

External Debt and the Nigerian Economy

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ABSTRACT

Due to the very low rate of savings in the developing economies they are unable to take full advantage of the abundant profitable investment opportunities hence they must borrow (both and abroad) to argument their lean capital base. Thus, this study seek to investigate the effects of external debt on economic growth of the Nigerian economy from 1981 to 2017, as the huge accumulated debts of the developing countries have been argued to impede their economic growth. Employing the autoregressive distributed lag (ARDL) of the ordinary least Squares (OLS) estimation technique the findings of the study revealed that external debt has no significant effect on Nigeria's economic growth (RGDP). The study then recommended that the Nigeria government should ensure that debts incurred are channel towards productive uses and debt management office of the government should strengthen its plans and foster appropriate use of loans in the critical areas of development.

Keywords: External debts; Economic growth; Debt service; Basic transfer; Original Sin

JEL Codes: E20, E58, E62, F02, F2, F21, F31, F35.

INTRODUCTION

Developing countries including Nigeria receive huge financial inflow from abroad (Pattillo et al, 2002). Domestic savings fall short of domestic investment, thus leading to current account deficit. Due to poverty and poor financial institutions, national savings often is low in developing countries. Notwithstanding the relatively very poor capital of the developing economies, the opportunities for profitability introducing or expanding plants and equipment can be abundant; such opportunities justify a high of investment. By running a deficit in its current account, a country can obtain resources from abroad to invest even if its domestic savings is low. This deficit in the current account implies that the country is borrowing abroad.

The borrowings of developing countries are potentially explained by the incentives for intertemporal trade. The developing countries generate too little savings of their own to take advantage of all their profitable investment opportunities, so they must borrow abroad. On the other hand, most productive investment opportunities have been exploited already in the developed economies, but savings level is relatively high, hence owners of capital in developed countries can earn higher rates of return by lending to finance investments in the developing countries (Krugman and Obstfeld, 2009; Safdari and Mehrizi, 2011). By borrowing, developing countries can undertake productive investments that they would not otherwise carry out, so they gain by building up capital stocks despite limited national savings, however, mismanagement of these borrowed capital can spell economic disaster as have experienced in Nigeria over time. Lenders on the other hand, profit by earning higher returns to their savings than they could earn at home.

Accumulation of external debt has become a common feature of the developing countries at the stage of economic development where the supply of domestic savings is low, current account payment deficits are high, and imports of capital are needed to augment domestic resources (Todaro and Smith, 2011; Sementari, 2005).

Nigeria like most other developing economies had had relatively small external debt before the early 1970s and had primarily relied on official sources where majority of the creditors are foreign governments and international financial institutions such as the international monetary fund (IMF), World Bank and regional development banks. The loans were on concessional (low interest) terms and were extended for purposes of implementing development projects and expanding inputs of capital goods. However, during the early 1980s, commercial banks began playing a large role in international lending (Ajayi and Oke, 2012). Unfortunately, this has meant that for many countries in the region the stock of external debt has built up over recent decades to a level that is widely viewed as unsustainable. From a trivial debt stock of \$1 billion in 1971, Nigeria had towards the end of 2005 incurred close to \$40 billion debt with over \$30 billion of the amount owed to the Paris Club alone. Prior to Nigeria's \$18 billion debt cancellation deal in 2006, the 18 other poor countries (14 of them African countries) classified as Heavily Indebted Poor Countries (HIPCs), i.e. Benin Republic, Bolivia, Burkina-Faso, Ethiopia, Ghana, Guyana, Honduras, Madagascar, Mali, Mauritania, Mozambique, Nicaragua, Niger, Rwanda, Senegal, Tanzania, Uganda and Zambia had secured a 100 percent debt cancellation totaling \$40 billion (Semenitari, 2005).

The sharp increase in the Nigeria debt burden is traceable to the early 1980's oil price shock, the international oil price dropped from \$28 per barrel to \$18 per barrel which was Nigeria's main source of foreign exchange. This economic condition had precipitated the then military government of General Babangida to sort for loan relief from the IMF with under an excruciating structural adjustment programme (SAP) in 1986 as the government claimed that because Nigeria was behind in repaying its short-term debts, Western bankers said that the country can no longer buy goods abroad. As such, the IMF loan could give Nigeria reprieve by allowing her time to begin restructuring its economy and reopen access to foreign credit. Thus, increasing debt burden, constituted a major constraint to growth and development (Apeh and Okoh, 2014). Osuji and Ozurumba (2013) revealed that between the period of 1950-1960, Nigeria had a magnificent growth in its economy due to her huge investment in agriculture which was a major source of revenue for the country; this brought about reduction in both internal and external debt. However, in the eighties Nigeria's external debt rapidly escalated as a result of declining oil export earnings (Udoka and Ogege, 2012; Apeh and Okoh, 2014).

According to Muhammad and Fayyaz, (2015) efficient use of external debts can bring economic prosperity to a nation, so is their inefficient use can cause severe economic implications. External debt became a burden to African countries and Nigeria in particular, because contracted loans were not optimally deployed (Iya, et al. 2013), therefore returns on investments were not adequate to meet maturing obligations, thereby hindering economic growth (Erhieyovwe and Onovwoakpoma, 2013). Nigeria like most developing economies, have not performed well, partly because of the increased basic transfer and partly because the necessary macro-economic adjustment has remained elusive for most of the countries in the continent.

It is no exaggeration to claim that Nigeria's huge external debt burden was one magnified by the 2.4 billion Dollar IMF loan which came with the fruitless SAP that further disequibrated the Nigerian economy. Ogunmuyiwa (2011) argues that the period 1986 through 1993 when the country embarked on Structural Adjustment Programme (SAP) only coincided with a period when external debt was at its peak. The high level of debt service payment prevented the country from embarking on larger volume of domestic investment, which would have enhanced growth and development (Darma, 2014; Clements et al, 2003).

The main objective of this study then is to investigate the effect of external debt on the economic growth of Nigeria.

Literature Review

Conceptual Issues

Debt servicing

Debt service is the payment of amortization, that is, the liquidation of the principal and accumulated interest. It is a contractually fixed charge on domestic real income and savings. As the size of the debt increases or as interest rates rise, debt service charges increase. Debt service payments must be made with foreign exchange. That is, debt service obligations must be only through export earnings, curtailed imports, or further external borrowings.

Basic Transfer

This is the net foreign exchange inflow or outflow related to its international borrowing. It is measured as the difference between the net capital inflow and interest payments on the existing accumulated debt. Basic transfer is an important concept because it represents the amount of foreign exchange that a particular developing country is gaining or losing each year from international capital flows.

The Problem of “Original Sin”

When developing countries incur foreign debts, those debts are dominated in terms of a major foreign currency, the U.S. dollar, euro, or yen. This practice is not a matter of choice. Lenders from rich countries, fearing the extreme devaluation and inflation that have occurred so often in the past, insist that poorer countries repay them in the lenders own currencies. In contrast, rich countries borrow in terms of their own currency.

The ability to denominate foreign debts in their own currencies, while holding assets denominated in foreign currencies is a considerable to the rich countries. Suppose a fall in world demand for U.S. products leads to a dollar depreciation. The U.S. portfolio of foreign assets is mostly denominated in foreign currencies, the value of those assets rises when the dollar depreciates against foreign currencies. At the time, because U.S. foreign liabilities are predominantly in dollars, their dollar value rises very little. So a fall in world demand for U.S. goods leads to a substantial wealth transfer from foreigners to the U.S., a kind of international insurance.

On the other hand, poor countries subject to the original sin, a fall in export demand have the opposite effect. They tend to be net debtors in the major foreign currencies, so a depreciation of domestic currency causes a transfer of wealth to the foreign creditor countries by raising the domestic currency value of the net foreign debt. That amount to negative insurance (Krugman and Obstfeld, 2009).

Problem of Default

The prevailing social and political instability, as well as the fragile public finances and financial institutions in developing countries, make it much more risky to lend to developing than to industrial countries. A loan is said to be in default when the borrower fails to repay on schedule according to the loan contract, without the agreement of the lender. Hence, the potential gains from international borrowing and lending will not be realized unless lenders are confident they will be repaid.

Alternative Forms of Financial Inflow

When a developing country has a current account deficit, it is selling assets to foreigners to finance the difference between its spending and its income. Economists lump these asset sales together under the catchall term borrowing; the financial inflows that finance developing countries’ deficits (and indeed, any country’s deficit) can take several forms. Different types of financial inflow have predominated in different historical periods. Because different obligations to foreign lenders result, an understanding of the macroeconomic scene in developing countries requires a careful analysis of the five major channels through which they have financed their external deficits.

1. **Bond finance.** Developing countries have sometimes sold bonds to private foreign citizens to finance their deficits. Bond finance was dominant in the period up to 1914 and in the interwar years (1918-1939). It regained popularity after 1990 as many developing countries tried to liberalize and modernize their financial markets.
2. **Bank finance.** Between the early 1970s and late 1980s, developing countries borrowed extensively from commercial banks in the advanced economies. In 1970, roughly a quarter of developing-country external finance was provided by banks. In 1981, banks provided an amount of finance roughly equal to the non-oil developing countries’ aggregate current account deficit for that year. Banks still lend directly to developing countries, but in the 1990s the importance of bank lending shrank.
3. **Official lending.** Developing countries sometimes borrow from official foreign agencies such as the World Bank or Inter-American Development Bank. Such loans can be made on a “concessional” basis, that is, at interest rates below market levels, or on a market basis that allows the lender to earn the market rate of return. Official lending flows to developing nations have shrank relative to total flows over the post-World War II period, although they remain dominant for some countries, for example, most of those in sub-Saharan Africa.

4. **Foreign direct investment.** A firm largely owned by foreign residents acquires or expands a subsidiary firm or factory located in another country. A loan from Coca-Cola to its assembly plant in Nigeria, for example, would be a direct investment by the United States in Nigeria. The transaction would enter Nigeria's balance of payments accounts as a financial inflow (and the U.S. balance of payments accounts as an equal financial outflow).
5. **Portfolio investment in ownership of firms.** Since the early 1990s, investors in developed countries have shown an increased interest for purchasing shares of stock in developing countries' firms. The trend has been reinforced by many developing countries' efforts at privatization that is, selling to private owners large state-owned enterprises in key areas such as electricity, telecommunications, and petroleum.

Theoretical Review

From the literature, the channels through which indebtedness works against growth are identified as: current stock of external debt as a ratio of GDP, which may stimulate growth; past debt accumulation, which captures the debt overhang and therefore deters growth; and debt service ratio to capture the crowding out effects. Debt service payments reduce export earnings and other resources and therefore retard growth. According to Elbadawi et al (1996), these debt burden indicators also affect growth indirectly through their impact on public sector expenditures. As economic conditions worsen, governments find themselves with fewer resources and public expenditure is cut. Part of this expenditure destined for social programs has severe effects on the very poor.

Empirical Studies

Clements et al, (2003) examined the channels through which external debt affects growth in low-income countries. Their results suggest that the substantial reduction in the stock of external debt projected for highly indebted poor countries (HIPCs) would directly increase per capita income growth by about 1 percentage point per annum. They noted that reductions in external debt service could also provide an indirect boost to growth through their effects on public investment. They argued that If half of all debt-service relief were channeled for such purposes without increasing the budget deficit, then growth could accelerate in some HIPCs by an additional 0.5 percentage point per annum. Borensztein (1990) found that debt overhang had an adverse effect on private investment in Philippines. The effect was strongest when private debt rather than total debt was used as a measure of the debt overhang. Iyoha (1996) found similar results for SSA countries. He concluded that heavy debt burden acts to reduce investment through both the debt overhang and the 'crowding out' effect.

Elbadawi *et al.*, (1996) also confirmed a debt overhang effect on economic growth using cross-section regression for 99 developing countries spanning Sub-Sahara Africa, Latin America, Asia and Middle East. They identified three direct channels in which indebtedness in Sub-Sahara Africa works against growth: current debt inflows as a ratio of GDP (which should stimulate growth), past debt accumulation (capturing debt overhang) and debt service ratio. The fourth indirect channel works through the impacts of the above channels on public sector expenditures. They found that debt accumulation deters growth while debt stock spurs growth. Their results also showed that the debt burden has led to fiscal distress as manifested by severely compressed budgets.

Ajayi and Oke (2012) investigation of the effect of external debt burden on economic growth and development of Nigeria using regression analysis of OLS showed that external debt burden had an adverse effect on the nation income and per capital income of the nation. They observed that the magnitude of the external debt outstanding mounted pressure on the economy since the eruption of the oil crisis in 1981 due to the rapid accumulation of trade arrears from 1982 the debt problem had been traced to the fall in the crude oil prices, collapse in commodity prices and the protracted softening of the world market since 1981 with the resultant decline in foreign exchange earnings and pressure on the balance of payment.

Sulaiman and Azeez (2012) examine the effect of external debt on the economic growth of Nigeria using econometric techniques of Ordinary Least Square (OLS), Augmented Dickey-Fuller (ADF) Unit Root test, Johansen Co-integration test and Error Correction Method (ECM) and found that external debt has contributed positively to the Nigerian economy. Oke and Sulaiman (2012) also examine the impact of external debt on the level of economic growth and the volume of investment in

Nigeria and found that the current external debt ratio of GDP stimulates growth in the short term, but the Private Investment which is measure of real and tangible development shows a decline.

Onyekwelu *et al.* (2014) adopted Linear Regression and Analysis of Variance (ANOVA) to examine External Debts Management Strategies in developing economies and its implications on some key economic indices using Nigeria as a case study. The linear regression showed that there is a positive and significant relationship between the size of External Debts and Gross Domestic Product (GDP), Capital Expenditure, External Reserves and Exports. However, the Analysis of Variance (ANOVA) reveals a negative correlation between External Debts and the variables studied. Onyekwelu *et al.* (2014) attribute this anomaly to mismanagement of credit facilities, unfavorable loan terms characterized by capitalization/compounding of interests, weak economic base, poorly coordinated statistics on loans and overdependence on foreign aids among others.

Based on the assertion that debt, whichever type or form, is a major problem militating against economic growth of developing economies, Osuji and Ozurumba (2013) investigate the impact of external debt financing on economic growth in Nigeria with data covering 1969 to 2011. The VEC model estimate shows that London debt financing possessed positive impact on economic growth while Paris debt, Multilateral and Promissory note were negatively related to economic growth in Nigeria.

Ezeabasili *et al* (2011) investigate the relationship between Nigeria’s external debt and economic growth between 1975 and 2006 applying econometric analyses. The result of the error correction estimates revealed that external debt has negative relationship with economic growth in Nigeria. They stated that Nigeria must be concerned about the absorptive capacity noting that consideration about low debt to GDP, low debt service/GDP capacity ratios should guide future debt negotiations.

Kanu *et al.* (2014) examine the impact of disaggregated components of external debt on the economic development of Nigeria for the period 1969 to 2011 using least square regression analysis and unit root test. The findings of the study show that in the short run, while multilateral and miscellaneous sources of external debt had positive significant relationships with economic development, promissory notes maintained a significant negative relationship. In the long run only the lagged value of GDP was found to be positively significant. In other words, there is no significant long run relationship between external debts and the level of economic development in Nigeria. Other sources of external debt that were hitherto significant in the short run, turned out to be insignificant in the long run. It was also ascertained that there exists a causality relationship between external debts and economic development in Nigeria.

Ojo (1996) affirms that it is no exaggeration to claim that Nigeria’s huge external debt is one of the hard knots of the Structural Adjustment Programme introduced in 1986 to put the economy back on as sustainable path of recovery. The corollary of this statement is that if only the high level of this debt service payment could be reduced significantly, Nigeria would be in a position to finance larger volume of domestic investment, which would enhance growth and development. But, more often than not a debtor has only a limited room to manage a debt crisis to advantage.

However, Cohen’s (1993) results on the correlation between developing countries (LDCs) debt and investment in the 1980s showed that the level of stock of debt does not appear to have much power to explain the slowdown of investment in developing countries during the 1980s. It is the actual flows of net transfers that matter. He found that the actual service of debt ‘crowded out’ investment.

Data Analysis

Model Specification

The model of this study is derived from the theoretical relationship between external debts, foreign exchange availability, and inflation via devaluation of domestic currency. Theoretically, there exist an indirect relationship between external debt and economic growth through the payment of amortization which freezes up available foreign exchange needed for industrial innovation, or expansion of existing plants. External debts are paid for with foreign exchange, hence increasing foreign debts implies increasing amortization rate, thus depleting the available foreign reserves needed for development purposes. Very often, developing countries, including Nigeria resort to devaluation of domestic currency which often leads to inflation. Thus, the model is specified as:

$$RGDP = f(ED, FEX, Inf) \dots\dots\dots (1)$$

Equation (1) will be estimated in the explicit, functional form as:

$$RGDP = \alpha_0 + \alpha_1 ED + \alpha_2 FEX + \alpha_3 INF + U_t \dots\dots\dots (2)$$

Where:

- RGDP = Real Gross domestic Product
- ED = External debts
- FEX = foreign exchange
- INF = Inflation
- $\alpha_0, \alpha_1, \alpha_2$ & α_3 are the parameters
- U_t is the stochastic term

The apriori expectations for the coefficients are as follows; $\alpha_1 < 0$, $\alpha_2 > 0$ & $\alpha_3 < 0$.

Model Estimation Technique

To test the time series properties of the variables of the study, the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) test statistic was employed to determine the order of integration of the variables of the study.

Data Sources

The data for this study was sourced from wide range of sources including; The central Bank of Nigeria’s (CBN) statistical bulletins of various issues; 1996, 2013, and 2017 editions, National Bureau of statistics (NBS) statistical fact sheets, 2013 edition; CBN annual reports 1994, and 2013 editions.

DATA ANALYSIS AND DISCUSSION OF FINDINGS

Stationarity Test

The time series properties of the data used in this study was tested using the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) statistic in order to avoid spurious results, and determine the order of integration of the variables of study. The KPSS test statistic shown in Table 1 below revealed that alltime series achieved stationarity at levels at 5 percent level of significance but for foreign exchange that achieved stationarity after first differencing at 5% levels of significance.

Table 1: Kwiatkowski-Phillips-Schmidt-Shin test statistic

	t - statistic	5% Critical values	Order of Integration
RGDP	0.341936	0.463000	I(0)
ED	0.403750	0.463000	I(0)
D(FEX)	0.406772	0.463000	I(1)
INF	0.292467	0.463000	I(0)

Since there is no exact critical values for the F-test for an arbitrary mix of I(0) and (1) variables, Pesaran, Shin, and Smith (2001) supplied bounds on the critical values for the asymptotic distribution of the F-statistic for various situations, for example, different numbers of variables,(k+1), they give lower and upper bounds on the critical values. In each case, the lower bound is based on the assumption that all of the variables are I(0), and the upper bound is based on the assumption that all of the variables are I(1). There is no provision for I(2) variables in ARDL framework, hence the presence of I(2) variable(s) will invalidate the ARDL methodology.

Therefore, due to the I(0) and I(1) mix of the orders of integration, equation (2) will be estimated in the ARDL specification thus;

$$\Delta RGDP = \beta_0 + \sum_{i=1}^p \beta_{1i} RGDP_{t-1} + \sum_{i=0}^p \beta_{2i} ED_{t-1} + \sum_{i=0}^p \beta_{3i} FEX_{t-1} + \sum_{i=0}^p \beta_{4i} INF_{t-1} + RGDP_{t-1} + ED_{t-1} + FEX_{t-1} + INF_{t-1} + \mu_t$$

...(3)

In order to determine the appropriate numbers lags the VAR lag selection criteria was employed and majority of the statistic including Schwarz information criterion indicated two (2) lags, hence our ARDL model will be a 2 lag model. See table 2 below for lag order selection.

Table 2: VAR Lag Order Selection Criteria

VAR Lag Order Selection Criteria
 Endogenous variables: D(RGDP)
 Exogenous variables: C D(ED) D(FEX) D(INF)
 Date: 10/19/18 Time: 19:17
 Sample: 1981 2017
 Included observations: 30

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-77.30449	NA	13.25029	5.420300	5.607126	5.480067
1	-73.95792	5.577629*	11.34892	5.263861	5.497394	5.338570
2	-72.07676	3.009846	10.72637*	5.205117*	5.485357*	5.294769*
3	-71.20166	1.341822	10.85172	5.213444	5.540390	5.318037
4	-71.19434	0.010739	11.64592	5.279623	5.653275	5.399157
5	-69.99260	1.682429	11.55751	5.266174	5.686533	5.400650
6	-68.05471	2.583863	10.93808	5.203647	5.670713	5.353065

* indicates lag order selected by the criterion
 LR: sequential modified LR test statistic (each test at 5% level)
 FPE: Final prediction error
 AIC: Akaike information criterion
 SC: Schwarz information criterion
 HQ: Hannan-Quinn information criterion

Table 3: Model Estimation Result

Dependent Variable: D(RGDP)
 Method: Least Squares
 Date: 10/19/18 Time: 19:27
 Sample (adjusted): 1984 2017
 Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.457672	2.110850	3.059276	0.0060
D(RGDP(-1))	0.207701	0.226544	0.916825	0.3696
D(RGDP(-2))	0.029692	0.143911	0.206324	0.8385
D(ED(-1))	-0.210234	0.201112	-1.045357	0.0653
D(ED(-2))	-0.210907	0.041186	-5.120842	0.4529
D(FEX(-1))	0.055864	0.052826	1.057504	0.5023
D(FEX(-2))	0.327714	0.052627	0.146586	0.8849
D(INF(-1))	-0.059064	0.044712	-1.320979	0.2007
D(INF(-2))	-0.097328	0.049119	-1.981457	0.0408
RGDP(-1)	1.057459	0.271598	3.893475	0.0008
ED(-1)	-0.510456	0.210606	-2.423748	0.0602
FEX(-1)	0.341552	0.113638	3.005614	0.0605
INF(-1)	-0.073259	0.052066	-1.407053	0.1740

R-squared	0.695877	Mean dependent var	0.179706
Adjusted R-squared	0.464950	S.D. dependent var	4.127054
S.E. of regression	3.288851	Akaike info criterion	5.501822
Sum squared resid	227.1474	Schwarz criterion	6.085430
Log likelihood	80.53097	Hannan-Quinn criter.	5.700849
F-statistic	2.580364	Durbin-Watson stat	1.951300
Prob(F-statistic)	0.027617		

The estimates of equation (3) are presented in Table 3 above. All the variables conformed to a priori expectation, while real gross domestic product (RGDP) is significant at 1 percent; external debt (ED) and Foreign exchange (FEX) are significant at 10 percent. The estimated long run coefficients revealed that a one percent increase in external debt will bring about 51 percent decrease in real gross

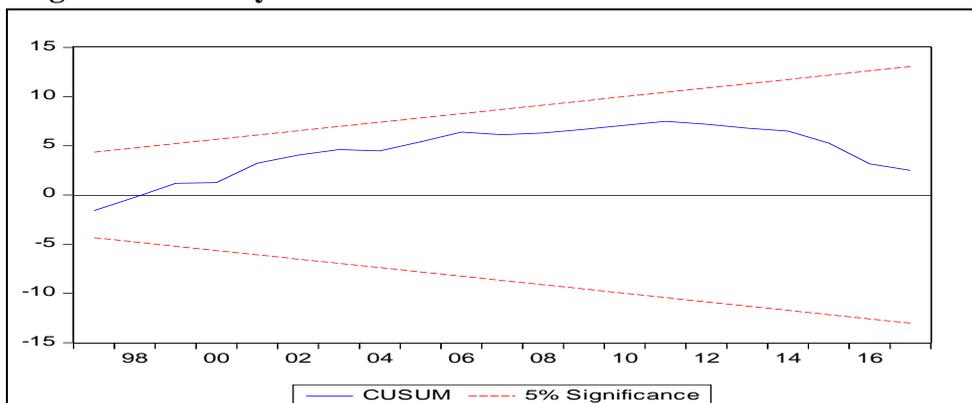
domestic product (RGDP) in Nigeria though, not significant, while a percentage change in foreign exchange will bring about 34 percent increase in real gross domestic product in Nigeria in the long run.

The model was further validated by testing for serial correlation and stability of the model. The Breusch-Godfrey serial correlation LM test was employed and the result showed that the variables in the model are serially independent. The cumulative sum of square residuals (CUSUM) was used in testing for the stability of the model which indicated that the model is stable. See Table 4 and Figure 1 below for the results of serial correlation test and stability test respectively.

Table 4: Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.041381	Prob. F(2,19)	0.9596
Obs*R-squared	0.147457	Prob. Chi-Square(2)	0.9289

Figure 1: Stability Test



To establish the existence of long run relationship (that is, co-integration) between the regressand (RGDP) and the explanatory variables, the joint (wald) test of the long run coefficients was estimated (as shown in table 5 below) in order to derive the F-statistic needed to conduct the bound test (to establish long run relationship among the variables). The F-statistic of the long run coefficients is 4.506996, while the upper bound of the Pesaran critical value at 5 percent level of significance is 4.35.

Decision Rule:

Since the value of the F-statistic exceeds the upper bound at 5 percent level of significance, we conclude that the variables are co-integration and long run relationship exists between the regressand and the explanatory variables.

Table 5: Wald Test:

Test Statistic	Value	df	Probability
F-statistic	4.506996	(4, 21)	0.0087
Chi-square	18.02798	4	0.0012

Table 6: ARDL Technique for determination of co-integration

*Critical value Bounds of the F-Statistic		
	Lower Bound I(0)	Upper Bound I(1)
1%	4.29	5.61
5%	3.23	4.35
F-Statistics 4.506996 (Prob. 0.0087)		

Case: Intercept and no trend.

Number of regressors (k) = 3

* Critical value Bounds of the F-statistic derived from Pesaran, Shin, and Smith (2001)

The coefficient of determination (R-squared) is 0.6958 which implies that about 70 percent of total variation in the real gross domestic product (RGDP) is explained by the variation in the explanatory variables included in the model. The F-statistic value of 2.580364 with a p-value of 0.027617 indicates that the overall model is statistically significant at 5 percent critical value. This implies that jointly, all explanatory variables included in the model explained variations in the real gross domestic product (RGDP) in Nigeria. The value of DW of 1.95 indicates the absence of first order auto-correlation in the model.

Estimated Short run Dynamics

Table 7: Parsimonious Error Correction Model

Dependent Variable: D(RGDP)				
Method: Least Squares				
Date: 10/19/18 Time: 19:55				
Sample (adjusted): 1985 2017				
Included observations: 33 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.156706	0.610142	-0.256835	0.7993
D(RGDP(-2))	-0.267146	0.142942	-1.868908	0.0729
D(ED(-2))	-0.000605	0.000989	-0.611529	0.5462
D(FEX(-2))	0.024207	0.047171	0.513176	0.6122
D(INF(-1))	0.031916	0.038310	0.833087	0.4124
D(INF(-2))	0.044579	0.035326	1.261934	0.2182
ECM(-1)	-0.684678	0.217054	-3.154408	0.0040
R-squared	0.420460	Mean dependent var		-0.121212
Adjusted R-squared	0.286720	S.D. dependent var		3.793399
S.E. of regression	3.203748	Akaike info criterion		5.352351
Sum squared resid	266.8641	Schwarz criterion		5.669792
Log likelihood	-81.31380	Hannan-Quinn criter.		5.459161
F-statistic	3.143866	Durbin-Watson stat		2.082710
Prob(F-statistic)	0.018763			

The parsimonious model above was derived from an over-parameterized model through general to specific method. The ECM provides the proportion of disequilibrium error that is accumulated in the previous period which is corrected in the current period. Table 7 revealed that external debt does not have significant impact on the real gross domestic product (RGDP) in Nigeria and magnitude of impact is quit inconsequential at about 1 percent. The coefficient of the error correction term, ECM(-1) of -0.68 is rightly signed (that is, negative) and significant at 2 percent. The magnitude of this coefficient (-0.68) implies that 68 percent deviation from the long run equilibrium is corrected yearly. The error correction model was tested for serial correlation as shown in Table 8 which revealed that the model is serially independent and as such free from any autocorrelation of any order. This position was supported by the DW statistic with a value of 2.08, indicative of the absence of autocorrelation in the model. Also to ensure that the model is dynamically stable, the cumulative sum of recursive residuals (CUSUM) test was conducted and the result as presented in figure 9 revealed that the model is dynamically stable as the tick line lies within the two dotted critical values lines at 5 percent level of significances, see figure 2 below.

Table 8: Breusch-Godfrey Serial Correlation LM Test

F-statistic	1.463922	Prob. F(2,24)	0.2513
Obs*R-squared	3.588064	Prob. Chi-Square(2)	0.1663

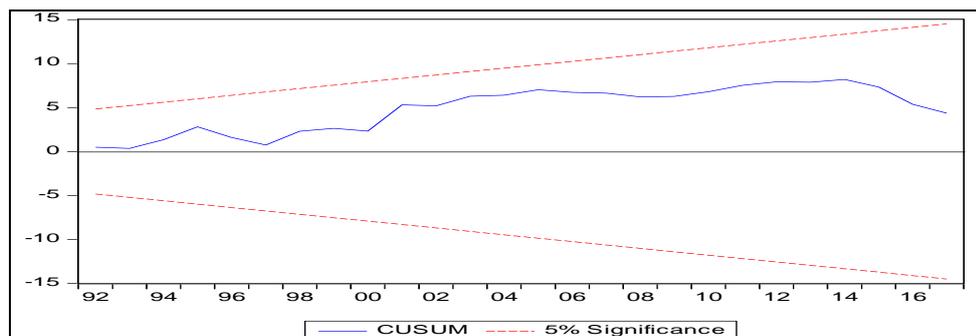


Figure 2: Stability Test Figure 1: Stability Test

Causality Test

Having established the evidence of long run causality running from the explanatory variables to the RGDP as shown in the error correction term (ECM(-1)) of the short run dynamics, whereby the $H_0: \chi = 0$ is rejected, showing that there is long run causal effect on RGDP resulting from changes in the explanatory variables (ED, FEX, and INF. In other words, joint movement in the explanatory variables in the long run has predictive information on the changes in RGDP.

The short run causality test provided evidence of NO causality running from any of the explanatory variables to the RGDP as the null hypothesis, $H_0: B_0 = B_1 = \dots = B_{qmax} = 0$ was accepted as shown in table 9. However, the null hypothesis of no strong causality was rejected; indicative of existence of strong causality running from all explanatory variables to RGDP in Nigeria as shown in table 10.

Table 9: Short Run Causality

	Test Statistic	Value	df	Probability
ED	F-statistic	0.373968	(1, 26)	0.5462
	Chi-square	0.373968	1	0.5408
FEX	F-statistic	0.263350	(1, 26)	0.6122
	Chi-square	0.263350	1	0.6078
INF	F-statistic	1.221913	(2, 26)	0.3110
	Chi-square	2.443826	2	0.2947

Table 4.8: Strong Causality

	Test Statistic	Value	df	Probability
ED	F-statistic	5.192352	(2, 26)	0.0127
	Chi-square	10.38470	2	0.0056
FEX	F-statistic	5.036761	(2, 26)	0.0142
	Chi-square	10.07352	1	0.0065
INF	F-statistic	4.508615	(3, 26)	0.0113
	Chi-square	13.52584	3	0.0036

CONCLUSION

External debt has shown to have less than 1 percent negative impact on the Nigeria’s economic growth (RGDP) in terms of magnitude and though statistically insignificant. The Nigerian external debt ratio to its Gross domestic product (GDP) within the period of this is insignificantly low and hence irrespective of the poor management of these debts had not really impeded the Nigeria economic growth rate.

The study then recommends as follows:

1. Nigerian government should ensure that debts incurred are channel towards productive uses and debt management office of the government should strengthen its plans and foster

appropriate use of loans in the critical areas of development. Prudent management of foreign debts will stimulate economic growth rather than impede it.

2. Nigeria still has great opportunity of borrowing abroad to leverage on her intertemporal trade.
3. External borrowing will provide Nigeria the needed window for bridging the huge infrastructural deficit in the country.

REFERENCES

- Ajayi, L. B. and Oke, M. O. (2012) "Effect of External Debt on Economic Growth and Development of Nigeria". *International Journal of Business and Social Science*. 3 (12).
- Anyanwu JC, Oyefusi A, Oaikhenan H, Dimowo FA (1997) the structure of the Nigeria economy. Onitsha, Anambra State, Joanee Educational Publishers Ltd.
- Apeh, A. S. and Okoh, A. S. (2014) "An Econometrics Analysis of the Impact of External Debt Crisis on Nigeria Economy (1986-2010)". *Journal of Economics and Sustainable Development*. 5 (12).
- Ayadi FS (1999) The impact of External Debt Servicing requirements on Nigeria's Economic Development. University of Lagos, Nigeria.
- Borensztein, E. (1990) "Debt overhang, debt reduction and investment: The case of the Philippines". *International Monetary Fund working paper*. No. WP/90/77, September.
- Central Bank of Nigeria (1996), Annual Report and Statement of Accounts.
- Central Bank of Nigeria (2013), Annual Report and Statement of Accounts.
- Central Bank of Nigeria (1996), Statistical Bulletin.
- Central Bank of Nigeria (2013), Statistical Bulletin.
- Central Bank of Nigeria (2017), Statistical Bulletin.
- Clements, B.; Bhattacharya, R. and Nguyen, T. Q. (2003) "External Debt, Public Investment, and Growth in Low-Income Countries". *IMF Working Paper*. No. WP/03/249.
- Cohen, D. (1993) "Low investment and large LDC debt in the 1980s". *The American Economic Review*. June 1993.
- Darma, N. A. (2014) "The Impact of Nigeria's Debt Stock and its Servicing on Social Services Provision: 1980-2010". *Developing Country Studies*. 4 (10).
- Elbadawi, A. I.; Ndulu, J. B. and Ndung'u, N. (1996) "Debt overhang and economic growth in Sub-Saharan Africa". A paper presented to the IMF/World Bank conference on External Financing for Low Income Countries in December.
- Erhieyovwe, E. K. and Onovwoakpoma, O. D. (2013) "External Debt Burden and its Impact on Growth: An Assessment of Major Macro- Economic Variables in Nigeria". *Academic Journal of Interdisciplinary Studies*. 2 (2).
- Ezeabasili, V. N.; Isu, H. O. and Mojekwu, J. N. (2011) Nigeria's External Debt and Economic Growth: An Error Correction Approach. *International Journal of Business and Management*. 6 (5).
- Ezike, J. E. and Mojekwu, J. N. (2011) "The Impact of External Debt on Macro-Economic Performance". *International Journal of Business and Management Tomorrow*. 1 (2).
- Iya, I. B.; Gabdo, Y. and Aminu, U. (2013) "An Empirical Investigation into the impact of External Debt on Economic Growth in Nigeria". *International Journal of Current Research*. 5 (5). 1065-1069.
- Kanu, S. I.; Anyanwu, F. A. and Osuji, J. I. (2014) "The Impact of Disaggregated Components of External Debt on the Economic Development of Nigeria (1969-2011)". *Research Journal of Finance and Accounting*. 5 (10), pp. 96-106.
- Muhammad, U. D. and Fayyaz, A. (2015) "External Debts and Exchange Rates of Oil-Producing and Non-Oil Producing Nations: Evidence from Nigeria and Pakistan". *Journal of Advanced Management Science*. 3 (1), pp. 8-12.
- National Bureau of statistics (2013), statistical fact sheets.
- Ojo, M. O. (1996) "The power structure of international debt Management". *CBN Economic and Financial Review*.
- Oke, M. O. and Sulaiman, L. A. (2012) "External Debt, Economic Growth and Investment in Nigeria". *European Journal of Business and Management*. 4 (11), pp. 67-75.

- Ogunmuyiwa, M. S. (2011) "Does External Debt Promote Economic Growth in Nigeria?" *Current Research Journal of Economic Theory*. 3 (1), pp. 29-35.
- Onyekwelu, U. L.; Okoye, E. and Ugwuanyi, U. B. (2014) "External Debts Management Strategies in Developing Economies: An Impact Assessment on Selected Economic Indices of Nigeria (2002–2011)". *International Journal of Economics and Finance*. 6 (8), pp. 137-152.
- Osuji, C. C. and Ozurumba, B. A. (2013) "Impact of External Debt Financing on Economic Development in Nigeria". *Research Journal of Finance and Accounting*. 4 (4), pp. 92-98.
- Pattillo, C.; Poirson, H. and Ricci, L. (2002) "External Debt and Growth". IMF Working Paper. No. WP/02/69, pp. 1-33
- Safdari, M. and Mehrizi, M. A. (2011) "External debt and economic growth in Iran". *Journal of Economics and International Finance*. 3 (5), pp. 322-327.
- Semenitari, I (2005). "The Road to debt Relief" in *Tell* No 29, July 18, P38.
- Semenitari I (2005). "It was all God's Doing" in *Tell* No. 29, July 18, P47.
- Sulaiman, L. A. and Azeez, B. A. (2012) "Effect of External Debt on Economic Growth of Nigeria". *Journal of Economics and Sustainable Development*. 3 (8), pp. 71-79.
- Udoka, C. O. and Ogege, S. (2012) "Public Debt and the Crisis of Development in Nigeria: Econometric Investigation". *Asian Journal of Finance and Accounting*. 4 (2), pp. 231-243.