

## **Financing Growth or Fueling Burden? The Economic Consequences of Nigeria's External Borrowing**

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### **Abstract**

*This study investigates the impact of external borrowing on economic growth in Nigeria over the period 1981–2018, employing the Vector Error Correction Model (VECM) to analyze the long-run and short-run dynamics among key macroeconomic variables. The research tests three hypotheses relating to the effects of external debt, external debt service payments, and domestic investment on Nigeria's gross domestic product (GDP). Empirical results reveal that both external debt and external debt service payments exert a statistically significant negative impact on economic growth, indicating that increased borrowing and rising debt servicing obligations have constrained Nigeria's economic performance. Conversely, domestic investment exhibits a positive but statistically insignificant influence on growth. The study attributes the negative outcomes to the misallocation of borrowed funds, particularly their use in financing recurrent expenditures rather than capital investments. It concludes that while external borrowing can potentially foster economic growth, its effectiveness depends on transparent management, strategic utilization, and alignment with productive, growth-enhancing sectors. Policy recommendations include enforcing borrowing limits, improving debt monitoring, promoting economic diversification, and ensuring that loans are directed toward infrastructure and human capital development to achieve sustainable growth.*

**Keywords:** *External Debt, Economic Growth, Debt Servicing, Domestic Investment, Public Finance, Debt Management, Nigeria.*

### **Introduction**

External borrowing is an important source of finance mainly used to supplement the domestic sources of funds for supporting development and other needs of a country (Noko, 2016). Usually, external borrowing is incurred by a country which suffers from shortages of domestic savings and foreign exchange needed to achieve its developmental and other national objectives (Ejigayehu, 2013).

However, if the external debt is not used in income-generating and productive activities, the ability of a debtor nation to repay the debt is significantly reduced. It is often argued that the excessive debt constitutes an obstacle to sustainable economic growth and poverty reduction of a nation (Berensmann, 2004). No nation can live in isolation of each other; in other words, every country depends on financial assistance from other countries at every point in time to enable the execution of her projects. In other to do this, borrowing from the neighbouring countries becomes very imperative to achieve the set down macroeconomic goals (Emori, 2015).

Arnone (2005) defined Nigeria external debt as that portion of a country's debt that is acquired from foreign sources such as foreign corporations, government or financial institutions. According to Ogbeifin (2007), external debt arises as a result of the gap between

domestic savings and investment. As the gap widens, debt accumulates and this makes the country to continually borrow increasing amounts in order to stay afloat. He further defined Nigeria's external debt as the debt owed by the public and private sectors of the Nigerian economy to non-residents and citizens that is payable in foreign currency, goods and services. Nigeria like other developing countries had faced domestic financial constraint; this constraint has made external debt an essential complement to domestic resources for promoting sustainable economic growth among these developing countries. This is possible if the economic benefits from such projects are larger than the interest paid on the debt servicing (Obadan, 2004). External debt is a major source of public receipts, the accumulation of external debt should not signify slow economic growth of the borrowing countries as could be observed in most developing nations.

The motive behind external debt is due to the fact that countries especially the developing ones lack sufficient internal financial resources and this calls for the need for external borrowing (Bilginoglu & Aysu, 2008). Governments borrow to fill the vacuum created by the fiscal gaps in the proposed expenditure and expected revenue within a fiscal period. If government does not want to compromise macroeconomic stability by printing more money and if government's taxation capability is limited, then debt option becomes the only available avenue that the government can explore to provide social overhead capital for the citizenry (Ibi & Aganyi, 2015). Governments borrow in principle to finance public goods which increase welfare and promote economic growth. Government spending generally has to be financed either through taxation, seigniorage (money printing), or with debt.

Furthermore, the debt management strategy in Nigeria shifted and focused on borrowing from the domestic sources to borrowing from external source. External borrowing has mainly been from concessional windows (Nwankwo, 2013). In 1981, Nigeria's external debt was \$11.4 billion why in June ending 2012 the external debt of the country stood at US\$ 6.035 billion or 2.43 percent of GDP, with the multilateral debts constituting the bulk of 82.02 percent of the external debt. Fast forward to 2016 Nigeria external Debt stood at \$31.41 billion, by the year ending 2017, Nigeria external debt stood at \$40.96 billion. Nigeria's debt profile rose to \$68.74 billion in the first quarter of 2019. Nigeria's debt profile rose by 2.3% to \$68.74 billion (N24. 947 trillion) as at March 2019, according to the Debt Management Office (DMO). Nevertheless, Nigeria has also made series of attempt to structure her debt through a process of selling foreign debts at reduced prices in the secondary market. It is worth-while to determine whether external debt will be a vehicle to propel economic growth and development in Nigeria

According to Omoleye, Sharma, Ngussam, and Ezeonu (2006), Nigeria is the largest debtor nation in the Sub-Saharan Africa. The genesis of Nigeria's external debt can be traced to 1958 when 28 million US dollars was contracted from the World Bank for railway construction. Between 1958 and 1977, the need for external debt was on the low side. However, due to the fall in oil prices in 1978 which exerted a negative influence on government finances, it became necessary to borrow to correct balance of payment difficulties and finance projects. The first major borrowing of one billion US dollars referred to as Jumbo loan was contracted from the international capital market (ICM) in 1978 increasing the total to 2.2 billion U.S dollars (Adesola, 2009).

A number of interrelated factors contributed to the rise in Nigeria external debt including macroeconomic policy, increases in the price of a number of primary commodities encouraging countries to borrow, low real interest rates and a favourable world environment.

Unfortunately, the favourable conditions were short-lived and when they did change over the 1980s, heavily indebted countries experienced difficulty in servicing their debt (Noko, 2016). Therefore, huge external debt does not necessarily imply a slow economic growth; it is a nation's inability to meet its debt service payments fueled by inadequate knowledge on the nature, structure and magnitude of the debt in question (Were, 2001). It is no exaggeration that this is the major challenge faced by most developing countries, Nigeria inclusive. The inabilities of the Nigerian economy to effectively address its debt servicing requirements have exposed the nation to a high debt service burden.

Generally, the indebtedness of the country becomes a problem when burden of servicing the debt becomes so heavy and unbearable that it imposes intolerable constraints on the economy and the development efforts of the authorities. The causes of Nigeria's external debt problem is related to the nature of her economy this has to do with the country's over-reliant on foreign goods as against locally produced goods. It's vital to note that over the years that the Nigeria government has contracted large stocks of external debt and yet the question still begging for answer is; why the external borrowings have not propelled the vehicle of growth of the economy? Therefore, the main interest of this research study is to investigate the implication of external debt on economic growth of Nigeria with an attempt to examine the causes and effects of external debt on macro-economic performance in Nigeria.

## **LITERATURE REVIEW**

### **Conceptual Clarification**

This section will review literatures on external borrowing and its implication on Nigeria economic growth. Specifically, theories on external debts will be reviewed and empirical findings will also be reviewed to ascertain the depth of research that has been carried in the subject of discussion. Most economists especially those in the third world countries, have at one time or the other experienced a shortfall between domestic savings and the desired level of investment. External borrowings have often been relied upon in order to fill such gaps. However, if such loans are not properly monitored, the problem of sourcing them ensures and invariably leads to the problem of debt overhang. For example, short-term borrowing for the financing of long-term project is a mismatch. Many third World countries which engage in borrowing to fill the saving investment gap ended up having the dual problem of debt serving burden and debt overhang.

External debt (or foreign debt) is that part of the total debt in a country that is owed to creditors outside the country. The debtors can be the government, corporations or private households. The debt includes money owed to private commercial banks, other governments, or international financial institutions such as the International Monetary Fund (IMF) and World Bank. Note that the use of gross liability figures greatly distorts the ratio for countries which contain major money centres, e.g. United Kingdom, because of London's role as a major money centre. According to Onuchukwu and Agiobbendbo (2000) external debt can be seen as money owed to foreigners; servicing and payment of actual principal are made in foreign currencies. This payment on foreign debt automatically becomes a source of capital outflow. Huge external debt has an adverse effect on the macroeconomics environment.

According to Oyejide (2004) external debt is defined as the money or resources used in an organization that is not contributed by its owner and does not in any other way belong to them. It is a liability represented by a financial instrument or other formal equivalent.

External debt therefore refers to the resources of money in use in a country that is not generated internally and does not in any way come from local citizens whether corporate or individual. The World Bank (1998) described external debt as the amount of money at any given time disbursed and outstanding contractual liabilities of residents to pay interest, with or without principal. The liabilities which fall within this core definition include currency and transferable deposits, other deposits, short term bills and bonds (Noko, 2016).

Hope (2005) argues that debt is not a bad thing rather it can be proved to be very beneficial. For a developing country like Nigeria, the issue of debt can be crucial to its development for one thing. A developing country that is committed to an objective of rapid economic growth and industrialization would experience increasing demand for goods and services and the need for investment from advanced countries. Domestic savings are sufficient to import the needed capital goods for development (Emori, 2015). This is why external borrowing becomes necessary in order to maintain a fairly steady rate of economic growth. It was against this background that the need for external finance in the form of foreign loans appears unquestionable in our economy.

Countries experiencing fiscal deficits, especially the developing ones borrow to improve their economic growth. Government borrows in principle to finance public goods that increase welfare and promote economic growth (Ogunmuyiwa, 2011). Due to the fact that the domestic financial resources are not adequate, borrowing is acquired from foreign sources. The amount of fund provided by these foreign sources constitutes the external debt of a nation. In Nigeria, external debt is sourced from multilateral agencies, Paris club creditors, London club creditors, Promissory Note holders and other creditors. External debt is one of the sources of financing capital formation in any country (Ayadi, 2008).

### **Theoretical Literature**

In order to assess the significance of the level of government resources and foreign resources, as well as domestic savings, on the growth path of output and investment, in this section a structural three-gap model of growth along the lines suggested by Fanelli, Frenkel and Winograd (1987), Bacha (1990) and Taylor (1991) is specified and estimated.

The three-gap model provides a general framework by which to assess the role and significance of domestic private and public sector saving, as well as foreign saving, on the growth path of output and investment. The three-gap model explicitly considers the interaction between capacity expansion and capacity utilization, a specification which may be more suitable where the full utilization of existing capacity is constrained by the kinds of structural bottlenecks. Finally, the three-gap model has minimal data requirements for both estimation and simulation. These three features make the three-gap model a more suitable means of understanding macroeconomic growth processes than that provided by other open economy macroeconomic models. Granted, the three-gap model is a highly aggregated one-sector growth model in which price variations, including exchange rate variations, are not explicitly incorporated. Although it is possible to incorporate absolute prices into the three-gap model (Solimano, 1993), it is not yet possible to incorporate relative prices. This obvious limitation of the three-gap model should however be weighed against the already-mentioned benefits of the model. At the same time, the use of the three-gap model for understanding economies under adjustment is limited by the assumption that the structure of the economy is

not changing. It should be noted though that this shortcoming is not particular to the three-gap model; most open economy macroeconomic models suffer from the same shortcoming.

**Table 1: Three Gap**

Real output:	$X = GDP + M_k$	(1)
Capacity utilization:	$u = X/Q$	(2)
Growth rate:	$g = g_0 + \alpha i$ $\alpha g_0; \alpha > 0$	(3)
Equilibrium:	$i = s$	(4)
Total investment:	$i = i_p + i_g$	(5)
Total saving:	$s = s_p + s_g + s_f$	(6)
Private investment:	$i_p = i_0 + \alpha i_g + \alpha u$ $\alpha \alpha; \alpha > 0$	(7)
Private saving:	$s_p = \alpha_0 + \alpha_1 u$ $\alpha \alpha_0; 0 < \alpha_1 < 1$	(8)
Public sector saving:	$s_g = Z - \alpha j^*$ $0 < \alpha < 1$	(9)
Fiscal effort:	$Z = Z_0 + Z_1 u$ $\alpha Z_0; Z_1 > 0$	(10)
Public sector borrowing requirements:		
	$\alpha u = i_g - s_g$	(11)
Intermediate imports:	$m_k = a_0 + a_1 u$ $\alpha a_0; 0 < a_1 < 1$	(12)
Capital goods imports:	$m_z = m_0 + m_1 i$ $\alpha m_0; 0 < m_1 < 1$	(13)
Foreign saving:	$s_f = m + m_k + m_z + j^* - e = \alpha = \alpha g + r$	(14)
<u>Three Gap Equations:</u>		
Growth-investment equation:	$i_g = [1/(1 + \alpha)][(g - g_0)/\alpha - (i_0 + \alpha u)]$	(15)
Savings gap:	$(1 + \alpha) i_g - (\alpha_1 + Z_1 - \alpha) u = Z_0 - \alpha j^* + \alpha_0 + \alpha - i_0$	(16)
Foreign exchange gap:	$m_1(1 + \alpha) i_g + [a_1 + m_1 \alpha] u = \alpha - m - j^* - m_0 - m_1 i_0 - a_0 + e$	(17)
Fiscal gap:	$i_g - (\alpha + Z_1) u = Z_0 - \alpha j^*$	(18)

The three-gap model extends the two-gap model of Chenery and Strout (1966) by introducing a fiscal constraint alongside the existing gaps in domestic savings and foreign exchange. It emphasizes that economic growth in developing countries is not solely limited by savings and foreign exchange availability, but also by public investment capacity, which is frequently



hindered by limited fiscal space. In economies with underdeveloped financial markets, public investment is primarily financed through foreign borrowing, budget surpluses, or inflation, each carrying its own constraints and implications.

The model captures the dynamic interaction between investment, savings, and resource availability using a series of structural equations. Key variables such as real output ( $X$ ), capacity utilization ( $u$ ), and the growth rate ( $g$ ) are central to the framework. The level of capacity utilization becomes especially important because many developing countries operate below potential output due to shortages of foreign exchange and structural inefficiencies. Output growth is modeled after the Harrod-Domar framework, with growth being a linear function of the investment rate, modulated by the incremental capital-output ratio ( $\kappa$ ) and an exogenous growth factor ( $g_0$ ). Investment equals total savings in equilibrium, where total investment ( $i$ ) is the sum of private ( $i_p$ ) and public ( $i_g$ ) investments, and total savings ( $s$ ) includes private savings ( $s_p$ ), public sector savings ( $s_g$ ), and foreign savings ( $s_f$ ). Private investment (Equation 7) depends positively on public investment and capacity utilization, potentially exhibiting either crowding-in or crowding-out effects. Private savings (Equation 8) are modeled to increase with higher capacity utilization, reflecting standard consumption behavior. Public savings (Equation 9) are shaped by fiscal effort and external interest obligations, where fiscal effort ( $z$ ) also increases with capacity utilization (Equation 10).

The model culminates in three key gap identities:

- The growth-investment gap (Equation 15) determines required public investment given output growth and capacity utilization;
- The savings gap (Equation 16) highlights how investment needs exceed available domestic and foreign savings;
- The fiscal and foreign exchange gaps (Equations 17 and 18) articulate constraints posed by external balances and public sector borrowing needs.

All variables are normalized to potential output ( $Q$ ), reinforcing the model's focus on structural inefficiencies and underutilization. This analytical structure allows the model to simulate how policy tools and external resources can close these gaps to enable sustainable growth. In essence, the three-gap model offers a comprehensive macroeconomic framework for understanding the structural constraints on investment and growth in low-income and developing economies.

### **2.3 Empirical Literature**

The motive behind external debt is to boost economic growth and development of any nation but as a result of future high debt service payments, it poses a serious threat to the economy of that nation. Researchers have therefore sought out to investigate the implication of external debt burden on the economies of debtor nations and have come up with diverse views.

Ugwuegbe, Ugochukwu, and Akarogbe (2017) examined the effect of external borrowing and foreign financial aid (foreign grant) in the form of Official Development Assistance (ODA) on the growth of the Nigerian economy over a period of 34 years from 1980 to 2013. Annual time series data was obtained from the Central Bank of Nigeria (CBN) statistical bulletin and Organization for Economic Cooperation and Development (OECD's online). The study employed Ordinary Least Square technique (OLS) multiple regression model in determining the causal-effect between the variables under study. The results show that while external debt has a positive and significant effect on economic growth, foreign aid in conformity with the a

priori expectation is positively related to GDP as well but statistically insignificant. This implies that foreign aid is beneficial to Nigeria but has not been much felt. Hence, bulk of such funds (foreign aid) is being channeled towards meeting recurrent or consumption expenditure needs of the country at the expense of productive investments.

Udeh, Ugwu and Onwuka (2017) examined the impact of external debt on economic growth in Nigeria. Ex-post facto research design was adopted for the study. While data on Gross Domestic Product (GDP), External Debt Stock and External Debt Service Payment were obtained from World Bank International Debt Statistics, Exchange Rate data were collected from Central Bank of Nigeria Statistical Bulletin, 2013. The period of study was between 1980 to 2013. Model was formulated and data were analyzed using Ordinary Least Square. We discovered that External Debt had a positive relationship with Gross Domestic Product at short run, but a negative relationship at long run. Also, while External Debt Service Payment had negative relationship with Gross Domestic Product, Exchange Rate had a positive relationship with it. The paper concluded that exchange rate fluctuation had positive impact on the Nigerian economy while external debt stock and debt service payment had negative impact on the same economy. The study recommended amongst others, that Debt Management Office should set mechanism in motion to ensure that loans were utilized for purposes for which they were acquired as well as set a ceiling for borrowing for states and federal governments based on well-defined criteria.

In another study carried out by Ndubuisi (2016) on the Effect of External Debt Relief on Sustainable Economic Growth and Development in Nigeria using Chi-square, Regression and Correlation analysis to test the relationship between external and internal debt stock in relation to debt relief, he found that there is a relationship between external and internal debt stock in relation to debt relief, that debt relief affected the economic growth of the economy and that gradual reforms and investments will help bring back a healthy economy for the nation.

Adesola (2016), examined Debt Servicing and Economic Growth in Nigeria: An Empirical Investigation using ordinary least square multiple regression method to determine whether debt payment to Multilateral Financial creditors, Paris Club creditors, London Club creditors, Promissory notes holders and Other creditors (Non-Paris Creditors) have inverse relationship with gross domestic product (GDP) and gross fixed capital formation at current prices (GFCF) from 1981 to 2004. The study revealed that debt payment to London Club creditors, Paris Club creditors, Promissory notes holders and other creditors have significant impact on the GDP and GFCF. Debt payment to Paris Club creditors and debt payment to promissory notes holders are positively related to GDP and GFCF, while debt payment to London Club creditors and other creditors showed a negative significant relation to GDP and GFCF.

Emori (2015) investigated the impact of external debt on economic growth in Nigeria for the period 1980-2012. He employed time series data on external debt stock and external debt service was used to capture external debt burden. The study set out to test for both a long run and causal relationship between external debt and economic growth in Nigeria. An empirical investigation was conducted using time series data on Gross Domestic Product, External Debt Stock, External Debt Payments and Exchange Rate from 1980-2012. The results showed an insignificant long run relationship and a bi-directional relationship between external debt and economic growth in Nigeria.

Sulaiman and Azeez (2012) carried out a study on the effect of external debt on the economic growth of Nigeria. Annual time series data covering the period from 1970-2010 was used. The empirical analysis was carried out using econometric techniques of Ordinary least squares (OLS), unit root test, Johansen Co-integration test and error correction method. The co-integration test shows long-run relationship amongst the variables and findings from the error correction model revealed that external debt has contribute positively to the growth of the Nigerian economy.

An empirical investigation conducted by (Audu, 2004) examined the impact of external debt on the economic growth and public investment of Nigeria. The study carried out its analysis using time series data covering the period from 1970 - 2002. The Johansen Co-integration test and Vector Error correction method econometric techniques of estimation were employed in the study. The study concluded that Nigeria's debt service burden has had a significant adverse effect on the growth process and also negatively affected public investment.

Another study by Alege (2013) examined whether external debt promotes economic growth in Nigeria using time-series data from 1970 - 2007. The regression equation was tested using econometric techniques of Vector Error Correction Method (VECM). The results revealed that causality does not exist between external debt and economic growth in Nigeria.

Ayadi and Ayadi (2008) examined the impact of the huge external debt, with its servicing requirements on economic growth of the Nigerian and South African economies. The Neoclassical growth model which incorporates external debt, debt indicators, and some macroeconomic variables was employed and analyzed using both Ordinary Least Square (OLS) and Generalized Least Square (GLS) techniques of estimation. Their findings revealed that debt and its servicing requirement has a negative impact on the economic growth of Nigeria and South Africa.

Faraji and Makame (2013) investigated the impact of external debt on the economic growth of Tanzania using time series data on external debt and economic performance covering the period 1990-2010. It was observed through the Johansen co-integration test that no long-run relationship exists between external debt and GDP. However, the findings showed that external debt and debt service both have significant impact on GDP growth. The study also identified the need for further research on the impact of external debt on foreign direct investments (FDIs) and domestic revenues.

Safdari and Mehrizi (2011) analyzed external debt and economic growth in Iran by observing the balance and long term relation of five variables (GDP, private investment, public investment, external debt and imports). Time series data covering the period 1974 - 2007 was used and the vector autoregressive model (VAR) technique of estimation was employed. Their findings revealed that external debt has a negative effect on GDP and private investment and pubic investment has a positive relationship with private investment.

Ejigayehu (2013) also analyzed the effect of external debt on the economic growth of eight selected heavily indebted African countries (Benin, Ethiopia, Mali, Madagascar, Mozambique, Senegal, Tanzania and Uganda) through the debt overhang and debt crowding out effect with ratio of external debt to gross national income as a proxy for debt overhang



and debt service export ratio as a proxy for debt crowding out. Panel data covering the period 1991-2010 was used. The empirical investigation was carried out on a cross-sectional regression model with tests for stationarity using Augmented Dickey Fuller tests, heteroskedasticity and ordinary regression. The concluding result from estimation showed that external debt affects economic growth through debt crowding out rather than debt overhang.

In their study on external debt relief and economic growth in Nigeria, Ekperiware and Oladeji (2012) examined the structural break relationship between external debt and economic growth in Nigeria. The study employed the quarterly time series data of external debt, external debt service and GDP from 1980 - 2009. An empirical investigation was conducted using the chow test technique of estimation to determine the structural break effect of external debt on economic growth in Nigeria as a result of the 2005 Paris Club debt relief. The result of their findings revealed that the 2005 external debt relief caused a structural break effect in the relationship between external debt and economic growth. Based on these findings they concluded that the external debt has significantly hindered sustainable growth through wrong channeling of the resources into meaningful project.

They argued that in order to prevent diversion of borrowed fund through capital flight, there is need for greater accountability on the creditor side as well as the establishment of mechanisms of transparency and accountability in the debtor countries' own decision-making processes with regard to foreign borrowing and the management of borrowed funds. Sun (2004) opined that completion point countries will continue to face a dilemma given their large priority financing needs for development on the one hand, and the need to maintain long-term debt sustainability on the other. To achieve debt sustainability, he advised that they should maintain macroeconomic stability and deepen reforms to improve policy and institutional frameworks, strengthen debt management, mobilize domestic revenues, and create an environment conducive to attracting foreign direct investment and diversifying exports. He concluded that the mix between debt and grant financing must be closely monitored by both borrowers and creditors to ensure that the potentially large financing needs associated with meeting the Millennium Development Goals (MDGs) do not give rise to a renewed excessive build-up of debt.

Ngassam (2000) argued that debt obligations can be eased temporarily by rescheduling. He however, noted that African countries that are undergoing external debt crisis may improve their situation by: liberalizing their economies in order to bring competitive pressures on domestic private business activities, adjusting the exchange rate so that exports are encouraged and imports are restrained, and reducing inflation through strong policies of fiscal and monetary adjustment. He concluded that because of the structural difficulties facing most African countries, a comprehensive policy package for managing external debt has to aim at addressing not only demand management issues, but also the structural problems. Another study by Ogunmuyiwa (2011) examined whether external debt promotes economic growth in Nigeria using time-series data from 1970 - 2007. The regression equation was estimated using econometric techniques such as Augmented Dickey-Fuller test, Granger causality test, Johansen co-integration test and Vector Error Correction Model (VECM). The results revealed that causality does not exist between external debt and economic growth in Nigeria.

Osinubi and Olaleru (2006) conducted a thesis on budget deficit, external debt and economic growth in Nigeria. The study covered the period 1970 to 2003. Using the Johansen co-integration test, the study concluded that if debt-financed budget deficits are operated in order to stabilize the debt ratio at the optimum sustainable level, debt overhang problems would be avoided and the benefits of external borrowing would be maximized. Adepoju, Salau and Obayelu (2007) examined the effects of external debt management on economic growth of Nigeria between the period 1962 to 2006, using time-series data of the various bilateral and multi-lateral arrangements. Their study concluded that accumulation of external debt adversely affected Nigeria's economic growth. Also, Folorunso and Ayadi (2008) examined the impact of external debt on economic growth: A comparative study of Nigeria and South African from 1994 to 2006 employing the ordinary least square (OLS) and the generalized least square (GLS). The study connotes that there exists a negative impact of external debt on economic growth in Nigeria. However, South Africa performs better than Nigeria in the application of external loans to promote growth.

Ajayi and Oke (2012) examined the effects of external debt on economic growth and development from the period 1990 to 2010. They adopted the regression analysis of OLS on secondary data and their finding indicates that external debt burden had an adverse effect on the national income and per capital income of the nation. High level of external debt led to devaluation of the nation currency, increase in retrenchment of workers, continuous industrial strike and poor educational system. This led to the economy of Nigeria getting depressed. Based on the finding, the study suggested that debt service obligation should not be allowed to rise more than foreign exchange earnings and that loans contracted should be invested in profitable venture, which will generate a reasonable amount of money for debt repayment.

An investigation conducted by Osuji and Ozurumba (2013) on the impact of external debt financing on economic development in Nigeria between 1969 to 2013, employing a time series data and the Vector Error Correction Method (VECM). The test results showed that London debt financing possessed positive impact on economic growth while the Paris debt, Multilateral and Promissory note were inversely related to economic growth in Nigeria. The study recommended debt service cancellation and global marketing participation to encourage survival of SMEs in Nigeria.

## **METHODOLOGY**

### **Model Specification**

Hypothesis has earlier been stated in this study with the view of evaluating the relationship between external debt and Nigeria's economic growth. Based on the three-gap model of external debt as discussed in section two; and following the work of Konadu, Forster, Eric and Twerefou (2016).

The model can be specified in its functional form as:

$$RGDP = f(EDT, EDSP, EXR, DINV) \quad 19$$

**Where;**

- RGDP = Real Gross Domestic Product
- EDT = Nigeria External Debt
- EDSP = External Debt Service Payment
- EXR = Average exchange rate.
- DINV = Domestic Investment

The linearized model specification for the analysis is given as:

$$RGDP_t = b_0 + b_1EDT_t + b_2EDSP_t + b_3EXR_t + b_4DINV_t + U_t \quad 20$$

The ECM and econometric form of the model is as stated hereunder;

$$\Delta RGDP_t = \delta_0 + \delta_1\Delta EDT_t + \delta_2\Delta EDS_t + \delta_3\Delta EXR_t + \delta_4\Delta DINV_t + U_t \quad 21$$

**Where;**

$\delta_0$  = Constant term/parameter intercept

$\delta_1, \delta_2, \delta_3, \delta_4$  = Coefficients of the parameters estimates.

$U_t$  = Error Term

$\delta_1, \delta_2, \delta_3$ , and  $\delta_4 > 0$

### Estimation Procedure

In the preliminary test to be conducted, includes the following:

- Unit Root Test
- Co-Integration Test
- Vector Error Mechanism Test (VECM)

**Unit Root Test:** It is used to test for the stationarity of the time series data. This involves testing of the order of integration of the individual time series under consideration. These tests are initially performed at levels and then in first difference form. Three different models with varying deterministic components are considered while performing the tests. These are; (1) model with an intercept which assumes that there are no linear trends in the data such that the first differenced series has zero mean, (2) model with a linear trend which includes a trend stationary variable to take into account of unknown exogenous growth and (3) a model which neither includes a trend nor a constant. The most popular ones are Augmented Dickey-Fuller (ADF) test due to Dickey and Fuller (1979, 1981). Augmented Dickey Fuller (ADF) test statistics shall be compared with the critical values at 5% level of significance. A situation whereby the ADF test statistics is greater than the critical values with consideration on absolute values, the data at the tested order will be said to be stationary. Augmented Dickey-Fuller test relies on rejecting a null hypothesis of unit root (the series are non-stationary) in favour of the alternative hypotheses of stationarity. The tests are conducted with and without a deterministic trend (t) for each of the series.

The general form of ADF test is estimated by the following regression:

$$\Delta y_t = \alpha_0 + \alpha_1 y_{t-1} + \sum \alpha_i \Delta y_t + e_t$$

Where: Y is a time series, t is a linear time trend,  $\Delta$  is the first difference operator,  $\alpha_0$  is a constant, n is the optimum number of lags in the dependent variable and e is the random error term.

The null hypothesis is that  $\alpha_1 = 0$ . If the null hypothesis  $\alpha_1 = 1$ , then we conclude that the series under consideration  $\Delta(y_t)$  has unit root and is therefore non-stationary.

If the ADF test fails to reject the test in levels but rejects the test in first differences, then the series contains one-unit root and is of integrated order one I(1). If the test fails to reject the test in levels and first differences but rejects the test in second differences, then the series contains two-unit roots and is of integrated order two I(2).

### Data Discussion

**Gross Domestic Product (GDP):** This is defined as the total value of all the goods and services produced in a country usually a year. It is all the goods and services produced in country in a year. It is concerned with domestic production and does not, include net income

from abroad. GDP was chosen because been an indicator of growth we could use. It is to show the impact of monetary policy on economic growth.

**External Debt:** External debt also known as foreign debt is the total debt a country owes to foreign creditors. The debtors can be the government, corporations or citizens of that country. The debt includes money owed to commercial banks, other governments or international financial institutions such as the International Monetary Fund (IMF) and World Bank

**External Debt Service Payment:** External Debt Service Payment refers to the money that is required to cover the payment of interest and principal on a loan or other debt accumulated by a country for a particular time period.

**Exchange Rate:** Exchange Rate is the rate at which one currency will be exchanged for another currency. The exchange rate is also regarded as the value of one country's currency in relation to another currency.

**Gross Domestic Investment:** Gross Domestic Investment is the investment in the companies and products of someone's own country rather than in those of foreign countries. Sum of all investment in the local companies of a country.

#### Source of Data

The data for this research work was obtained from Central Bank of Nigeria (CBN) Statistical Bulletin, 2018.

#### Presentation and Analysis of Results

Having estimated the model, the variables considered are Gross Domestic Product (dependent variable), External Debt of Nigeria (EDT), External Debt Service Payment (EDSP), Official exchange rate (EXR) and Domestic Investment (DINV) will all be used as the independent variables. The result covered the period of 1981 – 2018.

#### Unit Root Test

In other to test for the presence or absence of unit root in the data used for the empirical analysis, Augmented Dickey-Fuller (ADF) test was employed and the test result is as presented below:

**Table 2: Augmented Dickey Fuller Unit Root Test at level (Trend and intercept)**

Variables	ADF @ Level	1 <sup>st</sup> difference	Critical value (5%)	Order of integration	Remarks
D(LGDP)	0.862034	5.633667	3.544284	I(1)	Stationary
D(LEDIT)	0.743034	3.742414	3.552973	I(1)	Stationary
D(LEDSP)	2.825900	6.915440	3.544284	I(1)	Stationary
D(EXR)	1.213744	3.803112	3.544284	I(1)	Stationary
D(LDINV)	2.951809	6.102031	3.548490	I(1)	Stationary

**Source: Researcher's Own Computation**

From table 1 above, at 5 percent level of significance, none of the variables intended for this regression was stationary at level since by comparison, their critical values were greater in absolute values than their augmented dickey fuller (ADF) test statistics. However, at first difference, all the variables became stationary. Thus, all of the variables are stationary and integrated of the first order, I(1). Since the variables are not stationary at level, the Johansen cointegration was conducted to test for the long-run relationship.

### Cointegration Result

Cointegration was used to test for the long run relationship between the variables considered. For this purpose, the Johansen cointegration test was adopted. In Johansen's Method, the Eigenvalue statistic is used to determine whether cointegrated variables exist. Cointegration is said to exist if the values of computed statistics are significantly different from zero or if the trace statistics is greater in absolute value than the critical value at 5 percent level of significance. The model with lag 1 was chosen with the linear deterministic test assumption and the result is presented below.

**Table 3: Unrestricted Cointegration Rank Test (Trace)**

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.831846	114.2994	69.81889	0.0000
At most 1 *	0.580790	51.89869	47.85613	0.0199
At most 2	0.261502	21.47024	29.79707	0.3290
At most 3	0.181051	10.86047	15.49471	0.2202
At most 4 *	0.104673	3.869805	3.841466	0.0492

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

**Source: Researchers Own Computation**

**Table 4: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)**

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.831846	62.40068	33.87687	0.0000
At most 1 *	0.580790	30.42845	27.58434	0.0210
At most 2	0.261502	10.60977	21.13162	0.6860
At most 3	0.181051	6.990664	14.26460	0.4903
At most 4 *	0.213452	4.782105	3.641216	0.0482

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

**Source: Researcher's Own Computation**

The results of the cointegration in the table above indicated that the trace statistics in table 2 and Max-Eigen Statistics in table 3 are greater than their critical value at 5 percent level of



significance in three of the hypothesized equations in each of the table. This confirms that there is at least one cointegrated relationship among the various variables used to model the relationship between monetary policy instrument and economic growth in Nigeria for the period under study. Specifically, this is  $114.2994 > 69.81889$ ,  $51.89869 > 47.85613$  and  $3.869805 > 3.841466$  for table 2 and  $62.40068 > 33.87687$ ,  $30.42845 > 27.58434$  and  $4.782105 > 3.641216$ . Also, their p-values were less than 0.05 respectively. Hence, the test result shows the existence of a long-run equilibrium relationship in three cointegrating equations at 5% significance level.

### Vector Error Correction Model (VECM)

It has been pointed out earlier that the vector error correction model (VECM) is meant to tie the short-run dynamics of the cointegrating equations to their long-run static dispositions in order to maintain equilibrium. In order to capture the short run fluctuation, the Vector Error Correction Model (VECM) was employed and the result is presented below.

**TABLE 5: VECM Result**

	Coefficient	Std. Error	t-Statistic	Prob.
CointEq1	-0.988032	0.121943	-8.102417	0.0000
D(LGDP(-1))	0.272052	0.105260	2.584567	0.0153
D(LED(-1))	-8.802418	1.586445	-5.548516	0.0000
D(LEDSP(-1))	-9.568268	4.465554	-2.142683	0.0410
D(EXR(-1))	28.00385	33.72067	0.830465	0.4133
D(LDINV(-1))	17.54348	111.3342	0.157575	0.8759
C	8102.809	1113.110	7.279433	0.0000
R-squared	0.822176	Mean dependent var	3246.018	
Adjusted R-squared	0.784071	S.D. dependent var	5703.762	
S.E. of regression	2650.436	Akaike info criterion	18.77969	
Sum squared resid	1.97E+08	Schwarz criterion	19.09076	
Log likelihood	-321.6446	Hannan-Quinn criter.	18.88707	
F-statistic	21.57648	Durbin-Watson stat	1.790446	
Prob(F-statistic)	0.000000			

### SOURCE: Researcher's Own Computation

From above table, VECM was consistent by assuming a negative value. It suggests that the VECM could correct any deviations from longrun equilibrium relationship between GDP and the explanatory variables. The coefficient indicates a speedy adjustment of 0.98 per annum. This implies that following the shortrun disequilibrium, 98% of the adjustment to the longrun takes places within one year. The above result shows that the  $R^2$  is 0.82, which shows a goodness of fit, that the model explains about 82% of the total variations in GDP are explained by the independent variables during the period of the study.

The result also shows that EXR and DINV are statistically insignificant considering their probability values as being greater than 0.05, but the past level of GDP, LEDT and

LEDSP were found to be statistically significant as the p-values were less than 0.05 levels of significance.

### LM Serial Correlation Test

This test is to verify if there is the presence of autocorrelation in the data. The test result is as shown below;

**Table 6: Breusch-Godfrey Serial Correlation LM Test**

F-statistic	0.427891	Prob. F(2,26)	0.6564
Obs*R-squared	1.115304	Prob. Chi-Square(2)	0.5726

### SOURCE: Researcher's Own Computation

From the table above, it could be deduced that there is no autocorrelation in the series since the probability values are greater than 0.05. The study accepts the null hypothesis that there is no autocorrelation in the series. This is an indication that the dependent variable; GDP is well explained by the independent variables which are EDT, EDSP, EXR and DINV.

### Chow Test

The Chow test is a test of whether the true coefficients in two linear regressions on different data sets are equal. In econometrics, it is most commonly used in time series analysis to test for the presence of a structural break at a period which can be assumed to be known *a priori*. For the current study, it is assumed that there should be a structural break in 2005 when Nigeria had her debts written off. However, the table below shows the output from the hypothetical test.

**Table 7: Chow Test**

Chow Breakpoint Test: 2005

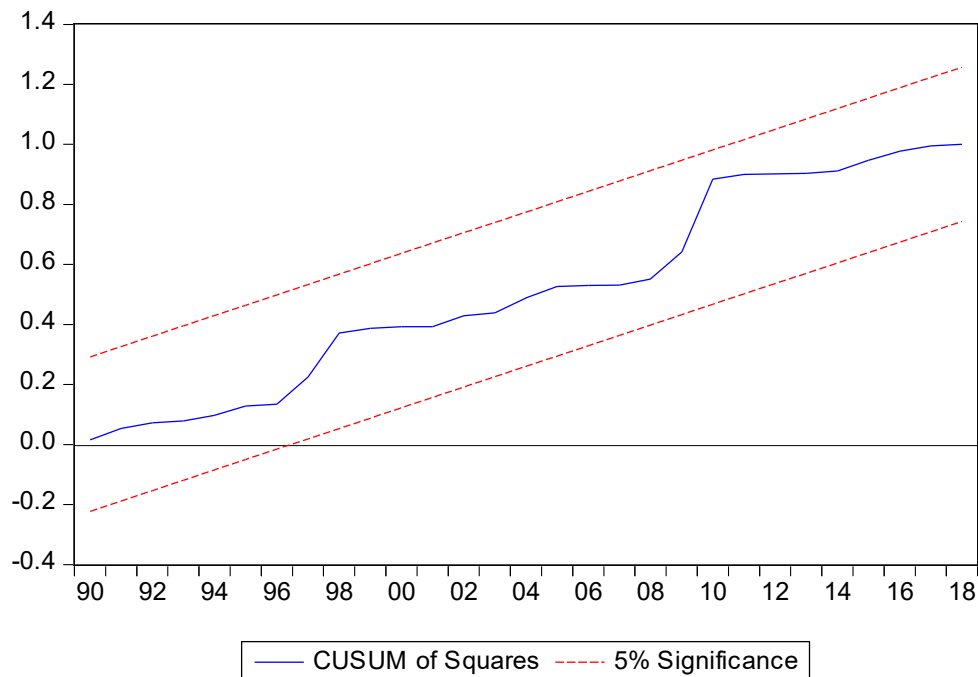
Null Hypothesis: No breaks at specified breakpoints

Equation Sample: 1983 2018

F-statistic	2.337197	Prob. F(7,22)	0.0605
Log likelihood ratio	20.01537	Prob. Chi-Square(7)	0.1055
Wald Statistic	16.36038	Prob. Chi-Square(7)	0.1220

### SOURCE: Researcher's Own Computation

From the table 6 above, the F-statistics had a coefficient of 2.337197 with a p-value of 0.0605 which was greater than the 0.05 level of significance. Hence, the null hypothesis of no breaks as the specified breakpoint is accepted. To further prove this; the Cusum square test as shown below also shows that the data series had no structural break.



### Test of Hypotheses

**Hypothesis I:** The main objective of this study is to examine the impact of external borrowing on Nigeria economic growth. With respect to this, the null hypothesis and alternative hypothesis are stated as follows;

$H_0$ : External borrowing has no significant impact on Nigeria's economic growth.

**T-statistic-:** This is employed in testing the hypothesis. This test will help to show the individual influence of the explanatory variable on the dependent variable.

### Decision Rule;

If the P-value of the T-statistics of the variable is less than 5% level of significance, otherwise accept the null hypothesis. Hence from table 4, the T-statistics [-5.548516] had a p-value [0.0000] which was less than 0.05; the study therefore reject the null hypothesis and conclude that external borrowing has significant negative impact on Economic Growth of Nigeria within the sample period.

### Hypothesis II:

$H_0$ : External Debt Service Payment has no significant impact on Nigeria's economic growth.

**T-statistic-:** This is employed in testing the hypothesis. This test will help to show the individual influence of the explanatory variable on the dependent variable.

### Decision Rule;

If the P-value of the T-statistics of the variable is less than 5% level of significance, otherwise accept the null hypothesis. From table 4, the T-statistics [-2.142683] had a p-value [0.0410] which was less than 0.05; the study therefore reject the null hypothesis and conclude that external debt service payment has significant negative impact on Economic Growth of Nigeria within the sample period.

### **Hypothesis III**

H<sub>0</sub>: Domestic Investment has no significant impact on Nigeria's economic growth.

**T-statistic-:** This is employed in testing the hypothesis. This test will help to show the individual influence of the explanatory variable on the dependent variable.

### **Decision Rule;**

If the P-value of the T-statistics of the variable is less than 5% level of significance, otherwise accept the null hypothesis. From table 4, the T-statistics [0.157575] had a p-value [0.8759] which was greater than 0.05; the study therefore accept the null hypothesis and conclude that domestic investment has no significant impact on Economic Growth of Nigeria within the sample period.

### **5. Conclusion and Policy Implication**

This study has empirically examined the impact of external borrowing on economic growth in Nigeria over the period 1981–2018 using the Vector Error Correction Model (VECM). The analysis reveals that external debt and external debt service payments exert a statistically significant and negative influence on Nigeria's economic growth. Specifically, an increase in either external debt stock or debt servicing obligation results in a measurable decline in GDP. These findings underscore a systemic challenge: external borrowing, rather than fostering sustainable growth, has been largely misallocated—often directed toward recurrent consumption expenditures rather than productive investments capable of generating returns.

Moreover, while domestic investment showed a positive but statistically insignificant impact, its role remains marginal in driving growth within the review period, likely due to limited scale or inadequate enabling infrastructure. The co-integration results affirm a long-run equilibrium relationship among the variables, and the speed of adjustment coefficient (-0.98) indicates a strong tendency for the system to correct short-run disequilibrium swiftly. Altogether, the study confirms that while Nigeria engages in external borrowing ostensibly to stimulate growth, the prevailing patterns of use and debt servicing have instead constrained long-term economic performance.

### **Policy Implications**

- The Nigerian government must fundamentally reform the way external debts are planned and utilized. All loans should be strictly tied to capital projects with measurable economic returns. Borrowing to fund recurrent expenditure—such as salaries—must be discontinued.
- The DMO should enforce stringent monitoring and evaluation mechanisms to ensure accountability and transparency in the disbursement and use of borrowed funds. A performance audit system should be institutionalized to assess loan effectiveness against project outcomes.
- Borrowing limits must be objectively determined by macroeconomic criteria such as debt-to-GDP ratio, export capacity, and revenue performance. These thresholds should apply uniformly across both state and federal levels.
- The negative relationship between debt and growth can be mitigated if Nigeria significantly diversifies its economy. A more diversified economy—especially in sectors like agriculture, manufacturing, and technology—can generate the fiscal capacity to repay debt and reduce dependency on external financing.

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