Effect of External Debt on Economic Growth in Nigeria

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Abstract
External debt arises as a result of the gap between domestic saving and investment. As gap widens, debt accumulates and this make the country to continually borrow increasing amount in order to stay afloat. This study evaluates the effect of external debt on economic growth of Nigeria from 1986-2016. The paper used secondary sources of data using time series data on external debt, foreign direct investment, external debt services, and exchange rate was used to capture the effects as they relevant macroeconomic variables. The study also tests for the long run and causal relationship the variables. The empirical investigation was conducted using time series data on RGDP, FDI, ED, EDS, and EXR for the period of 1986-2016. The techniques of estimation employed in the study include Augmented Dickey Fuller (ADF) test, Johenson co-integration test and Granger causality test. The analytical technique employed was OLS multiple regression analysis. The result reveals an insignificance long run relationship between external debt and economic growth of Nigeria which shows a positive relationship between FDI and EXR and the real gross domestic growth. While on the contrary ED and EDS has a negative relationship with the real gross domestic product. The study recommended that Debt management office (DMO) should set mechanism in motion to ensure that loans are effectively and efficiently utilized for the purpose of which the loans are acquired.

Keywords: External Debt; Economic Growth; Econometric Methods; Nigeria.

Introduction

It is difficult for a developing country to support itself with only domestic financial resources because these resources are limited. The dual gap framework identified the need for financial resources from foreign sources to augment available limited domestic financial resources in order to archive sustainable economic growth in a country especially for a developing country. External (foreign) debt is required by developing nations like Nigeria to attain the economic status to be relevant for their residents and to compete globally (Were, 2001).

Studies like Sulaiman and Aziz (2012); Yaqoob and Zhendming (2013); either reported that external debt and FDI has growth-stimulating effect on the economy. External borrowing is advantage and necessary to increase the pace of economic growth as long as they are channeled to increase the economic productivity (Gana 2002). External debt is macroeconomic variable which tend to bolster the economy. This is because external debt represents capital inflows which are likely to increase the rate of capital formation which is necessary to propel economic growth. A generic problem existing in less development country (LDCs) is low capital formation to bearing to reality investment and infrastructural facilities for necessary for economic growth. It has been argued that the capital flows from internal debt and foreign direct investment can bridge the gap between desired investments and saving mobilized internally. LDCs are limited by domestic financial constraints, judging from the fact that provides countries with opportunity to increase capital formation. However, LDCs are prone to debt overhang problem due to mismanagement of external debt.

External debt is assumed to be beneficial, but, problems in Nigeria such as capital flight poor governance, macroeconomics instability, corruption, currency (Naira) depreciation and weak export base among others make the effect of external debt and foreign direct investment demand empirical answers. Hence this study is motivated to empirically investigate how inflows from external debt affect the growth of the Nigeria economy and more importantly, determine which has more significant economic impacts.

This paper is structured into four sections. Section one is the introduction, followed by Literature review and theoretical framework in section two; section three is the methodology of the paper; section four is the estimation techniques and result analysis while conclusion and recommendations forms the fifth section.

Literature Reviews

The act of borrowing creates debts and these debts can be domestic or external. The focus of this study is of external debt which refers to that part of a nation`s debt that is owed to creditors outside the nation. Kudaisi *et al.* (2015) define external debt as the portion of a country debt that is acquired from foreign sources such foreign corporation government financial institution. And also, in the work of Udeh, Ugwu, and Onwuka (2016), Ogunmuyia (2011) described external debt as that part of a country's debt that was borrowed from foreign lenders including commercial banks, governments or international financial institutions.

According to Oke and Suleiman, (2012), external debt arises as a result of the gap between domestic saving and investment. As gap widens, debt accumulates and this make the country to continually borrow increasing amount in order to stay afloat. He further defined Nigeria`s external debt as the debt owed by the public and private sectors of the economy to non-residents and citizens that is payable in foreign currency, goods and services.

Aminu, Ahmadu, and Salihu (2013) applied Autoregressive Distributive Lag (ARDL) model to explore the association between foreign debt and economic growth of Bangladesh from 1972 to 2010. The study revealed that debt from foreign source has significant and inverse association with economic growth.

Zouhaier and Fatima (2014) appraised the effect of debt on 19 developing economies from 1990 to 2011 by applying a dynamic panel data model. The results derived showed that ratio of total external debt to gross domestic product and external debt as a fraction of gross national income interact negatively with economic growth.

Ejigayahu (2013) utilizing data for 8 highly indebted poor counties (HIPC) from Africa between 1991 and 2010 ascertained whether external debt impacts on economic growth via debt crowding-out effect or debt overhang. The estimates indicated that economic growth is affected by debt crowding-out effect rather than debt overhang.

Aminu, Ahmadu and Salihu (2013) investigated the impacts of external and internal (domestic) debts on the Nigerian economy from 1970 to 2010 using ordinary least square (OLS) method and Granger causality test. The OLS results showed that external debt is unfavorable and the causality test revealed a two-way causality between external debt and economic growth and no causality between internal debt and economic growth.

Osuji and Ozurumba (2013) examined the bearing of external debt findings on economic growth in Nigeria between 1969 and 2011. Using the vector error correction Model (VECM) approach, the found that London club debt is directly related to economic growth while Paris club, multilateral club, and promissory debts are inversely related.

Azam, Emirulla, Prabhakar and khan (2013) determined whether external debt is a blessing or burden to the Indonesian economy. The OLS method unearthed that external debt has adverse impacts on economic growth; thus, affirming external as a burden.

Yagoob and Zhengming (2013) built at error correction model to determine the effect of external debt sustainability on Sudanese growth and funds indices of external debt sustainability to significantly influence economic growth. Similarly, Sulaiman and Azeez (2012) develop an error correction to survey the outcome of external debt on the economic growth of Nigeria between 1970 top 2010 and it was revealed that external debt stimulates economic growth.

Ajayi and Oke (2012) employing OLS regression analyzed the effect of external debt burden on the Nigerian economy. The regression result indicated that external debt burden negatively affects national income which measure economic growth.

Atique and Malik (2012) conducted a comparative analysis to determine effects of domestic debt and external debt on Pakistani growth from 1980 to 2010. It was observed for the period under review that both forms of debt wield significant negative effect of economic growth; however, external debt produced greater adverse effect.

Ogunmuyiwa (2011) confirmed whether external debt has driven economic growth in Nigeria between 1970 and 2007. It was discovered that external debt failed to drive economic growth because there is no causality between external debt and economic growth. Pattillo, Poirson and Ricci (2002) through panel data analysis evaluated the non-linear impact of external debt on the growth of 93 developing economies from 1969 – 1998. The study found that high debt decrease growth by reducing investment efficiency rather than its volume.

History of Nigeria's Debt Crisis

The phenomenon of external debt by Nigeria dates back to the colonial period precisely in 1958 when the sum of US $28 million was contracted for railway construction (Adepoju *et al* 2007). Between 1958 and 1977, debts constructed were the concessional debts from bilateral and multilateral sources with longer repayment periods and lower interest rates constituting about 78.5 percent of the total debt stock (Adepoju *et al*, 2007). AFRODAD (2007) noted that Nigeria's external debts have been increase over time because of professional shortage of foreign exchange to meet her developmental needs. The fail of oil prices in the late 1970s has a devastating effect on government expenses.

It therefore necessary for government to borrow in 1978 for balance of payment support and project financing. As a result of this government to promulgated decree No 30 f 1978 which limited the external loan the federal government could rise to N5billion. In the same year government made first ''jumbo loan'' market of US $ 2.2 billion from the international capital market. This increases the nation's debt profile to US $ 2.2 billion (AFRODAD. 2007). Given this, Nigeria's external debt stock increased to US $ 13.1 billion in 1982 (CBN, 2003). Two factors led to this sharp increase: one, the entrance of state governments into external loan obligation and two, there was a substantial decline in the share of loans from bilateral and multilateral creditors and a consequent increase in borrowing from private sources at stiffer rates.

Nigeria's inability to settle her import bills resulted in the accumulation of trade arrears amounting to US $ 9.8 billion between 1983 and 1988. The insured components were US $ 2.4 billion while the uninsured were US $ 7.4 billion (Adepoju et al, 2007). The insured component was rescheduled at the Paris Club, while the uninsured was reconciled with the London Club. This reconciliation which took place between 1984 and 1988 reduced the amount to US $ 3.8 billion (Adepoju *et al*, 2007). The accrued interest of US $ 1.0 billion was recapitalized. This brought the amount to US $ 4.8 billion in 1988 and the debt was eventually refinanced. In 1990, Nigeria's external debt rose again to US $ 33.1 billion (CBN, 2003). After a brief decline to US $ 27.5 billion in 1991, it rose again to US $ 32.6 billion at the end of 1995. As at 1999, Nigeria's external debt stock was US $ 28.0 billion. 73.2 percent of this was owed to the Paris Club while the rest was owed to the London Club, the multilateral creditors, promissory note holders and others. (CBN, 2003). Furthermore, servicing and rescheduling of debt become problematic for Nigeria from around 1985 when its external debt rose to up US $ 19 billion. Before then, Nigeria had experienced boom in oil revenue which was followed immediately by an unexpected decline. In 1980 Nigeria earned $ 25 billion from oil. In 1982, it declined to $12 billion and further to further to $6 billion in 1986 (CBN, 2003).

Government spending had remained high within this period and much of the project was finance through external borrowing. Since Nigeria was an OPEC member, it was not qualified for the soft-loan financing provided by multilateral and bilateral aid agencies to other countries at that time. As at the end of 2004, Nigeria's debt stock had reached almost $36 billion out of which $31 billion was owed to the Paris club of creditor (Braun, 1986). According to AFRODAD, (2007) debt service payment for Nigeria's debts started on a soft, tolerable level in 1958 until it become a hard bargain year. Matters come to a head in 2003 when one of Nigeria's creditors, the Paris Club, demands $3 billion annually for debt service payment. Dr. Ngozi Okonjo-Iweala considered the payment economically unsustainable (Iyoha, 1996). She therefore negotiated with the club. The $18 billion debt cancellation for Nigeria in 2005 by the Paris Club and subsequent settlement of some outstanding debts reduced the total external debt of the country substantially.

Theoretical Framework

There exist many economic theories but the Keynesian theory of increasing government activity as catalyst to economic growth was deemed most appropriate in this study. This is an economic theory named after a British Economist, John

Maynard Keynes. The theory is based on the concept that in order for an economy to grow and be stable, active government intervention is required. The Keynesian Economists argue that private sector decisions sometimes lead to inefficiency macroeconomic outcomes. Therefore, monetary policy action by central bank and fiscal policy action by the government are required to direct the economy. These actions will bring about stability in output over the business cycles.

Keynes stated that during depression, a combination of two approaches must be applied viz: a reduction in interest rate (monetary policy), and government investment in infrastructure (fiscal policy). Both Keynesians and monetarists believe that both fiscal and monetary policies affect aggregate demand (Ajayi, 2000). The monetary policy requires CBN to reduce interest rate to commercial banks and the commercial banks to do the same to their customers. Government investment in infrastructure injects fund into the economy by creating business opportunities, employment and demand. One of the sources of fund for infrastructural development is external borrowing during fiscal deficit.

This implies that Keynesian theory which views capital accumulation as a catalyst to economic growth is supportive of external loans as it injects fund into the economy to increase economic activity resulting in growth. It therefore supports a positive relationship between external debt and economic growth.

Methodology

The methodology adopted in this study is econometrics using the ordinary least squire (OLS), multiple regression model to capture other relevant macro-economic variables (EXR and EDS), augmented dickey fuller (ADF), unit root test, Johansen co-integration test which provide coefficient estimate of the time-series data used in the analysis. Also, a test for causality between external debt and economic growth using Granger Causality test is carried out.

Source and Method of Data Collection

The secondary data will be used in this study covering the period of 1986-2016, were sourced from Central bank statistical bulletin (CBN), Debt management office (DMO), National bureau of statistics (NBS) and world development indicators (WDI). The method of collection the data is through accessing the above organization publication by accessing the hard and soft copy.

Model Specification

The main aim of this study is to evaluate the effects of External Debt on the growth of Nigerian economy. The model is adopted from a multiple open macroeconomic model employed by Kudaisi *et al* (2015), there model was RGDP=f(FDI, EXTD) with a little modification. The model is of the functional form:

RGDP=f (FDI, ED, EDS, EXR) (1)

Where:

RGDP=Real Gross Domestic Product

FDI=Foreign Direct Investment

EDS=External Debt

DSP=External Debt Service

EXR=Exchange Rate

The model is specified in mathematical model:

$RGDP=\beta0+\beta1FDI+\beta2ED+\beta3EDS+\beta4EXR$ (2)

And also, the model is specified in to its stochastic form:

$RGDP=\beta0+\beta1FDI+\beta2ED+\beta3EDS+\beta4EXR+\mu$ (3)

Where:

μ=Error term

Due to the large nature of the value of macroeconomic variables (RGDP, FDI, EDS, and DSP) were logged except exchange rate which is rate.

$Log\ RGDP=\beta0+\beta1LogFDI+\beta2LogEDS+\beta3LogDSP+\beta4EXR+\mu$ (4)

Result and Discussion

Table 1: ADF Unit Root Test Result

Variables	ADF Values	Mackinon critical value @5%	Order of integration	Probability value	Remarks
RGDP	-4.0979	-2.9719	1(1) 1^{st} difference	0.0037	Stationary
FDI	-11.2830	-2.9719	1(1) 1^{st} difference	0.0000	Stationary
EDS	-3.6408	-2.9719	1(1) 1^{st} difference	0.0112	Stationary
DSP	-4.4747	-2.9719	1(1) 1^{st} difference	0.0015	Stationary
EXR	-4.5759	-2.9719	1(1) 1^{st} difference	0.0011	Stationary

Source: Researcher compilation from E-views 7.0

From the ADF test which is presented above, it is clear that the entire variables are non-stationary at level, but was found to be stationary at first differences. At levels, the observed values of ADF statistics are less than their critical value in trend and intercept. While at first difference the observed values of ADF statistics are greater than their critical values. Thus, null-hypothesis of the variables is rejected at 5%. However, the *a priori* expectation when using the ADF test is that variables are stationary when the value of the ADF test statistic is greater than the critical values. None of the variables used met this *a priori* expectation at levels and thus were integrated at first differences and found to be stationary.

Johensen Co-Integration Test

The co-integration test is used to check for a long run relationship between the variables that is the dependent variable and the independent variables (Clement, B., Bhattacharya, R. and Nguyen, T.Q. 2003). The co-integration test was carried out using the Johenson co-integration test or technique and also using E-views software package 7.0 and it produced the following results (see Appendix 1).

From the above table Max –Eigen value indicate 2 co-integrating equation at 5 percent level.
Based on the above table we reject the null hypothesis of the co-integration equation.

Table 2: Normalized co integrating coefficients (standard error in parentheses)

RGDP	FDI	EDS	DSP	EXR	@TRENDS(85)
1.000000	0.2579	0.5061	0.3142	-0.03092	-0.01404
	(0.1228)	(0.1228)	(0.0673)	(0.1306)	(0.0312)

Source: Extracted by Author from E-views 7

Results in Table 2 show the normalized co-integration coefficient with standard error in parenthesis. There is an inelastic relationship between real gross domestic product (RGDP) and Trio Relationship between foreign Direct investment (FID), External Debt (ED) and Economic Growth of Nigeria 1986- 2016. FDI, EDS, DSP and EXR); this implies that a unit change in FDI, EDS, DSP and EXR) will bring about a less than proportionate change in real gross domestic product (RGDP) which shows that in the long run the relationship between RGDP and FDI, EDS, DSP and EXR will be negative. RGDP increases by 1% FDI, EDS, DSP and EXR fall or rise by 25%, 50%, 31% and 3% respectively.

Granger Causality Test

The dynamic natures of the causal relationship between variables were analyzed through the use of Granger causality approach. Granger causality allows for several causal relationships to be identified in different alternative models. Table below shows the summary results of the Granger causality tests. The results reveal the dynamic behavior of all variables.

From Table 2, the focus of the analysis is to examine the relationship between RGDP, FDI, ED, EDS, and EXR. The research question states that FDI does not granger cause RGDP and RGDP does not granger cause FDI. The rule of thumb states that, the probability must be less than 0.05 to show a causal relationship. The probability of our variables RGDP and FDI ARE 0.0520 and 0.2673. Therefore, we accept the null hypothesis and conclude that there is no causality between them. This is similar to all other variables. On the other hand, the research question states that EXR does not granger cause RGDP and RGDP does not granger cause EXR. The probability of our variables RGDP and EXR are 0.0163 and 0.8661 which means EXR does not granger cause EXR and therefore conclude that the there is Uni-directional relationship. Furthermore, the research questions states that the DSP does not granger cause RGDP and RGDP does not granger cause DSP. The probability of our variables RGDP and DSP are 0.9840 and 0.0002 which means both variables have a relationship thus there is also a unidirectional causality between them.

Regression Analysis

The data used in this study were processed using the ordinary least square method (OLS). This method is suitable because they are time efficient in terms of output and adequacy of statistics generated.

Table 3: Estimation Results

Variables	Coefficients	Std. Error	t. statistics	Probability
C	37.2601	2.1617	17.2362	0.0000
Log(FDI)	0.08620	0.0569	1.5157	0.1421
Log (EDS)	-0.2839	0.0449	-5.8814	0.0000
Log(DSP)	-0.1101	0.0329	-3.3427	0.0026
Log(EXR)	0.1107	0.0308	3.5907	0.0014

R==0.9284 R^2=0.9169 No of observation 30

RGDP=37.2601+0.08620FDI – 0.2839EDS – 0.1101DSP + 0.1107EXR.

Source: Extracted by the Author using E-views 7.0

From Table 3, keeping all other factors constants the value of RGDP is exactly equal to 37.26 secondly at one level of RGDP, FDI will increase by 0.086 while on the other side external debt stock will fall by 0.28, and also external debt services will fall by 0.11 and finally exchange rate will rise by 0.11. By interpretation, the group of the study in table above shows a positive relationship between FDI and EXR and the real gross domestic growth. While on the contrary ED and EDS has a negative relationship with the real gross domestic product. It was revealed that from the high variation of 92% for the coefficient of multiple determinations R^2. Meaning that, 92% of the variation is explained by explanatory variable External debt stock, foreign direct investment, external debt service payment, and exchange rate. It was also revealed that through the probability values that all the variables were statistically significant at 1%. On the theoretical ground (*a priori*) we expect parameter to take positive sign meaning positive relationship between the dependent real gross domestic product and the independent/explanatory variables EDS, FDI, DSP and EXR. The t-statistic and the standard error test revealed that the parameters were significant. For the entire variable in the model, the values of standard error are less than half of the values of the coefficient of the variables. This shows that the data used for the computation is statistically significant. The result shows that ED, FDI, EDS and EXR determine the real gross domestic product. The value of adjusted R^2 for the model is high pegged at 0.9169 (92%), which implies that EDS, FDI, DSP and EXR explained 92% systematic variation in economic growth over the observed year in the Nigeria economy while the remaining 8% variation is explained by the other determining variables outside the model (U).

Conclusions

It is concluded that external debt is necessary to meet shortfall in domestic resources and stimulates economy and is unarguably crucial for the economic growth more especially developing countries. As in the case of LDC`s which characterized by low capital formation due to low saving capacity, hence, they need financial resources from within and across their boarders. The study evaluates the effects of external debt on the growth of Nigerian economy and concludes that external debt has negative and insignificant effect on the Nigerian economic growth. This portrays that external debt does not yield social and economic benefits capable of boosting economic growth.

Recommendations

The study made the following recommendations:

(i) Debt management office (DMO) should set mechanism in motion to ensure that loans are utilized for the purpose of which they were acquired. Through proper monitoring of the loan.

(ii) DMO should set maximum limit of loans federal, and state could be allowed to acquire based on certain stipulated criteria.

(iii) Government should aggressively pursue the process of diversification of the economy. Which result economic buoyancy to reduce the need for external loans.

(iv) Anticorruption agencies like EFCC, ICPC and Code of Conduct Bureau should be made independent and the laws establishing them reviewed by the government to make them more functional and efficient.

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