# **Empirical Analysis on Impact of External Debt on Economic Growth in Nigeria**

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**Abstract:** This paper analyzes relationship between external debt and economic growth. Data collections are mainly secondary over the period of 1980 to 2010. The study hypothesized negative relationship between external debt; debt servicing and economic growth. Collected data were regressed using OLS technique and Augmented Dickey Fuller to test for the stationarity of the variables. Findings indicate a negative relationship between external debt and economic growth while that of debt servicing conforms with the apriori expectation of positive relationship. Hence, it is therefore recommended that Nigeria has to narrow down its international trade in order to save its balance of payment (BOP) to meet debt servicing needs of the country. The policy makers should also create credibility including political will in order to spur investor confidence for both local and foreign investments.

Keywords: External debt; debt servicing; economic growth; regression; Nigeria

JEL Classification: F35; 040; 055; C10

## 1. Introduction

It is essentially expected that developing countries facing scarcity of capital will acquire external debt to support domestic savings (Pattillo, et al (2002), Safdari & Mehriz, 2011). The rate at which they borrow abroad the "sustainable" level of foreign borrowing depends and links among foreign and domestic savings, investment, & economic growth. The main lesson of the standard "growth with debt" literature is that a country should borrow abroad as long as the capital thus acquired produces a rate of return that is higher than the cost of the foreign borrowing in that event, the borrowing country is increasing capacity & expanding output with the aid of foreign savings. Nigeria in her bid to fill up both the domestic gap and the foreign exchange gap, started contracting foreign loans soon after the independence in 1960 in order to achieve economic growth and national development with the ultimate target of increasing the living standard of the generality of the citizenry. (Ovat, et al, 2003). However, from the mid 1980s, a lot

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of external debt management policies such as the structural adjustment programme (SAP), debt rescheduling, debt servicing, debt cancellation, etc have been pursued vigorously by the Nigerian government with the sole aim of reducing the debt burden on the country. It is a liability represented by a financial instrument or other formal equivalent. In modern law, debt has no precisely fixed meaning and may be regarded essentially as that which one person legally own to another or an obligation that is enforceable by legal action to make payment of money. When a government borrows, the debt is a public debt. Public debts either internal or external are debts incurred by the government through borrowing in the domestic and international markets so as to finance domestic investment. Debts are classified into two i.e. reproductive debt and dead weight debt. When a loan is obtained to enable the state or nation to purchase some sort of assets, the debt is said to be reproductive e.g. Money borrowed for acquiring factories, electricity refineries etc. However, debt undertaken to finance wars and expenses on current expenditures are dead weight debts. Hence, drawing from all the aforementioned criteria for debt accumulation for developing countries, this study tends to critically examine the impact of external debt on economic growth in Nigeria.

#### 1.1. Statement of Problem

It is not exaggeration to claim that Nigeria's huge external debt burden was one of the had knots of the Structural Adjustment Program (SAP) introduced in 1986 by the Babangida administration. The high level of debt service payment prevented the country from embarking on larger volume of domestic investment, which would have enhanced growth and development. With the recent debt forgiveness granted to Nigeria, one would expect the economic process of the country to be improve but the trend of the debts increased coupled with the fact that much of the country's external debt is owed to fifteen creditor countries belonging to the Paris club, as a percentage of the total external debt. Nigeria's indebtedness to this group rose almost consistently from about 30% in 1983 to about 80% in 2001. This huge external debt constitutes a major impediment to the revitalization of its shattered economy as well as the alleviation of debilitating poverty. However, given the number of years, since Nigeria had been in debt and the substantial debt it had incurred, coupled with the existing institutions, one can claim that the entire spectrum of the economy has not been sufficiently active, especially when compared with the economy of similar or lesser aged developing countries. The main interest of this study then it is to investigate the effect of external debt on the economic growth in Nigeria.

## 1.2. Significance of the Study

The emphasis on economic and monetary integration among economic of the world may not be realized in face of rising external debt of developing countries including Nigeria. Even the current much talked about "Millennium Development Goals" may turn out to be an illusion if this fundamental problem of debt burden is not deal with properly. In order to justify further the critical importance given to external debt in Nigeria, the objective of this work is to examine empirically the relationship between external debt and economic growth and examine the impact of the level of debt servicing on economic growth using Nigerian data. This will be undertaken with a view to proffering some policy recommendation for both the private and public sector to improve on the ways in which external debt is put into developmental usage in Nigeria and by implication economic growth.

## 1.3 Statement of Hypothesis

## Hypothesis I

 $H_0$ : That the external debt has no significant impact on economic growth in Nigeria

H<sub>1</sub>: That the external debt has significant impact on economic growth in Nigeria

## Hypothesis II

H<sub>0</sub>: That the debt servicing has no significant impact on economic growth in Nigeria

H<sub>1</sub>: That the debt servicing has significant impact on economic growth in Nigeria

# 2. Literature Review

There are two major ways in which growth can be accounted for. The first being the dynamic competition model which maintains that growth arises from innovations made possible by the process of competition (Ellig, 2001). The second is the neoclassical model, which argues that growth results from expansion in the scale of investment (Solow, 1956). The latter becomes more appealing in view of the role of scale expansion on productivity growth and; growth that can be achieved through the former is limited to scale. According to the neoclassical, policy should focus on increasing savings and investment. The policy implication of the neoclassical growth theorists is that low-growth economies should save more to fund additional investment since increases in savings and investment caused economic growth (*Hunt*, 2007). Sachs (2002,), in his model, argues that growth will not take –off until capital stock has risen to a given threshold. As capital raises, an investment and output rise in a vicious circle, saving level will also continue to rise. After a given level, the rise is both capital and savings will be sufficient to engender self –sustaining growth.

Colaco (1985) explain debt service vulnerability in developing country using three contexts. First, the size of external loans has reached a level that is much larger than equity finance, resulting in an imbalance between debt and equity. Secondly, the proportion of debt at floating interest rate as rising dramatically so, borrowers are hit directly when interest rate rise. Thirdly, maturities have shortened considering in large part because of the decline share of official flows.

In sub-Saharan Africa, especially Nigeria, external debt from multilateral and bilateral donor organizations has over the years remained the sine-quo-non for filling of this resource gap. This resource gap is in three fold: the domestic saving gap, the foreign exchange gap: and the fiscal gap (resulting from budget deficit). In the savings constrained estimates, external finance is necessary to finance increased investment that otherwise will not be possible. The Harrod model is useful in determining the amount of foreign resources that will be necessary to realize the targeted growth rate in countries where domestic savings are far from adequate.

External debt no matter how low has service with difficulty by developing countries. Thus, the dark side of the coin in the borrowing-lending process comes in when debt Servicing difficulties arise. In addition, the fact the public external debt is concentrated in the public sector has had profound implications for adjustment. "The first and widely recognized problem is that of transferring national income (via trade surplus) to the foreign creditor. Thus, we can borrow externally to execute viable project. Iyoha (1997) in his work (the impact of external debt reduction on economic growth) concluded." In an ideal situation, a developing country would borrow to boost its investment and increase the rate of economic growth. Provided such funds are effectively utilized. The country may in fact succeed in boosting the rate of growth of its gross domestic product (GDP) and will be able to service its debt conveniently. In other words, foreign borrowing could contribute significantly to economic growth.

#### 2.1. Conceptual Issues

#### 2.1.1. Nigeria External Debt Creditors

Nigeria has contacted a number of debt obligations from eternal source. This could be grouped into two main categories – The official debt which consists of Paris club debt, multilateral debts and bilateral debts and private debt which is made up of uninsured short- term trade arrears contracted through the medium of bills for collection, open account, etc. commercial bank debts acquire through loans/letters of credit. Credits are in this case referred to London club debts.

 Much of the Country's external debt is owed to fifteen creditor countries belonging to the Paris club. Paris club debt is government to government credits or market- based term loans, which are guaranteed by various export credit agencies of the creditor countries. The Paris club is a cartel of creditor's countries that provide an information forum where countries experiencing difficulties in paying their official debt meet with creditors to reschedule the debts. It is an informal group with no permanent members, which works under principle of consensus. Paris club members, who Nigeria is indebted, are: Australia, U.S.A, Spain, Israel, France Switzerland, Germany, Demark, Italy, the Netherlands, Japan, the U.K, Belgium, Russia and Finland.

- These are projects loans owed to multilateral financial initiatives (e.g. the World Bank Group, the African Development Bank Group, European Investment Bank Group, IFAD and ECOWAS Fund) by federal or state governments and their agencies.
- The third category of debts is bilateral debt otherwise called Non- Paris
  club bilateral debt. These are debt owed to countries which are not
  members of the Paris club but whose debts are not insured by the export
  credit agencies.
- The fourth categories of debts are the commercial debts. They are further divided into two groups.

## 2.1.2. Nigeria External Debt Servicing

The major challenge faced by the debt management office is ensuring that a reasonable level of resources are earmarked for debt servicing to avoid the risk of default and to maintain conducive relations for debt relief negotiations with the creditors. Also, the DMO faces the challenge of ensuring that budget resources are release in time to effect debt service payment since much of Nigerian's debt stock build – up was accounted for by the capitalization of interest arrears and penalties for default. Debt service payments to the World Bank are due every 15 days while ADB (African Development Bank) service payments occur frequently. The debts are not subject to debt Relief or rescheduling and in case of default, they carry stiff consequences with sanctions coming 30 days after due date. The implications for default include.

- Prohibition of borrower/guarantor from signing new loan or guarantee agreement with the background;
- Suspension of disbursement in respect of all Bank group loans granted to the borrower/guarantor and lastly, and

 Suspension of the granting of any new loans by the Bank group to the borrower/guarantor. The impositions of the above sanctions adversely affect the credit – worthiness of a country as well as access to further foreign credits or loans. It is therefore to be avoided by all means.

However, the implications for default to various creditors are discussed below:

- Paris club: Failure of our debt service obligation will undermine Nigerian's effort to obtain substantive debt relief over the medium term coupled with the inability to benefit from normal credit facilities as Export credit agencies in Paris club creditor countries in default of debt service payment. Also business and government agencies from such debtor countries seeking to import goods and services are required to pay the full 100% upfront, even against deliveries that will take several months and at times years.
- **Bilateral:** Defaulters in this category incur penalty charges in the form of late interest, which are usually about 1-3% above the normal interest charged.
- London Club: The consequences of defaulting are stiff as the instruments
  carry legal obligations e.g. If par bonds on promissory notes payment is not
  received as at when due, creditors could acquire the assets of the Central
  Bank of Nigeria CBN and Nigerian National Petroleum Corporation
  NNPC anywhere in the world, as Nigeria has expressly waived her
  sovereign immunity under the terms of the agreement.

#### 2.1.3. Nigerian External Debt Rescheduling and Restructuring

Debt Rescheduling involves the postponement, extension and re-orderings of the repayment of the existing debt. An agreement between creditors (government authorities and the commercial banks acting as a group) and the debtor to roll over payment due to the former from the later over a certain period and under new terms and conditions falls under either debt rescheduling or refinancing. This involves the provision of new money to replace maturing debt. The four elements of loan restructuring are:

• Rescheduling of the principal of a part all of an existing loan by postponing repayment i.e. rearranging maturities and grace periods involves the rescheduling of the interest payments;

- Refinancing of an existing loan by raising fresh or complementary fund to meet existing obligation that is making provision for new credit's with proceeds to be used to repay outstanding loans;
- Restoring of trade –related bank credit lines, and
- Persuading the financial community to restore inter-banks lines of credit to a certain minimum level.

## 2.1.4. Causes of Nigeria's Debt Problems

The causes of Nigeria debt problem include endogenous and exogenous factors. It should be noted that external factors which the Nigerian authorities have no control over complicated the inherent weakness in both structure and management of the Nigerian economy to impose a severe debt problem on the country. A major defect of the Nigerian economy is the heavy dependence on the export of major petroleum products. In 1980, the oil sector, which accounted for over 22% of GDP, provided about 80% of government revenue and over 96% of export earnings. These features are still very much the same today. In addition, the dependence of the economy on foreign countries for consumer goods as well as the finance required for the prosecution of development programmes, made the economy vulnerable to external shocks. The collapse of crude oil prices in 1982 is a case in point. When the debt crises surfaced, the desperately needed foreign loan to tidy over dried up. At this point, Nigeria's credit worthiness had been heavily bartered. "On the domestic front, some of the debt problems can be traced to excessive reliance on external debt and inappropriate fiscal, monetary and external debt politics. Some borrow funds have been used 10 finance prestigious projects or allegedly diverted to unintended uses" Sanusi (1988).

## 2.1.5. Consequences of Nigeria's Mounting External Debt

Nigeria's high debt burden has grave consequences for the economy and the welfare of the people. The servicing of the external debt has severely encroached on resources available for socio-economic development and poverty alteration. Although since 1986, Nigeria had taken a decision to limit debt service to no more than 30 percent of oil receipts; this has not brought much relief. Between 1985 and 2001, Nigeria spent 'over US\$ 32 billion on servicing external debt. Prior to the recent rescheduling arrangement with the Paris club, creditors annual debt service payment due were in the range of US\$ 3.0 billion to US\$ 3.5 billion.

Due to Nigeria's problem with servicing of her debts, Export credit Guarantee Agencies (ECGAS) Suspended insurance cover for exports for goods and services as well as investment capital to the Country. Consequently, the much needed inflow of foreign resources for investment stimulation, growth and employment has been hampered. Without credit cover, Nigerian importers are required to

provide 100% cash covers for all orders and this therefore place them to a competitive disadvantage compared to their counterpart elsewhere. The situation exacerbates the pains of external burden as it blocks off the relief that would have been received through speedy economic recovery, growth and development.

## 3. Research Methodology

## 3.1. Sources of Data and Model Specification

Data for the study are obtained from secondary sources such as the Statistical Bulletin of the Central Bank of Nigeria (CBN) for various editions, and the Debt Management Office (DMO). This study is empirically examining the effect of external debt on economic growth in Nigeria for the period 1970- 2010. First of all, the problem of stationary has been solved through employing the unit root test. Augmented Dickey-Fuller (ADF) test is carried out to test for the stationarity of the variables. In implementing ADF unit root test, each variable is regressed on a constant, a linear deterministic trend, a lagged dependent variable and q lags of its first difference. The ADF test for unit root tests the null hypothesis Ho: p = 0 against the one-sided alternative H1: p < 0 in equation above. The optimal lag length for conducting ADF tests is usually picked with the help of various information criteria. Thus, the model for external debt and economic growth relationship follows the specification of Greene, J. (1989) that based their empirical model specification on the Gravity growth model. Through the use of Ordinary Least Square Method, the model has the specified thus:

 $LOG GDP = \alpha_{0+}LOG \beta_{1}ED_{+}LOG \beta_{2} DS_{+}\mu$ 

Where:

 $\alpha_{\rm o}$  = Autonomous incomes

 $\beta_1$  and  $\beta_2$  are parameters

GDP= Gross Domestic product

ED= External Debt

DS= Debt Servicing

 $\mu = Error Term$ 

## 3.2. A Priori Expectation

It is clear that  $\beta_0$  should be positive ( $\beta_0 > 0$ ) as there can be no negative value for GDP.  $\beta_1 < 0$ ; a change in external debt will lead to change in GDP and  $\beta_2 < 0$ ; a change in debt servicing will lead to a change in GDP

## 4. Presentation and Interpretation of Findings

#### 4.1. Descriptive Statistics

The summary of the statistics used in this empirical study is presented in Table 1 above. As can be observed from the table, the mean value of GDP is 12.88667, External debt is 10.94714 and Debt servicing is 9.029339. It is also observed that LNGDP, LNEDEBT and LNDESER are positively skewed. The kurtosis value is positively low and Jarque-Bera (J-B) statistic test value is relatively high. These suggest that the three series are skewed to the right .Whereas all the values are pletokurtic because their kurtosis value are below three.

**Table 1 Showing the Summary of Descriptive Statistics** 

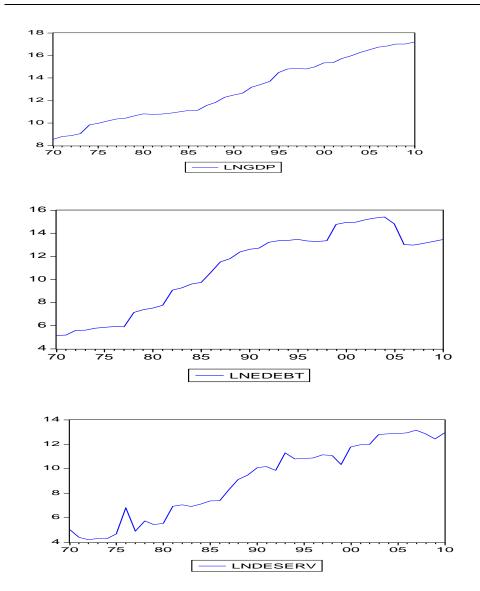
	LNGDP	LNEDEBT	LNDESER
Mean	12.88667	10.94714	9.029339
Median	12.49706	12.60691	9.873042
Maximum	17.18988	15.40276	13.14538
Minimum	8.571890	5.164786	4.209309
Std. Dev.	2.715625	3.458408	3.063122
Skewness	0.129536	-0.457252	-0.209671
Kurtosis	1.649824	1.715038	1.595103
Jarque-Bera	3.228912	4.249383	3.672204
Probability	0.198999	0.119470	0.159438
OBS	41	41	41

Source: Author's Computation

Note: the table is the summary statistics for LNGDP, LNEDEBT and LNDESER

## 4.2. Trend Analysis

Figure 1 below depicts the graphical illustrations showing trend analysis of data that were used in this study. The figure reveals that GDP witnessed significant increase within the period of our study.



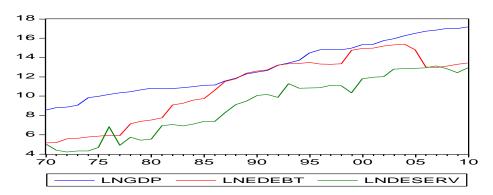


Figure 1. Graphical illustration of statistics used in the analysis

#### 4.3. Result of Unit Root Test

Time series properties of all variables used in estimation were examined in order to obtain reliable results. Thus, this exercise was carried out through Augmented Dickey Fuller (ADF) test as articulated by Engel and Granger (1987). In this analysis, constant model was considered. The null hypothesis in the ADF is that there is the presence of unit root. Table 2 report the results of ADF, respectively.

**Table 2. Stationary Test Result** 

Variables	At Level		At First Difference		
	ADF Values	Mackinnon Critical Values	ADF Values	Mackinnon Critical Values	Order of Integration
LNGDP	-0.229023	-3.605593	-5.444020*	-3.610453	I(1)
LNEDEBT	-1.762375	-3.605593	-4.756727*	-3.610453	I(1)
LNDESER	-0.843586	-3.610453	-9.300343*	-3.610453	I(1)

Source: Author's Computation

NOTE: One, two and three asterisk denotes rejection of the null hypothesis at 1%, 5%, and 10% respectively based on Mackinnon Critical Values.

The unit root test is conducted on the variables used in this study in other to avoid a spurious regression. From the above results, it shows that the data are not stationary at level form since the critical values are high when compare to the ADF statistics and probability value is very high indicating that it is not statistically

significant at all significance levels. Moreover, the variables became integrated of order one at first difference considering the low probability value and critical values that are significant at 1%, 5% and 10% when compare to the ADF test statistics.

The above result show that LNGDP, LNEDEBT and LNDESER are non stationary series at level form but became an I(1) series after first differencing. This implies the above Augmented Dickey Fuller (ADF) tests suggest that LNGDP, LNEDEBT and LNDESER are of the same order of integration.

## 4.4. Result of OLS Regression

This approach involves the estimation of static OLS regression which captures any possible long run relationship between LNGDP, LNEDEBT and LNDESER. The OLS regression model is specify as follows;

Log GDP= $a+\beta_1$  log EDEBT+  $\beta_2$  DESER +  $\mu_t$ 

Where,

GDP = GDP at current price

EDEBT=External debt

DESER=Debt servicing

 $\beta_2$  = Model parameters

 $\mu_t = Error term$ 

 $\beta$  = Intercept of the equation

 $\beta_1$  and  $\beta_2$  are coefficients of EDEBT and DESER.

Table 3. OLS Result

Dependent Variable: LNGDP							
Method: Least Squares							
Variable	Coefficient	Std.Error	t- Statistic	Prob			
С	5.340264	0.369733	14.44358	0.0000			
LNEDEBT	-0.142753	0.100346	-4.422610	0.0030			
LNDESERV	0.018838	0.113295	8.904540	0.0000			
$R^2 = 0.936077$							
Adjusted $R^2 = 0.932713$ DurbinWatson:1.960327							

*Note: Model:*  $LOG GDP = \alpha_{0} + LOG \beta_{1}ED + LOG \beta_{2} DS + \mu$ 

## 4.4.1. Discussion of findings from OLS Result

Log GDP = 5.340264 - log 0.142753 + log 0.018838

S.E = (0.369733) (0.100346) (0.113295)

The analysis on the impact of external debt on GDP growth is presented in the table above. The results obtained from the dynamic model indicate that the overall coefficient of determination (R<sup>2</sup>) shows that the equation has a good fit with 0.936077 meaning that 93% change in the dependent variable (GDP) is caused by the independent variable (EDEBT and DESER). The higher the R<sup>2</sup>, the higher the goodness of fit the higher the reliability of the model.

As the adjusted  $(R^2)$  tends to purge the influence of the number of included explanatory variables, the  $(R^2)$  of 0.932713 shows that having removed the influence of the explanatory variables, the model is still of good fit, hence, in terms of the goodness of fit we can say that the test is fair.

The Durbin Watson (D.W) statistics of 1.96 as it is significantly within the bench mark, we can conclude that there is no auto- correlation or serial correlation in the model specification.

The prob. (F- statistic) shows that the model is significant at 1%, 5%, and 10%.

The t-test values of the parameters estimates could be deduced from the computed regression result in the table above. The results confirm that growth of GDP in Nigeria has an automatic mechanism and that GDP growth in Nigeria responds to deviations from equilibrium in a balancing manner. As for the effect of external debt on economic growth, although sound government policy is crucial, there seems to be a growing consensus that consistent and increasing government presence in an economy can hinder economic growth, especially in developing countries

## 5. Summary, Conclusion and Recommendations of the Study

#### 5.1 Summary of Major Findings

This research work has sought to analyze the effect of external debt on economic growth in Nigeria using annual data over the period 1970 to 2010. This research analysis drew upon the Ordinary Least Square Method (OLS) approach to estimate these relationships which was found to be appropriate with the use of Augmented Dickey Fuller (ADF) to test for the stationary nature of the data. The neoclassical assumption of foreign capital for third world development motivated Nigeria to contract foreign loans to fill both the domestic saving and the foreign exchange gap in its quest for economic development. The paper identified that initially external debt did not pose a serious threat to national development but beginning from the

1980s, growth in external debt and huge debt service obligations, coupled with the dwindling exports earnings culminated in what is now regarded as Nigeria's external debt crisis. External debt started impacting positively on economic growth thereby conforming to the postulation of later theories. The paper traced crisis and management strategy of Nigeria's external debt. Despite the interesting results, it is obvious that the economy is fragile and ill–prepared for the stress of external debt.

## 5.2. Conclusion and Policy Implications

The primary objective of the study was to analyze the effect of external debt on economic growth in Nigeria. Nigeria has relied much on foreign debt to finance its balance of payments deficit and saving investment gap. This heavily dependence on external resources became uncontrollable in late 1980s. It is assumed that external debt can help the developing countries to meet developing needs of those countries. But external debt did not contribute its due role in case of Nigeria. This was due to mismanagement of the external debt. Now the external debt has become one of the major hurdles in the economic development of the country. The country has to spend his major portion of its Balance of Payments to serve its external debt. Nigeria has to agree upon many unfavorable conditions posed by IMF and World Bank. Nigeria has to narrow down its international trade because the country has to save its BOP to meet debt servicing needs of the country. Primary objective of external debt in case of Nigeria was to boost development activities. This could also be financed through increased export earnings spearheaded by an export-led growth strategy.

Availability of external finance should be consistent with a policy framework that is credibly maintained (fiscal stance, exchange rate policy, interest rate policy, pricing policy, etc). The policy makers should create credibility including political will in order to spur investor confidence for both local and foreign investments. Nigeria is facing many problems like political instability, terrorism etc because of which the country has lost its confidence for investors. The need of the day is to rebuild that confidence so that the investor may invest in the country and the country can get rid of heavy reliance on external debt. Nigeria still has a chance of overcoming its external debt problems by cultivating the right policies, but will need considerable support through debt relief/reduction initiatives.

#### **5.3** Suggestion for Further Research

This article studies the development of the Gross Domestic Product (GDP). This may not be generally adequate and applicable other development indices like the gross capital formation per capital since (CPI) could be used. The study also relied heavily on the ordinary least square (OLS) estimator to carry out the analysis.

Further study may adopt higher econometric techniques for analysis like the three—stage least squares among others. It also needful to state that this study was limited by the non-availability or, and inconsistency in most of the required data besides funds constraints.

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