Impact of Government Expenditure on Nigeria's Gross Domestic Product

GBEGHA TAMARAUIKIYE FAVOUR, DR. UCHE ABADA, DR.JC. ODIMGBE

ABSTRACT

This study examines the impact of government expenditure on Nigeria's gross domestic product between 2000-2022. The explanatory variables considered for this study include; agricultural expenditure, transportation/ communication expenditure, health expenditure and educational expenditure. The dependent variable is Nigeria's gross domestic product. The study uses aggregate time series data from secondary sources. The study employs different econometric tools such as Unit root test, Augmented Dickey Fuller Test (ADF) Test,Autoregressive Distributed Lag (ARDL) Approach and Error Correction Model (ECM).The findings of the study have confirmed that government expenditure on various sector influence Nigeria's Gross Domestic Product and follow established economic theories. Both Co-efficient of Determination as well as the F-statistic have established a good fit and joint significance of the independent variables on the dependent variable.The ECM results indicate that at the 66.70% speed of adjustment per annum the errors of the model corrected each period (each year). In other words, the speed implies that in the long run, 66.70 can be corrected after a number of periods (years) determined as follows: 100/66.70 periods (approximately1year 6months). The study recommends that; agricultural subsector which has a huge potential to stimulate economic growth in Nigeria should be supported by increasing government expenditure to the sector,the extent of government expenditure on Transportation/Communications sector should be sustained based on its positive impact on national real income, there is need to improve on government expenditure on health as high productivity in the economy can only be guaranteed with quality health conditions of workers and lastly there is need to sustain and increase government expenditures on education found to contribute positively and significantly to GDP.

KEYWORDS: *Agriculture, Health, ICT, Education, GDP*

Introduction

Government has three policy options; to borrow, to tax or both. Any of those prudent governments spending, through an efficient allocation of its resources to the different sectors of the economy, can be veritable tool for stimulating demand and better sales for firms. The huge expenditure profile of the government over the years is sufficient enough to boost productivity in all sectors and facilitate growth. Government spends substantial resources in both human and material resources with the aim of improving the nation's infrastructural facilities, boosting social welfare

and empowerment packages of the masses, employment generation, as well as creating enabling environment to facilitate the growth of private investment. In spite of this, growth in Nigeria seems to be more of a story than reality (Ogar, Anthony. Eyo. Arikpo& Oka, 2019).

Despite the dwindling revenue, the need for the creation of enabling and secure environment for human and business to operate is on the increase. This has led to increased spending on infrastructure, security and health with a view to achieving steady infrastructural development, security and creation of conducive environment for people to operate, in order to foster economic growth in the country.

Government expenditure has fostered growth in so many developed and developing countries, but this expenditure shows significant impact if its properly channeled and managed, but over time the case is always different. The goal of every economy is to maintain a high level of employment, stabilize prices, promote rapid growth of gross national product, maintain a favourable balance of payment position, promote a free market economy, satisfy collective demands redistribute income equitably, promote infant industries, encourage the priority sector, encourage balance population development and promote labour and capital development (Ogar, Anthony, Eyo, Arikpo and Oka 2019). The instrument of government expenditure is used to achieve macroeconomic objectives like full employment, price stability and sustained economic growth. The government also uses its expenditure to provide public goods like education, health, infrastructures, etc., which helps reduce socio-economic imbalances (Samuel and Oruta, 2021).

1.2 Research Objectives

Generally, the objective of this research is to examine the impact of government expenditure on gross domestic product in Nigeria. Specifically, the study is set to;

i. Determine the impact of government agricultural expenditure on economic growth in Nigeria.
ii. Investigate the impact of government transportation/communications expenditure on economic growth in Nigeria.
iii. Examine the impact of government health expenditure on economic growth in Nigeria.
iv. Assess the impact of government educational expenditure on economic growth in Nigeria.

LITERATURE REVIEW

2.1 Conceptual Framework

2.1.1 Government Expenditure

According to Bingilar and Oyadonghan (2020) government expenditure is the government's costs for providing and maintaining itself as an institution, the economy, and society. They further stated that government expenditures tend to increase with time as the economy becomes large and more developed or as a result of an increase in its scope of activities. In Nigeria, government expenditures are in the form of capital and recurrent costs. These are further categorised into administration, social and community service, financial services and transfers (CBN, 2020).

2.1.2 Nigeria's Gross Domestic Product

GDP per capital (GDP) is the estimation of the value of goods produced per person in the country, equal to the GDP of the country divided by the total number of the people in the country. This can be seen as a roughly display of a nation's prosperity. The picture of a country productivity and its international competitiveness can be observed on the GDP per employed person is the average labor productivity. The real GDP growth rate will be determined by the percentage change in real GDP from year to the next. The term economic growth primarily concerned with the long run economy measured by the GDP of the country taken as the increase of standard of living of the people. The economic growth of the country should focus on the growth rate of GDP per capital, thus the output per person rather than to consider the overall output.

2.2 Theoretical Framework

In summary, the theories of endogenous growth did not conclude that technological progress is a possible cause of growth in the long run. Other factors such as the quality of human capital which is a function of investment in human development component of education and at; the creation of the conditions necessary for intellectual property rights protection in the competition condition; government support for science and technology development; and the important role government play in creating a favourable climate of investment and new technologies attraction. From the review of theories in government expenditure, human capital and economic growth this study recognized the relevance of the theory used in this work and as a result of the linkage it underpins its model on the endogenous growth theory propanded by Robert Lucas, 1988.

2.3 Empirical Review

Adeyi (2022) examines the linkage between transportation and economic growth and development. The study used both theoretical models as econometrics model as the data were sourced from secondary sources. The paper observes that there is positive relationship between transportation and economic development.

Agbana and Ebisine (2022) evaluated the impact of government expenditure on agriculture and economic growth in Nigeria. Using secondary data from the CBN statistical bulletin from 1981 to 2021 and OLS regression method to analyze data. The findings from the empirical analysis showed that government expenditure on agriculture have positive impact on economic growth in Nigeria.

Eboh, Aduku and Onwughalu (2022) examined health expenditure, child mortality and economic growth in Nigeria using time series covering the 1980-2020 sample periods. The OLS t5echnique was employed in analyzing the data. Empirical results showed a negative and insignificant impact of government health expenditure on economic growth in Nigeria.

Olayiwola and Olunsoya (2022) examines the impact of health financing on economic growth in Nigeria using auto-regressive distributed lag model (ARDL) estimation technique with time series data from 1990-2020. The results show that previous year's productive activities have a growth effect on economic growth both in the short run and the long run.

Aribaba and Ahmodu (2021) examined the effectiveness of educational budget expenditure on economic growth in Nigeria. The study employed a causal comparative research design. Data was obtained from the CBN statistical bulletin. Findings from the study showed the positive and negative coefficient effects of the variables.

Igbayue (2022) examined the impact of Information and Communication Technology on the economic growth in Nigeria: 1991-2020. An OLS regression is applied to annually aggregate data. The results of the study showed that government expenditure on ICT has a positive impact and significant impact on GDP.

Daodu (2021) examined the impact of transportation on economic growth in Nigeria. The data collected were analyzed using tables and econometric techniques. From the results obtained, it was discovered that road transportation has an insignificant but positive relationship with REAL GDP.

Zita, Cyril and Ugochukwu (2020) empirically probes the efficiency of education expenditure in Nigeria from 1990 to 2018. The study employed the ADF test and ARDL co-integration in the analysis. The research findings probe that education expenditure had significantly negative impact on economic growth in Nigeria.

Ditimi, Nwosa and Ajifase (2019) examined the relationship between government expenditure and economic growth in Nigeria for the period 1970-2018. The results of the long run regression estimates indicated that expenditure on telecommunication has insignificant impact on economic growth in Nigeria.

However, based on the researchers' knowledge, there seems to be no well-established conclusion regarding the direction and extent of the impact of government expenditure on Nigeria's gross domestic product. In furtherance of this, some gaps in knowledge (period, variables, data and methodology) were identified and this study ultimately bridged these gaps. Most of this studiesattempted to use two approaches (cross-sectional and panel data) to show the empirical relationship between government expenditure and economic growth while this study differs from observed studies by using times series data from 2000 to 2022.

RESEARCH METHODOLOGY

This study adopts ex-post facto design to determine the impact of government expenditure on Nigeria's gross domestic product. Time series secondary data covering the period from 2000 to 2022 was obtained from CBN Statistical Bulletin (2022). Econometric analysis technique will be applied in the analysis of the time series data and with the aid of the econometric view (E- views) software statistical package

3.3 Model Specification

Leaning on the theoretical models earlier reviewed, the model of this study includes Gross Domestic Product as the dependent variable while government expenditure variables are the explanatory variables. It is hypothesized that Gross Domestic Product in Nigeria is a function of the explanatory variables. This is algebraically expressed in equation one,

$$GDP = f(AS, TCS, HS, EDUS) \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

The model in its econometric linear form can be written as:

$GDP = \beta_O + \beta_1 AS + \beta_2 TCS + \beta_3 HS + \beta_4 EDUS + U$ ……. (2)

U = stochastic or random error term

β_O = constant intercept

$\beta_1, \beta_2, \beta_3, \beta_4$ = coefficients of associated variables

The model in the log linear form can be expressed as:

$LnGDP = \beta o + \beta_1 lnAS + \beta_2 lnTCS + \beta_3 lnHS + \beta_4 ln\text{EDUS} + ut$ …… *(3)*

Where:

ln = natural logarithm

apriori expectations: $\beta_{1...}\beta_4 > 0$, implying that each government expenditure variables increase is expected to exert a positive effect on the Nigerian economy.

Where:

GDP = Gross Domestic Product (or National Income in current cost)

AS = Agricultural Sector

TCS = Transportation/Communications Sector

HS = Health Sector

EDUS = Educational Sector

DATA PRESENTATION AND ANALYSIS

4.1 Descriptive Statistics

Table 4.1: Data of the Descriptive Statistics

	LNGDP	LNAS	LNTCS	LNHS	LNEDUS
Mean	10.83004	3.362288	4.285413	4.804947	5.236628
Median	11.06215	3.591818	4.210497	5.192901	5.784410
Maximum	12.21783	4.405133	5.773184	6.081122	6.555328
Minimum	8.862590	1.846879	1.108563	3.199489	2.722610
Std. Dev.	1.006436	0.804629	1.163145	0.859121	0.947279

Skewness	-0.515521	-0.566989	-0.771213	-0.313780	-0.888222
Kurtosis	2.727927	2.933782	3.435215	1.876878	3.263757
Jarque-Bera	1.747580	1.951396	2.461470	1.586268	3.090930
Probability	0.417367	0.376929	0.292078	0.452425	0.213213
Sum	249.0909	77.33263	98.56449	110.5138	120.4424
Sum Sq. Dev.	22.28410	14.24343	29.76393	16.23794	19.74142
Observations	23	23	23	23	23

Source: Author's Eviews10 Output

The descriptive statistics shows that all the variables exhibited positive mean and positive median which is an indication that the dataset may come from normal distribution. The mean and median of the dataset are near equal confirming the normal distribution of the time series. The maximum value of LNGDP in the time series in log form was 12.22 units with minimum value of 6.56 units. Also, the maximum and minimum values for the other variables were captured. While the skewness captures how variables lean to one side, the kurtosis shows the peakness of distribution. The skewness close to zero and kurtosis also close to 3 except LNHS validate the assumption that the dataset came from normal distribution. Jarque-Bera statistic (JB) with most variables showing p.values greater than Alpha value of 0.05 implies a rejection of the Null hypothesis and acceptance of the normal distribution of the time series.

4.2 Unit Root Tests

As procedure demands, unit root test is usually conducted on all the time series data of a model to confirm stationarity of the series. Unit roots are the characteristics of some time series data, and if they are not expunged through differencing applying the ADF tool, any analysis will produce dubious parameter estimates which if applied for econometric forecast will produce spurious results. Data is stationary when it has a constant mean value, variance and co-variance or where the calculated ADF is greater than the critical ADF.

Table 4.2: Summary of the Unit Root Test

Variable		t-statistic	Critical value	Prob.	Order of Integration
LNGDP	Level	-4.202838	-3.004861	0.038	1(0)

	1st Diff	-	-	-	
LNAS	Level	-1.519684	-3.004861	0.5052	1(1)
	1st Diff	-6.652650	-3.012363	0.0000	
LNTCS	Level	-1.197798	-3.004861	0.6563	1(1)
	1st Diff	-6.459041	-3.012363	0.0000	
LNHS	Level	-0.543574	-3.004861	0.8643	1(1)
	1st Diff	-8.447757	-3.012363	0.0000	
LNEDUS	Level	-0.524184	-3.040391	0.8647	1(1)
	1st Diff	-6.323236	-3.012363	0.0000	

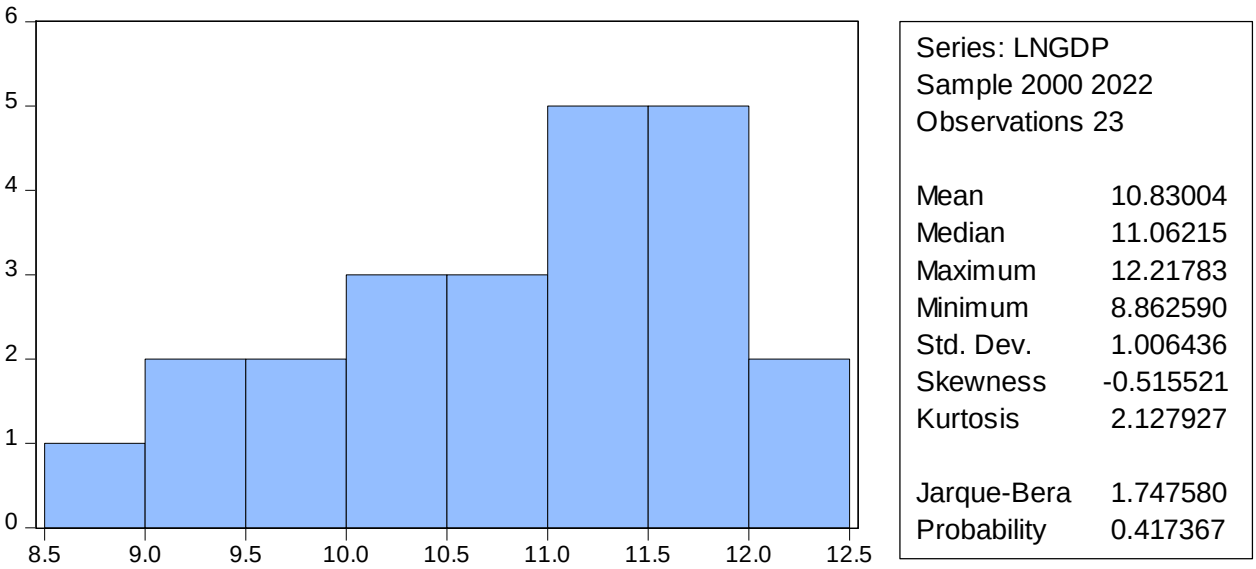
Source: E-views10 output

From Table 4.2 above, ADF results show that LNAS, LNTCS, LNHS and LNEDUS integrated at order 1(1) while LNGDP integrated at level; therefore stationary and suitable for further analysis. The probabilities reject the Null hypothesis of no significant relationship between LNGDP and LNAS, LNTCS, LNHS and LNEDUS with values smaller than the Alpha value of 0.05.

This implies that the variables are stationary at the order of integration stated above at 5% level of significance. Furthermore, this indicates that the regression is no more spurious but real. That is to say, all the variables are individually stationary or integrated of order 1(0) and 1(1).

4.3 Normality and Reliability Test

In order to ascertain further if the data for the study were good enough for analysis, we investigated if the data were normally distributed at the mean. Reliability tests were therefore conducted. The results of the tests are presented in Figure 4.1.



These results indicate that the dataset was to a large extent distributed around the mean. This is supported by JB statistic with a high probability value of 0.417367. The p-value is greater than the Alpha of 0.05 which means the acceptance of the Alternate hypothesis of Normal distribution of fitted data around the mean suggesting that the residuals of the model are normally distributed. When the residuals of a model are normally distributed around the mean then the normality of the main variables are assumed to be normally distributed and need no further testing. The model analysis can proceed once the normal distributions of the residuals have been confirmed.

Table 4.3: Serial Correlation and Heteroskedasticity Tests

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.311576	Prob. F(2,17)	0.7364
Obs*R-squared	1.166876	Prob. Chi-Square(2)	0.5580

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.339278	Prob. F(13,19)	0.9744
Obs*R-squared	6.217284	Prob. Chi-Square(13)	0.9379
Scaled explained SS	2.919892	Prob. Chi-Square(13)	0.9982

Source: E-views10 output

The Null hypothesis of no serial correlation in the Model is accepted with p-value of 0.7364 as shown in Table 4.3 and which is greater than the Alpha value of 0.05.

The Null hypothesis of heteroskedasticity is also accepted by the p-value of 0.9744 which is higher than the 0.05 Alpha value indicating absence of heteroskedasticity.

Table 4.4 Ramsey Reset Test Result

Ramsey RESET Test

Equation: UNTITLED

Specification: GDP GDP(-1) AS TCS HS HS(-1) HS(-2) HS(-3) HS(-4) EDUS EDUS(-1) EDUS(-2) EDUS(-3) EDUS(-4) C

Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	0.214909	18	0.2401
F-statistic	1.476004	(1, 18)	0.2401

F-test summary:

Source: E-views10 outputs

In the table above, results shows t = 0.276152 which falls within the threshold of 0 and 1 which means that there is neither under specified or over specified of variables. The Model contains all relevant variables for the study. The acceptance of the Null hypothesis is backed by the p-value of 0.2401 which is greater than the Alpha value of 0.05 implying the acceptance of the Null hypothesis of the absence of non-linear combinations associated with the fitted data (independent variables) of the model which tended to explain any variation in the dependent (response) variable.

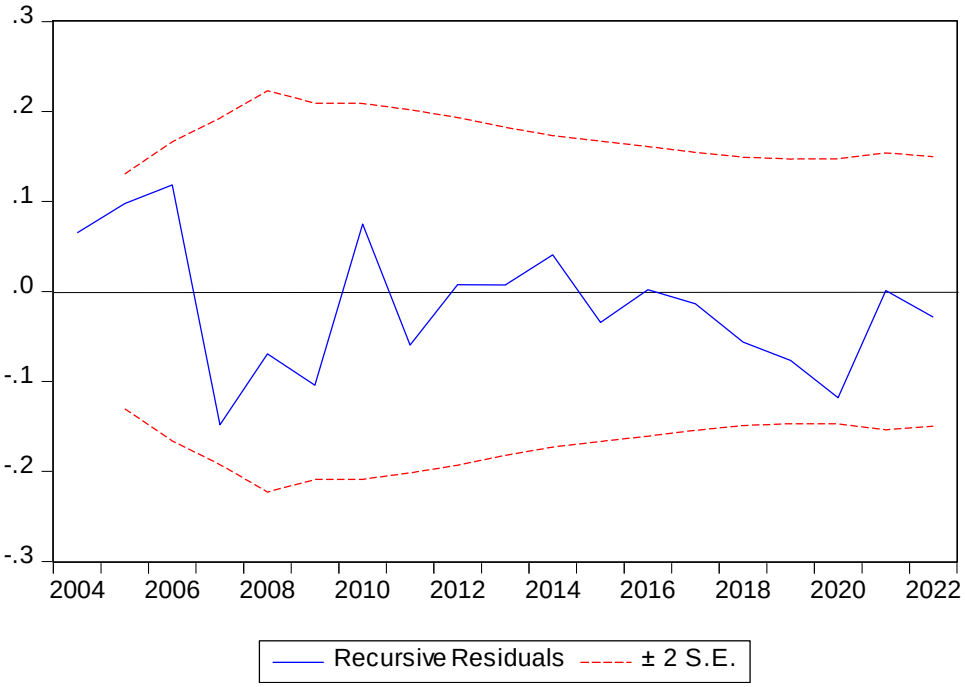


Figure 4.2: CUSUM Reset

Source: E-views10 output

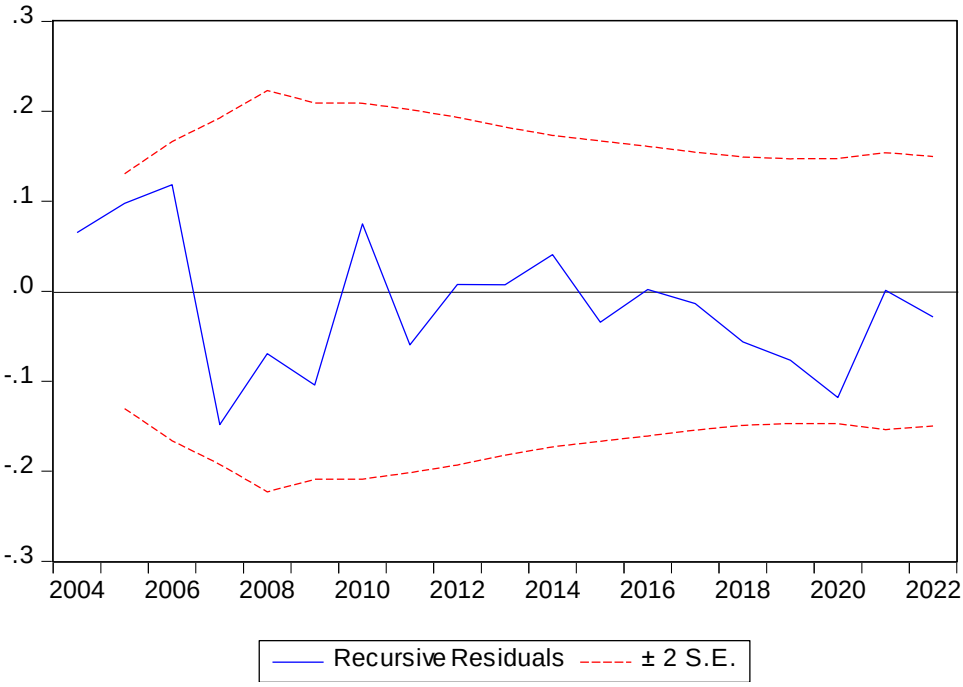


Figure 4.3: CUSUM of Square, Source: E-views10 outputs

The above Cusum Reset and Cusum of Squares tests show no instability in the model in the period under review.

4.4 ARDL Co-integration Test and Co-efficient Estimation

The fact that the Unit root tests for Model III portrayed a mixed order of integration, that is, 1(1) and 1(0) disqualified the use of Johansen Co-integration test are the Engle-Granger Co-integration test which are strictly applied on data that integrated individually at 1st order. Autoregressive Distributed Lag (ARDL) Bound Test will be applied for testing the model because of the mixed order of differencing. The summary of the bound test is shown in Table 4.5

Table 4.5: ARDL Bound Test Result

F-Bounds Test			Null Hypothesis: No levels relationship	
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	18.12895	10%	2.2	3.09

K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
			Finite Sample:	
Actual Sample Size	33		n=35	
		10%	2.46	3.46
		5%	2.947	4.088
		1%	4.093	5.532
			Finite Sample:	
			n=30	
		10%	2.525	3.56
		5%	3.058	4.223
		1%	4.28	5.84

Source: Eviews10 output

From the table above, the value of F-statistic of 18.12895 is greater than the upper bound value 3.49 at 5% level of significance. This depicts co-integration indicating that a long run relationship exists between the endogenous variable and the exogenous variables.

4.5 Autoregressive Distributed Lag (ARDL) Estimation

To test the hypotheses of the study using ARDL estimation technique, below is the ARDL regression result.

Dependent Variable: GDP
Method: ARDL
Date: 07/02/24 Time: 15:18
Sample (adjusted): 1990 2022
Included observations: 33 after adjustments
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): AS TCS HS EDUS
Fixed regressors: C
Number of models evalulated: 2500
Selected Model: ARDL(1, 0, 0, 4, 4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GDP(-1)	1.127068	0.074708	15.08638	0.0000

AS	0.038382	0.028434	1.349862	0.1929
TCS	-0.011868	0.019362	-0.612968	0.5472
HS	0.070307	0.035957	1.955328	0.0654
HS(-1)	0.028338	0.034076	0.831619	0.4160
HS(-2)	0.120769	0.038412	3.144081	0.0053
HS(-3)	0.043726	0.033887	1.290359	0.2124
HS(-4)	0.076807	0.033835	2.270011	0.0350
EDUS	-0.154861	0.046481	-3.331695	0.0035
EDUS(-1)	-0.073195	0.038594	-1.896513	0.0732
EDUS(-2)	-0.142339	0.039120	-3.638486	0.0017
EDUS(-3)	-0.087130	0.037690	-2.311763	0.0322
EDUS(-4)	-0.102136	0.037890	-2.695565	0.0143
C	-0.002687	0.449824	-0.005973	0.9953

R-squared	0.999022	Mean dependent var	9.838154
Adjusted R-squared	0.998353	S.D. dependent var	1.801742
S.E. of regression	0.073115	Akaike info criterion	-2.097161
Sum squared resid	0.101569	Schwarz criterion	-1.462279
Log likelihood	48.60316	Hannan-Quinn criter.	-1.883543
F-statistic	1493.340	Durbin-Watson stat	1.673078
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

Source: E-views10 output

The result in table above reveals that only GDP(-1), HS(-2), EDUS, EDUS(-2), EDUS(-3) and EDUS(-4) have significant effect on its own current value. For instance, this indicates that a 1% increase in the GDP of the previous year will result in a 1.127% increase in current year GDP. Other variables of the model have p-values greater than the Alpha value of 0.05. The Null hypothesis of no significant relationship between these variables and GDP is accepted. With the lagged model the variations in the baseline explanatory variables explained about 99.90% of the changes in GDP during the period. The high R2 makes the reliability of the coefficients for any forecasting questionable.

4.6 Long-Run Estimation

The results of the estimated long run coefficients using the ARDL approach is presented in the table 4.6 below. The model selected by AIC is (4,4,3,4,).

Table 4.6: ARDL Long Run Form

Levels Equation

Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AS	-0.302055	0.271583	-1.112201	0.2799
TCS	0.093400	0.164510	0.567747	0.5769
HS	-0.675317	1.614410	-1.657148	0.1139
EDUS	0.404418	2.042439	2.156450	0.0441
C	0.021144	3.527954	0.005993	0.9953

EC = GDP - (-0.3021*AS + 0.0934*TCS -0.6753*HS + 0.4044*EDUS + 0.0211)

Source: E-views10 output

The estimated coefficients of the long-run relationship between GDP, AS, TCS, HS and EDUS are:

EC = GDP - (-0.3021*AS + 0.0934*TCS -0.6753*HS + 0.4044*EDUS + 0.0211)

LNGDP = 0.0211- 0.3021LNAS + 0.0934LNTCS– 0.6753HS + 0.4044LNEDUS

-1.112201* 0.567747* -1.657148* 2.156450*

0.0.2799# 0.5769# 0.1139# 0.0441#

Where * represents t-value; # represents p-value

The result of above equation in table 4.7 above indicates that for instance, that Agricultural Sector (AS) report a negative and no significant relationship to Gross Domestic Product in Nigeria. This implies that a unit increase in government expenditure on agricultural sector will lead to andecrease of 0.3021 units in Nigeria's national output. Transportation/Communications and Education sectors made positive contributions of 9% and 40% respectively to national income.

The result of the Error Correction Model (ECM) in Table 4.7

Table 4.7: ARDL Error Correction Result

ARDL Error Correction Regression

Dependent Variable: D(GDP)

Selected Model: ARDL(1, 0, 0, 4, 4)

Case 2: Restricted Constant and No Trend

Date: 07/02/24 Time: 15:34
Sample: 2000 2022
Included observations: 33

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(HS)	0.070307	0.023853	2.947541	0.0083
D(HS(-1))	-0.241302	0.040661	-5.934531	0.0000
D(HS(-2))	-0.120533	0.034758	-3.467738	0.0026
D(HS(-3))	-0.076807	0.026148	-2.937387	0.0085
D(EDUS)	-0.154861	0.029349	-5.276611	0.0000
D(EDUS(-1))	0.331606	0.036679	9.040809	0.0000
D(EDUS(-2))	0.189267	0.030202	6.266588	0.0000
D(EDUS(-3))	0.102136	0.024892	4.103183	0.0006
CointEq(-1)*	0.667068	0.010840	11.72170	0.0000

R-squared	0.729492	Mean dependent var	0.187257
Adjusted R-squared	0.639323	S.D. dependent var	0.108322
S.E. of regression	0.065054	Akaike info criterion	-2.400192
Sum squared resid	0.101569	Schwarz criterion	-1.992053
Log likelihood	48.60316	Hannan-Quinn criter.	-2.262865
Durbin-Watson stat	1.673078		

Source: E-views10 output

The ECM (-1) result shows the adjustment speed and the time it will take for the variables of the model to adjust and re-converge at an equilibrium point after drifting apart following an initial shock along the short-run equilibrium path. ECM(-1) is correctly signed with a co-efficient of -0.667068 and p-value 0.0000, implying acceptance of a long run relationship between the explanatory variables. The ECM results indicate that at the 66.70% speed of adjustment per annum the errors of the model corrected each period (each year). In other words, the speed implies that in the long run, 66.70 can be corrected after a number of periods (years) determined as follows: 100/66.70 periods (approximately1year 6months). From the result, it will take approximately one year six months for the variables to reconverge at a long-term equilibrium position. The adjusted coefficient of determination (Adj R^2) stands at 63.93 percent portraying a good fit.

4.7 Discussion of Findings

This discussion was done to establish the nature of relationship existing between Gross Domestic Product and government expenditure (Agricultural, Transportation/Communications, Health And Educational Sectors) in Nigeria based on the stated objectives of the study.

Objective One: To determine the impact of government agricultural expenditure on economic growth in Nigeria.

Government expenditure on agricultural sector has a negative and no significant relationship with Gross Domestic Product. The result is not in line with the *apriori* expectations and in tandem with the findings of Agbana and Ebisie (2022); Ekere and Akpan (2022); Olayemiet at (2019) who found a negative impact of agricultural government expenditure on Nigeria's economic growth. This result suggests that the agricultural subsector has a huge potential to stimulate economic growth in Nigeria but lacks adequate attention of the government.

Objective Two: To investigate the impact of government transportation/communications expenditure on economic growth in Nigeria.

The result a positive but no significant relationship with GDP and in line with a priori expectation. The findings conform with those of Oladipo et al (2024); Daodu (2021); Siyan et al (2015) who found a positive impact of transportation/communications on the economic growth of Nigeria. The positive relationship between transportation and communication and real GDP is because of the strategic role of the sector in fostering economic growth. For example, good transport system enhances the speed of products and services delivery as well as reduces operating cost, thus enabling greater productivity. On the other hand, communication also enhances the efficiency of businesses as decisions are quickly made and implemented, even without the physical presence of key actors.

Objective Three: To examine the impact of government health expenditure on economic growth in Nigeria.

The result of long-run ARDL estimation indicates that a negative and no significant relationship to Gross Domestic Product in Nigeria. The result is not in line with the *apriori* expectations and conforms with Eboh et al (2022), Yeriwa (2022) who found negative impact of Health sector to

economic growth in Nigeria. The negative relationship between government expenditure on social services like health could be attributed to the meager government expenditure on the sector leading to its poor performance; thus frequent industrial actions by health unions in Nigeria and preference for medical treatment abroad by the Nigerian elites attest to this.

Objective Four: To assess the impact of government educational expenditure on economic growth in Nigeria.

The long run estimation result shows result shows a positive and significant relationship between government expenditure on education and Nigerian economy. This outcome is in line with the a priori expectation. Rahman et al (2023), Ojo and Ojo (2022) and Okerekeoti (2022) in agreement hold that educational expenditure contribute positively to Nigeria's national output. The positive impact may be due to the impact emanating from the private sector rather than government meagre expenditure on social services like education.The meagre government expenditure on education has resulted to many industrial actions like that of ASUU and other unions.

5.1 Conclusion

The findings of the study have confirmed that government expenditure on various sector influence Nigeria's Gross Domestic Product and follow established economic theories. Both Co-efficient of Determination as well as the F-statistic have established a good fit and joint significance of the independent variables on the dependent variable.

5.2 Recommendations

1. Agricultural subsector which has a huge potential to stimulate economic growth in Nigeria should be supported by increasing government expenditure to the sector. Most importantly greater bulk of the expenditure on the subsector should reach the targeted farmers by minimizing corrupt practices in the sector.

2. The extent of government expenditure on Transportation/Communications sector should be sustained based on its positive impact on national real income. Communications sub-sector has

been identified as one of the key sectors that presently sustains Nigeria's economy and should be fully sustained.

3. There is need to improve on government expenditure on health as high productivity in the economy can only be guaranteed with quality health conditions of workers. Similarly, needs of health workers should be accorded special attention. Medical trips should be discouraged while health facilities should be brought to standard.

4. There is need to sustain and increase government expenditures on education found to contribute positively and significantly to GDP. In Nigeria, the sector has been identified as private-sector-drive and should be sustained through fiscal policy reliefs.

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