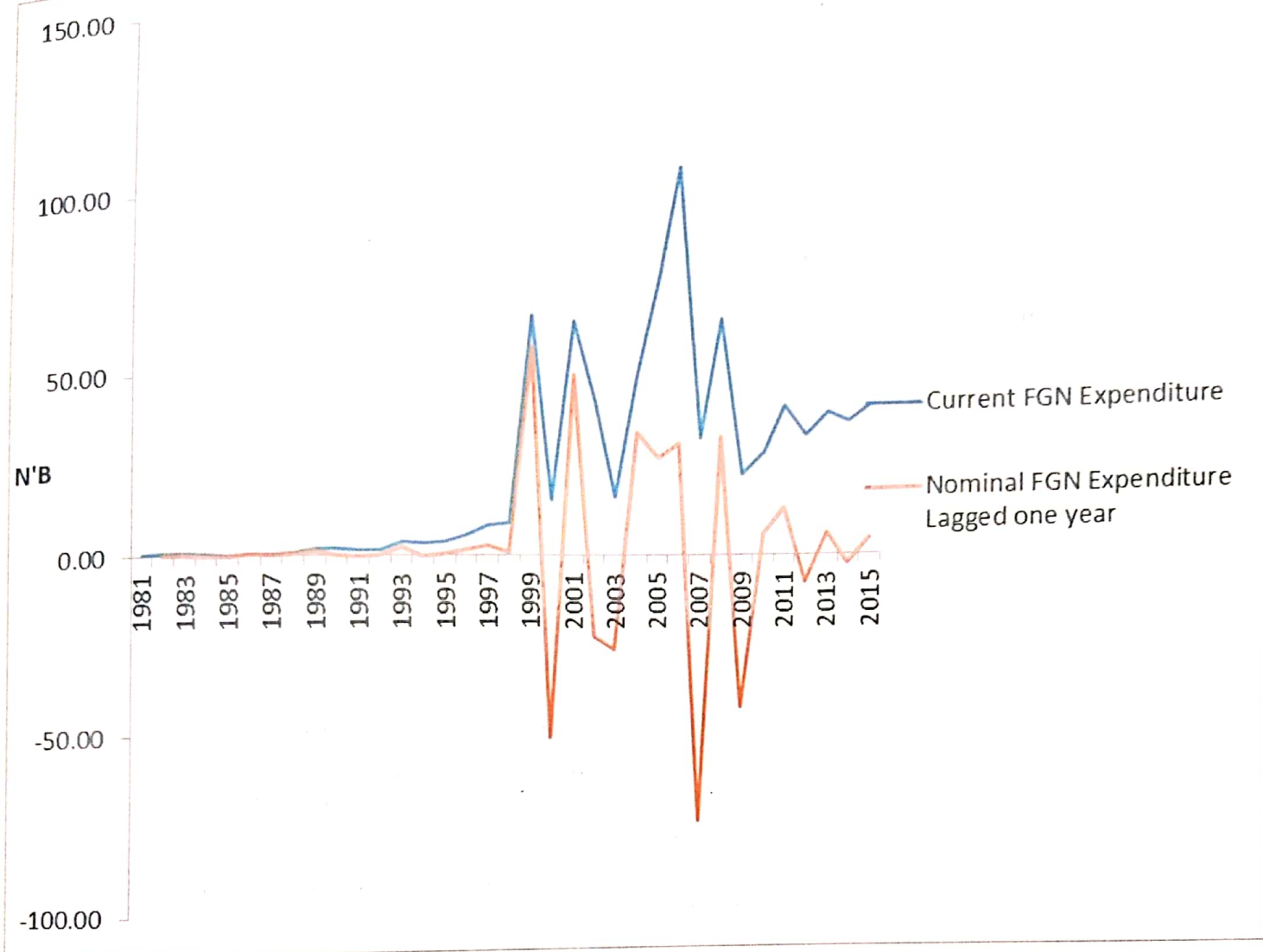


Figure 1: Trends of Nigeria's current and lagged federal government expenditures (1981-2015)

**Summary statistics of time series variables**

The summary of the time series data used in the study is provided in Table 1. Most importantly, the mean FGN agriculture expenditure was ₦23.4 billion, while maximum and minimum values stood at ₦ 107.46 billion and ₦ 0.13 billion respectively. Skewness and Kurtosis ranges from -1.36 to -1.46. Trochim and Donnelly, (2006); Gravetter and Wallnau, (2014) and Field, (2009) affirmed that range of between -2 and +2 are suitable. Meanwhile, standard deviation for agricultural GDP, revenue, loan advances and population were particularly high, implying that these variables may have lacked consistency, thus indicating unstable macroeconomic environment; this is likely a factor in the outcome of this study. Details of the other variables in the model are as provided in the table.



Table 1: Summary of time series variables

Variables	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
FGN Expenditure (N'B)	35	107.34	0.13	107.46	23.54	27.51	1.24	1.11
Agric. GDP	35	13,648.71	2,303.51	15,952.22	6,886.37	4,523.14	0.76	-0.97
Exchange Rate N/ USD	35	192.67	0.61	193.28	71.54	66.30	0.24	-1.72
Total Fed Revenue (N'B)	35	11,106.39	10.51	11,116.90	2,916.50	3,667.71	1.05	-0.29
Loans and Advances	35	13,077.62	8.58	13,086.20	2,624.24	4,041.81	1.46	0.83
CPI	35	191.57	1.03	192.60	71.82	64.58	0.35	-1.36
Nig. Pop (Mill.)	35	106,472,390	75,729,572	182,201,962	121,082,352	31,708,995	0.35	-1.03

Authors' computation (2018)

### Stationarity test

A total of twenty variables initially considered for the study were subjected to stationarity test. However, given collinearity and dummy trap problems, only 7 variables were retained. The unit root test for these variables are detailed in Table 2.0. The results show that all the variables considered were non-stationary at level 1(0) but became stationary at first difference (that is, after all variables were differenced once) at 5% probability level, indicating non-existence of unit root in the time series data, therefore stationarity of the data set. Numerous researchers (Ama, (2003); Obayelu and Alimi, (2013); Ibrahim, 2017) have confirmed stationarity of macroeconomic data at first difference.



**Table 2.0: Results of Unit Root Test (Augmented-Dickey Fuller) (1981-2015)**

Variables	Model	t-statistics in 1st difference	Order of Integration
FGN Agric. Expenditure (Y)	Intercept	-10.358	1(1)
Agric. GDP (X3)	Intercept	-4.56	1(1)
Exchange Rate (X5)	Intercept	-5.196	1(1)
Total FGN Revenue (X6)	Intercept	-5.645	1(1)
Loans and Advances (X8)	Intercept	-6.356	1(1)
CPI (X9)	Intercept	5.346	1(1)
Nigeria's Population (X20)	Intercept	-3.135	1(1)

Comparison of t-stat and critical values were basis for rejection of critical values

All models were significant at 5% probability levels

Source: Authors' computation (2018)

### **Results of Cointegration and Vector Error Correction tests**

Tables 3.0 and 4.0 detail the results of the co-integration and vector error correction tests undertaken to ascertain the relationship between the independent variables in the model and the Federal Government agricultural expenditure. The outcome of the cointegration analysis shows that there are 4 co-integrating equations in the model, as determined at 5% significance level. The results suggest the existence of long run relationship between the variables in the model and justification for the fitting of vector error correction model. The outcome of the VECM analysis shows that of the 4 co-integrating equations, only the second error correction model was marginally significant with an acceptable negative sign. This implies a weak long run relationship between the past and current values of the Federal Government expenditure on agriculture.

Further review of the results shows that only the lag of FGN agricultural expenditure was significant at 5% and thus, has a short run individual causality with the FGN expenditure, implying that current FGN expenditure is determined by past releases. This result therefore refutes the null hypothesis of this study which indicated that the macroeconomic variables included in the model were not drivers of Federal Government agricultural expenditures. The outcome further supports the position that agricultural sector expenditures were based on either the Garbage Can or incrementalism theory of expenditure strategies, implying that current expenditures were derived from previous expenditure, with negative consequences for the attainment of developmental outcomes within the agriculture sector. However, further analysis after this stage was not feasible, given the non-significance of the variables in the model. Without prejudice to data limitations, there are possibilities that qualitative variables which could not be included in the model, could aptly cause public agriculture investment in the country as inferred by literature (Mogues, 2012). Meanwhile, numerous researchers, including Fosu, (1986); Ojo and Akanji, (1996); Saez and Sinha, (2010); Coker, (2010) have all shown that economic, social and political factors were key determinants of Government expenditures on agriculture.



Table 3.0: Johansen test for cointegration

Maximum rank	Eigen Value	Trace Statistic	5% Critical Value	Max statistic	5% Critical value
0	.	197.1387	124.24	71.3344	45.28
1	0.88486	125.8042	94.15	43.4133	39.37
2	0.73167	82.3909	68.52	29.1706	33.46
3	0.58686	53.2203	47.21	27.1782	27.07
4	0.51938	29.0421*	29.68	19.2517	20.97
5	0.44199	9.7904	15.41	7.4329	14.07
6	0.20168	2.3575	3.76	2.3575	3.76

Source: Authors' computation (2018)

Table 4.0: Vector Error Correction Model Results

D-Federal Government Expenditure	Coefficient	Standard Error	Z	P> Z
ce 1	-0.3936959	0.3718642	-1.06	0.29
ce 2	-0.011056	0.0060102	-1.84 *	0.0066
ce 3	0.4184418	0.2574152	1.63	0.104
ce 4	0.0038975	0.0058239	0.67	0.503
Lag_FGN Agric Expenditure	-0.5364855	0.2387225	-2.25**	0.025
Lag_Agric. GDP	-0.010269	0.0101917	-1.01	0.314
Lag_Exchange Rate	-0.4231868	0.4090337	-1.03	0.301
Lag_Total Fed revenue	0.0019727	0.005027	0.39	0.695
Lag_CPI	-0.1624329	0.3302951	-0.49	0.623
Lag_Nigeria's Population	-4.00E-06	0.0000887	-0.05	0.964
Lag_Loan and Advances	0.2803598	0.4137648	0.68	0.498
Constant	0.9791679	16.87922	0.06	0.954

Source: Authors' Computation(2018)

\*\* implies 5 percent level of significance; \* 10 percent level of significance

## CONCLSION AND RECOMMENDATIONS

Arising from the outcome of the analysis, the study concluded that Federal Government agriculture expenditure within the study period fluctuated, but increased with the return to civilian rule in 1999, implying the priority focus on the agriculture sector during the civilian era. Past expenditures were also affirmed to have determined current Federal Government expenditure on agriculture, likely confirming the existence of the garbage can or incrementalism strategy of expenditure releases. Meanwhile, the content review undertaken showed that agricultural expenditures were likely influenced by actors, institutions and ethical issues such as corruption.

Arising from the above, there is the need to sustain democratic tenets, given the tendency for high agricultural sector expenditure and need for logical and innovative approaches to determining resource allocation and expenditure, entailing expenditure programming, premised on developmental expediency and cogent sectoral preferences. Without prejudice to the needs of the sub-sectors and stakeholders, expenditure priorities should be performance related, premised on agreed results as detailed in the reformed performance contract system operational in the Ministries, Departments and Agencies, including the Federal Ministry of Agriculture and Rural Development.

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