Effect of external debt on Nigerian Economy: Further evidences

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15 January 2019

Online at https://mpra.ub.uni-muenchen.de/92704/
MPRA Paper No. 92704, posted 23 March 2019 03:51 UTC
Effect of External Debt on the Nigerian Economy: Further Evidences

by

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Abstract

The study sought further evidences on the effect of external debt on economic growth in Nigeria. Time series data on external debt stock, real gross domestic product, trade openness, and gross fixed capital formation as a percentage of GDP as well as data on inflation and exchange rates were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin and World bank indicators. The study set out to test for both the long run and short run relationship as well as presenting further evidences on the relationship between external debt and economic growth. The Autoregressive Distributed Lag (ARDL) Model was employed as a technique of estimation in the study and the results led a finding that the external debt contribute negatively to growth in Nigeria based on data from 1981 through 2016 which was in line with Ayadi and Ayadi(2008). The study recommended amongst others, the need for accountability in governance, good macroeconomic policy environment, proper acquisition and use of debt solely for productive reasons and the enhanced exportation of domestic products.

Key Words: External debt, growth, further evidences.
1. INTRODUCTION

The difference between the revenue and expenditure of most governments may not always be zero. This raises the question of other sources of finance for their required expenditure including borrowing either from individuals, countries, multinationals amongst others. Most countries across the world borrow funds to meet their financing needs and close the budget deficit. This constitute debt, which can either be internal or external. External debt plays both an optimistic and destructive part in forming economic growth, especially of the developing nations. However, it is useful if it is utilized for investment-oriented purposes. For example sectors like the power sector, educational sector among others. External debt may be an economic stimulant but when its accumulation gets to a very substantial level, a reasonable proportion of government expenditure and foreign exchange earnings will be used to service and repay the debt with heavy opportunity costs even for future generations. Thus, external debt is a major source of finance majorly used in supplementing domestic sources of funds in a bid to support the development process as well as other needs of a country. It must however be pointed out that excessive external debt may breed harmful effects to the sustainable economic growth and poverty reduction which developing nations seek.

Nigeria’s Debt profile has been on the rise over several decades although it has not reached certain thresholds stipulated by well-meaning international organizations including the IMF’s 56% for countries in Nigeria’s peer group; a situation that has encouraged government borrowing. Moreover, total public debt stock is low, there’s still increased funding requirement to sustain the economic recovery and this would entail enormous funding resources including borrowing. This is in line with the Economic Recovery and Growth Plan (ERGP) in 2017.

Over the past decade and especially after the financial crisis in 2008, the level of public debt is expanding in international, national and sub-national level. Soludo (2003), stated that countries borrow for two broad categories, macro-economic reasons (higher investment higher consumption i.e. education and health or to finance transitory balance of payment deficit to lower nominal interest rates abroad lack of domestic long term credit or to circumvent hand budget constraint. It should be approached with caution, ensuring optimal utilization and higher return than the interest (cost of fund). According to Mbah(2016), the Keynesian
economics school of thought posits that government borrowing can be used to promote economic growth, through the financing of government deficit expenditures which stimulates aggregate demand and thus encourage increase in private investments. However excessive public debt can create great debt burden for the country. Soludo (2003) in Okonjo-Iweala et al (2013) argues that once an initial stock of debt grows to a certain threshold, servicing them becomes a burden, and countries find themselves on the wrong side of the Debt Laffer Curve, with debt crowding out investment and growth. Conversely, Bakare (2011) asserts that a country’s indebtedness does not necessarily slow growth, rather it is the nation’s inability to optimally utilize these loans to foster economic growth and development and ensure effective servicing of such debt that hampers the benefits derivable from borrowed capital resources. Therefore, the position that debt takes in the process of growth of nations needs to be determined

1.1. Statement of the Problem

Debt could be a response to a need to meet the much needed obligations whether at the level of an individual or nation. Therefore, nations utilize the borrowing option in a bid to meet these obligations; this is how debt is created. According to Chen (2018) debt is an amount of money borrowed by one party from another. It is used by many corporations and individuals to make large purchases that they could not afford under normal circumstances. Shortfall in domestic savings to finance productive activities compels nations to borrow (Ezeabasili, 2006 and Momodu, 2012). Researchers seems to have mixed thoughts on funding domestic investment through external borrowing. Some posit that it is inadequate while others embrace its adequacy. They assert that only if the external borrowing is used effectively in productive activities, will it facilitate reduction of imports. In line with the Economic Recovery and Growth Plan (ERGP), the suggested debt structure for Nigeria is 60: 40; the former being the percentage of external funding while the latter is domestic funding. This was considered needful as against the 80:20 ratio structure in operation at the inception of the Debt Management Office (DMO). This newly adopted funding was intended to reduce the crowding out effect of government spending on the private sector. Thus, domestic debt, in itself has the effect of crowding out private investment; an issue that is remedied by external borrowing. This is because a rise in government borrowing from the domestic economy would reduce the ability of domestic investors
to access credit leading to a reduction in their investment. Furthermore, it must be stated that there are other measures of public debt other than the debt to GDP ratio often emphasized in literature and this overt emphasis has limited the broad consideration of debt issues. Some of the other measures include the Debt to Revenue, Debt to exports, Debt service payments to Revenue among others.

Nigeria took the jumbo loan in 1978 which was used productively for needed infrastructures like the Dam, etc but recent debts have not been put to seemingly adequate productive use in the country. Hence, strengthening the position of some researchers who have thus questioned the need for debt contraction and accumulation. They say it creates the intergenerational and intragenerational inequity since it benefits the present but burdens the future generations who have to clear the debt. According to the King James version of the Christian Holy book, “a good father leaveth inheritance for his children”; this sort of debt contradicts the implied meaning of that verse. As a result, this study seeks to assess the effect of external debt on economic growth in Nigeria as well as provide further evidences on the impact of debt on the process of growth in Nigeria. The remaining part of the study is organized as follows: section two gives the literature review on external debt and economic growth. Section three provides the source and methodology employed in the study. Section four deals on the presentation and discussion of the result and this was concluded in section five.

2. Literature Review

2.1. Nigeria’s External Debt Profile

Nigeria’s external debt can be traced back to the pre-independence period (1958) when about 28 million US dollars was borrowed from World Bank for construction of railways. According to the Debt Management office (2004), this debt level was considered minimal up until 1978, when the first loan popularly called “The Jumbo loan” was raised to the tune of more than $1.0 billion from the International Capital Market. In 1958 through 1977, the need for debt was very low. However, the need for debt arose in 1978 due to the fall in oil prices in 1978, leading to a contraction of external debt. The falling oil prices had a negative influence on the revenue of the government. Correcting difficulties in the balance of payment
and financing projects thus necessitated borrowing. The report of the Debt management office (DMO), however states that from 1977, the debt stock incurred by the country has been on a steady increase, rising from $0.763 billion in 1977 to $5.09 billion in 1978 and $8.65 billion in 1980, an increase of over 73.96 percent. This subsequently rose to $35.94 billion in 2004. However, Nigeria became better positioned with respect to debt owing to the debt relief in 2006; a period in which it offset a substantial part of its debt but this did not last for too long as debt figures soon started to record an upward trend. Borrowing further increased when state governments were allowed to go into external loan contractual obligations. 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 and this made the country better-able to service her debt (Ayadi and Ayadi, 2008). According to Amaefule (2015), Nigeria’s total debt stock as at December 2014 stood at N12.4 Trillion. A major revelation in the public debt figure reveal that the domestic borrowing by the government consistently decreased from N12.589trn in December 2017 to N12.577 trillion in March 2017 and N12.151trn in June 2018 according to the International Monetary Fund (IMF) in 2018. Current figures from the trading economics have revealed that the external debt in Nigeria increased to USD22083.44m in the second quarter of 2018 from USD22071.91m in the first quarter of 2018. External debt in Nigeria averaged USD8486.04m from 2008 through 2018, reaching an all high of USD22083.44m in the second quarter of 2018 and record low of USD3627.5m in the first quarter of 2019. According to Omoleye, Sharma, Ngussam, and Ezeonu (2006), Nigeria is the largest debtor nation in the Sub-Saharan Africa. This is captured in the graph in figure 1.1 which shows the debt service payments and total external debt in Nigeria for the years 1981-2016.
Form the graph in figure 1.1, the external debt to GDP ratio rose from slightly greater than 15% to an all high of over 45% in 1987. However, after this period it began to fluctuate decreasing to slightly over 32% in 2003 after which it fell drastically below 5% in 2006. After this point, the debt to GDP ratio was relatively low yet increasing at a steady rate reaching about 12% in 2016. The Debt service ratio also maintained a steady but flat trend between 1981 and 2002 before then skyrocketing to over 42% in 2003, 43% in 2004 and back to 42% in 2005. By the end of this period, it fell to about 20% in 2006 before it began to increase steadily till 30% in 2016.

2.2. Empirical Review

Ayadi & Ayadi (2008) argue that acquisition of external funds depends on the relationship between domestic savings, foreign funds, investment, and economic growth. Following Ajayi (2000), the guiding principle is to seek for external finance when funds acquired generates a rate of return that is higher than the cost of borrowing the foreign funds. Adhering to this principle therefore implies that such country is increasing capacity and expanding output with the aid of foreign savings.

In terms of empirical literatures with developing countries’ experiences, Halima (2013) beamed searchlight on some developing nations by estimating the effect of external public debt on economic growth in four East African countries including Kenya, Tanzania, Uganda, and Rwanda using panel data for the period
1981 to 2014. The data was analyzed using the fixed effect and the random effects model estimation techniques from which it was found that external debt had a negative effect on economic growth in East African Countries while Domestic debt had no significant effect on economic growth.

Olasode and Babatunde (2016) sought to explain the casual relationship between accumulated funds/loans from external sources and economic growth focusing on the Nigerian economy. The Autoregressive Distributed Lag (ARDL) model was employed to capture the effect of external debts and growth in Nigerian from 1984-2012. The result from the ordinary least squares method employed in the research confirms the presence of a dual behavior as the lag one of external debts is positive while external debts of current year has a negative effect on the performance of the economy.

Udeh, Ugwu and Onwuka (2016) worked on ascertaining the impact of external debt on economic growth in Nigeria adopting an ex-post facto research design for the period 1980-2013 using Ordinary Least Square. From their findings, external Debt had a positive relationship with Gross Domestic Product in the short run, but a negative relationship in long run. However, the external debt service payment had negative relationship with Gross Domestic Product.

Njiru (2012) examined the effect of public debt on economic growth in Kenya for the years between 1980 and 2013. The study employed the Debt overhang hypothesis, Endogenous growth theory, the Crowding out effect and the neo-classicalists theory for the study objectives. Causal research design was applied and annual financial data was collected from Kenya National Bureau of Statistics and Central Bank, while economic data was collected from World Bank for the period 1980-2013. They found that Public debt servicing, domestic debt affected the growth of the GDP negatively while external debt component affected growth of the GDP positively.

Panagiotis Pegkas(2017) empirically investigated the relationship between economic growth and several factors (investment, private and government consumption, trade openness, population growth and government debt) in Greece. The results reveal a negative long-run effect of government debt on growth. The results indicate that the relationship between debt and growth depends on the debt breaks.
Mbah (2016) investigated the impact of external debt on economic growth of Nigeria using the ARDL bound testing approach to co-integration and error correction models for the periods 1970 – 2013; The study indicated a long-run relationship among the variables and external debt impacts negatively significant on output.

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) methods. Their finding revealed negative impact of debt and its servicing requirement on the economic growth of Nigeria and South Africa.

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

3. Theoretical Framework

3.1. The Two gap or Dual gap model

Scholars have taken so many positions in an attempt to explain the subject of external debt. The dual gap model by Chenery(1996) is generally used in order to analyse the requirements of foreign aid to bridge the two gaps that prevail in developed and developing countries vis savings gap and trade gap. In most of these economies, they start off their development process with low savings. However, it has change gaps binding for achieving a desired rate of growth in order to engage in high level investment. If the gap is reduced, it becomes easier for economies to reach the stage of take-off as postulated by Rostow. The question now is how the gap will be filled. Chenery sees foreign aid as a way of filling these two gaps in order to achieve the target rate of the economy (M.L. Jhingan 2007). Given the assumption of full employment, if the savings gap is dominant, this would imply that the economy is operating at full employment and are not
using all of its foreign exchange earnings. It may have enough foreign exchange to purchase additional capital goods from abroad but there is not enough excess domestic resources to carry out additional investment projects. As a result, excess foreign exchange may be spent on importing luxury goods. Such a country can be said to have a shortage in productive resources which can be viewed as shortage in savings. On the other hand, the saving-gap countries, the countries facing foreign exchange gap cannot overcome it by using excess domestic saving.

The foreign exchange gap is binding for the purpose of achieving a desired rate of economic growth. This is the basis of dual gap analysis. Assume that there is a country that requires saving and investment good import to achieve a particular rate of growth. If the available saving at the domestic font falls short of the level necessary to achieve the targeted growth rate, a savings-investment gap is said to be present. On a similar note, if the maximum import requirement needed to achieve the growth target is greater than the maximum possible level of export, then this is an export-import of foreign exchange gap.

Foreign exchange gap occurs due to the difference in the total value of exports and imports (especially when imports exceed export). The depreciation that arises therefrom alters the gap between the local and foreign currency on the other hand, savings gap is the difference between amount of money held by individuals and the required level of investment in the economy. The two gaps are explained in terms of national income account identities. This can be expressed mathematically as:

\[ Y = C + I + X - M \] \hspace{1cm} Eqn 3.1

\[ Y = C + S \] \hspace{1cm} Eqn 3.2

\[ S = Y - C \] \hspace{1cm} Eqn 3.3

Therefore,

\[ C + I + X = C + S + M \] \hspace{1cm} Eqn 3.4

\[ I - S = M - X \] \hspace{1cm} Eqn 3.5

Where, \( Y \) = national income or expenditure,

\( C \) = consumption spending,

\( I \) = investment spending,
S= savings,
X= export,
M= import,

(I-S) is savings gap while the (M-X) is foreign exchange gap or trade gap.

When savings gap is greater than foreign exchange gap, we have the savings constraint and when foreign exchange gap is greater than the savings gap, we have foreign exchange constraint. It is thus needed for foreign aid to be used to remove the savings gap by the inflow of capital.

3.2. Methodology

3.2.1. Model specification

The model below assumes a linear relationship. The linear specification is done to investigate the impact of external debt on the Nigerian economy. Following Ottone (2015), the linear model is as specified below.

The regression equation that we use to capture the relationship between external debt and Nigerian economy is of the type:

\[ RGDP = f(EXDG, TOP, INV, EXCH, INF) \] \hspace{1cm} \text{Eqn 3.1b}

The functional relationship depicted above could be summarized into a reduced form growth model shown below:

\[ RGDP_t = \beta_0 + \beta_1 EXD_t + \beta_2 TOP_t + \beta_3 INV_t + \beta_4 EXCH_t + \beta_5 INF_t + U_t \] \hspace{1cm} \text{Eqn 3.2b}

We log some of the values so as to be able to enable them be on the same unit of measurement.

\[ \text{LOGGDP}_t = \beta_0 + \beta_1 \text{LOGEXD}_t + \beta_2 \text{TOP}_t + \beta_3 \text{LOGINV}_t + \beta_4 \text{EXCH}_t + \beta_5 \text{INF}_t + U_t \] \hspace{1cm} \text{Eqn 4.3b}

\( \beta_0 > 0, \beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 > 0, \beta_5 > 0 \) are the apriori expectations of the model. RGDP is the real gross domestic product used to measure growth of the Nigerian economy, EXD is the Eternal Debt to GDP ratio, TOP is a policy variable which stands for trade openness, computed as (import+export)/(RGDP)
while INV is gross fixed capital formation as a percentage of real RGDP, EXCH is the official exchange rate and $U_t$ is the disturbance term.

4. Results Presentation and Discussion

4.1. Unit Root Test

Table 4.1: Table showing the results of the unit root tests for stationarity.

The table gives the values of the unit root tests for stationarity of the variables in the model.

<table>
<thead>
<tr>
<th>Variables</th>
<th>t-values</th>
<th>P-value</th>
<th>Degree of stationarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exch</td>
<td>-3.644593</td>
<td>0.0099</td>
<td>I(1)</td>
</tr>
<tr>
<td>Loggfcf</td>
<td>-4.580447</td>
<td>0.0009</td>
<td>I(1)</td>
</tr>
<tr>
<td>Logextdebt</td>
<td>-4.673478</td>
<td>0.0006</td>
<td>I(1)</td>
</tr>
<tr>
<td>Loggdp</td>
<td>-5.472869</td>
<td>0.0001</td>
<td>I(1)</td>
</tr>
<tr>
<td>Inf</td>
<td>-5.696396</td>
<td>0.0000</td>
<td>I(0)</td>
</tr>
<tr>
<td>Top</td>
<td>-7.999128</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

Source: Author’s computation (2015) From Eviews 9.0

From table 4.1, the result shows that only inflation rate (INF) is integrated of order I(0) at 5% level of significance, meaning that it is stationary at level, while the variables LOGGFCF, LOGEXTDEBT, LOGGDP, TOP and EXCH become stationary only after first difference, implying that they are integrated of order I(1). Because the variables are a mixture of I(0) and I(1) series, the Autoregressive Distributed Lag Model technique would be most appropriate.

4.2. Autoregressive Distributed lag Model (ARDL)

Given that the results of the unit root test gives the order of stationarity of the variables in question to be both stationary at I(1) and I(0), the appropriate model to be used is the Autoregressive Distributed lag Model (ARDL) which gives both the short run and long run values of the variables in the model.

4.2.1 Wald Test

Table 4.2: Table showing the results of the Wald Test

The table below shows the results for the Wald Test

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Value</th>
<th>Df</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
<td>1289.249</td>
<td>(4, 19)</td>
<td>0.0000</td>
</tr>
<tr>
<td>Chi-square</td>
<td>5156.997</td>
<td>4</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Author's Computation using E-views 9.0
From Table 4.2, the calculated F-statistic of the Wald-test on the level variables is 1289.249 and is higher than the upper bound critical value at the 5% level of significance. This implies that the null hypothesis of no co-integration cannot be accepted at the 5% level of significance and thus, there exists a long-run relationship among the variables.

4.2.2. ARDL Cointegrating and Long Run Form

Table 4.3: Table showing the co-integrating and long run forms of the Autoregressive Distributed Lag Model

The table below gives the co-integrating and long run form of the Autoregressive Distributed Lag Model.

<table>
<thead>
<tr>
<th>Cointegrating Form</th>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D(LOGEXTDEBT)</td>
<td>-0.014651</td>
<td>0.047629</td>
<td>-0.307604</td>
<td>0.7617</td>
</tr>
<tr>
<td></td>
<td>D(LOGGFCF)</td>
<td>0.012410</td>
<td>0.039496</td>
<td>0.314200</td>
<td>0.7568</td>
</tr>
<tr>
<td></td>
<td>D(INF)</td>
<td>0.002654</td>
<td>0.000189</td>
<td>14.059941</td>
<td>0.0000</td>
</tr>
<tr>
<td></td>
<td>D(EXCH)</td>
<td>0.000041</td>
<td>0.000309</td>
<td>0.134242</td>
<td>0.8946</td>
</tr>
<tr>
<td></td>
<td>D(EXCH(-1))</td>
<td>0.000932</td>
<td>0.000448</td>
<td>2.079194</td>
<td>0.0514</td>
</tr>
<tr>
<td></td>
<td>D(EXCH(-2))</td>
<td>-0.000881</td>
<td>0.000370</td>
<td>-2.383668</td>
<td>0.0277</td>
</tr>
<tr>
<td></td>
<td>D(TOP)</td>
<td>-0.014020</td>
<td>0.040304</td>
<td>-0.347854</td>
<td>0.7318</td>
</tr>
<tr>
<td></td>
<td>CointEq(-1)</td>
<td>-0.050243</td>
<td>0.039967</td>
<td>-1.257109</td>
<td>0.2239</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Long Run Coefficients</th>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOGEXTDEBT</td>
<td>1.379090</td>
<td>1.149587</td>
<td>1.199639</td>
<td>0.2450</td>
</tr>
<tr>
<td></td>
<td>LOGGFCF</td>
<td>0.246991</td>
<td>0.604810</td>
<td>0.408377</td>
<td>0.6876</td>
</tr>
<tr>
<td></td>
<td>INF</td>
<td>0.060760</td>
<td>0.051220</td>
<td>1.186253</td>
<td>0.2501</td>
</tr>
<tr>
<td></td>
<td>EXCH</td>
<td>0.015151</td>
<td>0.012094</td>
<td>1.252739</td>
<td>0.2255</td>
</tr>
<tr>
<td></td>
<td>TOP</td>
<td>1.564272</td>
<td>1.073606</td>
<td>1.457025</td>
<td>0.1614</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>-6.010563</td>
<td>8.370966</td>
<td>-0.718025</td>
<td>0.4815</td>
</tr>
</tbody>
</table>

The result of the ARDL co-integrating and long run form presented in Table 4.3 shows that in the short run, LOGEXTDEBT is negatively correlated with output growth at 5% level in the short-run. This negates the Keynesian view on debt, a source of increased government revenue on the economy. In this case, as well, the crowding out hypothesis and debt overhang theory of Krugman (1989) is highly supported in Nigeria. This is in sharp consonance with the studies of Mbah (2016), Akram (2010) and Babu et al. (2014). However, in the long run, it becomes positively correlated with output. Similarly, LOGGFCF both in the short and long runs, has a non-significant but positive relationship with output at 5% level of significance. This suggests that investment contributes to growth. This implies that with more resources being invested in the economy, the rate of growth rises. In the short run, Inflation has a significant and positive relationship
with output which however becomes non-significant in the long run. This implies that a higher price level may lead to higher amount of transaction or sales which raises growth in this economy. Trade openness (TOP) also impact negatively but not significantly on economic growth in the short run. This negative effect may be a result of increased imports relative to exports in the country. The works of Jarita (2007) opines that trade balance will worsen whenever imports are greater than exports for any nation. However, this is not the case in the long run. The trade openness contributes positively to growth in the long run. The Exchange rate (EXCH) variable is also positive but not significant in the short and long runs.
The result also shows the speed of adjustment of -0.05 from the short-run equilibrium to the long-run equilibrium. This means that 5% of the error is corrected in each time period. Thus, the low speed of adjustment implies that it will take the economy about 5 years to correct all deviations from equilibrium and bring the economy back to equilibrium.

4.2.3. Bounds Testing

Table 4.4: Table showing the results for the bound test

The table below shows the results for the bound tests

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Value</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
<td>38.59939</td>
<td>5</td>
</tr>
</tbody>
</table>

Critical Value Bounds

<table>
<thead>
<tr>
<th>Significance</th>
<th>I0 Bound</th>
<th>I1 Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>2.26</td>
<td>3.35</td>
</tr>
<tr>
<td>5%</td>
<td>2.62</td>
<td>3.79</td>
</tr>
<tr>
<td>2.5%</td>
<td>2.96</td>
<td>4.18</td>
</tr>
<tr>
<td>1%</td>
<td>3.41</td>
<td>4.68</td>
</tr>
</tbody>
</table>

Author’s Computation using Eviews 9.0

The bound test requires that the F-statistic be greater than the I1 bound value for there to be co-integration. If the F-statistic fall below the lower bound, the variables are I(0) and no co-integration is possible. Any value in between 1 and I1 is inconclusive. In this case, as can be seen from Table 4.4, the F-statistic is greater than the I1 bound which is evidence of a long run relationship between the variables.

4.2.4. Breusch Geoffrey Test of Serial Correlation

Table 4.5: Table showing the results of the Breusch-Geoffrey Test of serial correlation

The table below gives the results of the Breusch Geoffrey Tests of serial correlation

<table>
<thead>
<tr>
<th>F-statistic</th>
<th>2.440916</th>
<th>Prob F(2,17)</th>
<th>0.1170</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obs R-squared</td>
<td>7.139194</td>
<td>Prob Chi-Square(2)</td>
<td>0.0282</td>
</tr>
</tbody>
</table>

Author’s Computation using Eviews 9.0

From the table 4.5, the results of the Breusch-Godfrey test for autocorrelation is presented. With a prob. Chi-Square value of 0.1170, we cannot reject the null-hypothesis of no auto correlation. This therefore implies that there is no autocorrelation in the model.

4.2.5. CUSUM and CUSUM Squared Tests

Figure 4.1: Showing the results of the CUSUM and CUSUM Squared tests.
The results of the CUSUM tests and CUSUM Squared tests are shown below.

From the figure 4.1, the CUSUM test of stability shows the model to be stable. This is evidenced by the fact that the blue line lies between the two red lines in both the CUSUM and the CUSUM Squared tests of stability. This further confirms that the model is stable.
5. Summary and Conclusion

It has been said that external debt is not a bad in itself except for unproductive uses. Therefore, a nation can borrow but not for unproductive and unsound purposes. The contraction of debt for unproductive uses brings about intergenerational and intragenerational inequity. That is, placing a burden on the future generation of a country due to borrowing that does not profit them. This burden on future generations according to Udeh et al (2016) ought to be the most important concern agitating the mind of any good economist whenever the issue of external debt is contemplated.

From the study however, external debt has a negative influence on economic growth. This is highly due to its contraction for unnecessary and unproductive uses. Although, the result does not support the position of Ngiru(2012), it corroborates the findings of Ayadi and Ayadi(2008), Udeh, Ugwu and Onwuka (2016) and Mbah(2016). Therefore, drawing based on these findings, there is a need for the government to seek the diversification of the economy away from oil as this will generate more revenue which will reduce the effect of a downtrend in oil revenue which usually calls for debt. Also, following Bakare (2011) and Ayadi and Ayadi(2008), the government must ensure productive use of debt when contracted although this may require considerable fiscal discipline. As well, the cost of governance should be reduced so as to enable proper utilization of the available funds for development purposes and an enabling environment must be created to enhance investment in the Nigerian economy. There is also the need for accountability in governance, good macroeconomic policy environment and the enhanced exportation of domestic products.
References


Yanrui (2013) “Local Government Debt And Economic Growth In China” Business School, University Of Western Australia; Discussion Paper 15.11.