

**ASSESSING THE IMPACT OF ECONOMIC SERVICES
EXPENDITURE ON NIGERIAN ECONOMIC GROWTH:
EVIDENCE FROM A NONLINEAR ARDL APPROACH
(1981 – 2022)**

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ABSTRACT: This study investigates the relationship between economic services expenditure and Nigeria's economic growth from 1981-2022 using a Nonlinear Autoregressive Distributed Lag (NARDL) model. The study aims to find out whether economic services expenditure, particularly in sectors such as agriculture and infrastructure, significantly contributes to economic growth in Nigeria. The findings reveal a significant long-run relationship between government expenditure on agriculture, roads, and construction and economic growth, while transport and communication spending negatively affects growth. Recommendations include increased investment in agriculture and infrastructure to support economic development.

Keywords: Public Spending; Economic Growth; NARDL; Wagner's Law

INTRODUCTION

Government spending has increased more quickly during the last 30 years in both developed and developing nations. However, compared with wealthy countries, government spending in emerging nations is generally substantially lower (Vtyurina, 2020).

Government spending encompasses all the outlays that the public sector incurs for its maintenance to benefit the economy (Balami, 2006). Government spending in Nigeria takes the form of capital and recurrent expenses. These services are further divided into social and community categories, economic services, capital expenditures and transfers.

Economic services expenditure refers to the money the government spends on agriculture, transport and communication, road and construction, and other economic services. Other economic services are expenses incurred by the government at all levels of goods and services, such as federal government extra budgetary expenditures and interest payments both foreign and domestic.

Therefore, the components of the economic services sector in Nigeria include agriculture, road and construction, transport, communication, and other economic services. A healthy service sector, among other things, promotes an environment for investment. The economic

service sector has grown quickly, becoming the largest contributor to the real gross domestic product in several countries (Liyanage et. al 2019).

Since independence, Nigerian economic services spending has continued to increase, owing to the massive receipts from the production and sales of crude oil, and the increased demand for public (utilities) goods such as roads, communication, power, education, agriculture, construction, and health (Ugochkwu & Aruta,2021). In other words, there is no justification for the large amount of money the government injected into all the sectors because all the sectors are in a sorry, state which led to the ineffective provision of basic infrastructure such as hospitals, roads and electricity thereby causing the collapse of many industries, and resulting in a high level of unemployment. Available statistics from the Central Bank of Nigeria (CBN, 2022) show that average total government service expenditures rose rapidly from ₦1.22 billion for the period 1981-1990 to ₦14.63 billion, ₦33.03 billion and ₦67.74 billion for the periods 1991-95, 1996-2000 and 2001-2005 respectively. It increased to ₦177.75 billion, ₦182.80 billion, ₦192.90 billion and ₦194.90 billion and 198.86 billion for the periods of 2006-2008, 2009-2011, 2012-2014, 2015-2017 and 2018-2022, respectively.

There is a persistent public outrage over deteriorating infrastructure amenities in Nigeria despite increases in government spending over the years (Okere, 2019). Few or no empirical studies have conducted a complete examination of economic services expenditure and economic growth in Nigeria irrespective of its significance for policy decisions. To the best of the author's knowledge little or no research has been conducted on the impact of economic service expenditures on the growth of the Nigerian economy from 1981-2022 using NARDL. The NARDL model is employed due to its ability to capture asymmetric effects of positive and negative changes in government expenditure on economic growth. Additionally, the absence of empirical literature on the link between economic service expenditures and the growth of the Nigerian economy makes this issue worthy of examination. Furthermore, the period covered by the research from 1981-2022 is relatively large. The choice of 1981-2022 was on the basis that, in the 1980s, some components of economic service expenditures suffered serious neglect, such as agriculture, as a result of a shift in attention to the oil sector and various reforms in the sector both in the military and civilian regimes. Therefore, This study seeks to answer whether economic services expenditure, particularly in sectors such as agriculture and infrastructure, significantly contributes to economic growth in Nigeria from 1981-2022.

The paper is structured as follows. After the introduction in Section 1, Section 2 represents the literature review. The methodology and discussion of the findings are presented in Sections 3 and 4, respectively. The conclusions and policy recommendations are presented in Section 5.

LITERATURE REVIEW

Conceptual Review

According to Bingilar and Oyadonghan (2020), government spending is the government's overhead for providing and maintaining itself as an institution, economy, and society. They added that government spending tends to increase with time as the economy becomes large and more developed or as a result of an increase in its scope of activities.

Economic service expenditures in Nigeria are expense that governments incur on agriculture, road and construction, transport and communication, manufacturing, mining and quarrying, and other areas. (CBN, 2020).

Economic growth is defined as an increase in the market value of the products that an economy produces over time (Balami, 2006).

The explanations of the components of economic services expenditure are as follows:

(a) **Agricultural expenditure** – The costs incurred by the government in the agricultural sector are known as government spending on agriculture and could be directly or indirectly associated with both capital expenditures and recurrent expenditures. Capital projects include constructing feeder roads in rural regions, silos, tractors and other tools for farmers, increasing their yield and improving the quality of life for locals. Recurrent spending involves offering lending facilities, subsidizing farm inputs and financial assistance to farmers to increase the attractiveness of the agricultural industry and promote entrepreneurship in agribusiness, which promotes economic growth. (Emmanuel et al., 2020).

(b) **Construction** expenditures are expenditures incurred by federal, state and local governments for the construction of capital projects such as roads, hospitals, schools, railways, and bridges. Construction expenditures rose to 1.45 trillion Naira (8.9%) in the 2022 budget (Zainab, 2021).

(c) **Transport** expenditure –Transport expenditure refers to the expenditures incurred by federal, state and local governments on transport infrastructure. Transport expenditures rose to 12.6 billion in the 2022 budget (Zainab, 2021).

(d) **Communication** expenditure – All expenses incurred by the government at all levels of the communication infrastructure. The communication expenditure rose to 633.39 billion in the 2022 budget.

(e) **Other economic services** expenditures are expenses incurred by the government at all levels on goods and services, such as federal government extra budgetary expenditures, interest payments both foreign and domestic, etc.

Therefore, government spending can be utilized to affect the amount of national output, employment, general price level, and income redistribution in favour of the poor. It is crucial for promoting economic growth, stability, and poverty reduction (Ekpo et al., 2022).

Theoretical Literature

Theory of Increasing Public Expenditure: Wagnerian Law of Increasing State Activities

Adolph Wagner, a German economist, is the author of the law of rising state activity. He asserts that there are innate tendencies for government activity to grow both intensively and broadly. According to this hypothesis, there is a functional relationship between economic growth and government operations, which causes the government sector to expand quickly in relation to the economy. Wagner categorizes the factors contributing to the rising trend in public spending as follows: Administrative and protective obligations: As part of this

responsibility, defence costs rose. Administrative jobs continue to expand in scope and importance. Justice, law and order, the maintenance of government infrastructure, and social costs are still substantial and expensive. Welfare and fair income distribution roles: These include activities that contribute to the improvement of the general populace's quality of life and the provision of social security. The direct provision of merit products, items, and services, as well as old - age pensions and subsidy payments, are heavily included here and have a propensity to become more expensive as the economy develops.

These aforementioned roles help achieve distributive justice by easing the negative impacts of income and wealth disparities in society. Roles in the provision of public goods and services: Governments also focus their efforts in sectors where there are market imperfections that call for the development of government investment operations (Bhatia, 2002).

Wagner's hypothesis of increasing state activities formed the basis of this study because of its strength and relevance to the topic at hand, and from 1981 - 2022, the Nigerian government witnessed considerable public spending with an incessant increase in GDP.

Empirical Literature

By applying gross domestic product as the dependent variable, Harriet et al. (2023) researched the disaggregated analysis of public expenditure and economic development on the Nigerian economy via data spanning from 1981-2021 and reported that capital expenditures on economic services, administration, and social and community services are positively related to economic growth. Similarly, recurrent expenditures on administration, transfers and capital transfer have a negative relationship with economic growth. Ordinary least squares and Granger causality were applied in the research.

Omitogun et al. (2022) examined the asymmetric impact of government expenditures on economic growth in Nigeria via data spanning from 1981-2018 and reported that both positive and negative changes in recurrent and capital expenditures in the short run significantly boosted economic growth in Nigeria at various time lags. In the long run, negative changes in recurrent expenditures have a positive impact on economic growth, whereas recurrent expenditures have a negative impact on economic growth. The NARDL model was applied in this study.

Ikubor et al. (2022) examine the impact of government capital expenditures in the economic services sector on Nigeria's economic growth and find that capital expenditures on agriculture and capital expenditures on manufacturing, mining and quarrying have a positive nexus with GDP. The study applied the ARDL model for Nigerian data spanning from 1981 - 2020.

Chinonye (2022) used data spanning from 1981 – 2020 to disaggregate government expenditures and economic development in Nigeria and reported that in the long run, government spending on agriculture, health, social security and education has a positive and significant effect on economic development, whereas public spending on infrastructure has a negative but significant effect on economic development in Nigeria. The vector error correction technique (VECM), cointegration and ADF were applied in this study.

Adegboyo and Olaniyan (2021) discovered that social and community recurrent spending, capital expenditure for social and community services, and recurrent expenditure for administration increase Nigeria's economic growth, whereas economic service recurrent expenditure, economic service capital expenditure, transfer capital expenditure and transfer recurrent expenditure deter Nigeria's economic growth. The findings further reveal that there is unidirectional causality that runs from both administrative capital expenditures and recurrent administrative expenditures to economic growth. The study examined the viability of public expenditure in stimulating economic growth in Nigeria and employed ARDL along with the Granger causality test for data spanning from 1981 - 2019.

Ugochukwu and Oruta (2021) conducted research on some components of economic service expenditures in Nigeria and reported that, in the short-run, recurrent expenditures on agriculture have an insignificant negative impact on economic growth, whereas recurrent expenditures on debt service and road construction have a positive and negligible impact on economic growth. Capital expenditures on economic services had a positive and insignificant effects on economic growth in Nigeria. In the long run, all the components employed had a significant effect on economic growth. The study applied the ECM and Granger causality test for the period between 1981 and 2020.

Nwosa and Tijani (2020) reported that public spending in the service sector has a negative and significant effect on economic growth in Nigeria. The authors applied cointegration and error correction model for data spanning from 1970 - 2017.

Aremu et al. (2020) investigated how government spending in Nigeria's critical sectors affects economic growth (1984-2019). The research used the bound test cointegration approach and the autoregressive distributed lag model to estimate the short- and long-term effects of government spending on economic growth. The findings showed that government spending on agriculture promotes economic growth, whereas spending on defense has a negative effect. Government spending on transportation, education, and communication did not have a long-term effect on economic growth.

A study by Muhammad et al. (2020) examined the impact of agricultural expenditure on economic growth in Nigeria and reported that, in the short run, total government expenditure on agriculture had no significant effect on real GDP, whereas government expenditure on agriculture had a significant positive effect on real GDP in the long run. The study applied ARDL for Nigerian data spanning between 1981 and 2018.

Obi (2020) reported that economic services as well as social and community services are not the Nigerian state's main drivers of development. The research focused on social and community services, economic services, and transfers, as it applied the vector error correction model technique to Nigerian data spanning the years 1980 - 2017 to investigate the impact of some chosen government recurrent expenditures on economic growth.

Barlas (2020) investigated the effects of government capital spending in Afghanistan from 2004 - 2019 and reported that government spending on economic services, education, security, and defense was positive and significantly contributed to Afghanistan's economic growth. The study applied the ARDL model, Johanson cointegration test and bound test.

Duruibe et al. (2020) studied the effect of government public spending on Nigeria's economic growth from 1986 - 2016 via the sectorial economic function approach. The study applied a vector error correction model and revealed that, with the exception of spending on transfers, which is positive but insignificant to economic growth in Nigeria, all the variables (economic services, social community services, and transfers) are positively related to economic growth.

Udoka (2020) reported that public spending on agriculture, education and health has a positive and significant effect on economic growth. The study applied cointegration and error correction model for Nigerian data spanning between 1987 and 2019 to determine the disaggregated impact of government expenditure on economic growth. Akanbi et al. (2019) investigated the effect of government agricultural expenditures on Nigeria's economic growth during the period of 1981 - 2015. The authors used descriptive statistics and a vector error correction model to analyse the relationship between government agricultural expenditures and economic growth. The framework for the study is based on the Keynesian school of thought. The results revealed that government expenditure on agriculture has a positive and significant effect on economic growth both in the short run and long run. The authors concluded that the government should increase agricultural expenditures to stimulate growth in the Nigeria economy, which could increase employment opportunities, increase per capita income, improve the agricultural sector infrastructure deficit and reduce poverty.

Another study by Omokaro and Ikpere (2019) who examined the role of public spending on construction, transport and communication on economic growth via regression analysis for Nigerians, revealed that spending on communications, transportation, and building had a positive impact on economic growth between 1989 and 2013.

Ditimi et al. (2019) examined at the effects of government spending on the economy of Nigeria between 1970 and 2018, with an emphasis on education, agriculture, health, transportation, and telecommunications. The findings of the long term and short term regression estimates suggested that agricultural spending was the most important component of government expenditure that impacted economic growth. The study applied the ARDL model for the data analysis.

Akaakohol et al. (2019) investigated the asymmetric impact of government spending on economic growth using Nigerian data spanning between 1986 and 2017. This study applied NARDL and revealed that there is an asymmetric relationship between government spending and economic growth in Nigeria. The results demonstrated that positive changes in government spending had a beneficial effect on economic growth, as opposed to negative changes in spending, which had a negative impact.

According to Shakirat (2018), government spending on infrastructure for transportation, communications, education, and health has a significant positive impact, whereas spending on infrastructure for agriculture and natural resources has a significant negative impact on Nigeria's economic growth from 1980 - 2016. Weighted least square and the vector error correction model were employed in this research.

Akinlo and Jemiluyi (2018) examined the nexus between government expenditure and economic growth in Nigeria via NARDL, the VECM and Granger causality for the period between 1960 and 2016 and determined the existence of cointegration and nonlinear effects on economic growth in both the long and short run. The results further revealed that there is

unidirectional causality that runs from economic growth to government expenditure, which is in line with Wagner's hypothesis in Nigeria.

Numerous previous studies have been conducted on the topic of public spending and economic growth, as evidenced by the empirical review of this literature. Numerous regional areas have been studied on this subject. However, little research has been conducted on all the components of Nigeria's economic services spending and economic growth. Additionally, there are mixed batches of findings regarding the impact of public spending on Nigeria's economic growth. While several studies (e.g., Aremu et al. 2020) have examined specific components of economic services expenditure, few have utilized the NARDL model to assess nonlinear effects, particularly over the extended period from 1981-2022. This study will add to the existing body of knowledge by using more up-to-date data (2022), a better analytical technique, and covers Nigeria, making it a country-specific study.

METHODOLOGY

Sources of Data

The study employed secondary data. The data were sourced from the Central Bank of Nigeria statistical bulletin and the World Bank for variables such as; real gross domestic product, agricultural expenditure, road and construction expenditure, transport and communication expenditure, and other economic services. The study covers the period from 1981 - 2022. The choice of 1981 was on the basis that, in the 1980s, some components of economic service expenditures suffered serious neglect, such as agriculture, as a result of a shift in attention to the oil sector. In addition, the justification for the choice of 2022 is that, within the period, the trends of economic services expenditure increased tremendously, and there have been various reforms in the economy since the introduction of different programmes, such as the Green Revolution, the Structural Adjustment Programme (SAP) under military regimes and civilian administration aimed at increasing public spending to improve the economy by reducing poverty and improving the welfare of citizens. The choice of this period is informed by the availability of uniform time series data on the variables used in the study. The NARDL model is employed due to its ability to capture asymmetric effects of positive and negative changes in government expenditure on economic growth.

Model Specification

To estimate the asymmetries between economic service expenditures and economic growth in Nigeria, the NARDL model developed by Shin et al., (2014) was used. The model is decomposed into the cumulative sums of positive and negative changes that occur in the control variables. The NARDL is chosen to overcome the deficiency of the standard ARDL model. The standard ARDL assumes linearity of the regressor on the regressand. That is, a 1% increase in A (regressor) decreases B (regressand) by 1% which is not often true. To overcome this limitation, NARDL includes symmetry and asymmetry assumptions that allow the sum of positive and negative changes. The study adopted Wagner's hypothesis as the theoretical frame because of its strength and relevance to the topic at hand and from 1981 - 2022, the Nigerian government witnessed considerable public spending with an incessant increase in real GDP.

$$Gf = (Y).....(1)$$

G stands for government spending, and Y stands for revenue. We modify equation (1) by incorporating other variables. Thus:

$$RGDP = f(GEA, GETC, GERC, GEES, \varepsilon_t) \dots \dots \dots (2)$$

where:

RGDP = Real gross domestic product

GEA = Government expenditures on agriculture

GETC = Government expenditures on transport and communication

GERC = Government expenditures on roads and construction

GEES = Government expenditures on other economic services

ε_t = Error term

The study adopted the Omitogun and Adedayo (2022) model with slight modifications. Their model is specified as

$$GDP_t = GDP_t = w + \beta_1 GDP_{t-1} + \beta_2 RE_t^+ + \beta_3 RE_t^- + \beta_4 CE_t^+ + \beta_5 CE_t^- + \sum_{q=1}^{\rho} \rho_1 \Delta RE_{t-i}^+ + \sum_{q=1}^{j_1} \rho_2 \Delta RE_{t-i}^- + \sum_{q=1}^{\rho} \rho_3 \Delta CE_{t-i}^+ + \sum_{q=1}^{j_1} \rho_4 \Delta CE_{t-i}^- + \mu_t \dots \dots \dots (3)$$

The above model has been modified for the purpose of this study as follows:

$$RGDP = \beta_0 + \beta_1 GEA + \beta_2 GETC + \beta_3 GERC + \beta_4 GEES, + \varepsilon_t \dots \dots \dots (4)$$

The asymmetric error correction term is represented as follows in the NARDL model:

$$\Delta \ln GDP_t = \alpha_0 + \alpha_1 \ln GDP_{t-1} + \alpha_2^+ \ln GEA_{t-1}^+ + \alpha_3^- \ln GEA_{t-1}^- + \alpha_4^+ \ln GETC_{t-1}^+ + \alpha_5^- \ln GETC_{t-1}^- + \alpha_6^+ \ln GERC_{t-1}^+ + \alpha_7^- \ln GERC_{t-1}^- + \alpha_8^+ \ln GEES_{t-1}^+ + \alpha_9^- \ln GEES_{t-1}^- + \sum_{l=0}^q \beta_1 \Delta \ln GDP_{t-1} + \sum_{l=0}^{K_2} \beta_2^+ \Delta \ln GEA_{t-1}^+ + \sum_{l=0}^{K_2} \beta_3^- \Delta \ln GEA_{t-1}^- + \sum_{l=0}^{K_3} \beta_4^+ \Delta \ln GETC_{t-1}^+ + \sum_{l=0}^{K_3} \beta_5^- \Delta \ln GETC_{t-1}^- + \sum_{l=0}^{K_4} \beta_6^+ \Delta \ln GERC_{t-1}^+ + \sum_{l=0}^{K_4} \beta_7^- \Delta \ln GERC_{t-1}^- + \sum_{l=0}^{K_5} \beta_8^+ \Delta \ln GEES_{t-1}^+ + \sum_{l=0}^{K_5} \beta_9^- \Delta \ln GEES_{t-1}^- + \mu_t \dots \dots \dots (5)$$

RESULTS AND DISCUSSION

In table 1, unit root testing is carried out with an augmented Dickeyfuller (ADF). The results of the ADF unit root test are presented in Table 1 below. As can be observed from Table 1,

when the ADF test is estimated at levels with intercepts, all of the variables become stationary except *gea*, *rgdp*, and *gerc*. This is because the value of the test statistic for the variables is greater than the critical value for the ADF statistic. However, *gea*, *rgdp*, and *gerc* become stationary after the first difference is taken. The test statistic values are greater than their critical values at the 5 percent level of significance. Thus, the variables are stationary at order zero, and *gea*, *rgdp*, and *gerc* at order one making it possible to apply the NARDL technique for the analysis of the nexus between economic service expenditures and the growth of the Nigerian economy.

Unit Root Test

Table 1: Unit root results

SERIES	ADF STAT	5% CRITICAL VALUE	ORDER	REMARK
GEA	7.213362	3.529758	I(1)	Stationary
GEES	4.195060	3.529758	I(0)	Stationary
LRGDP	3.876850	3.529758	I(1)	Stationary
GERC	4.930094	3.529758	I(1)	Stationary
GETC	4.369672	3.529758	I(0)	Stationary

The optimal lag length is determined by the Akaike information criterion (AIC).
 Source: Authors' computation via E-view 10

NARDL Bounds Test

Table 2: Results of the Bounds Test for Cointegration

Significance Level	Critical Values	
	Lower Bound	Upper Bound
1% significance level	3.15	4.43
5% significance level	2.55	3.68
10% significance level	2.26	3.34
F-statistics	4.285439	

Source: Author's computation via E-view 10.0

The NARDL bounds test results in Table 2 show the presence of a long-run relationship between the variables in the model, as the F-statistic value of 4.285439 is greater than the 5 percent upper bound value of 3.68. Accordingly, the null hypothesis of no long-term relationship is rejected.

Long Run Relationships

Table 3: NARDL long-term Results

Variables	Coefficient	Std. Error	t-Statistic	Prob.
GEA_POS	0.487426	0.290445	1.678202	0.1443
GEA_NEG	0.429868	0.283218	1.517799	0.1799
GEES_POS	0.010339	0.009075	1.139247	0.2980
GEES_NEG	-0.174116	0.088308	-1.971682	0.0961
GETC_POS	0.133108	0.081746	1.628315	0.1546
GETC_NEG	0.418294	0.217809	1.920467	0.1032
GERC_POS	-0.201885	0.113657	-1.776273	0.1260
GERC_NEG	0.126032	0.034064	3.699889	0.0101
C	11.94877	3.170323	3.768945	0.0093

Source: Author's computation via Eviews 10

Table 3 shows the results of the nonlinear response of economic growth to government expenditures on agriculture, other economic services, transport and communication, and road construction in Nigeria with positive and negative responses in the long run. The long-term results show that the response of economic growth to both positive and negative shocks in government expenditure on agriculture is positive and statistically insignificant. A 1% increase in government expenditures on agriculture increases economic growth by 0.48%, whereas 1% decrease in government expenditure on agriculture decreases economic growth by 0.43%. This suggests that the response of RGDP to positive changes in government expenditure on agriculture is different from its response to negative changes in government expenditure on agriculture. Consequently, the relationship between RGDP and government expenditure on agriculture in Nigeria is asymmetric.

Moreover, the response of RGDP to positive changes in other economic service expenditures is positive and statistically insignificant, whereas negative changes in other economic services expenditures are negative and statistically insignificant (0.010339 and -0.174116, respectively) . This shows that economic growth increases by 1% when other economic service expenditures increase by at least 1%, whereas a decrease in other economic service expenditures by 1% results in a 0.17% increase in RGDP in the long run. In the same vein, the transport and communication response of RGDP to both positive and negative changes is positive but statistically insignificant in explaining the change in RGDP. The results show that a 1% increase in transport and communication increases RGDP by 0.13%, whereas a 0.41% decrease in transport and communication decreases RGDP. Furthermore, the response of RGD to positive changes in road construction expenditure is negative and statistically insignificant, whereas negative changes in road construction expenditure are positive and statistically insignificant. The results show that a 1% increase in road construction expenditure increases RGDP by 0.20%, whereas a percentage decrease in road construction expenditure decreases RGDP by 0.41%. All other factors are constant.

NARDL short - term results

Table 4: Nonlinear ARDL short - term response

<i>Variables</i>	Coefficient	Std. Error	t-Statistic	Prob.
<i>C</i>	11.94877	1.718080	6.954724	0.0004
<i>D(GEA_POS)</i>	0.011747	0.001796	6.540549	0.0006
<i>D(GEA_POS(-1))</i>	-0.241311	0.033869	-7.124795	0.0004
<i>D(GEA_NEG)</i>	0.355098	0.052391	6.777877	0.0005
<i>D(GEES_POS)</i>	0.040193	0.005998	6.700859	0.0005
<i>D(GEES_POS(-1))</i>	0.020309	0.002829	7.177810	0.0004
<i>D(GEES_POS)(-2))</i>	0.045759	0.006389	7.161873	0.0004
<i>D(GEES_NEG)</i>	-0.025612	0.004002	-6.399350	0.0007
<i>D(GEES_NEG(-1))</i>	0.140527	0.019978	7.034203	0.0004
<i>D(GEES_NEG(-2))</i>	0.042925	0.006283	6.832351	0.0005
<i>D(GETC_POS)</i>	-0.044328	0.006548	-6.769989	0.0005
<i>D(GETC_POS(-1))</i>	-0.164045	0.024046	-6.822191	0.0005
<i>D(GETC_POS(-2))</i>	-0.147521	0.021679	-6.804679	0.0005
<i>D(GETC_NEG)</i>	0.208219	0.030303	6.871158	0.0005
<i>D(GETC_NEG(-1))</i>	-0.226842	0.032299	-7.023170	0.0004
<i>D(GTC_NEG(2))</i>	-0.069972	0.009320	-7.507363	0.0003
<i>D(GERC_POS)</i>	-0.022271	0.003416	-6.519856	0.0006
<i>D(GERC_POS(-1))</i>	0.098577	0.013977	7.052778	0.0004
<i>D(GERC_POS(-2))</i>	0.015378	0.002549	6.031834	0.0009
<i>D(GERC_NEG)</i>	-0.048593	0.007125	-6.819611	0.0005
<i>D(GERC_NEG(-1))</i>	-0.112764	0.016400	-6.876032	0.0005
<i>ECM(-1)</i>	-1.257681	0.181542	-6.927787	0.0004

Source: Author's computation using E views 10

Table 4 shows the results of the short-term asymmetric coefficients of the independent variables, with all the positive and negative responses statistically significant in explaining any change in RGDP in Nigeria. If all things are equal, a 1% increase in the current year of government agricultural expenditure increases RGDP by 0.01%, whereas a 1% increase in the previous year's value of government agricultural expenditure results in a 0.24% decrease in RGDP. Again, negative changes in government agricultural expenditure have a direct relationship with RGDP, implying that a decrease in the current year of government agricultural expenditure decreases RGDP by 0.35%. Our findings that increased agricultural spending promotes growth are consistent with the results of Aremu et al. (2020), but contradict those of Ugochukwu and Oruta (2021), who found an insignificant negative impact on economic growth. Conversely, positive shocks in other economic service expenditures have positive and significant impacts on economic growth. A 1% increase in other economic services expenditures raises RGDP by 0.4%, whereas a 1% increase in other economic services expenditures in the previous year increases RGDP by 0.02%, but a decrease in other economic services expenditures by 1% raises RGDP by approximately 0.02%, and a decrease in the lagged two values of other economic services expenditures also increases economic growth by 0.04%. In the same vein, a decrease in expenditures on other economic services of 1% results in a 0.025% increase in RGDP. A decrease in the previous year's other economic

services expenditure of 1% decreases RGDP by 0.14%. Additionally, a decrease in the lag two value of other economic services expenditures decreases RGDP by 0.04%. The results also show that an increase in transport and communication expenditures of 1% leads to a decrease in RGDP of 0.04%, whereas a 1% increase in the previous year decreases RGDP by 0.16%. This maybe as a result of paucity of funds and corruption bedeviling the sector and country at large. Furthermore, a decrease in the lag two values of transport and communication expenditures increases RGDP by 0.14%, whereas a decrease in the current year of transport and communication expenditures of 1% decreases RGDP by 0.20%. In the same vein, a decrease in the previous year and lag two values of transport and communication expenditures increase RGDP by 0.22% and 0.06% respectively. Our findings that increased transport and communication spending retards growth contradict those of Omokaro and Ikpere (2019) and Umeh et al. (2018), who found out that, transport and communication expenditures promote economic growth. The results also reveal that an increase in construction expenditure in the current year of 1% decreases RGDP by 0.02%. Our findings that increased construction spending retards growth are consistent with the results of Charles et al. (2018) and Ogunlana (2017), but contradict those of Ekiran and Olasehinde (2019), who found postive relationship between construction expenditures and economic growth. Additinally, an increase in road construction expenditure in the previous year and a lag of two values increase RGDP by 0.09% and 0.01%, respectively. Furthermore, a decrease in road construction expenditures in the current year and previous year increases GDP. This is because, the coefficient of GERC-NEG is also negative; thus, the two variables move in the same direction. This means that a 1% decrease in road construction expenditures in the current year and previous year increases GDP by 0.04% and 0.11%, respectively. Finally, the error correction mechanism $ECMt(-1)$ is negative and statistically significant, implying that, for every disequilibrium, in the long run, there will be convergence or correction toward equilibrium by 1.25%. This study is in line with those of Barla (2020), Duruibe et al. (2020) and Chinonye (2022) but contrasts with those of Callistar (2020), Adegboyo and Olaniyan (2021).

Diagnostic tests

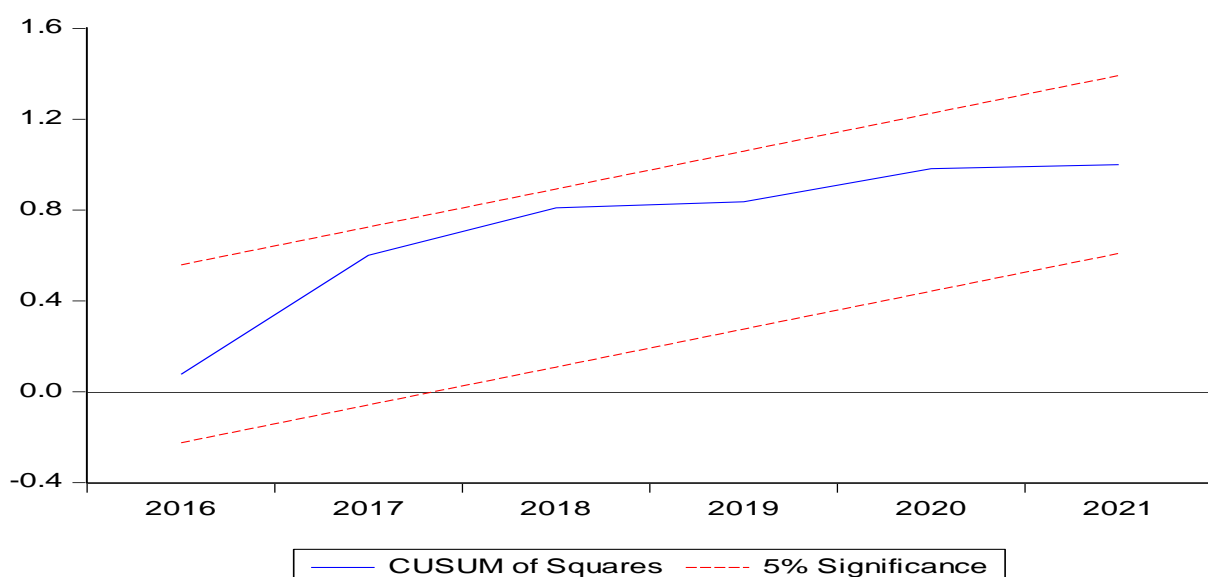


Figure 1: NARDL CUSUM-Squared Graph

Figure 1:- shows that the residuals of the estimated NARDL are stable, as the cumulative sum of squares plot lies in between the upper and lower 5 percent significance bounds.

Conclusion and Policy Recommendation

This study examined at the asymmetries between Nigeria's economic growth and expenditures on economic services from 1981-2022. The data were analysed via the asymmetry ARDL model, often referred to as the nonlinear autoregressive distributive lag NARDL model. The NARDL bounds test revealed that a long-run relationship exists between the dependent variable and the independent variables. A further finding was that positive changes in government agricultural expenditures, other economic services expenditures and road construction expenditures lead to significant increases in economic growth both in the short-run and long-run, whereas positive changes in expenditures on transport and communication retard economic growth both in the short - run and long run. In the same vein, negative changes in agricultural expenditures, other economic service expenditures and transport and communication increase economic growth both in the short - run and long – run, whereas negative changes in road construction expenditures hinder economic growth both in the short - run and long - run. The study therefore concludes that government expenditures on economic services promote economic growth in Nigeria.

The study recommends that policymakers should prioritize investments in agriculture and infrastructure to boost agricultural outputs and ease the transportation of agricultural produce which will lead to the flourishing of the economy, while reassessing expenditures in the transport sector, which appear to have counterintuitive effects on growth

The government should ensure that money budgeted to the sectors is utilized efficiently and effectively by reducing or eliminating institutional corruption.

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