

Research article

External Borrowings and Economic Performance in Developing Nations: Empirical Evidence from Nigeria

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Abstract

Development economists and other notable researchers are yet to come to terms on the roles of external debt finance in economic development. While some uphold that external debt is a credible desideratum for balanced growth and effective economic performance, others dismiss such position arguing that external borrowing rather triggers debt crisis which in turn could result in overall meltdown of an economy. Capturing the immediate past global economic crisis period, our study is an empirical contribution to these existing literature. The study utilized time series annualized data on Nigeria's aggregate outstanding external debt, gross domestic product (GDP) at current basic price and gross fixed capital formation over a ten year period covering 2001-2010 to evaluate the impact of government external borrowings on economic performance in Nigeria. The study applied the computer-based linear regression approach using the current statistical package for social science (SPSS) version 17. Results show negative and significant effect of government external borrowings on GDP as well as gross fixed capital formation. Based on these findings, we concluded that government's external debt is not favourable for Nigeria's longrun economic performance. We therefore recommend amongst others that Nigerian government should reduce her financing expenditure using external debt. Instead, they should use more of domestic debt financing strategy since servicing external debt could be more expensive.
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Keywords: External Debt, Debt Crisis, Gross Fixed Investment, Economic Growth, GDP

1. Introduction

Public debt otherwise called government borrowing has over the years received much attention as a crucial component of any country's macroeconomic policy framework. The heightened attention on public investment risk from policy makers and financial markets within the recent period stems from the realization that how public debt is managed considerably influences the soundness and solvency of the overall public sector balance sheet. Debt management is also argued as an important factor that underpins the credibility and reputation of nations and ensures the stability of debt capital markets as well as the financial institutions that hold public debt (Audu, 2004, and Udaibir, et. al., 2010). The sharp increase in debt levels in developed countries and the recent contagious fears in euro area countries through the financial system have reinforced the need for proper debt management especially in the developing nations.

There is already a widespread recognition however in the international community that excessive foreign indebtedness of many developing countries remains a major impediment to their growth and stability. Studies have shown that developing countries have contracted large amount of external debts, often at highly concessional interest rates particularly in the 1970s (Bolle, et.al., 2006; Guscina and Anastasia, 2008). The hope was that these loans would put them at faster development path through higher investment and faster growth. But as debt service ratios reached very high levels in the 1980s, it became obvious that for many of these countries, debt repayment would constrain economic performance in their countries.

Meanwhile, an extensive body of literature have attempted to examine how the stage of national development could affect the structure of public debt in a country and how fiscal policy and the resulting level of debt could affect macroeconomic stability. while most of these studies explicitly acknowledged the role of the proper management of domestic public borrowings in promoting macroeconomic stability, evidence from the external debt proportion of public debt is still inadequate. According to Reinhart and Rogoff (2009), research cases concerning default and restructuring of domestic public debt are far more common than those of external public debt, implying that more attention should be devoted to the external debt episodes. Moreover, even in situations where research evidence exist on the relationship between external debt and public investment, majority of the studies still used data from the United States, Asia, and the advanced economies of Europe. Such studies therefore undermined the geographical peculiarities and the business environmental dynamics in the developing countries. In Nigeria today, there is this popular opinion although lacking in empirical validation that external debt overhang is the major factor that has contributed largely to the poor performance of the Nigeria economy within the last decade. This study is therefore an attempt to fill the aforementioned research gaps. Specifically, the paper evaluated the effect of government's external borrowings on the gross domestic product (GDP) as well as the gross fixed capital investment in Nigeria.

2.1 Conceptual Framework

Public or government debt as the name implies are debt owe by the government within its economy or externally. According to CBN (2010), foreign debt or external borrowings are debt obligations the government owe to multilateral bodies, London Club, Paris Club, foreign promissory notes and other unclassified external borrowings. Debt instruments are IOU certificates, that is, certificates that acknowledge indebtedness. They are the tools governments often use to borrow money from the public. In principles, state and local government can also issue debt instrument, but limited in their ability to issue such. In Nigeia, public debt instruments consist of Nigerian Treasury certificates, Federal government development stocks and treasury bonds (Adofu and Abula, 2010). Out of these, treasury bills, treasury certificates and development stocks are marketable and negotiable while treasury bonds; ways and means advances are not marketable but held solely by the central Bank of Nigeria. The Central Bank of Nigeria (CBN) is the banker and financial adviser to the federal government and as such, it is charged with the responsibility for managing the public debt.

Economic performance encompasses economic growth and development. But, the concept 'economic development' has in some cases been used interchangeably with economic growth (Todaro and Smith, 2003). Unarguably, however, economic growth has a narrower scope. Economic growth is a rise in the productive capacity of a country on a per capita basis. It involves the expansion of the economy through a simple widening process (Eleje and Emerole, 2010). It is the increase in the national output or GDP of the nation (Hogendorn, 1992). Economic development on the other hand is broder. Idam, (2007) argues that economic development involves economic growth plus sustained structural changes that enhance the living standard of the wider segment of the society. According to Hla and Krueger (2009) economic development is the increase in the standard of living in a nation's population with sustained growth from a simple, low-income economy to a modern, high-income economy. Also, if the local quality of life could be improved, economic development would be enhanced. Its scope includes the process and policies by which a nation improves the economic, political, and social well-being of its people (O'Sullivan & Steven; 2003). The nature of the relationship between public external borrowings and economic performance of nations has over the years been a subject of academic debate.

2.2 Theoretical and Empirical Literature

An extensive body of literature examines how the stage of financial market development affects the structure of public debt in a country and how a country's fiscal policy and the resulting level of debt affect macroeconomic stability. Majority of the studies agree that different sources of vulnerabilities may arise from the debt profile, depending primarily on the debt structure, that is, the composition of debt instruments and their maturities (Borensztein, et.al., 2004; Bolle, Rother, and Hakobyan 2006; and Udaibir, et. al., 2010). Inappropriate debt structures could become channels or sources of vulnerabilities to the real economy and the financial system.

Some literature have focused on two sources of vulnerabilities, foreign currency-denominated liabilities and the short maturity of liabilities (Guscina 2008, and Papaioannou 2009). Inappropriate debt structures can lead to higher interest payments. In general, lower-cost debt structures such as the excessive use of foreign currency–

denominated debt are subject to higher risk in the event of an unexpected shock. In the past, many emerging market countries, especially in Latin America, relied heavily on the issuance of instruments linked to the exchange rate. Mexico's case during 1994 is a good example. According to Jeanneau and Verdia (2005), the Tesobonos (domestic bonds linked to the U.S. dollar) represented almost the entire stock of Mexico's public debt, up from just 4 percent a year earlier. This increase alarmed international investors. At the end of 1994, the domestic currency was devalued. The devaluation led to a significant increase in the debt stock and consequently to significant financial instability. This episode is a clear example of how a poor debt structure can have adverse financial consequences. After the crisis many Latin American countries improved the composition of their debt structure and developed their domestic debt markets, in order to become less vulnerable to debt-related shocks, a pattern also seen in Asia after the financial crisis that hit that region.

In Turkey crisis-triggered retooling of policies on debt management enhanced resilience to financial shocks. Keller, et.al., (2007) document that Turkey's public balance sheet was severely weakened as a result of the banking and exchange rate crises in 2001. The bailing out of the banking sector, through the issuance of foreign exchange-linked government bonds led to a surge in public debt, a shortening of maturities, and greater exposure to foreign currency risks. In the aftermath of the crisis, reducing the risks from high public debt became a necessary condition for ensuring financial stability. Prudent debt management, against the backdrop of strong fiscal and growth performance, contributed to the improvement in the country's sovereign balance sheet and prospects for financial stability. Although a virtuous combination of tight fiscal policy, falling interest rates, and strong economic growth helped reduce debt ratios, the Turkish authorities also took advantage of the favorable macroeconomic tailwind to improve the debt structure, reduce risks, and increase financial stability, including through reductions in the level and volatility of interest rates. For example, foreign currency-indexed domestic debt was halved between 2002 and 2006, from 32 percent to 16 percent, significantly reducing sovereign debt exposure to exchange rate risk. The fixed rate share of domestic debt over the same period increased from 25 percent to more than 40 percent, and the share of short-term debt declined to less than 5 percent of total debt in mid-2006, down from more than 20 percent four years earlier.

In general, debt structures that rely heavily on short-term instruments are sources of vulnerability, because short average maturities entail high rollover and refinancing risk. In such cases, an increase in interest rates can have an adverse fiscal impact. Debt structures that are too short or allow for bumps in the maturity profile can potentially generate confidence crises, fueled by investors' concerns that the government will not have sufficient funds to redeem maturing bonds when they fall due. Depending on the extent of these fears, they could translate into lower demand for the country's instruments in auctions, thus triggering a self-fulfilling prophecy. It is the debt manager's responsibility to design policies and schemes that reduce these risks. This could be done by preemptively building large cash buffers, ensuring efficient coordination with cash-management policies, and, at times, absorbing the higher cost of prefunding liability tranches maturing in the near future in order to extinguish the risk of a market call on solvency at the point of redemption.

Some studies also examined the contribution of the use of public debt as a strategic component of policy directed at increasing the level and pace of economic growth. For example, Abbas and Christensen (2007) develop a model that shows that moderate levels of debt can increase growth and higher levels can undermine it. They conclude that if domestic debt is marketable and part of it is held outside the banking system, it can contribute to economic growth.

2.3 Public Debt Problems and the Nigeria Experience

Public debt problems in Nigeria have been traced to the collapse of the international oil price in 1981 and the persistent suffering of the international oil market and partly due to domestic lapses (Adofu and Abula, 2010). Credit facilities during this period gradually dried up, which led to a number of projects getting stalled. Ahmed (1984) documented the causes of debt problem as related to both the nature of the economy and the economic policies put in place by the government. He articulated that the developing economies are characterized by heavy dependence on one or few agricultural and mineral commodities and export trade is highly concentrated. The manufacturing sector is mostly at the infant stage and relies heavily on imported inputs. The overdependence on the developed countries for supply of other input and finance for economic development have made them vulnerable to external shocks.

Similarly, Sanusi (1988) asserts that faulty domestic policies which range from project financing mismatch, inappropriate monetary and fiscal policies were responsible for the government debt problem. He argues that some of the policies were of little significance because of the perceived temporary effect of the external shocks. The expansionary policies led to stupendous macroeconomic fallout, which encouraged import and discourage export. Ajayi (1989) advocated the revival of the economic growth as the best and most durable option to the debt burden. He however observed that the needed growth is disturbed by two factors including limitation imposed by inappropriate domestic policies and the external factors beyond the control of the economy.

James (2006) argues that public debt has no significant effect on the growth of the Nigeria economy because the fund borrowed were not channeled into productive ventures, but diverted into private purse. He suggested further, that, for the gains of the debt forgiveness to be realized the War Against Corruption should be fought to the highest. Adofu and Abula (2010) result is consistent with Oshadami (2006). Both studies concluded that the growth of public debt has affected negatively the growth of the economy. The situation is premise on the fact that majority of the market participant are unwilling to hold longer maturity and as a result the government has been able to issue more of short term debt instruments. This has affected the proper conduct of monetary policy and affected other macroeconomic variables.

3. Methodology

Empirical Design and Data

The paper employed ex-post facto research design in obtaining, analyzing and interpreting the relevant data. The justification for the choice is that ex-post facto design allows the researcher the privilege of observing one or more variables over a period of time. Accordingly, the research variables for this study were observed over a 10 year period 2001–2010. The timeframe is justified as it falls within the beginning of the present democratic dispensation of the federal government of Nigeria and covers all other subsequent government debt financing programmes as well as the immediate past economic crisis period. The paper utilized secondary data on Nigeria’s gross fixed capital formation, gross domestic product (GDP) at current basic price and aggregate outstanding Nigeria external debt (see appendix 1). Data were got from the Central Bank of Nigeria (CBN) Statistical Bulletin. The extracted data were subsequently analyzed and tested with the aid of the statistical package for social science (SPSS) computer version 17 to determine the impact of external borrowings on economic performance in Nigeria as proxied by the gross fixed capital formation and the gross domestic product (GDP) respectively.

Research Hypotheses

Two major hypotheses were formulated in the null form to guide the study as follows:

- H₀₁:** There is negative and significant effect of government’s external borrowings on the gross domestic product in Nigeria.
- H₀₂:** There is negative and significant effect of government’s external borrowings on gross fixed investment in Nigeria.

Analytical Econometric and Justifications

The adopted model for this paper draws theoretical strength from Endogenous growth models. Endogenous growth models among other things demonstrate the channel by which financial policies affect economic growth and development. Accordingly, the model chosen is consistent with previous local and foreign studies on finance and growth including Islam and Biswas (2005), Adofu and Abula (2010), Ghirmay (2004). However, the study specifically patterned the bivariate model developed by Ghirmay (2004). The model is of the form: -

$$LY_t = \beta_0 + \beta_1 LC_{t-1} + \varepsilon_t \dots\dots\dots (i)$$

where: -

- LY = Log of Real Gross Domestic Product growth
- LC = Log of Real Private Sector Credit growth
- β_0 and ε_t are the constant and the error terms respectively

The above function is patterned to model our two hypotheses as follows:

$$LGDP_t = \beta_0 + \beta_1 L(EXDBT)_{t-1} + \varepsilon_t \dots\dots\dots (ii)$$

$$LGFCF_t = \beta_0 + \beta_1 L(EXDBT)_{t-1} + \varepsilon_t \dots\dots\dots (iii)$$

Where:-

- LGDP = Logarithm of Nigeria’s Gross Domestic Product at current basic price

LGFCF = Logarithm of Gross Fixed Capital Formation (Fixed Investment)
 LEXDBT = Logarithm of Nigeria's Outstanding External Debt

4. Results and Discussions

Table (4.1) and (4.2) below are summary statistics of the results emanating from the SPSS computer output (See appendix 2):

Hypo	Variables	Constants of the Regressors			Indepnt Variable (EXDBT)		
		Beta	t-stats.	t-sig.	Beta	t-stats.	t-sig.
H ₀₁	GDP	2E+007	10.074	0.000	-4.054	-4.587	0.002
H ₀₂	GFCF	2625943	6.058	0.000	-470	-3.035	0.016

Source: Computed from SPSS Output in appendix 2

Results arising from the coefficient table (4.1) above made striking revelations for the two hypotheses. For hypothesis one, the constant value is 2E+007. The value is positive and statistically significant at 0.000. That is, the constant value is significant at both 99% and 95% confidence levels respectively. Meanwhile, this constant value of 2E+007 is the intercept of the regression line indicating that gross domestic product (GDP) in Nigeria will be 2E+007 if other variables are zeros. The coefficient of external debt (EXDBT) is -4.054 which is negative and statistically significant at 0.002 significant value. This implies that for every one unit increase in Nigeria's external debt (EXDBT) holding other variables constant, Nigeria's gross domestic product (GFCF) will decrease by 4.054. Again, the constant term for hypothesis two is 2625945 and statistically significant at 0.000 indicating that gross fixed capital formation (GFCF) in Nigeria will be 2625945 if other variables are zeros. The coefficient of external debt (EXDBT) is - 470 which is negative and statistically significant at 0.016 significant value. This implies that for every one unit increase in Nigeria's external debt (EXDBT) holding other variables constant, gross fixed capital investment (GFCF) will decrease by 470.

Hypo	Variables	Pearson	R	R ²	Adj. R ²	F	F-Sig
H ₀₁	GDP	-0.851	0.851	0.725	0.690	21.038	0.002
H ₀₂	GFCF	-0.732	0.732	0.532	0.477	9.210	0.016

Source: Computed from SPSS Output in appendix 2

The above submission is further confirmed using relevant descriptive statistics summerized in table 4.2. The Analysis of Variance (ANOVA) tested for the acceptability of our model from statistical significant viewpoint by looking at the goodness of fit from the F-statistics. Accordingly, the significant values of the F-statistics from the ANOVA table are 0.002 and 0.016 for hypothesis one and two respectively. These values are both less than 0.05, an indication that the models did good job in explaining the variations in the dependent variables. The signs of the Pearson correlation coefficient between GDP/EXDBT as well as GFCF/EXDBT are -0.851 and -0.732 respectively. This is an indication of strong negative relationship between external borrowings and

economic performance proxied by GDP and GFCF in Nigeria. The multiple correlation coefficient (R) for the two models are also high (85% & 73%), an indication of strong relationship between the predicted and the observed values of the dependent variables. The R square statistics are 0.851 and 0.732 implying that 85.1% and 73.2% of the variations in the dependent variables are explained by the independent variables. The R square adjusted is high at 0.690 for hypothesis one but fair for hypothesis two at 0.477 signifying that after adjusting for errors, 69.0% and 47.7% of the variations in the dependent variables are still explained by the independent variables in the models.

5. Empirical Validation of Hypotheses and Implications

The t-statistics in table 4.1 were used to validate the two hypotheses. The critical t-statistics value from the statistical table at 95% confidence interval is 1.812. This value is greater than the computed t-statistics values of -4.587 and -3.035 for GDP and GFCF respectively in table 4.1. Meanwhile, the t-statistics decision rule on test of hypothesis is to reject the null hypothesis and accept the alternate hypothesis when the computed t-value is greater than the tabulated t-value or decided otherwise when the computed t-value is less than the tabulated t-value. Based on this rule, we accepted the two null hypotheses and rejected their alternate hypotheses. We thus submit that there is negative and significant effect of government's external borrowings on the gross domestic product as well as on the gross fixed investment in Nigeria. Our submissions have certain implication. The negative and significant results for both gross domestic product and gross fixed investments are indications that foreign debt do not favour developing countries as evidenced from Nigeria. The reason could be attributable to country-specific factors such as poor business, political, and socioeconomic climate of the developing nations contrary to the settled environment of the developed economies.

6. Conclusion and Recommendations

One significant conclusion of this study is that external borrowings have not contributed significantly to growth and economic performance in Nigeria. Rather, the study confirmed the popular opinion that external debt overhang is the major factor that has contributed largely to the poor performance of the Nigeria economy within the last decade. This conclusion is justified by the outcomes of the two hypotheses that: there is negative and significant effect of government's external borrowings on the gross domestic product as well as on the gross fixed investment in Nigeria. Based on this conclusion, we hereby recommend as follows:

- Government should reduce her financing expenditure using external debt. They should rather adopt more of domestic debt financing strategy as servicing external debt have been found to be more expensive.
- Secondly, the presence of a well-functioning autonomous domestic debt market could help reduce the rate at which government borrows from outside. This study suggests that such robust domestic debt market be established in Nigeria.
- Finally, actions taken and policies implemented by debt managers can promote financial market development and macroeconomic stability. Their relevance cannot be overemphasized. The role of debt managers has gained elevated status in the context of managing the effects of the recent crisis, during which debt levels in many countries rose significantly in a relatively short period of time. They should therefore be encouraged.

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Appendix 1:

Nigeria Aggregate External Debt & Measure of Economic Performance (=N= Million)

Year	Aggregate External Debt	Gross Fixed Investment	GDP @ Current B/Price
2001	3176291	372135.65	4685912.20
2002	3932884.8	499681.53	5403006.80
2003	4478329.3	865876.46	6947819.10
2004	4890269.6	863072.62	11411066.90
2005	2695072.2	804400.82	14610881.50
2006	451461.7	1546525.65	18564594.70
2007	431079.8	1935040.14	20657317.67
2008	493180.2	2050762.63	24296329.29
2009	590441.1	3048023.41	24794238.66
2010	689845.3	4007832.4	29205782.96

Source: Central Bank of Nigeria Statistical Bulletin 2010

**APPENDIX 2: SPSS REGRESSION RESULTS FOR HYPOTHESIS 1& 2
 (EXTERNAL DEBT & GROSS DOMESTIC PRODUCT)**

Descriptive Statistics

	Mean	Std. Deviation	N
GDP	2E+007	8781480.940	10
EXDBT	2182886	1843833.023	10

Correlations

		GDP	EXDBT
Pearson Correlation	GDP	1.000	-.851
	EXDBT	-.851	1.000
Sig. (1-tailed)	GDP	.	.001
	EXDBT	.001	.
N	GDP	10	10
	EXDBT	10	10

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.851 ^a	.725	.690	4888818.64	.725	21.038	1	8	.002	.879

a. Predictors: (Constant), EXDBT

b. Dependent Variable: GDP

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.0E+014	1	5.028E+014	21.038	.002 ^a
	Residual	1.9E+014	8	2.390E+013		
	Total	6.9E+014	9			

a. Predictors: (Constant), EXDBT

b. Dependent Variable: GDP

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations		
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	2E+007	2472270		10.074	.000	19205679.61	30607811.07			
	EXDBT	-4.054	.884	-.851	-4.587	.002	-6.092	-2.016	-.851	-.851	-.851

a. Dependent Variable: GDP

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	5082416	2E+007	2E+007	7474588.696	10
Residual	-7344684	7095555	.00000	4609222.421	10
Std. Predicted Value	-1.468	.950	.000	1.000	10
Std. Residual	-1.502	1.451	.000	.943	10

a. Dependent Variable: GDP

EXTERNAL DEBT & GROSS FIXED CAPITAL FORMATION

Descriptive Statistics

	Mean	Std. Deviation	N
GFCF	1599335	1185376.245	10
EXDBT	2182886	1843833.023	10

Correlations

		GFCF	EXDBT
Pearson Correlation	GFCF	1.000	-.732
	EXDBT	-.732	1.000
Sig. (1-tailed)	GFCF	.	.008
	EXDBT	.008	.
N	GFCF	10	10
	EXDBT	10	10

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.732 ^a	.535	.477	857208.118	.535	9.210	1	8	.016	.717

a. Predictors: (Constant), EXDBT

b. Dependent Variable: GFCF

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations		
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	2625945	433489.2		6.058	.000	1626317.499	3625573.425			
	EXDBT	-.470	.155	-.732	-3.035	.016	-.828	-.113	-.732	-.732	-.732

a. Dependent Variable: GFCF

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.8E+012	1	6.768E+012	9.210	.016 ^a
	Residual	5.9E+012	8	7.348E+011		
	Total	1.3E+013	9			

a. Predictors: (Constant), EXDBT

b. Dependent Variable: GFCF

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	326053.3	2423209	1599335	867154.06305	10
Residual	-867098	1706321	.00000	808183.56402	10
Std. Predicted Value	-1.468	.950	.000	1.000	10
Std. Residual	-1.012	1.991	.000	.943	10

a. Dependent Variable: GFCF