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Full Length Research Article

DETERMINANTS OF GOVERNMENT AGRICULTURAL EXPENDITURE IN NIGERIA FROM 1999 TO 2025 (THE FIRST 26 YEARS OF THE UNINTERRUPTED DEMOCRATIC ERA)

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ABSTRACT
This study was undertaken to analyse the impact of government agricultural expenditure on agricultural growth in Nigeria from 1999 to 2025. Annual time series data on agricultural Gross Domestic Product (GDP) growth rate, government agricultural expenditure, inflation rate, exchange rate, population growth rate, interest rate, export rate, private investment, public investment and foreign direct investment collected from the records of Central Bank of Nigeria (CBN) publications and annual reports, National Bureau of Statistics (NBS) database, Federal Ministry of Agriculture and Rural Development, Food and Agriculture Organization Statistics (FAOSTAT) and World Bank database were analysed using descriptive statistics and inferential statistics such as unit root, Johansen co-integration, growth model and vector error correction model (VECM). The result showed an instantaneous growth rate of -1.7% for agricultural GDP, with a compound growth rate of -3%. It also showed that the growth rate of agricultural GDP decelerated over the period under review, and that agricultural expenditure had a statistically significant impact on agricultural GDP growth at the 1% significance level in both the short run and the long run, with coefficients of 0.02270 and 0.003055, respectively. This implies that a unit increase in agricultural expenditure would increase agricultural GDP growth by 0.02270 in the short run and 0.003055 in the long run. The coefficients for inflation (0.890787) and private investment (0.004469) were both positive and significant at the 1% significance level. This means that acceleration in inflation and private investment lead to acceleration in agricultural expenditure by 0.890787 and 0.001617, respectively, in both the short run and the long run. The coefficient on public investment (0.004469) was positive and significant at the 1% significance level. This means that acceleration in public investment leads to acceleration in agricultural expenditure by 0.004469 in the short run only. The study concludes that Government agricultural expenditure had a statistically significant positive impact on agricultural GDP in both the short run and the long run. Thus, the government should increase its expenditure on agriculture to boost growth in this sector and its contribution to the domestic economy, and government expenditure needs to be closely monitored to ensure its proper implementation.

Keywords: Determinants, Government Agricultural Expenditure, Agricultural Growth Rate, Direction of Agricultural Growth, Vector Error Correction Model, Nigeria.

INTRODUCTION
One of the major challenges facing humanity is to provide an equitable standard of living, adequate food, clean water, safe shelter and energy, a healthy and secure environment, an educated public, and satisfying jobs for this and future generations (Ewubare & Eyitope, 2015). It is not an overstatement to assert that the growth and development of any nation depend, to a large extent, on the development of agriculture. The saying that "agriculture is the mainstay of the Nigerian economy may have become a cliché. It nevertheless underscores the emphasis placed on agriculture as the engine of growth in the Nigerian economy. Generally, the sector contributes to economic development in four major ways: product, factor, market, and foreign exchange contributions (Ewubare & Eyitope, 2015). In recognition of this, the government has embarked on various policies and programmes aimed at strengthening the sector to continue performing its roles, as well as measures to combat poverty. Notwithstanding the enviable position of the oil sector in the Nigerian economy over the past three decades, the agricultural sector is arguably the most important.

The Food and Agriculture Organization (FAO) (2017) recommended that 25% of developing countries' budgetary expenditure be allocated to agriculture to support agricultural sector development. This has not been achieved by the various administrations in Nigeria, thereby affecting government programmes and policies for the agricultural sector. Over the past years, oil prices have continued to fall, plunging the country into recession, with states unable to pay salaries or execute capital projects. These figures are a far cry from the 2003 AU-Maputo Declaration's Comprehensive Africa Agriculture Development Programme (CAADP), which requires African countries to allocate at least 10% of their annual budgets to agriculture and achieve 6% annual growth in agricultural GDP. CAADP is Africa's policy framework for agricultural transformation, wealth creation, food security and nutrition, economic growth, and prosperity for all, to which Nigeria is a signatory.

Based on the above information, agricultural expenditure as a percentage of total government expenditure increased from 3% in 1980 to 16.8% in 1985 (Central Bank of Nigeria, 2015). Agricultural spending remained unstable, averaging 4.5% annually between 1994 and 1998 and 3.5% between 1999 and 2005, while the average ratio of government recurrent spending on agriculture to

total government expenditure from 1981 to 2008 was 2.5% (Central Bank of Nigeria, 2019). Nevertheless, the unprecedented increase in crude oil prices between 2010 and 2015 gave the government an opportune moment to increase investment in agriculture, thereby achieving relative stability in expenditure patterns during the same period (Central Bank of Nigeria, 2019). Conversely, the sector's contribution to gross domestic product nosedived from an average of 30.7% between 2006 and 2010 to 21.7% between 2011 and 2015 (Central Bank of Nigeria, 2015). More so, the improved agriculture's expenditure performance of 24% from 2009 to 2010 that is ₦55 billion and ₦178 billion respectively was short-lived due to unanticipated fall in crude oil prices between 2015 and 2016 culminating into decreased government agricultural spending (Central Bank of Nigeria, 2019; NBS, 2016) as Nigeria witnessed a negative growth rate of -2.24% at the tail end of 2016 and this has mandated the present government to strengthen diversification efforts with agriculture at the forefront of its development efforts (Akanbi *et al*., 2019).

Nigeria consistently ran budget deficits over the years without an equivalent rate of economic growth. Data show that Nigeria's agricultural output has fluctuated over the past few years, and the sources of these shocks remain unclear (Adekunle, 2018). Some studies have examined government expenditures and agricultural growth in Nigeria. For instance, Uremadu et al. (2018) studied the effect of government agricultural expenditure on agricultural output using time-series data from 1981 to 2014. Furthermore, Richard *et al.* (2019) studied the effects of fiscal policy on real sector growth in Nigeria, focusing on government capital expenditure and its impact on agricultural sector growth, covering the period between 1980 and 2017. Njoku *et al*. (2013) conducted an assessment of Nigeria's agricultural expenditure and its relationship to agriculture. Kenny (2019) investigated the role of agricultural sector performance on economic growth in Nigeria. However, little or no research efforts were directed at the impact of government expenditure on agricultural growth during the period of uninterrupted democracy in Nigeria. Hence, this study sought to fill the gap.

The main objective of this research was to investigate the impact of government agricultural expenditure on agricultural growth in Nigeria over the period of uninterrupted democracy, 1999- 2025. The specific objectives were to:

i. ascertain the direction and growth rate of agricultural GDP in Nigeria from 1999 to 2025;
ii. Determine the long-run and short-run effects of government expenditure on agricultural GDP growth;
iii. Evaluate the factors that influence government agricultural expenditure in Nigeria.

MATERIALS AND METHODS

The study used a case study (uninterrupted democratic era) design to analyse the impact of government agricultural expenditure on agricultural growth in Nigeria. In line with the objectives of this research, a quantitative methodology was used to address the hypotheses.

The study area is Nigeria. Nigeria is a West African country lying between longitudes 30°E and 150°E and latitudes 4°N and 14°N (Federal Republic of Nigeria, 2023). The capital of the country is Abuja, located in the North Central region. Nigeria, which is the most populous country in Africa, has an estimated population of over 170 million (World Bank, 2023). The country lies along the Gulf of Guinea, and the Republic of Benin borders it to the West, the Republic of Cameroon and Chad to the east, and the Niger Republic to the North. The Niger River flows southward through part of the country into the Gulf of Guinea, with Swamps and mangrove forests bordering the southern part (Oyinbo & Rekwot, 2013). The country has a total area of 923,768 square kilometers, with land occupying 910,768 square kilometers and water occupying 13,000 square kilometers (Oyinbo & Rekwot, 2013).

Data for this study were obtained from secondary sources. The data were obtained from the records of the Central Bank of Nigeria (CBN) publications and annual reports, the National Bureau of Statistics (NBS) database, the Federal Ministry of Agriculture and Rural Development, the Food and Agriculture Organization Statistics (FAOSTAT), and the World Bank database. Variables for which data were collected include: agricultural GDP growth rate, government agricultural expenditure, inflation rate, exchange rate, population growth rate, real interest rate, export rate, private investment, public investment, and foreign direct investment. The data were analysed using inferential statistics. The growth model was used to capture objective I; the Vector Error Correction Model (VECM) was used to capture objectives II and III. To obtain more meaningful insights, a logarithmic transformation was applied to these variables. Unit root tests were conducted for all variables. The Augmented Dickey-Fuller (ADF) method was used to test for the presence of a unit root in each variable (an indication of nonstationarity). This was because using data characterized by unit roots can lead to serious errors in statistical inference, and the Johansen procedure was employed to test for Co-integration in the model.

The growth model that was used to ascertain the direction and growth rates of variables of interest is as specified:

$$\ln Y_t = \alpha + \beta_{Gea} t + \mu_t \quad (1)$$
$$\ln Y_t = \alpha + \beta_{Fdi} t + \mu_t \quad (2)$$
$$\ln Y_t = \alpha + \beta_{Inf} t + \mu_t \quad (3)$$
$$\ln Y_t = \alpha + \beta_{Rir} t + \mu_t \quad (4)$$
$$\ln Y_t = \alpha + \beta_{Ex} t + \mu_t \quad (5)$$
$$\ln Y_t = \alpha + \beta_{Pri} t + \mu_t \quad (6)$$
$$\ln Y_t = \alpha + \beta_{Pi} t + \mu_t \quad (7)$$
$$\ln Y_t = \alpha + \beta_{Pop} t + \mu_t \quad (8)$$
$$\ln Y_t = \alpha + \beta_{Gdr} t + \mu_t \quad (9)$$

Where:

Y_t = Agricultural GDPA Growth

α = Intercept

β = Vector of the trend variable μ in the econometric error term

β_{Gea}, β_{Fdi}, β_{Ifl}, β_{Rir}, β_{Ex}, β_{Pri}, β_{Pi},β_{Pop}, β_{Gdr} = coefficients of the variables for government expenditure on agriculture, Foreign direct investment, inflation, real interest rate, export, private investment, public investment, population growth rate, and GDP agricultural growth rate.

The parameters of utmost interest in equations 1-9 will be the β coefficients, and their slopes will indicate whether the relationship with agricultural growth is positive or negative.

It is expected that government expenditures, public investment, and the population growth rate will positively influence agricultural growth. In contrast, foreign direct investment, inflation, high interest rates, and private investment will negatively affect agricultural

growth.

Multiplying b by 100 gives the instantaneous growth rate (IGR) at a given point in time.

$IGR = \beta \times 100$ (10)

β = is the least-squares estimate of the slope coefficient.

Taking the antilog of β, subtracting 1, and multiplying the difference by 100 gives the compound growth rate (CGR) over a period. The compound growth rate (CGR) in percentage in each of the 9 cases can be recovered from the equations in the following manner:

$CGR = (e^{\beta i}-1)*100$ (11)

Where β = coefficient of the trend variables in the respective cases. If β is positive and statistically significant, there is acceleration in growth; if β is not statistically significant, there is stagnation in the growth process.

Vector Error Correction Model (VECM)

$$\ln Gdr_{t-1} = \alpha_0 + \alpha_1 \ln Gea_{t-1} + \alpha_2 \ln Gdr_{t-1} + \alpha_3 \ln Fdi_{t-1} + \alpha_4 \ln Inf_{t-1} + \alpha_5 \ln Rir_{t-1} + \alpha_6 \ln Ex_{t-1} + \alpha_7 \ln Pri_{t-1} + \alpha_8 \ln Pi_{t-1} + \alpha_9 \ln Pop_{t-1} + \partial ECM_{4t} + \mu_{9t} \quad (12)$$

$$\ln Gea_{t-1} = \alpha_0 + \alpha_1 \ln Fdi_{t-1} + \alpha_2 \ln Inf_{t-1} + \alpha_3 \ln Rir_{t-1} + \alpha_4 \ln Ex_{t-1} + \alpha_5 \ln Gea_{t-1} + \alpha_6 \ln Pri_{t-1} + \alpha_7 \ln Pi_{t-1} + \alpha_8 \ln Pop_{t-1} + \alpha_9 \ln Gdr_{t-1} + \partial ECM_t + \mu_{1t} \quad (13)$$

$$\ln Fdi_{t-1} = \alpha_0 + \alpha_1 \ln Gea_{t-1} + \alpha_2 \ln Inf_{t-1} + \alpha_3 \ln Rir_{t-1} + \alpha_4 \ln Fdi_{t-1} + \alpha_5 \ln Ex_{t-1} + \alpha_6 \ln Pri_{t-1} + \alpha_7 \ln Pi_{t-1} + \alpha_8 \ln Pop_{t-1} + \alpha_9 \ln Gdr_{t-1} + \partial ECM_{2t} + \mu_{2t} \quad (14)$$

$$\ln Inf_{t-1} = \alpha_0 + \alpha_1 \ln Gea_{t-1} + \alpha_2 \ln Fdi_{t-1} + \alpha_3 \ln Inf_{t-1} + \alpha_4 \ln Rir_{t-1} + \alpha_5 \ln Ex_{t-1} + \alpha_6 \ln Pri_{t-1} + \alpha_7 \ln Pi_{t-1} + \alpha_8 \ln Pop_{t-1} + \alpha_9 \ln Gdr_{t-1} + \partial ECM_{3t} + \mu_{3t} \quad (15)$$

$$\ln Ir_{t-1} = \alpha_0 + \alpha_1 \ln Gea_{t-1} + \alpha_2 \ln Fdi_{t-1} + \alpha_3 \ln Inf_{t-1} + \alpha_4 \ln Ex_{t-1} + \alpha_5 \ln Pri_{t-1} + \alpha_6 \ln Rir_{t-1} + \alpha_7 \ln Pi_{t-1} + \alpha_8 \ln Pop_{t-1} + \alpha_9 \ln Gdr_{t-1} + \partial ECM_{4t} + \mu_{4t} \quad (16)$$

$$\ln Ex_{t-1} = \alpha_0 + \alpha_1 \ln Gea_{t-1} + \alpha_2 \ln Fdi_{t-1} + \alpha_3 \ln Inf_{t-1} + \alpha_4 \ln Rir_{t-1} + \alpha_5 \ln Pri_{t-1} + \alpha_6 \ln Pi_{t-1} + \alpha_7 \ln Ex_{t-1} + \alpha_8 \ln Pop_{t-1} + \alpha_9 \ln Gdr_{t-1} + \partial ECM_{5t} + \mu_{5t} \quad (17)$$

$$\ln Pri_{t-1} = \alpha_0 + \alpha_1 \ln Gea_{t-1} + \alpha_2 \ln Fdi_{t-1} + \alpha_3 \ln Inf_{t-1} + \alpha_4 \ln Rir_{t-1} + \alpha_5 \ln Ex_{t-1} + \alpha_6 \ln Pi_{t-1} + \alpha_7 \ln Pop_{t-1} + \alpha_8 \ln Pri_{t-1} + \alpha_9 \ln Gdr_{t-1} + \partial ECM_{6t} + \mu_{6t} \quad (18)$$

$$\ln Pi_{t-1} = \alpha_0 + \alpha_1 \ln Gea_{t-1} + \alpha_2 \ln Fdi_{t-1} + \alpha_3 \ln Inf_{t-1} + \alpha_4 \ln Rir_{t-1} + \alpha_5 \ln Ex_{t-1} + \alpha_6 \ln Pri_{t-1} + \alpha_7 \ln Pop_{t-1} + \alpha_8 \ln Gdr_{t-1} + \alpha_9 \ln Pi_{t-1} + \partial ECM_{7t} + \mu_{7t} \quad (19)$$

$$\ln Pop_{t-1} = \alpha_0 + \alpha_1 \ln Gea_{t-1} + \alpha_2 \ln Fdi_{t-1} + \alpha_3 \ln Inf_{t-1} + \alpha_4 \ln Rir_{t-1} + \alpha_5 \ln Pop_{t-1} + \alpha_6 \ln Ex_{t-1} + \alpha_7 \ln Pri_{t-1} + \alpha_8 \ln Pi_{t-1} + \alpha_9 \ln Gdr_{t-1} + \partial ECM_{8t} + \mu_{8t} \quad (20)$$

Where:

Gdr_{t-1} = agricultural GDP growth rate
Gea_{t-1}= Govt. Total Expenditure on the Agricultural Sector
Fdi_{t-1}= Foreign Direct Investment
Inf_{t-1}= Inflation
Rir_{t-1}= Real Interest Rate
Ex_{t-1}= Export
Pri_{t-1}= Private Investment
Pi_{t-1}= Public Investment
Pop_{t-1}= Population Growth Rate
∂ECM_t =error correction term
μ_t = error term.

Measurement of Variables

1. Agricultural GDP Growth Rate (GDR): This was measured in percentage (%)
2. Export (EX): This was measured in United States (US) Dollars and converted to Naira (₦) value.
3. Foreign Direct Investment (FDI): This was measured in United States (US) Dollars and converted to Naira (₦) value.
4. Government Total Expenditure on Agricultural Sector (GEA): This was measured in Naira value (₦).
5. Inflation (INL): This was measured in percentage (%).
6. Population Growth Rate (POP): This was measured in percentage (%).
7. Private Investment (PRI): This was measured in United States (US) Dollars and converted to Naira (₦) value.
8. Public Investment (PI): This was measured in United States (US) Dollars and converted to Naira (₦) value.
9. Real Interest Rate (RIR): This was measured in percentage (%)

RESULTS AND DISCUSSION

Growth Rate and the Direction of Agriculture (GDP)

The results for the growth rate and direction of growth are presented in Table 1. The semi-log function was chosen among the functions. The reason for choosing the semi-log function was that it yielded the lowest Akaike information criterion (-1.243823), indicating model goodness, and a high adjusted R^2 value. The GDP growth direction indicated that the coefficient for agricultural GDP (-0.017043) was negative (indicating decelerating growth) and significant at the 1% probability level. This implies that the Agricultural GDP value decelerated over the period under review. This could be due to inconsistencies in government-targeted agricultural programmes in Nigeria. Other reasons may also include corruption and lip service paid to the implementation of laudable agricultural policies by successive administrations, as observed by Ogen (2007), who said that agricultural policies become meaningful if well implemented and free from the effects of corruption. The trend analysis revealed an adjusted coefficient of determination (Adjusted R-square) of 0.4031, implying that about 40.31% of the variation in agricultural GDP is explained by the trend model. The instantaneous growth rate (IGR) and the compound growth rate (CGR) of agricultural GDP were -1.7% and -3%, respectively. The result is consistent with the findings of Aidi *et al.* (2016), who reported a negative growth rate in Nigeria's agricultural sector.

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Table 1: Estimated Trend, Growth, and Direction of the Agriculture (GDP)

Model	Det.	Coefficient	T-statistic	Prob	AdjR²	AIC	F-statistic	DW	IGR (%)	CGR (%)	Status
Linear	@Trend	-0.435844	-3.487336	0.0025	0.358183	5.41544	12.16151 (0.002465)	1.139586			
	Constant	29.16095	18.58208	0.0000							
Quadratic	@Trend	-0.204854	-0.382216	0.7068	0.329858	5.49980	5.922203 (0.010561)	1.151725			
	@Trend²	-0.010500	-0.443763	0.6625							
	Constant	28.27549	11.04576	0.0000							
Semi log	@Trend	-0.017043	-3.808373	0.0012	0.403051	-1.24382	14.50372 (0.001187)	1.073677	-1.7	-3.	Decelerating
	Constant	3.367572	59.93088	0.0000							

Source: Author's computation from E-view (2026)

1. Short-Run Effect of Government Agricultural Expenditure on Agricultural (GDP) Growth

The short-run result from the Error Correction Model is presented in Table 2. The Error Correction Term (ECT) is statistically significant and negative (-0.06707), which indicates a moderate speed of adjustment of the variable towards equilibrium. This implies that 6.7% deviation from the equilibrium position is corrected within the year. The coefficient of determination (R^2) is 0.887341, indicating that 88.7% of the variation in agricultural GDP is explained by agricultural expenditure and foreign direct investment in the previous year. The result revealed that the coefficient on agricultural expenditure was positive and significant (0.002270) at the 1% significance level in the short run. This means that an acceleration in agricultural expenditure would lead to an acceleration in agricultural GDP in the short run. This short-run result is consistent with the *a priori* expectation. The result is consistent with the findings of Lawal (2011), who reported that government spending does not follow a regular pattern and that the agricultural sector's contribution to GDP is directly related to government funding for the sector. However, the result disagrees with that of Aina and Omojola (2017), Akanbi *et al*. (2019), and Keji and Efuntade (2020), who found that government agriculture expenditure contributes negatively and significantly to the Nigerian agricultural output growth in the short run, while contributing positively and significantly to long-run agricultural output growth long. The coefficient on foreign direct investment was positive and significant (0.014561) at the 1% significance level in the short run. This means that an acceleration in foreign direct investment would lead to an acceleration in agricultural GDP in the short run. The study disagrees with Udoh (2011), who examined the relationship between public expenditure, private investment, and agricultural output in Nigeria over the period 1970 -2008 and found that foreign investment has an insignificant impact on agricultural output in the short run. It is interesting to note that the subject of interest (Agricultural expenditure) has a positive and significant influence on Agricultural GDP. Based on these results, the hypothesis that government expenditure on agriculture has no significant short-run impact on agricultural GDP growth in Nigeria is rejected.

Table 2: Estimates of Short-Run Effect of Government Agricultural Expenditure on Agricultural (GDP) Growth

Error Correction:	D(GDPGA)	D(EXPD)	D(FDI)
CointEq1	-0.06707	7.837924	33.75363
	(0.22399)	(9.77675)	(13.8363)
	[-0.02994]	[0.80169]	[2.43950]
D[GDPGA(-1)]	0.183352	-3.909131	-28.49197
	(0.26966)	(11.7703)	(16.6577)
	[0.67994]	[-0.33212]	[-1.71044]
D[GDPGA(-2)]	0.570874	-1.708873	-31.02553
	(0.29186)	(12.7393)	(18.0289)
	[1.95599]	[-0.13414]	[-1.72087]
D[EXPD(-1)]	0.002270***	0.148744	0.645163
	(0.07572)	(0.29509)	(0.41763)
	[3.33572]	[0.50406]	[1.54484]
D[EXPD(-2)]	0.001116	0.100031	0.743878
	(0.00635)	(0.27726)	(0.39238)
	[0.17577]	[0.36079]	[1.89582]
D[FDI(-1)]	0.01456***	0.059913	-0.723211
	(0.03870)	(0.23904)	(0.33830)
	[2.65771]	[0.25064]	[-2.13780]
D[FDI(-2)]	0.000997	0.178616	-0.518728
	(0.00470)	(0.20529)	(0.29053)
	[0.21192]	[0.87006]	[-1.78543]
C	-0.272507	3.567162	-6.476973
	(0.89072)	(38.8788)	(55.0223)
	[-0.30594]	[0.09175]	[-0.11772]
R-squared	0.887341	0.346368	0.515567
Adj. R-squared	-0.739154	-0.111174	0.176464
Sum sq. resids	140.0074	266742.8	534248.8
S.E. equation	3.741756	163.3226	231.1382
F-statistic	8.494094	0.757020	1.520384

Log likelihood	-44.00280	-111.9739	-118.2251
Akaike AIC	5.778089	13.33043	14.02501
Schwarz SC	6.173810	13.72616	14.42073
Mean dependent	-0.144444	4.058889	9.351667
S.D. dependent	3.670586	154.9371	254.7009
Determinant resid covariance (dof adj.)		1.64E+10	
Determinant resid covariance		2.81E+09	
Log likelihood		-272.4383	
Akaike information criterion		33.27093	
Schwarz criterion		34.60648	

Source: Author's computation from E-view (2026)

2. Long-Run Effects of Government Agricultural Expenditure on Agricultural (GDP) Growth

The long-run equilibrium relationship between the variables motivated the construction of the Error Correction Mechanism (ECM). The application of ECM was necessary due to cointegration among the variables. The result of the ECM is presented in Table 3. The result shows the long-run impact of agricultural expenditure on agricultural GDP. The coefficient of determination (R^2) of the model is 0.887, indicating that 88.7% of the variation in agricultural GDP was explained by agricultural expenditure and foreign direct investment in previous years. The results further show that, in the long run, agricultural expenditure and foreign direct investment significantly affect agricultural GDP. Specifically, the coefficient on expenditure (0.003055) was positive and significant at the 1% significance level. This implies that a unit increase in expenditure would increase agricultural GDP by 0.003055. This also means that the Nigerian government was always keen about the amount to be expended in the agricultural sector, with a commensurate increase in agricultural GDP. More attention should be given to modalities and techniques for the judicious use of available resources to accelerate agricultural GDP growth. This result is consistent with the findings of Njoku et al. (2013), who found that any reduction in government expenditure would negatively affect agricultural output in Nigeria. However, the result is inconsistent with the findings of Iganiga and Unemhilin (2011), who found that investment in the agricultural sector is imperative and should be complemented by monitored credit facilities. The coefficient on foreign direct investment (0.007335) was positive and significant at the 5% significance level. This implies that a unit increase in foreign direct investment would increase agricultural GDP by 0.007335. The result shows that FDI is highly beneficial to the agricultural sector, and, as such, the government must continually work to develop attractive policies for investors in Nigeria. Several authors have confirmed that FDI has a positive impact on economic growth, e.g., Umoh et al. (2011), Oyatoye et al. (2011), Adeleke et al. (2014), Muhammed and Ehikioya (2015), Udeaja and Onyebuchi (2015), and Uwakaeme (2015). Based on these results, the hypothesis that government expenditure does not have a significant impact on agricultural GDP growth in Nigeria in the long run is therefore rejected.

Table 3: Estimates of Long-Run Effects of Government Agricultural Expenditure on Agricultural (GDP) Growth

Variables	Coefficients	Standard error	t-statistic
GDP (-1)	1.000000	-	-
Expenditure (-1)	0.003055***	0.01713	2.78345
FDI (-1)	0.007335**	0.00725	1.01120
Constant	23.99384	-	-

Note: *** and ** denote rejection of the null hypothesis at 1% and 5% significant level, respectively.
Source: Author's computation from E-view, 2026

3. Factors Affecting Government Agricultural Expenditure in the Short-Run

The short-run results from the Error Correction Model are presented in Table 4. The Error Correction Term (ECT) is statistically significant and negative (- 0.0278), indicating a slow adjustment of the variable towards equilibrium. This implies that 2.8% deviation from the equilibrium position is corrected within the year. From the results, three variables, namely inflation, private investment, and public investment, were the significant variables that influenced government expenditure on agriculture in the short run. The coefficient of determination (R-squared) is 0.925, indicating that 92.5% of the variation in agricultural expenditure was explained by inflation, private investment, and public investment in the previous year. The coefficient of inflation was positive (0.890787) and significant at 1% probability level. This means that acceleration in inflation leads to acceleration in agricultural expenditure by 0.890787 in the short run. A high inflation rate increases the amount of money to be spent in the nation's budget and its subsectors. This study is consistent with studies by Olu and Idih (2015) and Umaru and Zubairu (2012), which confirmed that inflation has a positive effect on economic growth in Nigeria. The result also agrees with Ezirim *et al*. (2008), who found inflation and expenditure to be positively correlated. The coefficient of private investment, as shown in Table 7, was positive (0.004469) and significant at the 1% probability level. This means that an acceleration in private investment will lead to a 0.004469 increase in agricultural expenditure in the short run. This calls for the Nigerian government to encourage private investment in the country. This indicates that private investment was deficient during the period under study. A nation with a viable private sector is expected to spend less and be complemented by private investors. According to Ayeni (2014), the private sector contributes more meaningfully to economic growth than the public sector because private-sector investment is less corrupt than public-sector investment. From Table 7, the coefficient on public investment was positive (0.001612) and significant at the 1% probability level. This means that an acceleration in public investment will lead to a 0.001612 increase in agricultural expenditure in the short run. This indicates that the Nigerian government, over the period under study, increased its spending on the agricultural sector without achieving reasonable growth in agricultural GDP, as the agricultural GDP growth rate decelerated. The study disagrees with the findings of Udoh (2011), who found that public investment has an indirect relationship with government agricultural expenditure.

Table 4: Estimates of Short-Run Effects of Factors Affecting Government Agricultural Expenditure

Error Correction:	D(EXPD)	D(INF)	D(PRI)
CointEq1	-0.027770	-1.081859	414.0375
	(0.22312)	(0.43965)	(1403.81)
	[-4.60640]	[-2.46075]	[0.29494]
D[EXPD (-1)]	0.563063	0.714885	-39.37502
	(0.15263)	(0.30076)	(960.340)
	[3.68899]	[2.37694]	[-0.04100]
D[EXPD (-2)]	0.142006	0.710504	51.66616
	(0.16450)	(0.32414)	(1035.01)
	[0.86325]	[2.19194]	[0.04992]
D[INF (-1)]	0.890787***	0.008477	548.8751
	(0.13419)	(0.26441)	(844.277)
	[6.63841]	[0.03206]	[0.65011]
D[INF(-2)]	0.441916	0.307366	170.9073
	(0.16907)	(0.33315)	(1063.77)
	[2.61376]	[0.92260]	[0.16066]
D[PRI(-1)]	0.004469***	0.004508	-2.889391
	(0.00095)	(0.00188)	(6.00367)
	[4.68350]	[2.39773]	[-0.48127]
D[PRI(-2)]	0.001683	-0.005195	1.446778
	(0.00111)	(0.00218)	(6.96352)
	[1.52037]	[-2.38190]	[0.20777]
C	0.027973	17.35665	10917.59
	(3.47982)	(6.85685)	(21894.3)
	[0.00804]	[2.53129]	[0.49865]
RIR	0.123334	-0.157428	77.52837
	(0.08841)	(0.17421)	(556.263)
	[1.39501]	[-0.90367]	[0.13937]
PBI	0.001612***	-0.003739	-0.947050
	(0.00062)	(0.00123)	(3.91839)
	[2.58881]	[-3.04709]	[-0.24169]
R-squared	0.925411	0.752458	0.621767
Adj. R-squared	0.829512	0.434189	0.135467
Sum sq. resids	17.02778	66.11417	6.74E+08
S.E. equation	1.559660	3.073253	9813.067
F-statistic	9.649799	2.364222	1.278566
Log likelihood	-24.13583	-35.66640	-172.8349
Akaike AIC	4.015980	5.372517	21.50998
Schwarz SC	4.506106	5.862643	22.00011
Mean dependent	-0.194118	-0.347059	204.5847
S.D. dependent	3.777312	4.085664	10553.92
Determinant resid covariance (dof adj.)		4.79E+08	
Determinant resid covariance		33410921	
Log likelihood		-219.6232	
Akaike information criterion		29.72038	
Schwarz criterion		31.33779	

Note: *, ****, and * denote rejection of the null hypothesis at 1%, 5% and 10% significant level, respectively.
Source: Author's computation, 2026

4. Factors Affecting Government Agricultural Expenditure in the Long Run

The long-run effects of the factors affecting government expenditure on agriculture are presented in Table 5. The result shows the long-run influence of certain economic factors on agricultural expenditure. The coefficient of determination (R^2) of the model is 0.925, indicating that 92.5% of the variation in agricultural expenditure is explained by inflation and private investment, as these variables were significant. The results show that, in the long run, inflation and private investment significantly affected agricultural expenditure. Specifically, the inflation coefficient (1.118415) was positive and significant at the 1% significance level. This implies that a unit increase in inflation will increase agricultural expenditure by 1.118415. This means that as long as inflation continues to rise in Nigeria, government expenditure will also increase, potentially leading to overspending in the agricultural sector without achieving meaningful growth in agricultural GDP. This study is at odds with the findings of Kandil (2006), who found that government spending shocks and price inflation are negatively correlated in most countries. Ojarikre, Ezie, and Torka (2015) empirically examined the causal relationship between public expenditure growth and inflation in Nigeria from 1981 to 2012 and found no statistically discernible relationship. They therefore kick against the "old-time religion" of restricting aggregate demand by tight monetary policy, as often demonstrated by the Central Bank of Nigeria through adjustments in the Monetary Policy Rate (MPR), but rather advocate a relaxation of the MPR with the necessary adjustments when necessary, as inflation is occasionally necessary to jump-start an economy that is floundering. The result also revealed that the coefficient on private investment (0.004239) was positive and significant at the 1% significance level. This implies that a unit increase in private investment will likely increase agricultural expenditure by 0.004239. This calls for the Nigerian government to encourage private investors in the country. There is a need for an appropriate interest rate policy, taking into cognizance the investment climate and the targeted sectors of the economy, to encourage private investment and expansion in market size, and to enhance the purchasing power of the people. The study agrees with Ahmad and Qayyum (2008), who examined the effect of government spending and macroeconomic uncertainty on private investment in the service sector for the period 1972 to 2005 and found that government recurrent expenditures were mostly substitutes for private investment and negatively affected private investment in services in the long run.

Table 5: Estimates of Long-Run Response of Factors Affecting Government Agricultural Expenditure

Variables	**Coefficients**	**Standard errors**	**t-statistic**
Expenditure (-1)	1.000000	-	-
INF (-1)	1.118415***	0.12252	9.12863
PRI (-1)	0.004239***	0.00025	16.9809
Constant	-55.66158	-	-

Note: *** denotes rejection of the null hypothesis at 1% and 5% significant level, respectively.
Source: Author's computation, 2026

Conclusion

Based on the results obtained, government agricultural sector expenditure in Nigeria plays a key role in agricultural growth. The highest volatility during the period of study was observed in private investment (PRI), followed by exports (EXPT), while the population growth rate (PGR) had the lowest volatility. There was no substantial gap between the maximum and minimum values of the population growth rate (PGR). In contrast, substantial gaps existed between the maximum and minimum values of other variables (GDPGA, EXPD, FDI, INF, IR, EXPT, PRI, PBI), which supported volatility.

Government agricultural expenditure had a statistically significant positive impact on agricultural GDP in both the short run and the long run. Thus, the government should not only increase the agricultural sector's budget allocation but also properly monitor its expenditure in the sector, as the backbone of the economy. Agricultural GDP growth decelerated during the period under study, likely due to a lack of focus, reduced government attention to the agricultural sector, and high levels of corruption in society.

Recommendations of the Study

Based on the findings of the study, the following recommendations were made:

i. The federal government should improve its budgetary allocation on agriculture in order to track enormous progress in the sector.

ii. For government expenditure to exhibit the desired results in the economy, government expenditure needs to be closely monitored. This will help ensure that budget allocations are channeled into the required targets that will help improve the economy.

iii. Since government revenue is a key factor in determining the size of the public sector, the revenue base should be expanded beyond the oil sector to include other unexploited solid minerals, agricultural exports, and other avenues that could increase the revenue base

iv. The federal government should adopt a strategy of using resource revenues to increase the growth of the domestic economy through private sector investment, from large-scale projects to improvements on small-holder farms.

v. Policy measures aimed at reducing inflation should be put in place.

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