

External Debt, Growth and Poverty Reduction in a Failing State:

Nigeria, 1970-2011*

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Abstract: The paper examines the relationship between debt, growth and poverty in Nigeria for the period 1970-2011. Despite the enormous resources, Nigeria seems to accumulate external debts especially in periods of declining oil prices in order to finance the development of the economy. What has been the precise link between external debt and poverty reduction? Econometric analysis brings out the precise relationship among these variables. The econometric methodology used incorporates elements of a failing state such as corruption, ethnic violence and insecurity, among others. Furthermore, incidence of poverty is captured by examining the share of government spending on social services as well as the trend in per capita income. The results show that public debt had a negative impact on growth and poverty reduction. The results of the proxies of a failing state indices were mixed.

Key words: debt; economic growth; poverty; Nigeria **JEL codes:** O4, O43

1. Introduction

The growth-debt nexus debate has been a long standing discourse. Following the traditional neo-classical growth theory¹, it is believed that given the existence of savings-investment gap, particularly in poor countries, that external borrowing can help fill the gap and provide the necessary resources needed for growth and development. But opponents of this view have argued that external debt beyond certain (established) threshold can affect growth adversely. In essence, large debt burden can slow down growth by hindering investment and productivity. The reason, according to Hameed et al. (2008), is that when greater percentages of reserves are consumed in meeting debt service, creditworthiness of the debtor nation erodes. This will cause a reduction in access to external financial resources. Moreover, external debt is also known to be accompanied by debt service obligations, which in itself has far-reaching negative implications on growth.

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¹ For instance, Harrod-Domar growth model.

Various channels through which debt is translated to slower economic growth have also been identified in the literature. One of such channels is the debt overhang hypothesis. Theoretically, debt overhang hypothesis is based on the premise that if debt will exceed the country's repayment ability with some probability in the future, expected debt service is likely to be an increasing function of the country's output level (Karagöl, 2002). Another channel is the liquidity constraint effect or the crowding-out effect. The liquidity effect stresses the fact that external debt has negative effect on growth in that the resources used to service the debt constitute resource drain which could have been available for investment, hence the crowding-out effect.

In Nigeria, episode of high level of debt was not alarming in the 1960s and early 1970s. But towards the tail end of 1970s, the country started accumulating heavy debts. The shortfall in revenue following the decline in crude oil exports as a result of the glut in the international oil market, coupled with large fiscal deficits and disequilibrium in the external sector, put pressure on the government. This generated the need for external aid by means of foreign debt to help finance growth and development activities and to support the deteriorating external position of the country. This led to the procurement of the so called "jumbo debt" of N1252.1 billion in 1978. An attempt to reverse the dwindling situation of the economy led to the adoption of the IMF engineered austerity programme in 1986. As one of its conditions, Nigeria was forced to obtain huge loans from the IMF to add to the already accumulated debt burden. By 1990, external debt had reached an alarming level of N298614.40 billion representing 111.6% of the country's GDP. This was clearly unsustainable. And between 1999 and 2005, the level of debt had gone wild, which also demanded concerted efforts from all and sundry on how to tame the situation. Following the debt deal with the Paris and London club of creditors resulting in the debt relief of 2005, the level of external debt declined sharply to N451461.70 million in 2006. But beginning from 2008, the level of external debt started rising raising concerns about the current trend.

Meanwhile, domestic debt which was only N30 million in 1960 and remained relatively stable over the period preceding the debt relief rose astronomically from N1,275.077 billion in 2005 to N5,622.844 billion in 2011, representing about 341 percent increase. Between 2005 and 2006, domestic debt increased by 63.3 percent, from N1,275.077 billion in 2005 to N2,082.007 billion in 2006.

Interestingly, it appears the incidence of social unrest and poverty also witnessed phenomenal increase beginning from the 1980s when public debt burden began to assume monstrous posture. The rates of terrorists' activities, insecurity and bombing in recent times have raised serious concerns with the country being described in some quarters as a failed state². There are contending views as to whether the country is a "failed state" or a "failing state". Social infrastructure is in a deplorable condition and capacity utilization in manufacturing and other productive sectors with huge employment potential have remained low. Consequently, poverty incidence deepened from 27.2 percent in 1980 to 69 percent in 2010. Thus, given the present deteriorating economic and social conditions in the country at present, it is doubtful whether the procurement of public debt has any significant positive effect on economic growth and poverty reduction in Nigeria.

The objective of this study is to investigate empirically the relationship between public debt, economic growth and poverty reduction in Nigeria. Unlike previous studies, such as Iyoha (1999), Udeaja and Okeke (2005), this study takes a holistic approach in terms of scope in analyzing the problem at hand by going beyond external debt and economic growth to examine the impact on poverty. In addition, the paper tries to incorporate elements of a failed state in the analysis. The paper is organized as follows. Section two reviews previous empirical studies

 $^{^2}$ Table A2 in the appendix shows the various incidences of insecurity and bombing since 1986.

and theoretical underpinnings. Section three presents analysis of debt sustainability and external debt performance in Nigeria. Research methodology is the main focus of section four. Section five analyzes the empirical results and section six concludes the paper.

2. Literature Review and Theoretical Underpinnings

Numerous empirical studies have been carried out in an attempt to establish the relationship between external debt and economic growth. Findings from these studies have failed to reach a common ground on the precise impact of debt on growth. While some studies found positive impact of debt on growth, others found negative relationship between them. The common belief, however, is that debt below a certain (established) threshold can promote economic growth while debt well above this threshold could retard growth. Early studies in this regard include Geiger (1990); Warner (1992); Cohen (1993); Cunningham (1993); Chowdhury (1994); Rockerbie (1994); Fosu (1996); Elbadawi et al. (1996); and lyoha (1999); among others. Conclusions from these studies show that external debt has an adverse effect on growth.

Using an error correction model, Were (2001) analyzed the debt overhang problem in Kenya and tried to find evidence for its impact on economic growth using time series data from 1970-1995. The empirical results of the estimated model did not find any adverse impact of debt servicing on economic growth; however, the results confirmed some crowding-out effects of debt servicing on private investment.

Udeaja and Okeke (2005) in their study investigate external debt management in Nigeria and its impact on economic growth and investment in Nigeria. Employing the ordinary least squares (OLS) regression technique on the Nigerian data spanning from 1980-2000, the empirical results from the error correction model show that a rise in the current debt flows as a ratio of GDP leads to a decline in economic growth, hence debt flows hamper economic growth. On the other hand, the positive impact of debt servicing on economic growth was rather contrary to expectation.

Osinubi and Olaleru (2006) examine how the use of budget deficits as an instrument of stabilization leads to accumulation of external debt with its attending effects on growth in Nigeria using data from 1970 to 2003. The ordinary least squares (OLS) estimates show that there is a positive relationship between debt below a given threshold and economic growth. The regression results show that the coefficient of debt overhang is negative, indicating that low levels of debt above the threshold value contributes negatively to growth in Nigeria. This result shows the existence of debt Laffer curve in Nigeria.

Ayadi and Ayadi (2008) investigate the impact of the huge external debt, with its servicing obligations, on economic growth in Nigerian and South Africa. The study utilizes annual time series data for the sample period from 1980 through 2007. The empirical results obtained from both ordinary least squares (OLS) and the Generalized least squares (GLS) techniques show that debt servicing has negative impact on economic growth in both Nigeria and South Africa. The paper, however, indicates that the current debt profile for Nigeria portrays a good picture than in South Africa but that South Africa has utilized their external debt better than Nigeria.

Adesola (2009), attempts to establish the relationship between poor economic growth and debt servicing in Nigeria focusing on the impact of debt payments to creditors. The study employed time series data for the period spanning from 1981 to 2004 with the ordinary least squares (OLS) regression technique as the estimation method. The empirical results show that debt payments to other creditors and London club creditors have significant negative influence on gross domestic product and gross fixed capital formation in Nigeria. Adofu and Abula (2010)

investigate the empirical relationship between domestic debt and economic growth in Nigeria using time series data for the periods from 1986-2005. Employing the ordinary least squares (OLS) regression method the empirical results show that domestic debt has significant negative impact on economic growth in Nigeria during the study period.

Ogunmuyiwa (2011) examines the debt-growth nexus for Nigeria using co-integration test, Granger Causality test and error correction mechanism (ECM) as relevant methodologies for testing the relationship between external debt and economic growth. The Granger Causality test shows that there is no strict causality between external debt and economic growth in Nigeria. This according to the study means that external debt is not a specific factor determining the rate of economic growth in Nigeria. This result corroborates those of Afxentiou and Serletis (1996a) and Bullow and Rogof (1990). However, the long-run and short run estimates show that there exists a relationship between external debt and economic growth in Nigeria. Specifically, the short-run dynamics show that the debt variable is correctly signed indicating a positive relationship between debt and growth.

Amassoma (2011) examined the causal relationship between external debt, domestic debt and economic growth in Nigeria between 1970 and 2009 using annual data between 1970 and 2009 under the framework of Vector Autoregressive (VAR) and Vector Error Correction (VEC) models. The results of the error correction model indicate that external debt has contributed significantly to economic growth in Nigeria. The study, therefore, advocates that domestic rather than external debts should be incurred, since the re-payment of such loans together with the principal connotes re-investment in the domestic economy with the attendant positive impact on growth.

Ezike and Mojekwu (2011) examine the impact of external debt on macroeconomic performance in Nigeria, utilizing time series annual data for the periods covering from 1980-2004. Employing the ordinary least squares (OLS) regression technique, the results show that provided appropriate domestic macroeconomic policies are adopted and implemented alongside debt reduction packages, debt reduction would provide the needed impetus to enhance macroeconomic performance in Nigeria.

Based on related studies, the external debt-growth nexus remains inconclusive. Moreover, none of the studies on Nigeria have linked external debt and growth to poverty. Our paper tries to fill this lacuna.

2.1 External Debt versus Poverty Reduction

While theoretical and empirical literature have provided some guide on the relationship between external debt and economic growth, there are no clear theoretical models linking external debt and poverty. The link between external debt and poverty is often indirectly presented in the assumption that overall growth leads to poverty reduction. This assumption is in general based on the study by Dollar and Kraay (2001), which finds that economic growth benefits the poor as well as the rich.³

The direct impact of external debt on poverty, however, is rarely explicitly modelled and tested. Howbeit, a few studies have investigated the consequences of external indebtedness on poverty. Schinke (1994) analyses the impact of debt on poverty through the change in relative prices of traded to non-traded goods in a factor endowment framework. In another empirical study, Loko, Mlachila, Nallari and Kalonji (2003) estimated the relationship between external debt and three human development indicators (life expectancy, mortality rate and primary school enrolment rate). They found a negligible negative effect of the debt indicators on non-income

³ Before the study by Dollar and Kraay (2001), the Kuznet hypothesis postulated that growth and inequality are correlated in a U-shaped curve. In the initial phase, economic growth increases inequality but after the country has reached middle income status, inequality narrows as the economy grows. (Kuznets S. (1955), "Economic growth and income inequality", *AER*, Vol. 45, pp. 1-28.)

poverty after controlling for the effect of income.⁴ The debt and poverty incidence nexus for Nigeria is shown in Figure 1 below.



Figure 1 Public Debt and Poverty Incidence in Nigeria, 1970-2011

3. Debt Sustainability and External Debt Performance in Nigeria

The concept of debt sustainability has been used frequently to mean the level of debt that allows a debtor country to meet its current and future debt service obligations in full, without resorting to debt relief or rescheduling, with no further accumulation of arrears, while at the same time allows an acceptable level of economic growth to occur. In another definition, European Council (2011) considers debt as being sustainable when a borrower is expected to be able to continue servicing its debts without an unrealistically large correction to its income and expenditure. And within the framework of debt sustainability, several debt ratios have been devised and used in measuring a country's solvency in the sense that they consider the stock of debt at certain time in relation to the country's ability to generate resources to repay the outstanding balance. Debt burden indicators in this category include: (1) the ratio of external debt to GDP; (2) the ratio of external debt to exports; and (3) the ratio of external debt to government revenue.

The ratio of external debt to GDP measures the health of an economy. It relates the debt burden to the broadest measure of the income-generating ability of the economy (IMF, 2004). A low debt to GDP ratio indicates that the economy can produce sufficient output and generate enough income to pay back the debt. The ratio of external debt to exports relates the debt burden to the availability of foreign exchange earnings of the economy. In other words, it is used to calculate the total amount of debt in comparison to its total amount of exports. A very high debt to exports ratio indicates the weakness of the external accounts and its vulnerability to foreign capital flows. For debt to government revenue ratio, it relates debt burden to the availability of domestic resources. This ratio is

⁴ See Maier Rolf (2005): "External debt and pro-poor growth", *Proceedings of the German Development Economics Conference*, Kiel 2005/Verein für Socialpolitik, Research Committee Development Economics, No. 23, http://hdl.handle.net/10419/19816.

used as a measure of sustainability in those countries with a relatively open economy facing a heavy fiscal burden of external debt. An increase in this ratio shows that the country has difficulties in servicing her debts.

Figure 2 below presents external debt indicators in Nigeria for the period 1970 to 2010. Figure 2 shows trend analysis of the ratio of external debt to GDP in Nigeria for the periods 1970-2010. With the threshold established at 30%, the figure shows that external debt to GDP ratio was well below the fixed threshold between 1970 and 1985. However, following the adoption of SAP in 1986 and the subsequent procurement of the IMF "engineered" loan, the ratio of external debt to GDP overshot its established threshold of 30% beginning from 1986 till 1995. This period reflects non-sustainability of debts in Nigeria. The rate however, fell below the threshold between 1996 and 1998 before overshooting again between 1999 and 2004. From 2005, this ratio showed sustainability, following the Paris Club debt exit deal. Meanwhile, with external debt to GDP ratio well below at 40% from 2010, it shows that Nigerian debt is still sustainable.

The ratio of external debt to exports in Nigeria is also shown in Figure 2. From the figure, Nigeria's debt burden was sustainable between 1970 and 1981. During this period, the external debt to exports ratio was below the established 100% threshold. However, between 1982 and 1994, the ratio overshot the established threshold but subsequently fell below this threshold between 1995 and 1998. Meanwhile, the ratio was well above the threshold between 1999 and 2004, reflecting non-sustainable debts burden in the country. But beginning from 2005, after the exit from the Paris debt deal, the external debt to exports ratio continued at low levels, below the set threshold. With new threshold set at 150% in 2010, the ratio of external debt to export continued to fall below this established benchmark.

External debt to government revenue is depicted in the same Figure 2. As shown in the figure, the debt to government revenue ratio was well below the established 250% threshold between 1970 and 1982 after which the ratio overshot the threshold between 1983 and 1995. The implication of this observed trend is that Nigeria's debt burden was not sustainable during this period. The ratio however fluctuated between 1996 and 2002 before staying below the established threshold between 2003 and 2010.



Figure 2 Ratios of External Debt to Gross Domestic Product, Government Revenue and Exports, 1970-2011

Apart from the above three debt solvency indicators, there are also a set of indicators focusing on the short-term liquidity requirements of the country with respect to its debt service obligations. These indicators not only provide useful early-warning signs of debt service problems, they also highlight the impact of the inter-temporal trade-offs arising from past borrowing decisions. Indicators in this group include: (1) External Debt Service to GDP Ratio; (2) external Debt Service to Exports Ratio; and (3) external Debt Service to Government Revenue ratio.

As evidenced in Figure 3 below, external debt service as a ratio of GDP was relatively low throughout the period under review. The low values of the ratio indicate the income-generating ability of the Nigerian economy to pay back its debts. From 2.9% in 1970, the ratio fell to 0.4% in 1974 before rising to 3.5% in 1976 but fell again to 0.4% in 1977. The ratio thereafter rose slowly and steadily between 1978 and 1992 before reaching a peak of 11.9% in 1993. Between 1994 and 2005, it fluctuated further and eventually averaged 1% between 2006 and 2010.

Figure 3 shows that external debt service to exports ratio was relatively low, below the threshold of 15% between 1971 and 1985. The ratio was however greater than the established threshold between 1988 and 1991, indicating signs of non-sustainability of debt during this period. But beginning from 1995, the ratio of external debt service to exports was well below the fixed threshold of 15% and later at 20% in 2010, respectively. This result indicates substantial external borrowing space created after the debt relief secured by Nigeria between 2005 and 2006 as well as the relatively low levels of debt accumulation thereafter (DMO, 2012).



Figure 3 Ratios of External Debt Service to Gross Domestic Product, Government Revenue and Exports, 1970-2011

Just like the external debt service to exports ratio analyzed above, the external debt service to government revenue was well above the established threshold of 20% in 1970 (Figure 3), but afterward remained relatively lower than the threshold between 1971 and 1987, but fluctuated to 10.2% in 1992. The ratio, however, peaked at 42.1% in 1993 and then remained at low levels below the established threshold of 30% between 1995 and 2010.

4. Model Specification and Results

From the literature, both empirical and theoretical, it is obvious that economic growth depends on external debt amongst other variables. However, the exact nature of the relationship is an empirical issue. It may also be the case that external debt, depends on the level of economic growth. Poor economic growth rate may lead to low income, poverty, and insufficient resources for investment; therefore warranting the borrowing of foreign resources to aid the provision of basic needs to the people. In addition, both economic growth and external debt may affect poverty reduction. Thus, a simultaneous equations model is most appropriate for capturing the interrelationship among the variables. Arising from the empirical and theoretical discourse, we specify the following model:

$$debt_{t} = a_{1} + a_{2} pov_{t} + a_{3} \operatorname{int}_{t} + a_{4} fisd_{t} + a_{5} debt_{t-1} + u_{1t}$$
(1)

$$growth_{t} = b_1 + b_2 pov_{t} + b_3 debt_{t} + b_4 fisd_{t} + b_5 open_{t} +$$

$$(2)$$

$$b_6 ethviol_t + b_7 debtser_t + b_8 psenr + u_{2t}$$

$$pov_t = c_1 + c_2 growth_t + c_3 debt_t + c_4 debtser_t + c_5 psenr_t + c_6 soc \exp_t + u_{3t}$$
(3)

 $a_{2,<}0, a_{3}>0, a_{4}>0, b_{2}>0, b_{3}>/<0, b_{4}>0, b_{5}>0, b_{6}, b_{7}<0, b_{8}>0, c_{2}, c_{5}, c_{6}>0, c_{3}, c_{4,<}<0$

Where debt is external debt outstanding, pov is poverty reduction index measure as the real per capita GDP, int is the rate of interest, fisd is the fiscal balance, growth is the growth rate of GDP, open is the measure of trade openness, ethviol is an index of state failure, debtser is the total debt service payment, psenr is the primary school gross enrolment rate, socexp is government expenditure on social services, u_{it} is the error term for the ith equation (i = 1,2,3).

Equation (1) is derived from the present value budget constraint (PVBC) approach to debt sustainability analysis. The critical relationship in the PVBC approach is:

$$B_t - B_{t-1} = -(R_t - G_t) + rB_{t-1}$$
(4)

Where B_t is the stock of public debt at period t, R_t is government revenue at period t, G_t is government expenditure at period t and r_t is the return on government debt at time t. According to the PVBC approach, if a government runs substantial primary surplus, the stock of debt will shrink over time. But if the government runs a primary deficit, the stock of debt will grow at a rate exceeding the interest rate (Ekpo, 2012). Thus, the stock of debt depends on the budget balance, interest rate and previous stock of debt⁵.

Recent literature on growth regression have focused on a set of core explanatory variables along the line adopted by Bosworth and Collins (2003) following earlier studies on growth regression Sala-i-Martin (1997) and Levine and Renelt (1992). In this approach, a core set of variables that have been found consistently to explain growth have been included in the model and the importance of other variables are evaluated conditionally as the core set of variables (Kumar & Woo, 2010).

In specifying economic growth, Equation (2), several combinations of the explanatory variables were considered and tested before a parsimonious specification was chosen. The core set of variables chosen in this study are primary school enrolment, fiscal balance, poverty index and trade openness, In addition to the core set of growth determinants, the estimation uses a set of state failure variables, such as ethnic violence, and a composite

⁵ To see this, rearrange Equation (4) to obtain: $B_t = (1 + r_t)B_{t-1} - (R_t - G_t)$

index of polity computed from 26 variables including civil violence, civil war, ethnic violence and war. The government debt variables used in this study are external debt to GDP ratio and external debt service to GDP ratio.

Specification of the poverty reduction model in Equation (3) is eclectic though guided by empirical literature and authors understanding of the workings of the Nigerian economy.

Because the model is over-identified, we utilize the general method of moments (GMM) to estimate Equations (1) to (3). The lagged and differenced values of the respective variables were used as instruments for the estimation. The advantage of this approach is that it solves the problem usually associated with the search for appropriate instruments for each of the variables. It is believed that the lagged and differenced values would be highly correlated with the individual variable.

4.1 Empirical Results

The regression results for the simultaneous equations are presented in Table 1 below. From the regression results, it is revealed that for debt equation, poverty, fiscal balance, domestic interest rate and past level of external debt are the significant determinants of the current stock of external debt. The results show that reduction in poverty will increase the level of per capita income and reduce the need for external debt. The coefficient of poverty reduction variable was significant at 1 percent level and with the correct sign. With regards to domestic interest rate, it serves as the cost of borrowing. When the domestic interest rate is high, it discourages government borrowing but it may encourage external debt if it is found that the foreign interest rate is relatively lower. The coefficient of domestic lending interest rate has a negative sign in the debt equation and is statistical significant at 5 percent level.

The fiscal balance variable was equally significant at 5 percent level and negative. The negative sign of the coefficient indicates that when there is a fiscal surplus, external debt will decrease while a fiscal deficit will lead to accumulation of further government debt including foreign debt. The coefficient of determination, adjusted R-squared, indicates that 90.52 percent of the variation in debt stock as a ratio of gross domestic product of Nigeria over the period 1970 to 2010 is explained by the explanatory variables selected for this equation.

In the economic growth equation, some interesting results were obtained. First, key variables such as primary school enrolment rate, budget balance, poverty variable, public debt and debt service are either not statistically significant at conventional level of statistical significance or with the wrong sign. The coefficients of debt stock and debt service payment as a ratio of GDP are positive contrary to theory but not statistically significant. Surprisingly, the coefficient of primary school enrolment has a negative sign contrary to theoretical expectation and other empirical findings that primary education improves the capacity of the population to lead a healthy lifestyle and improves the performance of non-income poverty indicators, such as access to sanitation, etc. The reason for this is not far-fetched. In developing countries like Nigeria where agriculture is still the main source of income and employment, primary school enrolment rate has negative effect on income. The traditional system of agricultural practice in the developing countries necessitates heavy reliance on family labour supplied by children and women. Increment in primary school enrolment implies a cut in labour supply and consequently a fall in output and income.

Fiscal balance and public debt have a positive but not statistically significant impact on economic growth. The state failure variable has a negative and statistical significant impact on economic growth. This implies that for sustainable economic growth to be achieved, every effort should be put in place to eliminate corruption, insecurity and political violence. However, this equation has a very low coefficient of determination, 0.08, indicating that only 8 percent of the variations in growth are explained by the independent variables. This should

not come as a surprise bearing in mind the fact that researchers are yet to exhaust the variables that explain economic growth.

Lastly, the estimation of poverty equation also shows some interesting results. It corroborates the finding that social unrest, insecurity and ethnic violence have negative impact on social well-being. The coefficient of the state failure variable is both negative and statistically significant at 5 percent. The coefficients of both stock of debt and debt service payment have negative signs implying that debt has negative and statistically significant effect on poverty reduction. A percentage point increment in the ratio of debt to GDP leads to about 13 percent reduction in per capita income, and thus aggravates rather than alleviate poverty in Nigeria. Debt service payment further reduces per capita income by 25.81 percent. The coefficient of the ratio of social expenditure to total government expenditure has a positive sign and is statistically significant at 5 percent. However, primary school enrolment has a negative sign although not statistically significant.

Economic growth lagged as would be expected has a positive sign and statistically significant in poverty reduction. The coefficient of determination indicates that the independent variables jointly explain about 70 percent of the variations in poverty reduction. However, these results should be interpreted with caution bearing in mind the low value of Durbin Watson statistics of 1.4677.

Variables	Debt Equation	Growth Equation	Poverty Equation
Constant	0.4544***	-0.0943	1764.19***
Constant	(4.7250)	(-1.4760)**	(25.3912)
Debt		0.0526	-13.851**
Debt		(1.6199)	(-1.7589)
Lagged Debt	0.6899***		
	(15.4729)		
Debt Service Payment		0.0014	-25.8145***
		(0.4374)	(-2.3289)
Lagged GDP Growth			18.3729***
			(4.7035)
Poverty Reduction	-0.0002***	-0.000025	
	(-4.2284)	(-0.9044)	
Fiscal Balance	-0.0314***	0.0022	
	(-9.6044)	(0.6529)	
Expenditure on Social services			0.0004***
Expenditure on Social services			(4.2359)
Index of Ethnic Violence		-0.0450***	-181.5571***
Index of Edime violence		(-4.4792)	(-7.8633)
Trada Opanpass		0.0046***	
Trade Openness		(7.1289)	
Drimary School approlment rate		-0.0011***	-0.6845
Timary School enforment rate		(-2.6066)	(-0.7165)
Domestic Interest Pate	-0.0038***		
Domestic Interest Kate	(-2.0075)		
Adjusted R-Squared	0.9052	0.0829	0.6951
Durbin Watson Statistics	1.7883	1.6947	1.4677
J-statistics	0.2445		

 Table 1
 Results of the GMM Estimation of the Simultaneous Equations Model

Note: *** = significant at 5%; ** = significant at 1%.

Source: Authors' Computation

5. Conclusion

This paper examined the relationship between external debt, economic growth and poverty reduction in a country characterized by insecurity, social unrest, terrorism and deplorable social infrastructure. Over the period under investigation, the external debt profile of Nigeria showed that the stock of debt was increasing, despite the debt relief of 2005. During the same period, poverty incidence was also on the increase, from 27.2 percent in 1980 to 69 percent in 2010.

The results of the empirical analysis indicated that external debt had a negative impact on economic growth and poverty. The results also demonstrated the extent to which ethnic and political violence hindered rapid economic growth and poverty reduction in Nigeria over the period 1970-2010. Furthermore, the study confirmed that consistent fiscal surpluses would reduce the stock of external debt which would minimize debt overhang. While fiscal surplus would curtail external debt accumulation, the study showed that expenditure on social services should not be neglected. Government expenditure on social services was found to be a key policy variable that can reduce poverty in Nigeria. However, this must be accompanied by the quality of service delivery.

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	Table A1Security Threats and Bomb Blast in Nigeria 1986-2011				
S/N	Date/year occurred	Casualty remarks			
1.	May 30, 2011	Post democracy day blast killing13 in bauchi and 40 injured.			
2.	April 15, 2011	Blast in Maiduguri killing 2			
3.	April 7, 2011	Explosion hit a polling booth at Unguwar Doki Maiduguri Borno state, injuring more than 10 people			
4.	April 21,2011	Two suspected bomb makers die in a blast in Kaduna			
5.	April 25, 2011	Three bomb blast rip through Tudu Palace Hotel and Kano motor park in Maiduguri Borno state			
6.	April 27, 2011	Foiled bombing at INEC office Oron Akwa Ibom State			
7.	April 8, 2011	Bomb blast rock INEC office in Suleja on eve of parliamentary pools killing at least 5 people			
8.	March 3, 2011	Bomb explosion at a PDP rally in Suleja killing 10 people			
9.	December 31, 2010	Explosion at Mogadishu Mami Market Abuja claim 4 people			
10.	December 24, 2010	Bomb explosion in Jos Plateu State killing 32 people			
11.	November 4, 2010	Military grenade explosion at Dadin-Kowa area of Jos chops off the hand of 18 years old Mohammed leaving him with multiple bruises			
12.	October 1, 2010	A twin car bomb blast killing 12 people ,injuring 36 in Abuja			
13.	June 1, 2010	2 bombs exploded behind the perimeter fence of white eagle hotel in Yenegoa Bayelsa State			
14.	May 3, 2010	Explosion device detonated at Mechanic Workshop along Melford Okilo Road Bayelsa State.			
15.	March 15, 2010	Bomb blast rock post amnesty submit being organized by vanguard newspapers Killing 1.			
16.	January 10, 2010	A twin car bomb at Eagle Square Abuja killing 12 people and injured 36			
17.	December 22, 2009	A parcel bomb exploded in the premises of super screen a private TV station in the Onipanu area of Lagos reaping off the right hand of the conveyer of the explosive device			
18.	July 12 ,2009	MEND attack Atlas Cov, an oil facility in Lagos with dynamite and guns killing 5 people.			
19.	March 18, 2009	A bomb on a farm in the Ikeja military cantonment killed a student of government secondary school, Nasarawa			
20.	December 13, 2006	Thugs attack Delta PDP secretariat in Asaba with Explosives			
21.	December 23, 2006	MENDcar bomb outside the office of River State government in Port Harcourt.			
22.	December 11, 2006	Thugs attack Ndudi Elumelu Campaign office in Aniotcha/ Oshimili Federal Constituency with dynamites			
23.	December 5 2006	Dynamite exploded at then Governor Goodluck Jonathan campaign office in Bayelsa state.			
24.	November 28, 2006	Godwin Aigbekhai killed by a car bomb explosion in Owan east Local council, Edo State.			
25.	November 26, 2006	Part of PDP secretariat destroyed by explosion in Bayelsa State			
26.	May. 28, 2005	Bomb blast occurs at residence of Chairman of the Ikono council Area Akwa Ibom State			
27.	January 27, 2002	Accidental detonation of explosives killing about 1,100 at the Ikeja depot of Nigeria army cantonment Ikeja			
28.	December 13, 1997	Lt. Gen Oladipo Diya escape death at Nnamdi Azikiwe Abuja Airport			
29.	May 12, 1997	Explosion rocks Ibadan in front of Fed Min of works at Eleyele Road near Jericho Hospital			
30.	April 22, 1997	Blast in Evans square claim 3 lives injures several			
31.	January 17, 1997	Bus belonging to Nigerian Army hit.			
32.	December 18, 1996	Bus belonging to Lagos state task force on environmental sanitation hit			
33.	December 16, 1996	Bomb blast rock Col. Mohammed Buba Marwa convoy Lagos.			
34.	November 14, 1996	Explosion kills Chief Security Officer of Murtala Mohamed Airport Lagos.			
35.	April 25, 1996	Explosions shake airport base Ikeja			
36.	April 11, 1996	Explosion at Ikeja Cantonment Lagos			
37.	January 20, 1996	Explosion at Aminu Kano International Airport Kano			
38.	January 18, 1996	Bomb at Durbar Hotel Kaduna Killing the News Correspondent with suspected bomber killed			
39.	May 31, 1995	Ilorin stadium rocked just before lunch of family support Programme			
40.	October 19, 1986	A parcel bomb kill Dele Giwa, the founding editor of Newswatch Magazine in Lagos			

Appendix

Source: Compilation by the Authors from Several Newspapers.

Tuble 12 - Index of Lumite Violence in Fugeria, 1970 2010								
Year	Score	Year	Score	Year	Score	Year	Score	
1970	0	1980	0	1990	2	2000	2	
1971	0	1981	0	1991	2	2001	2	
1972	0	1982	0	1992	2	2002	2	
1973	0	1983	0	1993	2	2003	2	
1974	0	1984	0	1994	2	2004	0	
1975	0	1985	0	1995	2	2005	0	
1976	0	1986	0	1996	2	2006	0	
1977	0	1987	0	1997	2	2007	1	
1978	0	1988	0	1998	2	2008	1	
1979	0	1989	0	1999	2			

 Table A2
 Index of Ethnic Violence in Nigeria, 1970-2010

Source: Polity IV Project.

Table A3 Corruption Index: the Ranking of Nigeria from 1996-2012

S/N	Year	No. of Countries	Nigeria's Rank Among Countries	No of Countries Below Nigeria	No of Countries Tied with Nigeria	CPI Score
1	1995 (first Year of CPI Index)	41	Nigeria not featured	n.a.	n.a.	n.a.
2	1996	54	54	0	0	0.69
3	1997	52	52	0	0	1.76
4	1998	85	81	3	1	1.9
5	1999	99	98	1	0	1.6
6	2000	90	90	0	0	0.6
7	2001	91	90	1	0	1.0
8	2002	102	101	1	0	1.6
9	2003	133	132	1	0	1.4
10	2004	146	144	2	0	1.6
11	2005	159	152	5	2	1.9
12	2006	163	142	13	8	2.2
13	2007	180	147	31	2	2.2
14	2008	180	121	55	4	2.7
15	2009	180	130	42	8	2.5
16	2010	180	134	38	8	2.4
17	2011	183	143	32	8	2.4
18	2012	176	139	23	4	27/100

Source: Transparency International, 2012.

Table A4Poverty Incidence in Nigeria, 1980-2010

Year	Poverty Incidence	Population in Poverty (million)	Estimated Population (million)
1980	27.2	17.1	65
1985	46.3	34.7	75
1992	42.7	39.2	91.5
1996	65.6	67.1	102.3
2004	54.4	68.7	126.3
2010	69	112.47	163

Source: National Bureau of Statistics, National Poverty Profile, 2010.