

THE IMPACT OF FOREIGN DEBT MANAGEMENT ON THE NIGERIAN ECONOMY

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Abstract

The primary objective of a nation is to improve the standard of living of the populace and promote economic growth. However, nations often have to borrow to foster the desired economic growth domestically. This study evaluates the impact of such borrowings on the economic development of Nigeria over 53 years (1960, 2012). The study employs an error correction model (ECM) to estimate the relationship. It observes that there is a negative correlation between the proxy for foreign debt and economic development. This suggests that the foreign debt is not contributing to the advancement of the economy. A further analysis also shows that foreign debt is not significantly related to the standard of living of the populace. The result calls for a significant change in the management of foreign debt in the country and the need to re-orientate the industries and the public in general to look inwards for financial needs while serious efforts should be put in place to reduce the debt burden.

Background to the Study

It is the objective of every sovereign nation to improve the standard of living of its citizenry and promote economic growth and development of the country. Due to the scarcity of resources and the law of comparative advantage, countries depend on each other to foster economic growth and achieve sustainable economic development (Adepoju, Salau & Obayelu, 2007). No government is an island on its own; it would require aid so as to perform efficiently and effectively. The motive behind foreign debt is due to the fact that countries especially the developing ones lack sufficient internal financial resources and this calls for the need for foreign aid (Sulaiman & Azeez, 2012). Foreign debt burden in Nigeria can be traced to so many factors in the past which caused the growth of the economy to decline alongside its development. Between the period 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 foreign debt rapidly escalated as a result of declining oil export earnings and absolute neglect of the hitherto source of sustenance (agriculture).

One major issue suspected to have aggravated the Nigeria debt problem is that some of the debt service obligations were in the form of contingent liabilities resulting from government guarantee of private sector trade transaction that had to be taken on board without adequate planning. Due to mismanagement, wide-scale corruption and default by private sector operators, the obligations fell on the Federal Government as explicit contingent liabilities in those instances where it had guaranteed the loan. Similarly, loans for directly productive projects were usually contracted on commercial terms and then went to waste due to lack of monitoring and corruption.

The accumulation of foreign debt should not signify slow economic growth; it is the inability of a country to meet its debt obligation that exposes it to high debt burden. Nigeria is about the richest on the continent Africa, yet due to the numerous macro-economic problems, such as inflation, unemployment, corruption, sole dependency on crude oil as a major source of revenue, and debt service payment, majority of her citizen fall below the poverty line. This study therefore investigates the degree to which Nigeria's foreign debt significantly impacts on her economy and arrive at a logical conclusion.

Objectives of the Study

The main objectives of this study are:

- I. To examine the effect of foreign debt management on economic growth of Nigeria.
- II. To ascertain if there is any relationship between servicing of foreign debt and standard of living of the populace.

Research Hypothesis

Hypothesis 1

H_0 : Foreign debt management has no significant effect on economic growth of Nigeria.

H_1 : Foreign debt management has significant effect on economic growth of Nigeria.

Hypothesis 2

H_0 : There is no significant relationship between servicing of Nigerian foreign debt and standard of living of the populace.

H_1 : There is significant relationship between servicing of Nigerian foreign debt and standard of living of the populace.

Literature Review

A lot of studies have been carried out by researchers to examine whether debt management affects growth of a country or otherwise. Various techniques and methodologies were employed and the results seem inconclusive. While some studies suggest that debt servicing affect the growth of a country significantly; others fail to agree with the postulation. 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.

Adepoju et al (2007) analyzed the effects of external debt management on the economic growth of Nigeria for a period between 1962 to 2006 using time-series data of the various bilateral and multi lateral arrangements. Their study concluded that accumulation of external debt adversely affected Nigeria's economic growth. Likewise, Ajayi and Oke (2012) investigate the effect of the foreign debt burden on economic growth and development of Nigeria, using secondary data which was analyzed via Ordinary Least Square (OLS). It was then revealed that foreign debt has an adverse effect on the nations per capital income.

The study conducted by Sulaiman and Azeez (2012) examined the effect of foreign debt on the economic growth of Nigeria using time series data from 1970 to 2010 and it was analyzed using Johansen Co-integrated Test and error correction method. Their study shows that foreign debt causes a significant change on the Nigeria economy. Following the above postulation was Ogunmuyiwa, (2011) who 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.

Adesola, (2009) empirically investigated the effect of external debt service payment practices on the economic growth of Nigeria. Ordinary Least Square method of multiple regression was used to examine how debt payment to multilateral financial creditors, Paris club creditors, London club creditors, Promissory Notes holders and other creditors relates to gross domestic product (GDP) and gross fixed capital formation (GFCF) using data from 1981 to 2004. The study provides evidence that debt payment to Paris club creditors and Promissory Notes holders are positively related to GDP and GFCF while debt payment to London club creditors and other creditors show a negative significant relation to GDP and GFCF.

The above studies show an inconclusive research on the topic. This study will add to literature and make definite postulation on the effect of debt burden on the Nigerian economy.

Methodology

For this study, we use the econometrics techniques of Ordinary Least Square (OLS), Augmented Dickey Fuller (ADF) Unit Root Test, Johansen Co-integration test and Error Correction Method (ECM) to estimate the relationship. ADF is used to determine stationarity of data and order of integration. Co-integration test determines whether a long run equilibrium relationship exists among the variables and the ECM decomposes the error and measures the speed of adjustment.

Annual time series data used was gathered from the Central Bank of Nigeria Statistical Bulletin, National Bureau of Statistics, Central Bank of Nigeria annual reports and statement of accounts, Debt Management Office, World Bank, International Debt Statistics, **United Nations World Population Prospect**, newspapers and journals from 1960 to 2012. The logarithms of the variables were obtained in order to bring the time-series data on the variables to the same base.

Model Specification

We use two models for the study. The first model examines the impact of foreign debt on the economy as a whole. For this model, we use Gross Domestic Product (GDP) as the dependent variable while Foreign Debt (FD), Ratio of Foreign Debt to Export (FDX), Inflation (INF) and Exchange Rate (EXR) are the independent variables for the first model. The second model estimates how the management of external debt has impacted on the standard of living of the populace. For this we estimate a bi-variate model and use Per Capita Income (PCI) as the dependent variable while Cost of Debt Servicing as the independent variable.

Model 1

The econometric model estimated is

$$GDP = B_0 + B_1FD + B_2FD/X + B_3INF + B_4EXR + e$$

Where;

GDP represents Gross Domestic Product; FD is Foreign Debt; FD/X is Ratio of foreign debt to Exports; INF is Inflation; EXR is Exchange Rate; B_0 is the Intercept and e represents the stochastic error term.

Model 2

The econometric model estimated is;

$$PCI = b_0 + b_1CDS + e$$

Where;

PCI represents Per Capita Income while CDS represents the Cost of Debt Servicing;

Data Analysis and Interpretation

As earlier stated, the Johansen Co-integration Test and the Error Correction Model (ECM) is used. When all the variables were included in the multi-variate regression, only three of them were significant. In view of this, we estimate a parsimonious model based on the result of model 1 in model 3.

Interpretation of Results

Unit Root Tests

The ADF results showed that all the variables were non-stationary at their levels. The results of the ADF tests are shown on table 1 below:

Table 1: - Unit Root Tests

	H ₀ : unit root; H ₁ : no unit root						K = number of lags = 0
	Δ GDP	Δ DFD	Δ DFDX	Δ INF	Δ EXR	Δ DPCI	Δ DCDS
ADF	-7.3442*	-2.5200*	-3.5164*	-2.6018*	-2.6425*	-3.4227*	-3.4227*

Δ means growth in the variable and D before the variable means first difference of that growth of that variable. * denotes 5% level of significance.

The result above shows that all the variables are integrated to the same order. However, we observe that some of the variables exhibit weak level of stationarity hence we estimate the long run relationship and the result is presented below.

Johansen Co-Integration Tests

Johansen procedure is used to identify long-run consumption expenditure amongst the co-integrating vectors. Table 2 reports the estimates of Johansen procedure and standard statistics. In determining the number of co-integrating vectors, we used degrees of freedom adjusted version of the maximum eigen value and trace statistics, since the existence of small samples with too many variables or lag tends to overestimate the number of co-integrating vectors.

Table 2A

Johansen Co-Integrated coefficients, (1) co-integration equation (s)

GDP	FD	FDX	INF	EXR	C
1.000000	-2.3001	2.3826	-1.3050	2.3402	3501.010
	(-2.422)	(-2.011)	(-3.1174)	(-2.2011)	
Log likelihood	-552.3011				

Table 2B

PCI	CDS	C
1.000000	-1.0133	2701.100
	(-1.422)	
Log likelihood	-355.2200	

Test indicates 2 co-integrating equation(s) at 5% significance level.

The result from table 2A suggests that positive long-run elasticity can only be reported for debt to export and exchange rate. The value of the long-run elasticity of output level with respect to foreign debt is -2.30. The implication of this is that the long run relationship between output level of gross domestic product and foreign debt is negative. Debt to export and exchange rate has a long run positive relationship with output level of gross domestic product. The negative relationship with respect to inflation is anticipated and conforms with existing literature.

The result from table 2B shows that cost of debt servicing has a negative long run relationship with per capital income.

Error Correction Model (ECM)

The Error Correction Model (ECM) is introduced to decompose the error and measure the speed of adjustments. The result is presented in table 3A below

Table 3A The Error Correction for Model 1 - Dependent Variable: GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.203011	1.206131	2.112330	0.2032
FD2	-2.021130	0.130110	-1.012423	0.0425
FD (-1),2	-1.034035	0.043221	-0.433012	0.3557
FDX,2	2.502211	2.306220	-3.435722	0.7320
FDX (-1),2	1.213307	1.320211	-0.302550	0.5633
INF,2	-1.323044	1.012330	4.312221	0.0012
EXR,2	1.021310	2.023420	2.031120	0.0454
ECM (1)	0.430014	0.303832	-1.426623	0.0049
R.squared	0.950332			
Adjusted R.squared	0.814302			
DurbinWatson stat	2.102203			
F-statistics	13.14022			

In table 3a, the R-squared (R^2) of 0.95, which measure goodness of fit, indicates that 95% of the systematic variations of growth rate in gross domestic product is explained by the explanatory variables during the period of the study. The overall F-statistics of 13.1 with a low probability of less than 5%, gives clear that the equation is well fitted. The Durbin- Waston statistics of 2.1 indicates the presence of autocorrelation in our specification.

Foreign debt has a negative relationship with output level of gross domestic product. A one per cent rise in the foreign debt will reduce the output level of gross domestic product by 2.02 per cent, The F-Statistic shows that we accept the alternative hypothesis and reject the null hypothesis. This means that foreign debt in the country has had an adverse effect on the growth process, Debt to export and exchange rate has a positive and significant relationship with output level of gross domestic product at first difference. The implication of this finding is that the Debt to export and exchange rate up to 2012 has resulted to increases in output level of gross domestic product in Nigeria. Inflation rate have a negative and insignificant relationship with output level of gross domestic product with lagged difference. The co-efficient of determinant shown that 95% of the total variations in output level of gross domestic product is explained by the explanatory variables.

Model 2 is estimated and the result presented in table 3B below

Table 3B The Error Correction Model Result for Model 2 Dependent Variable: PCI

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.011012	1.104000	1.101122	0.0232
CDS,2	-1.041211	0.122332	-1.213751	0.0247
(CDS (1),2	-0.063022	0.076240	-0.373611	0.0447
ECM (1)	0.210110	0.209838	-1.036625	0.0029
R-squared	0.752401			
Adjusted R-squared	0.524206			
DurbinWatson stat	1.515023			
F-statistic	11.21062			

Also in table 3b, the R-squared (R^2) of 0.75, which measure goodness of fit, indicates that 75% of the systematic variations of growth rate in per capita income is explained by the explanatory variable CDS during the period of the study. The overall F-statistics of 11.0 with a low probability of less than 5%, gives clear that the equation is well fitted. The Durbin- Waston statistics of 1.5

We went further to estimate a parsimonious model based on our model 1. This is obtained by grouping variables that were significant in the previous estimation. The result is presented in table 4 below. This process enables us to estimate the “simplest plausible model with the fewest possible number of variables”.

Table 4 - The Parsimonious Error Correction Model. - Dependent Variable: GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.350223	1.020500	0.000350	0.3305
D(FD,2)	-0.25253	0.57753	-2.03321	0.0210
D(EXR,2)	1.02012	1.02050	1.02002	0.0014
D(INF,2)	-0.13201	0.34321	-1.20324	0.0011
ECM (1)	0.20100	0.36630	1.02441	0.0023
R-squared	0.74602			
Adjusted R-squared	0.61022			
DurbinWatson stat	1.83022			
F-statistic	58.3069			

In table 4, the R-squared (R²) of 0.75, which measure goodness of fit, indicates that 75% of the systematic variations of growth rate in gross domestic product is explained by the explanatory variables during the period of the study. The overall F-statistics of 58.3 with a low probability of less than 5%, gives clear that the equation is well fitted. The Durbin- Watson statistics of 1.7 indicates the presence of autocorrelation in our specification.

Conclusion and Recommendations

From the findings above, it can be concluded that foreign debt has an adverse effect on the economic growth of Nigeria. The bane of the study has been to examine the effect of external debt on the economic growth of Nigeria. The study employed the Johansen co-integration test and Error Correction Method. The co-integration test shows the existence of long run equilibrium relationship among the variables. The error correction method reveals that the lagged error correction term in the over-parameterized and parsimonious model are significant.

Based on the findings in the study, I will like to recommend the following:

1. The government should place embargo on new loans, i.e temporary stoppage of further external commitment in the form of loan until the debt position improves.
2. Government should encourage debt conversion (debt to export). This simply means that some portions of external debts to be converted to export, i.e exportable commodities should be used to redeem some part of the foreign debt.
3. The federal government should lay down well considered guideline for external loans. Defining the purpose, duration, moratorium requirements and commitments, negotiation fees etc including the conditions under which the government can approve and guarantee external loans.
4. Also, the government through its monetary authorities should put measures in place to curtail the inflationary trend in the economy.
5. Government should reduce their cost of debt servicing and provide employment opportunities that are highly needed to boost the standard of living of the populace.
6. In addition, government should finance export activities and reduce export duties in order to foster export promotion.
7. Government should provide enabling social and economic environment in order to encourage entrepreneurship.
8. Lastly, government should press for permanent debt relief so as to avert debt overhang problem.

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