

The Relationship between External Debt and Economic Growth in Nigeria

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Abstract

External debt is found to be a driver of economic growth if properly managed but its servicing rather than repayment is an inhibiting factor to economic growth. This paper examined the relationship between external debt and economic growth in Nigeria for the period of 1981-2014. The study used both descriptive and econometric tools. The analysis of unit root was performed on each of the variables incorporated in the model and the result showed that, all the variables were not stationary at level but achieved stationary after first difference at 5% level of significance. The regression results showed a significant relationship between external debt and economic growth in Nigeria. However, external debt stock impacted positively while external debt service impacted negatively on the annual growth rate of the Nigerian economy both in the long run and the short run.

Keywords: Debt management; Debt servicing; Debt stock; Economic growth

Introduction

The issue of external borrowing as a policy to promote economic growth creates serious debate among economists and policy makers. The main concern is whether or not external borrowing leads to economic growth in debtor countries. This debate results in two main perspectives for explaining the relationship between external debt and economic growth. On one hand, the Neoclassical and the Endogenous growth models advocated that there is a positive relationship between external debt and economic growth. They emphasized that debt is one of the sources for financing capital formation, and if financing capital formation through this means impact positively on investment, it could promote economic growth [1-3]. On the other hand, among other scholars Krugman contradict this view by mentioning external debt as one of the factors hampering economic growth [4]. Kalonji explained that heavy external debt is the cause of poverty in the debtors' country while Chongo noted that public debt is a double edged sword [5]. This can also be seen in the mix opinion by Ojo and Sulaiman who examined 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 stimulate growth in the short-run, but the private investment which is a measure of real and tangible development shows a decline [6]. Their opinion shows a mix result indicating a positive and negative relationship between external debt and economic growth in Nigeria.

But given the ideology of the "growth-debt" nexus that a country should borrow abroad as long as the capital is inadequate and produces a rate of return that is higher than the cost of the foreign borrowing, it is generally expected that developing countries experiencing inadequate capital will acquire external debt to supplement domestic savings and investment. The rates at which they borrow depend on the links among foreign and domestic savings, investment and economic growth so that the borrowing countries increase their capacity output with the aid of foreign savings. Nevertheless, external debt can only be productive if well manage by making the rate of return higher than the cost of servicing the debt.

However, the external debt profile of Nigeria has been on the increase and has constituted a source of concern about the future. Recently, the Nigerian government has embarked on borrowing externally for the main purpose of financing increased proportion of economic activities for economic growth. It has been argued by Ali and

Mshelia that in Nigeria, external borrowing is often considered the best way out of embarrassing economic situations [2]. Despite the seeming justification to borrow externally, it is soon discovered to become a perpetual lifeline burden, consequently engendering severe economic implications both to immediate and future generation economies, leaving Nigerians with an acute decline in the standard of living, high external dependence, gross social and economic overhead depreciation, currency depreciation, balance of payment disequilibria, exchange rate depreciation and rising inflationary rate. External Debt in Nigeria averaged 6375.33 Million USD from 2008 until 2015, reaching an all-time high of 10718.43 Million USD in the fourth quarter of 2015 [7]. According to Nwankwo, the Nigerian external debt has risen to \$11 billion with debt sustainability ratio of 2.4% which is far below the sustainable ratio of 12.51 to the GDP [8].

Given the rising stock of external debt in Nigeria, it is important therefore that the country should undertake critical examination of the general implication of the loan on economic growth. It is against this background that it becomes imperative to assess the effect of the external debt on economic growth in Nigeria from 1981-2014.

Conceptual and Theoretical Review

External debt management

External debt is the phenomenon used to describe the financial obligation that ties one party (debtor country) to another (lender country) [6]. External debt management is a strategy design to ensure that the debt stocks does not grow to an extent that the country can no longer conveniently service her debts and also that the terms are not enslaving. In other words, it is a mechanism where a nation's debt stock and the servicing arrangement (terms of loan) do not cause severe problems for the economy and society. According to the Central Bank of Nigeria Statistical Bulletin [6], external debt management involves

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an assessment of the country's capacity to service existing debts and a judgment on the desirability of contracting further loans. Therefore, External debt management in this work means a mechanism used by the responsible authority (Debt Management Board) to ensure that external debt does not affect its country in terms of investment, saving and capital generation which are the basis for economic growth and development, but should be bearable and/or productive.

Debt servicing

Debt servicing is a contractually fixed charge on domestic real income and savings. As the size of debt grows, or as interest rate rises, debt service charge increases. Debt services payment is made is done only with the export earning, curtailed import, or with further external borrowing. Thus if the export earning diminishes, debt-service difficulties are likely to arise.

Debt sustainability

Debt Sustainability is defined as the ability to maintain a constant debt-GDP ratio over a period of time. Sustainability is challenged when the debt to GDP ratio reaches an excessive value. Kasidi and Said thought that, a number of factors come into play when establishing if a country is able to service its debt [9,10]. These factors include the existing debt stock and associated debt service, the prospective path of its deficits, the financing mix of the debt and the evolution of its repayment capacity in terms of foreign currency value of GDP, exports and government revenues.

External debt management in Nigeria

In the face of the declining trend in world oil prices, Nigerian government has been facing difficulties in financing deficit budgets and developmental projects. This led to borrowing from external sources such as World Bank, International Monetary Fund (IMF) and Paris club amongst others. The responsibility of managing external debt among other issues led to the establishment of other departments in the Central Bank of Nigeria (CBN) to undertake the functions in collaboration with the Federal Ministry of Finance (FMF) and other relevant agencies. Since 1980s, Nigeria has devised several debt management policies in order to make the debt-service burden bearable and avoid defaulting [11]. The embargo on loans policy was placed in 1984 and 2016 to state governments from borrowing externally. The cordial objective of the policy was to check the escalation of the debt stock and to minimize the problem of additional debt burden. Prior to the 1984 policy, the Federal Government fixed the maximum level of debt commitment for both the federal and state governments. For example, an upper limit of \$ 5 billion was for the federal government in 1978 and in 1982 while \$200 million for the state government. The embargo was lifted in January 1989 [12]. In February 1988, comprehensive guidelines were introduced with the aim of evolving strategies for increasing foreign exchange earnings and consequently reducing the need for foreign borrowing. Various measures were undertaken to ensure implementation of the guidelines such as; embargo on new loans, limit on debt service payments, debt restructuring and debt conversion programme.

Debt restructuring policy involves the reduction in the burden of an existing debt through refinancing, rescheduling, and buy-back insurance of collateralized bonds and provision of new money. A refinancing arrangement means the procurement of a loan by a debtor to pay off an existing debt, particularly short term-trade debt so as to ease the debt burden. It should be noted that the first refinancing arrangement by Nigeria was made in July 1983, followed by second arrangements in September of the same year. In both agreements,

\$2.1 billion worth of trade arrears was refinanced. The rescheduling of debt involved changing maturing, tenure and terms of debt structure. For instance in 1986, debt worth \$1.6 billion due to London club and payable in 1987 was rescheduled to extend to 1996 with four years grace period. Furthermore, the payback arrangement which implied the offer of a substantial discount to pay off existing debts was concluded on 21st January, 1982 when Nigeria bought 6.2% (\$3.395 billion) commercial debt owed to the London club at 60% discount.

Debt conversion programme was made to complement other strategies of debt management. In Nigeria, debt conversion exercise involved the sale of an external debt instrument for a domestic debt or equity participation in domestic enterprises. The debt conversion committee was set up in July 1988 to implement Nigeria's debt conversion programme. Though the appropriation of the substantial discount offered and commission paid, the nation benefited and reduced its debt stock. As a result of the strenuous effort being made by Nigeria government to formalize its economic and political relations, the prospect for an early rescheduling of Nigerian's official debts are bright especially as the international community reposes with some measures of confidence in Nigeria. In 2005/2006, Nigeria's external debt which stood at US \$32 billion was forgiven by the creditors. This has external and internal implications for the economy. On external front, Nigeria's credit worthiness increased, thereby, making the economy worthy to access short and medium term credits which enhance net capital inflows necessary for employment and growth. In the domestic economy, potential new export earnings and gains from new investment as well as the money budgeted for debt servicing are expected to be channeled into growth enhancing projects- as this result to rises in investment, employment and output [13]. External debt service on the other hand, reduces public investment funds, employment and private income. It also reduces the country's currency and compound balance of payment problems. In view of these, several policies were introduced to reduce the magnitude of public debt, ameliorate the debt service burden in order to stimulate sustained growth in the Nigerian economy. But, Henry observed that these policies have not been able to restrain the growth of foreign debt [14].

Economic growth

Ajayi perceived economic growth as the increase overtime of a country's real output of goods and services [15]. Schumpeter in Todaro and Smith defined economic growth as gradual and steady change in the long-run which comes about by a gradual increase in the rate of savings and population [16]. Freedman also in Todaro and Smith viewed economic growth as an expansion of the system in one or more dimensions without a change in its structure [16]. Thus economic growth is related to the quantitative and sustained increase in the countries per capita output or income accompanied by expansion in its labor force, consumption level, capital and volume of trade. It means an increase in a country's real gross domestic product over a period of time usually one fiscal year.

The dependency theory of underdevelopment

The theory originated from the writings of few Latin American economists whose translations began to appear in English in the mid 1960s and early 1970s. The proponents of this school according to Jhingan are Frank Gunder, Sunkel, Furtardo, Sanlos, Paul Baran, Emmanuel and Amin [17]. These scholars at one point or the other, contributed immensely to the dependency theory, though in varying capacities. The dependency theory states that the dependence of less developed countries (LDCs) on developed countries (DCs) is the main

cause for the underdevelopment of the former. Though the theory has so many aspects but emphasis is on the foreign capital dependence which has a bearing to the topic under study. The resultant effect of this dependence is that foreign debt so acquired stands as an instrument through which developed countries exploit less developed countries by insisting on the choice of projects, making decisions on pricing, supply of equipment, technical knowhow and personnel. According to the theory, the developed countries use foreign capital to impose a developmental pattern that is not compatible with local needs. The theory further argued that the dependence on foreign capital leads to a much high outflow in the forms of interest payment, royalties, debt service. All these drain LDCs wealth. The theory concludes that foreign capital signifies dependence and serves as a means of exploitation of the less developed countries exploit by the developed countries.

Empirical review

Adesola in his study on the effect of external debt service payment practices on sustainable economic growth and development in Nigerian from 1981 to 2004 argued that debt payment to Nigerian creditors to affect the economic growth both positively and negatively [3]. But Ali and Mshelia found that Nigeria is indebted to several creditors which do not augur well for the country [18]. Similarly, Ayadi and Ayadi in their study on the impact of external debt on economic growth in Nigeria and South Africa using neoclassical growth model found a negative impact of debt (and its servicing requirements) on growth in the two countries while external debt contributes positively to growth up to a point after which its contribution becomes negative in Nigeria [19].

Several empirical studies found a positive impact of external debt on economic growth in Nigeria. For instance; Sulaiman and Azeez examined the effect of external debt on the economic growth in Nigeria from 1970 to 2010 [20]. The study found short and long run relationship among the variables and concluded that external debt has contributed positively to economic growth in Nigerian. Also, Chinaemerem and Anayochukwu examined the impact of external debt financing on economic growth in Nigeria from 1969 to 2011. The study also found positive impact on economic growth [21].

Methodology

The study used secondary data from 1981 to 2014. Data were sourced from Central Bank of Nigeria (CBN) Statistical Bulletin of several issues, National Bureau of Statistics (NBS), Debt Management Office and World Bank reports. The study used both descriptive and econometric tools.

Augmented Dickey Fuller Test (ADF) was used to ascertain the stationary properties of the time series. The ADF formula was specified as:

$$\Delta P_{it} = \beta_1 + \beta_{2t} + \sigma P_{it-1} + \alpha \sum_{t-1}^m \Delta P_{it-1} + \varepsilon_{it} \quad (1)$$

The study also used Ng and Perron (2001) which constructed four test statistics that are based upon the GLS detrended data y_t^d . The formula is stated as:

$$K = \sum_{t=2}^T (y_t^d)^2 / T^2 \quad (2)$$

The modified statistics may then be written as:

$$MZ_{\alpha}^d = \left(T^{-1} (y_t^d)^2 - f_0 \right) / (2k)$$

$$MZ_{\alpha}^d = MZ_{\alpha} XMSB$$

$$MSB^d = \left(\frac{k}{f_0} \right)^{1/2} \quad (3)$$

$$MP_T^d = \begin{cases} (c^{-2}k - \bar{c}T^{-1}(y_t^d)^2) / f_0 & \text{if } x_t = \{1\} \\ (c^{-2}k + (1 - \bar{c})T^{-1}(y_t^d)^2) / f_0 & \text{if } x_t = \{1, t\} \end{cases}$$

Where

$$\bar{c} = \begin{cases} -7 & \text{if } x_t = \{1\} \\ -13.5 & \text{if } x_t = \{1, t\} \end{cases} \quad (4)$$

Thus, Granger causality test was employed to determine the causal relationship between the variables under study. It is thus stated as:

$$y_t = a_0 + a_1 y_{t-1} + \dots + a_p y_{t-p} + b_1 x_{t-1} + \dots + b_r x_{t-r} + e_t \quad (5)$$

$$x_t = a_0 + a_1 x_{t-1} + \dots + a_r x_{t-r} + b_1 y_{t-1} + \dots + b_p y_{t-p} + u_t \quad (6)$$

The ECM was conducted. It incorporates both the short run and the long run effects. When equilibrium holds $[Y_{t-1} - \beta_0 - \beta_1 X_{t-1}] = 0$ but in the short run when equilibrium exists, this term is non-zero and measures the distance by which the system is away from equilibrium during time t.

Model specification

Adopting the model used by Ayadi and Ayadi in analyzing the relationship between external debt management and economic growth in Nigeria [19]. The implicit form of the model shall be:

$$RGDPG = f(\text{AGREXP}, \text{DSERGDP}, \text{GCAP}, \text{DEBGDP}, \text{INF}, \text{INTR}) \quad (7)$$

The explicit form of the model that was estimated in explaining the linear relationship between output (RGDPG) and External debt management and other macro-economic variables is stated as:

$$RGDPG = b_0 + b_1 \text{AGREXP} + b_2 \text{DSERGDP} + b_3 \text{GCAP} + b_4 \text{DEBGDP} + b_5 \text{INF} + b_6 \text{INTR} + U_t \quad (8)$$

Where:

RGDPG = annual growth rate of the RGDP

AGREXP = annual growth rate of exports

DSERGDP = ratio of debt service to RGDP

GCAP = Growth in fixed capital

DEBGDP = Size of external debt stock relative to RGDP

INF = Inflation rate

INTR = Interest rate

U_t = random or stochastic error term

Data Presentation and Analysis

Result of unit root tests

The test results of the Augmented Dickey-Fuller statistic and Ng and Perron (2001) for all the time series variables used in the estimation were integrated of order one i.e. I(1) [22]. This is because the ADF statistics of annual growth rate, annual growth rate of exports, ratio of debt service to RGDP, growth in fixed capital, size of external debt stock relative to RGDP, inflation rate and interest rate were greater than their respective critical values at 5% critical level. This was evidence by the four statistics constructed under the Ng and Perron unit root test.

Results of granger causality

From the results of the Pairwise granger causality tests reveals that DEBGDP (i.e. the relative ratio of external debt stock to RGDP),

DSERGDG (i.e. the relative ratio of external debt service to RGDP) and GCAP (i.e. Gross Fixed Capital) granger causes RGDPG (i.e. economic growth rate) at 5% level of significance. More so, INFL (i.e. Inflation rate) granger causes INTR (i.e. Interest rate) at 10% level of significance.

Johansen hypothesized co-integration result

The Johansen hypothesized co-integration was carried out to determine the number of stationary long-run relationships among the variables included in the study. It offers two tests, the trace test and the Eigen values, with a view to identify the number of co-integrating relationships. The results revealed one co-integrating equation among the variables. This is because the trace statistic and Max-Eigen value of 186.3908 and 82.03992 are greater than the critical values of 125.6154 and 46.23142 respectively, at 5% level of significance. This implies that there is a long run relationship among the variables employed in the study.

The long run effect of external debt on economic growth in Nigeria

Using the normalized Johansen co-integrating equation that is based on the lowest log likelihood, the normalized coefficients present the estimates of the model (co-integrating equation).

$$RGDPG = 0.024197 \text{ AGREXP (0.00664)} - 14.48725\text{DSERGDG (1.29314)} + 0.08966\text{GCAP (0.01255)}$$

$$+ 0.331958\text{DEBGDP (0.08809)} + 0.079347\text{INF (0.02084)} - 0.077656\text{INTR (0.03299)}$$

Note: Standard Errors in parenthesis.

The coefficient of growth rate of export, growth rate in fixed capital, relative ratio of external debt stock to RGDP were positive and were theoretically plausible. The coefficients were statistically significant at 5% critical level. This implies that 1% increase in the growth rate of export, growth rate in fixed capital, relative ratio of external debt stock to RGDP leads to 2% 9% and 33% respective increases in economic growth.

More so, the coefficient of relative ratio of external debt service to RGDP and interest rate were negative and obeyed their apriority expectation except inflation rate. Besides, the coefficient of relative ratio of external debt service to economic growth, inflation rate and interest rate were statistically significant at 5% critical level. This explains that Nigeria needs a digit inflation rate for economic growth.

Short run effect of external debt on economic growth in Nigeria

The short run estimates are presented in Table 1. The coefficient

Variable	Coefficient	Standard errors [t-statistic]
RGDPG _{t-1}	0.159848	(0.19970) [0.80045]
AGREXP _{t-1}	0.012480	(0.01699) [0.73438]
DSERGDG _{t-1}	-8.517033	(2.23653) [-3.80812]
GCAP _{t-1}	0.008414	(0.00395) [2.13012]
DEBGDP _{t-1}	0.395059	(0.36575) [1.08014]
INF _{t-1}	0.029738	(0.06635) [0.44819]
INTR _{t-1}	-0.022320	(0.09003) [-0.24792]
C	-1.217698	(2.46639) [-0.49372]
ECM	-0.083977	(0.03173) [-2.64660]

R²=0.769848 R²=0.689483 F-statistic=15.110585,

Akaike information criterion=23.47637 Schwarz criterion=23.84644.

Table 1: Short-run estimates.

of RGDPG_{t-1} (i.e. in the previous year) and the relative ratio of external debt stock to economic growth in the previous year (DEBGDP_{t-1}) were theoretically plausible but not statistically significant at 5% critical level. However, the coefficient of AGREXP_{t-1} obeyed its apriori expectation and it is statistically significant at 5% critical level. Thus, there is a strong positive relationship between annual growth rate in exports and economic growth rate in Nigeria in the short run. This means that growth in Nigeria's exports contributes significantly to the growth of the economy even in the short run [23-25]. This is because, it increase the country's foreign exchange earnings making it favourable for debt settlement and public financing. Furthermore, the coefficient of DSERGDG and GCAP obeyed their apriori expectations and were statistically significant at 5% critical level. This implies that servicing external debt has negative influence on the growth of the Nigerian economy. The study also reveals a significant speed of adjustment of 8.4%. This implies that the system corrects the initial disequilibrium to long-run equilibrium at the rate of 8.4%. It is obvious from the coefficient of multiple determinations (R²) that the model has good fit as the independent variables were found to jointly explain 0.77% of the movement in the dependent variable with the R²-adjusted (R²) of 0.69 %. The F-statistic was significant at 15.110585% which explains the overall significance of all the variables incorporated in the model as indicated by both the R² and R² adjusted [25-28].

Summary and Conclusion

The study examined the relationship between external debt and economic growth in Nigeria from 1981 to 2014. The study used both descriptive and econometric tools. The analysis of unit root was performed using ADF and Ng and Perron on each of the variables and the result showed that all the variables were integrated at first difference. The study revealed positive impact of external debt on economic growth in Nigeria in the long-run only. However, external debt servicing had both long-run and short-run negative effect on economic growth in Nigeria. Growth in capital expenditure, growth rate of exports, and external debt stock had positive impact on economic growth while external debt servicing and interest rate were inversely related to the growth of the economy [28-30].

Recommendations

The study made the following recommendations;

i. Given that external debt stock had positive impact on economic growth in Nigeria implies that an increase in it will lead to increase the growth rate of the economy. Nevertheless, the study recommends that, the stock borrowed should be effectively managed. The federal government should laydown guidelines in terms of defining the purpose, duration, moratorium requirements and commitments, negotiation among others including conditions for external debt loans. This may guide against high external debt stock that would lead to exceeding healthy threshold.

ii. Instead of continuous debt servicing, there should be an arrangement for repayment of the loan(s) within the agreeable time. This will curtail the associated leakages from the economy.

iii. The government should adopt advanced technology in the manufacturing sector in order to make our locally made goods attractive in the international market. In order to achieve this, efforts should be made to ensure that the locally made products are of high standard so as to compete favourably both at internal and external markets as this will enhance Nigerian exports, discourage imports,

and as well, lead to a decline in the country's demand for external debts. Thus, there must be vigorous promotion of the nation's exports through reviving of agriculture and industrial sector that would absorb the shock in exchange rate even if left floating.

vi. External debt loans should be used only for productive investment of highest priorities that would help in yielding returns. This would help in deriving enough money for external debt servicing; otherwise, the huge external debt would throw the economy into series and "serious" economic problems.

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