

## External borrowing and Nigeria's economic growth

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### ABSTRACT

The study examined the impact of external borrowing on Nigeria's economic growth between 1980 to 2017. The broad objective of the study is to examine the impact of external borrowing on Nigeria's economic performance. The Augmented Dickey Fuller (ADF) unit root test was used to test for stationarity and the results suggest that all the variables were stationary at first difference. The Johansen co integration result showed that the variables were co integrated implying the existence of long run relationship among the variables. Error correction mechanism (ECM) test indicated that there is a positive significant relationship between external borrowing and economic growth in Nigeria; a negative relationship between the level of external borrowing service payment and economic growth and a positive relationship between government expenditure and economic growth in Nigeria. The study concluded that the accumulation of the external debt puts pressure on economic growth as external debt repayment and servicing reduces the foreign exchange earnings of the country which accounts for the negative relationship obtained with respect to external debt servicing. The study therefore, recommended that there should be strict adherence to spending of external debt on productive self-liquidating investments so as to generate funds which could be used in its servicing while projects to be financed with external loan must be properly appraised.

Keywords: External, borrowing, economic and growth

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### INTRODUCTION

External debt is a pivot source of fund mainly used to support the domestic sources of finance for achieving development and other needs of a country. Normally, external debt is incurred by a country which suffers from shortages of domestic savings and foreign exchange required to enhance its developmental and other macroeconomic goals. 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 causes an obstacle to sustainable economic growth and poverty reduction as the debt profile will be increasing there by increasing financial and economic pleasures on the debt nation [1]. As the

saying goes, "No man is an island of its own " meaning No nation can survive in isolation of other nations; in order words every country depends on financial assistance from other countries at every point in time to enable the execution of her projects. In order to do this, borrowing from other countries become very necessary to achieve the set down macroeconomic goals.

[2] defines external debt as that part of a country's debt that is gotten from foreign sources such as foreign companies, government or financial institutions. According to [3], external debt emanates from the gap between domestic savings and investment. As the gap widens, debt accumulates and this makes the nation to continually borrow increasing amounts in

order to stay afloat. He further defined Nigeria's external debt as the debt owed by both the public and private sectors of the economy to non-residents and citizens that is payable in foreign currency, goods and services. Nigeria like other developing countries had faced domestic financial crises which has made external debt an essential complement to domestic resources of income for promoting sustainable economic growth among these developing economies. This is possible if the economic benefits from such projects are larger than the interest paid on the debt servicing [4]. External debt is a major source of public receipts. The accumulation of external debt should not be an indicator of slow economic growth of the borrowing countries. [5], had it that a country's inability to meet its debt obligation compounded by the lack of information on the nature, structure and magnitude of external debt that makes external debt an economics problem. [6] opined that countries borrow for two broad reasons: to either finance higher investment or higher consumption and to circumvent hard budget constraint. This means that an economy borrow to boost economic growth and alleviate poverty. He argued that when debt reaches a certain level, it begins to have adverse effect, debt servicing becomes a huge burden and countries find themselves on the wrong side of the debt-laffer curve, with debt crowding out investment and growth. The debt burden

has militated against Nigeria's rapid economic development and worsened the social problems [7].

One major source of aid is foreign borrowing or external debt. The motive behind external debt is due to the fact that developing economies lack sufficient internal financial resources and these calls for the need for foreign aid [8]. Governments borrow to fill the gap created by the fiscal budget within a fiscal period. If government does not want to compromise certain macroeconomic goals by printing more money and if government 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 [9]. Governments borrow basically to finance public goods which increase welfare and promote economic growth. Government's expenditure generally has to be financed either through taxation, money printing, or with debt.

In Nigeria, debt service burden has been a serious problem in the country. The chart below show that Nigeria debt service payment is growing exponentially. In fact 2017 budget presented by president Buhari set outside 1.66 trillion naira only for debt service payment far above the capital and recurrent expenditure. The image below revealed Nigeria debt profile and debt service payment between 2000-2015.



Source: CBN, 2015

According to [10], 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 decline in oil prices in 1978 which exerted a negative impact on government finances, it became necessary to borrow to correct balance of payment deficits and finance projects. The first major borrowing of 1 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 US dollars [11].

The pace of borrowing increased thereafter with the entry of the state government into external loan contractual obligation. According to the Debt Management Office (DMO), Nigeria’s external debt outstanding stood at N17.3 billion. In 1986, Nigeria had to adopt a

World Bank/International Monetary Fund (IMF) sponsored Structural Adjustment Programme (SAP), with a view to revamping the economy. [12]. The increasing fiscal deficits driven by the higher level of external debt servicing is a major threat to growth of Nigerian nation. The outcome of large accumulation of debt exposes the nation to high debt burden. Nigeria is about the richest nation on the continent of Africa, yet due to the numerous macro-economic problems, such as inflation, unemployment, sole dependency on crude oil as a major source of revenue, corruption and mounting external debt and debt service payment, majority of her citizen are below the poverty line.

Also, President Obasanjo’s effort that resulted in writing off the country’s debt helped us in no small measure. However, due to the crash of oil price in the international oil market, pressures are beginning to mount again, and the nation’s borrowing is also on the rise. The

question is how the country can cope with the servicing of this debt, and its impact on Nigeria's economy.

Therefore, this study seeks to investigate the impact of Nigeria's external borrowing on economic growth.

#### **Objective of the Study**

This study has the broad objective of exploring issues relating to how external borrowing can influence Nigeria's economic performance. Specifically, the following objectives would be achieved:

- To empirically determine the impact of external debt on economic growth of Nigeria
- To determine if there is long-run relationship between external debt and economic growth in Nigeria.
- To determine the nature of causality existing between external debt and economic growth in Nigeria.

#### **THEORITICAL LITERATURE**

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 [13] external debt identified as money owned 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 [14] external debt is defined as the money or resources use 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.

[15] 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 [16]. [17] 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 [18]. 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 [19]. 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 [20].

## EMPIRICAL LITERATURE REVIEW

Economic 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 for instance, [21] carried out a study on the effect of external debt on the economic growth of Nigeria between the period 1970 and 2010. The empirical analysis was carried out using econometric techniques of Ordinary least squares (OLS), Augmented Dickey-Fuller 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 contributes positively to the growth of the Nigerian economy. In addition the study recommended that the Nigerian should ensure political and economic stability so as to ensure effective debt management.

[22] investigated the impact of external debt on economic growth in Nigeria. The study employed time series data on real gross domestic product (GDP) and external debt service payment (EDSP) as obtained from the World Bank International Debt Statistics, while data on exchange rate (EXCR) and inflation rate (INFR) were collected from Central Bank of Nigeria (CBN) statistical bulletin. The period of study was 1980-2014. Model was formulated

and data were analyzed employing Augmented Dickey Fuller (ADF) unit root test, Johansen Co-integration and Error Correction (VECM) techniques. Estimation via the unrestricted VAR was conducted to enable appropriate lag length selection while OLS estimation of the main or target equations of the VECM using the HAC consistent covariance estimator was carried out. Results indicate that external debt service payment had a longrun significant but negative relationship with real gross domestic product while Exchange Rate had a positive although insignificant, relationship with GDP. The author concludes that exchange rate fluctuation had positive impact on the Nigerian economy while external debt service payment had significant negative impact on the same economy. The study

recommends amongst others, that the Debt Management Office should set mechanisms 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

[23] aimed at ascertaining the impact of external debt on economic growth in Nigeria for the period of 1980-2013. Model was formulated and data were analyzed using Ordinary Least Square. Diagnostic tests were conducted using Augmented Dick Fuller Unit Root Test, Co-integration and Error Correction Model. The independent variable was GDP, while the explanatory variables were External Debt Stock, External Debt Service Payment and Exchange Rate. 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.

[24] investigated the effect of external debt on economic growth in Nigeria. Specifically, the study examines whether external borrowings and its major determinants like exchange rate, gross fixed capital formation and inflation rate have supported the growth of the Nigerian economy. The parameters of the model were estimated using the ordinary least squares method. The robustness of the result was enhanced using the generalized least squares technique. The result shows evidence of significant positive correlation between economic

growth and the explanatory variables namely external debt, exchange rate and inflation rate. A negative correlation was however observed between economic growth and gross fixed capital formation. The regression estimates for both the ordinary and generalized least squares tests show significant positive impact of external debt, exchange rate and inflation rate on economic growth. The results also show non-significant negative effect of gross fixed capital formation on economic growth. The study concludes the external debt has significantly promoted economic growth in Nigeria.

[25] examined the impact of external debt on economic growth in Nigeria for the period 1980-2012. Time series data on external debt stock and external debt service was used to capture external debt burden. The study was conducted using time series data on Gross Domestic Product, External Debt Stock, External Debt Payments and Exchange Rate from 1980- 2012. The techniques of Estimation employed in the study include Augmented Dickey Fuller (ADF) test, Johansen Co-integration, Vector Error Correction Mechanism and Granger Causality

Test. The results show an insignificant long run relationship and a bi-directional relationship between external debt and economic growth in Nigeria.

[26] examined the effect of financial crisis, external debt management on the economic growth of Nigeria using GDP as endogenous variable while exogenous variables measuring economic growth were Foreign Direct Investment, external debt, external reserve, inflating, and exchange rate proxies. Annual time series of 1980-2010 were used. OLS, Augmented Dickey Fuller (ADF) unit root tests and the Granger causality test were employed in analysis. The result showed a positive relationship between FDI and economic growth while inverse relationship existed between external debt and economic growth.

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An empirical investigation conducted by [28] examines 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.

[29] 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 Method (VECM). The results revealed that causality does not exist between external debt and economic growth in Nigeria.

[30] 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.

[31] 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 between external debt and GDP. However, the findings show 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.

[32] 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 that has a negative effect on GDP and private investment and public investment has a positive relationship with private investment.

[33] 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.

[34] 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 relief made available resources for growth-enhancing projects. 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.

[35] noted that Sub Sahara Africa countries were plagued by their heavy external debt burden. He argued that the debt crisis, compounded by massive poverty and structural weaknesses of most of the economies of these countries made the attainment of rapid and sustainable growth and development difficult. It then became widely accepted that the heavily-indebted countries require debt relief initiatives beyond mere rescheduling to have a turn-around in their economic performance and fight against poverty.

Another study by [36] 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 Method (VECM). The results revealed that causality does not exist

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METHODOLOGY

This research work will employ econometric technique known as Error Correction Mechanism but before that other tests like unit root tests and cointegration test would have been carried out. These steps will be followed to avoid spurious regression above all, causality test will be done to determine the direction of causality.

**Model Specification**

The model for the analysis can be stated thus:

$$GDP = F (TEXD, TEXDS, GEX)..... (1)$$

Statistically, the model is specified below:

$$GDP = \beta_0 + \beta_1 TEXD + \beta_2 TEXDS + \beta_3 GEX + U.....(2)$$

Where:

GDP = Gross domestic product at current price

TEXD = Total External Debt stock

TEXDS= Total External Debt Service payment

GEX = Government Expenditure

U = Stochastic error term

$\beta_1, \beta_2, \beta_3$  = Slope of the regression equation

**A Priori Expectation**

$$\beta_1 = \beta_3 > 0$$

$$\beta_2 < 0$$

**Estimation Procedures**

**Unit Root Test:** It is used to test for the stationarity of the time series data. Augmented Dickey fuller will be used in the process. In considering the levels the data could be said to be integrated of, 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 the 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 favor of the alternative hypotheses of stationarity.

**Cointegration Tests:** It is used to test for the long run relationship between the variables. Johansen Co-integration approach was used by the researcher in the course of the analysis hence, the use of Johansen Co-integrating Normalized

coefficients to ascertain the nature of the long run relationship between the estimated variables. [37] pointed out that a linear combination of two or more non-stationary variables may be stationary. If such a stationary combination exists, then the non-stationary time series are said to be co-integrated. The test concerns a test of the null hypothesis that there is r of co-integrating vectors against the alternative that r + 1 co-integrating vector

**Error Correction Mechanisms (ECM):** The purpose of the error correction model is to indicate the speed of adjustment from the short-run equilibrium to the long-run equilibrium state. If co-integration is accepted, it suggests that the model is best specified in the first difference of its variables with one period lag of the residual {ECM (-1)} as an additional regressor. To this effect a regressions was done on their first difference. By taking the first difference, we lost the long run relationship stored in the data which suggests that we have to use the variables at both their levels and first differences. According to [38], co-integrated variables, must have an ECM representation. However, the ECM strategy provides an answer to the problem of spurious correlations. If external debt variables and economic growth are co-integrated the corresponding error correction representation must be included in the system so that by so doing, one can avoid mis-specification and omission of the important constraints, but on the other hand, if the variables are not integrated of the same order or are not cointegrated, the ECM cannot be applied either [39], The greater the co-efficient of the parameter, the higher the speed of adjustment of the model from short-run to long-run equilibrium.

**Granger Causality test:** Causality test is a method of investigating whether X causes Y and or the other way round. X is said to be Granger-caused by variable Y if Y helps in the prediction of X, or if the coefficients on the lagged X's statistically significant. In this wok, pair wise granger causality test was used to determine the direction of event. That is to determine



whether external debt granger causes

growth and (or) otherwise.

#### PRESENTATION AND ANALYSIS OF RESULTS

##### Unit Root Test Results

To properly examine the trend relationship and the nature of stationarity of the variables in this study, the researcher adopted the Augmented

Dickey-Fuller test (ADF) at constant trend level in order to determine whether the data collected for the empirical analysis were stationary or not. Thus, below are the summary of the results.

**Table 1: Augmented Dickey Fuller Unit Root Test Results (Trend and Intercept @ level)**

Series	ADF Test Statistic	5% critical values	Order	Remarks
GDP	-1.873275	-3.544284	1(0)	Not Stationary
TEXD	-2.653653	-3.552973	1(0)	Not Stationary
TEXDS	-1.698757	-3.548490	1(0)	Not Stationary
GEX	<b>-1.183799</b>	<b>-3.548490</b>	<b>1(0)</b>	Not Stationary

*Sources: Researchers' compilation from E-view (version 9.0)*

**Table 2: Augmented Dickey Fuller Unit Root Test Results (Trend and Intercept @ 1<sup>st</sup> difference)**

Series	ADF Test Statistic	5% critical values	Order	Remarks
GDP	-4.360676	-3.548490	1(1)	Stationary
TEXD	-3.594354	-3.552973	1(1)	Stationary
TEXDS	-8.406184	-3.557759	1(1)	Stationary
GEX	<b>-7.737670</b>	<b>-3.562882</b>	<b>1(1)</b>	Stationary

*Sources: Researchers' compilation from E-view (version 9.0)*

The above tables were used to test the stationary state of the employed variables. For the purpose of making decision on whether a variable is stationary or not, the ADF test statistics is compared with the 5% critical value. If the test statistics is greater than the critical value in absolute terms, the variable is stationary and vice versa. In table 1 above, the ADF unit root test statistic results showed that at level and with one lag period, none of the variables were stationary at 5% levels of significance since their ADF test statistics were less than their critical values in their absolute terms. At first difference however, all the variables became stationary as their ADF test statistics were all greater than their critical values in absolute terms. In other words, all the variables were free from the

unit root problem at first difference or at the integration of order of two, I (1).

##### Cointegration Test Results

The outcome of the unit root results instigated the researcher to test for cointegration. Cointegration is used to test for long run relationship between the variables involved. For this purpose, the Johansen cointegration test was adopted. In Johansen's method, the trace statistics test and the eigenvalue statistic are used to determine whether cointegration exists or not. Cointegration is said to exist if the values of computed Eigen 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 summary result is presented in table 3 below:

**Table 3: Johansen cointegration test for the series; GDP, TEXTD, TEXTDS and GEX**

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.840012	92.58916	55.24578	0.0000
At most 1 *	0.507207	35.77686	35.01090	0.0413
At most 2	0.290972	13.83922	18.39771	0.1934
At most 3	0.097481	3.179543	3.841466	0.0746

*Sources: Researchers' compilation from E-view (version 9.0)*

The table above represents the Johansen Cointegration results which test for the long - run relationship among the variables used in the Co-integration model. The \* in the table above denotes rejection of the null hypothesis at 5% significance level. Thus, rejection of the null hypothesis that says that there is no significant long-run relationship among the variables in the model was taken based on the statistical and econometric decision rule. The condition for a significant long-run relationship (Co-integration) among the variables is that the Trace statistics value must be greater than the 5 percent critical value. Secondly, the Eigen-value coefficients of the variable must be significantly

different from zero. In this study, it was observed that the trace statistics is greater than critical value only in two of the hypothesized equations. Therefore, we conclude that there exists a long-run relationship (that is one cointegrating equation)

#### **Error Correction Model (ECM)**

Given that the absence of stationarity at level in the variables entails a loss of long run information, error correction mechanism (ECM) was used to estimate the parameter coefficients of the model. Error correction mechanism (ECM) is meant to tie the short-run dynamics of the cointegrating equations to their long-run static dispositions. The ECM result is therefore presented below:

**Table 4: Error Correction Model (ECM)**

Dependent Variable: D(LGDP)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.435124	3.494784	0.410647	0.6848
D(TEXTDS)	-0.332189	0.114530	-2.900454	0.0031
D(LGEX)	0.215201	0.101204	2.126408	0.0019
D(LTEXTD(-1))	-0.026844	0.004526	-5.931064	0.0035
D(LGEX(-1))	0.244186	0.111220	2.195522	0.0011
ECM(-1)	-0.540872	0.162540	3.327619	0.0027
R-squared	0.834337	Mean dependent var		-0.385313
Adjusted R-squared	0.696118	S.D. dependent var		16.51767
F-statistic	52.092756	Durbin-Watson stat		2.208541
Prob(F-statistic)	0.000231			

*Sources: Researchers' compilation from E-view (version 9.0)*

From the ECM result presented above, the coefficient of the intercept is 1.435124. This implies that when all explanatory variables are held, GDP will equal 1.4 billion. The coefficient of total external debt (TEXTD (-1)) is -0.026844 which show that a one billion increase in external debt will bring about a decrease in GDP by approximately 20 percent. This implies that there is a negative significant

relationship between economic growth and external debt in Nigeria. Hence an increase in external debt stock will decrease the volume of Gross Domestic Product (GDP) in Nigeria. With a p-value of 0.0035, the estimated coefficient is statistically significant since it is less than 0.05. The sign is nevertheless contrary to economic a-priori that as volume and value of external debt

increases, it is likely that the, Gross Domestic Product (GDP) will increase. This is however in line with the findings of [40] whose findings revealed that external debt has negative relationship with economic growth in Nigeria.

The coefficient of total external debt servicing (TEXDS) is -0.332189 which indicates that debt serving has a negative impact on economic growth of Nigeria. This is in conformity with a priori expectation and in consonance with the findings of [41] whose finding revealed a negative impact of debt and its servicing requirement on the economic growth of Nigeria and South Africa. This is due to the fact that servicing of external debt involves payment in foreign currencies which constitutes a depletion of the country's foreign exchange reserve. Equally, the accumulation of the external debt puts pressure on economic growth as external debt repayment and servicing reduces the foreign exchange earnings of the country which accounts for the negative relationship obtained with respect to external debt servicing. With a p-value of 0.0031 which is less than 0.05, the estimated coefficient is statistically significant.

The coefficient of government expenditure (GEX) is 0.215201 which indicate that a one billion increase in GEX will increase GDP by approximately 21 percent and with a p-value of 0.0019, the coefficient estimate is statistically significant just the same way it conforms to a priori expectation.

Equally from the result, the coefficient of ECM (-1) equals -0.540872. This reveals that the speed of adjustment between the short-run and long-run realities of the cointegrating equations is approximately 54 percent annually. This means that the system corrects its previous period disequilibrium at a speed of 54% annually. The sign of error correction coefficient is negative as was expected. A p-value of 0.0027 proves that the speed of adjustment is statistically significant. This in essence conforms to the granger representative theorem of a negative and statistically significant coefficient of ECM (-1). However, it is worthy to note that the speed of adjustment is extremely high.

The coefficient of determination ( $R^2$ ) is 0.834337 which shows that about 83 % of the total changes in the economic growth proxied by GDP which is the independent variable is adequately attributable to changes in the chosen explanatory variables [42].

F-test test was conducted to determine whether there is joint influence of the independent variables on the dependent variables. The p-value will be used to take decision in this case. If the p-value is less than 0.05, there is joint influence but if it is greater than 0.05, there is absence of joint influence. From the result estimated, the calculated F-value is 52.092756 and with a p-value of 0.000231 which is less than 0.05, we conclude that there is significant joint influence of the independent variables on the dependent variable.

#### **Durbin Watson statistics**

Level of significance = 0.05

N= 37

K= 3

$d_L=1.31$

$d_U=1.66$

The computed D-W statistics is 2.208541 at 5% level of significance with three explanatory variables and many observations. Since the calculated D-W statistics is greater than the upper D-W tabulated value, we conclude that there is absence of positive first order serial dependence (autocorrelation).

#### **Testing Hypotheses**

##### **Hypothesis I**

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

From the result of the ECM presented in table 4, the estimated coefficient of TEXD is statistically significant in explaining economic growth in Nigeria. Therefore, we reject the null hypothesis of no significance and conclude that external debt has significant negative impact on Nigeria's economic growth.

##### **Hypothesis II**

$H_0$ : There is no significant long run relationship between external borrowing and Nigeria's economic growth.

This hypothesis was tested with the aid of Johansen cointegration test. The Johansen cointegration test result presented earlier indicated two cointegrating equations k.

The test result shows the existence of a long-run equilibrium relationship among the variables employed for the regression analysis. Therefore, the null hypothesis of no long run relationship is rejected while the alternate hypothesis is accepted. Therefore, the test result shows the existence of a long-run equilibrium relationship between external debt and Nigeria’s economic growth.

**Hypothesis III**

H<sub>0</sub>: There is no causal relationship between external debt and Nigeria’s economic growth.

This hypothesis was tested with the aid of pair wise granger causality test to examine if there is causal relationship between external debt and Nigeria’s economic growth between the periods of 1980 and 2017 and the summary result is presented in table 6 below:

**Table 5: Granger Causality Test**

Null Hypothesis:	Obs	F-Statistic	Prob.
TEXD does not Granger Cause GDP	34	0.40053	0.6737
GDP does not Granger Cause TEXD		0.03724	0.03724

*Sources: Researchers’ compilation from E-view (version 9.0)*

In the table above, we used the Granger Casualty test to find out the direction of causality between external debt stock and g Gross Domestic Product from periods of 1980 - 2017, using one lags value. From table 6 above, the null hypothesis that TEXD does not granger cause GDP is accepted since its p-value is greater than 0.05 and the null hypothesis that GDP does not granger cause TEXD is equally accepted since it has a p-value greater than 0.05. This implies that there is no evidence of causality between external debt and growth in Nigeria. Therefore, we accept the null hypothesis and conclude that there is no significant causal relationship between external debt and Nigeria’s economic growth within the period under review.

**Implications of the Findings**

The results of the error correction mechanism (ECM) are insightful. The empirical evidence shows that there is a negative relationship between economic growth and external debt in Nigeria (TEXD (-1)). This implies that an increase in

external debt stock will decrease the volume of Gross Domestic Product (GDP) in Nigeria. The sign is nevertheless contrary to economic a-priori that as volume and value of external debt increases, it is likely that the, Gross Domestic Product (GDP) will increase. In addition, there exists a negative relationship between external debt service payment (TEXDS) and economic growth (GDP). This is equally in line with economic a priori which have it that debt services have a negative effect on economic growth. This is due to the fact that servicing of external debt involves payment in foreign currencies which constitutes a depletion of the country’s foreign exchange reserve. Equally, the accumulation of the external debt puts pressure on economic growth as external debt repayment and servicing reduces the foreign exchange earnings of the country which accounts for the negative relationship obtained with respect to external debt servicing.

**SUMMARY OF FINDINGS**

In the course of this research, the following findings were made:

1. The ADF test results show that all the series used in this study were statistically significant at five percent critical value at first difference. This is to say that all the variables used were stationary.

2. Equally, the cointegration test results revealed that the null hypothesis was rejected at 5 percent critical value, as the trace statistics and Max Eigen test indicated two cointegraing equations at five percent significant level within the period of the observation 1980 - 2017.

3. The empirical result for causality indicated that there is no causal relationship between external debt and Nigeria's economic growth within the period under review.
4. The error correction mechanism (ECM) which was employed to estimate the coefficient estimate of the specified model indicated that there is a negative relationship between external debt stock and economic growth in

Nigeria; a negative relationship between the level of external debt service payment and economic growth and a positive relationship between government expenditure and economic growth in Nigeria. Equally, the statistical tests of significance conducted on the estimated coefficients showed that all variables were statistically significant at 5 percent level of significance.

#### CONCLUSION

This study examined the impact of external borrowing on Nigeria's economic growth between 1980 and 2017. The study equally sought to find whether there is significant long run and causal relationship between external debt and economic growth. The co integration

result showed a significant long run relationship between external borrowing or debt while the ECM result revealed a significant negative relationship between external debt and Nigeria's economic growth

#### RECOMMENDATIONS

Based on the findings of this study summarized above it is inevitable to provide a set of policy recommendations that would be applicable to the Nigeria economy, these are as follows:

1. Since empirical investigations showed evidence of a long run relationship between external debt and economic growth, Nigerian government should always consider external debt as means to long run development not just for solving short run economic problems.
2. In order to ameliorate the negative influence of external debt on economic growth as was found from the study, the federal government should lay down well considered guideline for external

loans-defining the purpose, duration, moratorium requirements and commitments, negotiation fees including the conditions under which the government can approve and guarantee external loans.

3. Finally, due to the observed negative relationship between external debt and economic growth, government should acquire external debt largely for economic reasons rather than social or political reasons. This would increase the productivity of the country. This is to avoid accumulation of external debt stock overtime and prevent an obscuring of the motive behind external debt.

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