



EMPIRICAL ANALYSIS OF THE IMPACT OF ROAD AND CONSTRUCTION CAPITAL EXPENDITURE ON ECONOMIC GROWTH: EVIDENCE FROM NIGERIA

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ABSTRACT: *This study examines the impact of road and construction capital expenditure on economic growth in Nigeria. The study covered the period of 1981 to 2020 and employed the Autoregressive Distributed Lag Model (ARDL) to analyze the annual time series data collected from National Bureau of Statistics, Budget and Central Bank of Nigeria Statistical Bulletin. While the data for road and construction capital expenditure were collected from NBS and Budget database, the data for gross domestic product and commercial banks' credit to the construction sector were obtained from CBN statistical Bulletin. The findings reveal that government capital expenditure on road and construction has a negative and statistically insignificant impact on economic growth in Nigeria. The result further shows that commercial banks' credit to the construction sector has a positive but statistically insignificant impact on economic growth in Nigeria. The study therefore recommends that the government should ensure that allocations to this sector are properly monitored in order to enhance economic growth. Government should also encourage banks to give more loans for infrastructural development by reducing the bank rate.*

KEYWORDS: Road, Construction, Capital Expenditure, Economic Growth, Domestic Product, Commercial Bank, Nigeria



INTRODUCTION

Government expenditure is essential for economic growth and development through the provision of roads, electricity, good education and health system, and portable water to mention but a few. The importance of the road and construction sector as an integral part of any economy cannot be overemphasized (International Monetary Fund [IMF], 2020). The road and construction sector serves as a means of job creation to millions of unskilled, semi-skilled and skilled workforce. It has strong linkages with other sectors of the economy as it lays the foundation for economic growth by providing the needed infrastructural facilities for growth to take place. Good roads tend to reduce the costs of production and save time of movement of goods and services (National Bureau of Statistics [NBS], 2020). According to Rostow (1959), government expenditure is essential for a nation to develop at any stage. Keynes (1936) also emphasized on the need to increase government expenditure to boost economic growth because putting the appropriate infrastructure into place will encourage investment both domestic and foreign. As a way of encouraging investment, redistributing income and ensuring equitable distribution of wealth, most developing and developed nations of the world usually spend judiciously on infrastructural facilities such as good roads (Jhingan, 2011). Road and construction capital expenditure can boost trade and facilitate smooth movement of goods and services from one place to another. Good road network encourages investment, reduces unemployment, brings about competition which would help reduce the prices of goods and services, and helps to stimulate economic growth (Rostow, 1959). Apart from the importance mentioned earlier, a good road network can also help to open up more areas for development.

In the United States, government expenditure as a share of GDP has increased since 2000 due to its importance in enhancing economic growth. Even the major recession that began in 2007 demanded an increase in government spending so as to stabilize the financial system. The contribution of increased government spending to GDP since 1980, averaged one-third of GDP (World Economic Outlook [WEO], 2014). For the advanced economies, the WEO (2014) found that every dollar spent on capital projects generates an economic return of 5 to 25 percent, which tends to stimulate growth and development across all sectors of the economy. Studies suggest that government capital spending matters for growth (IMF, 2018). However, the efficiency of public investment depends on how it is managed. In a study conducted by IMF (2020), it was revealed that about 30 percent of the potential benefits of public spending are lost due to inefficiency. Africa is a good example of the continent whose public expenditure is characterized by inefficient projects and flaws in the planning, allocation and execution stages (IMF, 2020).

In Nigeria, despite government expenditure on road and construction, there is still a huge infrastructural deficit in Nigeria which has affected so many businesses in their costs of production due to increase in distances covered in transporting raw materials to the company and also finished products to the consumers. The effect of these extra costs incurred has forced so many businesses to reduce production and some to stop production permanently which has hampered economic growth of Nigeria. The World Bank has estimated that Nigeria would need to invest \$3 trillion in infrastructure to reduce the infrastructure deficit in the country (International Trade Administration [ITA], 2021). The challenges of the road and construction sector are not only limited to bad and dilapidated roads, but also lack of adequate funding to provide better infrastructure, corruption, poor quality control and construction projects taking longer than planned. The budget allocation to the road and construction sub-sector was recorded as NGN26598.7 million in 1998 and NGN126.9 billion in 2008. Also in 2011 and



2020, it was recorded as NGN150.7 billion and NGN315.56 billion respectively. This figure is low compared to what other developed and some developing economies allocate to this sector (Central Bank of Nigeria [CBN], 2021).

One of the means of financing roads and construction is through commercial banks credit to construction since these projects are long term projects and require huge sums of money. So, opting for various sources of financing apart from government revenue would help in the construction of good roads. Thus, the commercial bank credits serves as one of the means through which sectors do get funds to finance developmental projects, which are capable of fostering economic growth. However, the meager and inconsistencies in the amount of credits made available to the construction sector contributed to the ineffectiveness of the sector in enhancing economic growth since the government usually runs a deficit budget over the years due to the shortfall of revenue over expenditure. The evidence from the Central Bank Statistical Bulletin (2021) shows that bank credit to the sector was NGN1.75 billion in 1981 and NGN5.41 billion in 1993. However, in 2015 and 2020, commercial banks gave NGN 531.74 and NGN 965.19 billion credits to the construction sector (CBN, 2021).

In the quest to ensure that expenditure on roads and construction are efficiently utilized in order to contribute maximally to the growth of businesses and the economy at large, a lot of policies and initiatives have been adopted by the government. Some of these initiatives and policies include the National Transport Policy of 2010 which was established to promote the road and construction sector. The Belt and Road Initiatives of 2018 was established to construct large hydropower plants, rail lines and deep seaports so as to catalyze the development of the nation through the road and construction sector. Bank reform policy was formulated to consolidate the capital base of banks while interest rate policy was introduced so that customers can get loans at fair interest rates. With all these policies in ensuring output growth, government capital expenditure on road and construction has also not translated into growth as the nation still experiences high unemployment and inflation rates which are as a result of low investments, insecurity, among others (Africa Development Bank Group [AFDB], 2020).

There have been mixed results on how government capital expenditure impacts economic growth in Nigeria. Researchers like Amadi and Alolote (2020), Omokaro and Ikpere (2019), and Ekiran and Olasehinde (2019) found that government capital expenditure on road and construction contributes positively to economic growth while the likes of Charles et al. (2018) and Ogunlana (2017) revealed that government capital expenditure on road and construction is inimical to the growth of any economy. It is against this backdrop that this study seeks to examine the impact of road and construction capital expenditure on economic growth in Nigeria. The study is structured into five sections. Section one provides the introduction to the study. Section two expresses the review of literature, while section three discusses the data and methodology adopted for the study. The findings of the study are expressed in section four while the conclusion and recommendations for the study are discussed in section five.



LITERATURE REVIEW

The relationship between government capital expenditure and economic growth has attracted the attention of scholars both globally and in Nigeria over the years. This section reviews some of the studies carried out by scholars to establish their claims. Amadi and Alolote (2020) studied the impact of government infrastructure expenditure on economic growth in Nigeria between 1981 and 2017. The study used weighted least squares method and the result showed that government spending on road and construction, transport and communication, education and health have significant impact on economic growth in Nigeria. Praise (2020) investigated the impact of sectoral allocation of bank credits on economic growth in Nigeria for the period of 1985 to 2019. The study used an error correction method of analysis and the result showed that bank credits to construction was positive to economic growth in Nigeria. This empirical work by Praise (2020) is relevant to this study because commercial banks credit is one of the variables of interest in this study. Oyebowale (2019) also carried out research on the impact of sectoral bank lending on economic growth in Nigeria. The study covered the period of 1961 to 2017 and ARDL-ECM method of analysis was utilized. It was however discovered in his findings, that bank lending to construction has positive as well as significant impact on economic growth in Nigeria. Omokaro and Ikpere (2019) employed multiple regression techniques on the impact of government expenditure on economic growth in Nigeria between 1989 and 2013. The study shows that expenditure on road and construction is positive and significant, while expenditure on transport and communication is positive but insignificant on economic growth in Nigeria.

Ekiran and Olasehinde (2019) studied the impact of infrastructure spending on economic growth in Nigeria. The study covered the period from 1981 to 2017, using vector autoregressive estimation technique. The result revealed that road and construction expenditure has a positive and significant impact on economic growth in Nigeria. Agbanike et al. (2018) used a seemingly unrelated regression (SUR) method of analysis to study the impact of bank lending on economic growth in Nigeria between 1981 and 2014. The study found that bank lending has a negative and insignificant impact on economic growth in Nigeria.

Charles et al. (2018) used Engle-Granger co-integration and Error Correction Mechanism to study the impact of government expenditure on road and construction, transport and communication in Nigeria from 1980 to 2016. The results show that both expenditures on road and construction and transport and communication exert a negative as well as insignificant impact on economic growth in Nigeria. Ogunlana (2017) empirically investigated the impact of government expenditure on economic growth from 1970 to 2015. The study used an error correction model and it was found that government capital expenditure on road and construction has a negative impact on economic growth in Nigeria.

Mugambi (2016) carried out research on the impact of road infrastructure investment on economic growth in Kenya. The scope of the study covered the period of 35 years, that is, 1980 to 2014 and the method of analysis employed was simple linear regression model. It was however found that both government and private spending on road infrastructure in Kenya have a positive impact on the growth of their economy. Longe and Omozuawo (2012) see spending on road and construction infrastructure as one of the fiscal tools of achieving speedy economic growth and then examine its impact on economic growth in Nigeria between 1980 and 2009. The study employed an error correction model as a method of analyzing the impact. From the



findings, it was found that expenditure on road and construction in Nigeria has a negative but significant impact on economic growth during the period covered by the study.

It has been revealed through the review of the empirical literature that no study ever included commercial banks credits to construction in examining the impact of road and construction capital expenditure vis-à-vis economic growth. The commercial bank credit to construction is another means of sourcing for funds to finance road construction since a huge amount of money is required to execute such projects. This study therefore filled the gap in the literature by including commercial banks credits to the construction sector as one of the variables to examine the impact of government capital expenditure on road and construction in Nigeria between 1981 and 2020.

METHODOLOGY

Model Specification

The Musgrave theory of public expenditure proposed by Richard Abel Musgrave in his book on public finance theory and practice in 1997 serves as the theoretical framework for this study. The relevance of the theory to this study is based on Musgrave's emphasis on efficiency on the implementation of public spending in promoting growth. As it is in Nigeria, the problem of inefficient implementation of public funds needs to be tackled in order to restore growth in the economy. This study's model is specified in line with the model of Omokaro and Ikpere (2019) with a little modification, to examine the impact of government capital expenditure on some selected components of the economic services' sector on economic growth in Nigeria. Omokaro and Ikpere (2019) included in their model, gross domestic product, government expenditure on transportation and communication and government expenditure on construction. The model is thus functionally specified as;

$$RGDP = f(ECON, ETC) \dots \dots \dots (3.1)$$

Where, RGDP = Real Gross Domestic Product, ECON = Government Expenditure on Construction, ETC = Government Expenditure on Transportation and Communication

The model of this study therefore modified the model of Omokaro and Ikpere (2019) to incorporate government capital expenditure on road and construction and bank credit to the construction sector. The reason for dropping some of the variables in Omokaro and Ikpere (2019)'s work is because this study deals specifically on the components of the road and construction sector. The functional form of this study's model is thus specified as;

$$GDP = f(RCEX, CBCC) \dots \dots \dots (3.2)$$

Where, GDP = Gross Domestic Product, RCEX = Government Capital Expenditure on Road and Construction, CBCC = Commercial Banks' Credit to construction sector. The econometric form of the model is written as;

$$GDP_t = \beta_0 + \beta_1 GDP_{t-1} + \beta_2 RCEX_{t-1} + \beta_3 CBCC_{t-1} + \mu_t \dots \dots \dots (3.3)$$

Where, GDP is Gross Domestic Product, proxy for economic growth, RCEX is Government Capital Expenditure on Road and Construction, CBCC is Commercial Banks' Credit to Construction sector, t-1 is the lagged value of the variables, μ is the stochastic error term which



explains other variables that cannot be captured in the model. $\beta_0, \beta_1, \beta_2, \beta_3$ are the slopes of the coefficients.

ARDL-UECM Equation

$$\Delta \text{GDP}_t = \beta_0 + \beta_1 \text{GDP}_{t-1} + \beta_2 \text{RCEX}_{t-1} + \beta_3 \text{CBCC}_{t-1} + \sum_{i=1}^q \beta_4 \Delta \ln \text{GDP}_{t-1} + \sum_{i=1}^q \beta_5 \Delta \ln \text{RCEX}_{t-1} + \sum_{i=1}^q \beta_6 \Delta \ln \text{CBCC}_{t-1} + \text{ØECM}_{t-1} + \mu_t$$

Data Source

The study examines the impact of road and construction capital expenditure on economic growth in Nigeria from 1981 to 2020. The data used for the study were sourced from the Central Bank of Nigeria Statistical Bulletin. The variables of concern include Gross Domestic Product (GDP), government capital expenditure on road and construction (RCEX) and commercial banks' credit to the construction sector (CBCC).

Techniques of Estimation

This study used the Autoregressive Distributed Lag (ARDL) model to examine the impact of government capital expenditure on roads and construction on economic growth in Nigeria. In order to ensure that the variables are stationary, Augmented Dickey-Fuller (ADF) unit root test was employed in order to have reliable results. The ARDL Bounds test for cointegration test was conducted to test for the long run relationship among the variables. This kind of cointegration test does not require that the variables exert the same order of integration. It can be applied when there are mixed orders of integration in the stationarity tests conducted. Thus, the decision rule for using long run elasticities based ARDL is that the value of the computed F-statistic must be greater than the upper bound. This shows that there is cointegration. On the other hand, the short run ARDL model can be applied if the value of computed F-statistics is lower than the lower bound.

RESULT PRESENTATION AND DISCUSSION

Descriptive Statistics

The descriptive statistics were carried out to know the mean, median, standard deviation, the skewness, kurtosis and normal distribution of the series.

**Table 1: Summary of Descriptive Statistics**

	GDP	CBCC	RCEX
Mean	4.511554	1.603424	0.920351
Median	4.417838	1.652968	0.884808
Maximum	4.857900	2.984613	2.173769
Minimum	4.209823	0.243038	-0.545765
Std. Dev.	0.228122	1.010262	0.930549
Skewness	0.313171	0.041607	-0.131480
Kurtosis	1.541725	1.337676	1.486207
Jarque-Bera	4.198117	4.617075	3.934527
Probability	0.122572	0.099407	0.139839
Sum	180.4622	64.13695	36.81402
Sum Sq. Dev.	2.029542	39.80458	33.77091
Observations	40	40	40

Source: *Eviews 10. Output*

Table 1 shows the detailed result of the descriptive statistics of the variables. The table shows that Gross Domestic Product (GDP) has the highest mean value of 4.5116, while the road and construction capital expenditure (RCEX) has the lowest mean value of 0.9204. The standard deviations of these variables shows values of 0.2281 for GDP, 0.9305 for RCEX and 1.0103 for commercial banks credits to the construction sector (CBCC). This implies that the variables show low variability. The estimated skewness shows that GDP and CBCC with the skewness values of 0.3132 and 0.0416 respectively, are positively skewed with a long right tail, while RCEX with the skewness value of -0.1315 is negatively skewed with a long left tail. The Kurtosis statistics for the variables show the values of 1.5417, 1.3377 and 1.4862 respectively. This means that the distribution is flat and falls below the threshold of 3. Thus, the variables, that is, GDP, CBCC and RCEX are platykurtic, relative to the normal. The Jarque-Bera statistic which determines whether the series are normally distributed or not shows the probability value of 0.1226 for GDP, 0.0994 for CBCC and 0.1398 for RCEX. This indicates that all the variables are normally distributed since their probability values are greater than 5 percent significance level. The decision rule is that, for a null hypothesis to be accepted (i.e. the residuals are normally distributed), the probability value for Jarque-Bera must be greater than 5 percent, if



otherwise, the null hypothesis must be rejected. However, the null hypothesis in this study is accepted and it is concluded that the residuals are normally distributed.

Test of Stationarity

This subsection deals with the test of unit root. Since time series data usually exhibit unit root, ADF unit root test was employed to test for stationarity. The result is thus presented in Table 2.

Table 2: Summary of the ADF Unit Root Test

Variables	ADF Statistics	Critical Value @5%	Order Integration	ofP-Value @5%	Remarks
GDP	-3.781973	-2.941145	I(1)	0.0065	Stationary
RCEX	-3.933774	-3.529758	I(0)	0.0198	Stationary
CBCC	-5.752842	-2.941145	I(1)	0.0000	Stationary

Source: *Eviews 10. Output*

Non-stationarity data usually exhibit spurious regression which may produce misleading results. In order to avoid this, a stationarity test, using Augmented-Dickey Fuller (ADF) test was employed. The result of the ADF test is presented in Table 2. The result of the ADF statistics shows that Gross Domestic Product (GDP) and Bank Credit to Construction Sector (CBCC) are stationary after the first difference, that is, integrated of order one I(1). While the Road and Construction Expenditure (RCEX) is stationary at level. This means RCEX is integrated of order zero I(0). The null hypothesis of the presence of unit root in the series is therefore rejected as indicated by the values of their calculated ADF test statistics, in absolute terms, are greater than their critical values at 5 percent level. Based on this, it is clear that the series are integrated of mixed orders, that is, order one and zero. Thus, the ARDL Bounds test is appropriate to determine the long run relationship among the variables.



Lag Length Selection

Table 3: VAR Lag Order Selection Criteria

VAR Lag Order Selection Criteria

Endogenous variables: GDP CBCC RCEX

Exogenous variables: C

Date: 09/16/22 Time: 20:09

Sample: 1981 2020

Included observations: 37

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-67.73616	NA	0.009187	3.823576	3.954191	3.869624
1	13.49903	144.9060*	0.000186*	0.081029*	0.441431*	0.103163*
2	19.40957	9.584669	0.000222	0.085969	1.000274	0.408304
3	25.23261	8.498492	0.000271	0.257697	1.563846	0.718175

* indicates lag order selected by the criterion

Source: *Eviews 10 Output*

From the result presented in Table 3, the appropriate lag length for this model is one, since all criteria for selecting optimum lag length choose one as the lag length. Thus, Akaike information criterion was used in this study.

Bounds Test for Cointegration

Cointegration analysis is necessary in time series data in order to determine whether there is a long run relationship or not. In this study, ARDL Bounds test was employed to check this relationship and the result is presented in Table 4.



Table 4: ARDL Bounds Test Result

ARDL Bounds Test

Date: 11/12/22 Time: 12:58

Sample: 1982 2020

Included observations: 39

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	K
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F-statistic	12.18766	2
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Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	3.17	4.14
5%	3.79	4.85
2.5%	4.41	5.52
1%	5.15	6.36

Source: Eviews**10. Output****Source: Eviews 10 Output**

The result of the ARDL test presented in Table 4 reveals that the value of F-statistics (12.18766) of the test is greater than the lower bound (3.79) and upper bound (4.85) at 5 percent level of significance. Thus, there is a long run relationship among the variables. This leads to the rejection of the null hypothesis which states that there is no long run relationship among the variables of the model. Based on this decision, the long run elasticities-based ARDL model was conducted since there is cointegration in the model.

Autoregressive Distributed Lag (ARDL) Model

The ARDL model is necessary in this study because there is a long run relationship among the variables. Thus, the results of the long and short run ARDL model are presented in Table 5.

**Table 5: ARDL Result****Long Run Estimates**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.320182	0.188412	1.699374	0.1065
GDP(-1)	0.932335	0.045620	20.43686	0.0000
RCEX(-1)	0.009846	0.014993	0.656699	0.5197
CBCC(-1)	-0.001810	0.006317	-0.286543	0.7777

Short Run Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.010671	0.005817	-1.834652	0.0852
D(GDP(-1))	1.443495	0.231633	6.231811	0.0000
D(RCEX(-1))	-0.009596	0.009504	-1.009658	0.3277
D(CBCC(-1))	0.002193	0.002828	0.775546	0.4493
ECM(-1)	-0.852894	0.225973	-3.774314	0.0006

R-squared	0.733146	Mean dependent var	0.023754
Adjusted R-squared	0.666432	S.D. dependent var	0.016009
S.E. of regression	0.009246	Akaike info criterion	-6.324955
Sum squared resid	0.001368	Schwarz criterion	-6.076259
Log likelihood	71.41203	Hannan-Quinn criter.	-6.270982
F-statistic	10.98947	Durbin-Watson stat	2.274043
Prob(F-statistic)	0.000177		

Source: Eviews 10 Output

The result of the long run ARDL model presented in Table 5 reveals that the coefficients of the lagged values of road and construction capital expenditure (RCEX) and commercial banks' credits to construction sector (CBCC) are 0.0098 and -0.0018 respectively. These imply that on average, 1 percent increase in RCEX will increase GDP by 0.0098 while the same 1 percent increase in CBCC will decrease GDP by 0.0018 percent. The findings further reveal that RCEX and CBCC are statistically insignificant as their p values which are 0.5197 and 0.7777 respectively are greater than the critical value at 5 percent level of significance.



In the short run, the coefficient of the lagged value of gross domestic product (GDP(-1)) is approximately 1.4435 and the p value is 0.0000. The implication is that a 1 percent increase in the value of GDP of the previous year will increase the current value of GDP by 1.44 per cent. The relationship is positive and statistically significant since the p value is less than 5 percent level of significance. This significant impact suggests that, during the period under study, the value of GDP which shows the economic well-being of a nation keeps improving year in year out. Similarly, the coefficient of the road and construction expenditure (RCEX) stands at -0.0096, meaning that, 1 percent increase in RCEX will decrease the gross domestic product by 0.0096 percent. The variable is also statistically insignificant with GDP as the p value is greater than 0.05 percent level of significance. This negative relationship indicates that the government expenditure on road and construction has not translated to the growth of the economy. This may be due to inadequate fund allocation to this sector or misappropriation/mismanagement of the allocated funds. Since road construction requires huge fund commitment, the government has resulted in borrowing to finance capital projects. The finding of this study does not conform to the a priori expectation because it is expected that any kobo spent on roads and construction should be able to bring about growth in the economy through various investments that would be encouraged. The study's findings however corroborate the findings of Charles et al. (2018) and Ogunlana (2017) who revealed in their studies that road and construction expenditure are negative and statistically insignificant to economic growth in Nigeria.

The coefficient of the lagged value of commercial banks' credits to the construction sector stands at 0.0022 with the p value of 0.4493. This result shows a positive relationship but statistically insignificant at 5 percent level of significance. This implies that a 1 percent increase in commercial banks' credits to the construction sector will increase gross domestic product by 0.0022 percent. This is expected because when banks give loans to a particular sector, judicious spending is expected and the multiplier effect of this would bring about growth in the economy as the proper and adequate infrastructures are provided. The findings conform to the a priori expectation and support the findings of Oyebowale (2019) and Praise (2020) who found a positive relationship between commercial banks credit to construction and economic growth in their study area.

Additionally, the coefficient of the error correcting term of -0.853 gives the expected sign and is also statistically significant since the p value (0.0006) is lower than the 5 percent significance level. This clearly shows that any disequilibrium in the previous years will be corrected for in the current year with the speed of about 85 percent. The R^2 which is the measure of goodness of fit is 0.7331 and it implies that about 73 per cent variation in gross domestic product is accounted for by government capital expenditure on road and construction and commercial banks' credits to the construction sector. The F-statistics of 10.99 indicates that the variables are jointly statistically significant at 5 percent level of significance. Judging from the prob(F-stat) which is 0.0002, indicates that the variables are statistically significant. The Durbin-Watson test of 2.2740 which is approximately 2 implies that the model is free from autocorrelation.

Post Estimation Diagnostic Tests

After estimating the parameters of this study's model, the necessary diagnostic tests were conducted. For this study, the heteroscedasticity and stability tests were conducted.



Table 6: Heteroscedasticity Test Result

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.839426	Prob. F(4,33)	0.5101
Obs*R-squared	3.509373	Prob. Chi-Square(4)	0.4765
Scaled explained SS	12.00627	Prob. Chi-Square(4)	0.0173

Source: *Eviews 10 Output*

The Breusch-Pagan-Godfrey heteroskedasticity test was used to test whether the mean and variance of this model are constant overtime. The result reveals that the mean and the variance of the model are constant, meaning, this model is homoscedastic, since the probability values for both F-statistic and Obs*R-squared is greater than 5 percent significance level. The null hypothesis is therefore accepted and it is concluded that there is no heteroscedasticity in the model.

CONCLUSION AND POLICY RECOMMENDATIONS

The study examines the impact of road and construction capital expenditure on economic growth in Nigeria for the period of 40 years, spanning between 1981 and 2020. The Autoregressive distributed lag model was employed based on the mixed order of integration that the study exhibits. From the findings of the study, it was found that in the long run, government capital expenditures on road and construction has a positive impact on economic growth in Nigeria, while the impact is negative in the short run. The study also reveals that commercial banks' credit to the construction sector has a negative impact on economic growth in the long run, while the impact is positive in the short run. This shows that commercial banks' credit to the construction sector in the short run is capable of providing the necessary infrastructures that can enhance output growth such as good and accessible roads among others. Based on these findings, the study therefore recommends the following.

- i. Since government capital expenditure on road and construction exerts a negative impact on economic growth in the short run, the government should ensure that allocations to this sector are increased, efficiently monitored and judiciously used to help contribute to output growth of the Nigerian economy. For the increase in government capital expenditure on road and construction to be attainable, the government should ensure that money paid by vehicle owners to obtain a driver's license is diverted to road construction only. This would go a long way in helping the government to construct more roads which would ensure easy connections and movement of goods and services.
- ii. The short run result of commercial banks' credit was found to be positive but statistically insignificant on output growth in Nigeria. Based on this finding, it is suggested that the government, through the apex bank, should encourage deposit money banks to give more loans for infrastructural development by reducing the bank rate. It is also suggested that the funds should be judiciously utilized in order to have a positive impact on economic growth in the long run.



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