Developing Country Studies
ISSN 2224-607X (Paper) ISSN 2225-0565 (Online)
Vol.4, No.10, 2014

The Impact of Nigeria's Debt Stock and its Servicing on Social Services Provision: 1980-2010

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Abstract
Public expenditure financing using internal or external debt strategy is often the norm in most countries, Nigeria inclusive. The main objective of this study is to investigate the causality between debt service payments and provision of social services in Nigeria from 1980-2010. The paper employed the use of Ordinary Least Square (OLS) and Augmented Dickey-Fuller (ADF) unit root test to undertake our analysis, with total social services spending by the federal government serving as dependent variable, while internal debt, external debt, debt service payments and exchange rate as exogenous variables. Our results indicate a positive relationship between internal debt, exchange rate and social services provision, while an inverse relationship exist between external debt and social service provision. The study suggested the need for more innovativeness in tax collection and administration, implementation of more Public-Private-Partnership in infrastructural financing and reverting to medium term national development planning culture and programme based budgeting (PBB) as coherent alternatives towards improving quality and scope of social services provision in Nigeria.
Keywords: Internal Debt, External Debt, Social Services Provision and Debt Service Payments

1.0 Introduction

Every country in the world structures its economic policy and its subsequent implementation towards achieving clearly defined macroeconomic goals and objectives. For a developing country like Nigeria, a clear emphasis is laid on the provision of social services through state institutions as a deliberate strategy of improving the quality of life of its citizens and reducing social inequality. However, this is only possible if a country has adequate resources.

In Nigeria the twin problems of resource inadequacy and market indeterminacy has make it imperative for national and sub-national governments to intervene and provide the needed resources towards financing economic growth activities and provision of social services.

As indicated earlier, the predominance of low income as a major characteristic of our citizens and market failure has made it imperative for the public sector to mobilize domestic and external resources towards social services provision.

With an annual economic gr0wth rate of over 7% in the last 10 years, perhaps enough domestic capital formation should have been achieved to provide the needed resources for the provision of social services with our resorting to deficit budgeting, hence requiring domestic and external financing to fill the resource gap.

In addition, low tax revenues relative to national capacity, low productivity and meager foreign exchange earnings due to a mono-cultural economic structure and clear rent seeking in all national economic activities are additional factors to explain for the national resource gap.

With a population growth rate averaging 3% over the last 30 years with no corresponding capital formation and an enclave oriented economic growth, the results are obvious for low capital formation and scare resource availability, hence the need for resorting to debt towards financing the defined resource gap. In the process of obtaining alternative financing the country can consider either external or internal debt or both, serving the same purposes of financing government deficit budget directed towards the provision of social services in Nigeria.

Nigeria like most developing countries is characterized with a stunted and underdeveloped bond market in the 70's and 80''s, hence limited scope for internal resource mobilization and resort to large dependence on external debt and other funding sources towards financing its deficit budget.

The country's external debt was sustainable up to mid-1970's. From the late 1970's due to a combination of factors; poor macro – economic management and declining prices of crude oil, low economic growth rates and rising population, external balance of payment crisis and depreciation of Naira exchange rate relative to other convertible currencies, the country's external debt began its upward movement. Thus, from an external debt of US $ 557.74 million in 1975. Nigeria debt peaked at US $33.1 billion in 1990 before declining to US $27.1 billion in 1997 and rose again to US $ 28.8 billion in 1998.

However, one of the greatest problems facing African countries basically classified as Highly Indebted Countries (HIC's) is the amount of their external indebtedness. This problem of increasing rate of external debt *and its ser*vicing is threatening economic development programmes and interventions embarked upon by these countries, resulting in retarded economic growth and stunted development.

Much as there is a strong debate as to the reasonable level of debt to GDP ratio which should not be more than 40%, the scale of resource diversion towards its servicing and the attendant opportunity cost of social services retardation and its socio-economic consequences are varied across national jurisdictions and resource endowment for the national economy incurring such a debt profile. For Nigeria, the high debt to GDP ratio even after the Paris Club debt settlement of 2005, results in huge debt service obligations that often thwarted meaningful provision of social services required for optimal and sustained national development.

According to the Central Bank of Nigeria Statistical Bulletin of 2012, total debt service payments in 1981 amounted to N1,0271 billion relative to N294.75 million for social service payments, indicating a spending of 27.5% relative to debt service obligations. Figures for 1992, indicates an even wider margin as total debt service payments stood at N19.4 billion, while total social services expenditure stood at N1,336.15 billion or a partly 6.9% of debt service payments for the provision of health, education and other social services.

However, a remarkable decline in the margin between debt servicing and social services provision was achieved in 2012, as total debt service payments stood at N679.28 billion relative to social expenditure of N640.1 billion, giving a ratio of 1:1, partly due to reduction in external debt profile, but mainly due to rising expenditure to meet MDGs.

The remainder of the paper is organized in four sections. In Section 2, we discuss previous studies, theoretical framework and empirical literature on the case study. While in Section 3, we looked at the research methodology. Section 4 contains data presentation, data analysis and our main empirical results. These are based on a series of standard regressions, augmented with information about debt levels. It is here that we report our estimates of the thresholds beyond which debt becomes a drag on provision of social services. Section 5 contained our concluding remarks and made some policy recommendations on the findings of our study.

2.0 LITERATURE REVIEW

According to Cecchetti, Mohanty and Zampolli (2011) Debt is a two-edged sword. Used wisely and in moderation, it clearly improves welfare. But, when it is used imprudently and in excess, the result can be disaster. For individual households and firms, over-borrowing leads to bankruptcy and financial ruin. For a country, too much debt impairs the government’s ability to deliver essential services to its citizens. When debt ratios rise beyond a certain level, financial crises become both more likely and more severe (Reinhart and Rogoff, 2009). This strongly suggests that there is a sense in which debt can become excessive. The question is at what point do debts become excessive for the country and that debt become too much to impairs the government’s ability to deliver essential services to its citizens? To answer this question the researcher seek to empirically examine the impact of Nigeria’s debt servicing and its impact on social services provision from 1980-2010.

2.1 Literature Review and Theoretical Framework

For a macroeconomist working to construct a theoretical structure for understanding the economy as a whole, debt is either trivial or intractable. Trivial because (in a closed economy) it is net zero, the liabilities of all borrowers always exactly match the assets of all lenders. Intractable because a full understanding of debt means grappling with a world in which the choice between debt and equity matters in some fundamental way. That means confronting, among other things, the intrinsic differences between borrowers and lenders; non-linearities, discontinuities, and constraints in which bankruptcy and limits on borrowing are key; taxes, where interest paid to lenders is treated differently from dividends paid to shareholders; differences between types of borrowers, so household, corporate and government debt are treated separately; and externalities, since there are times when financial actors do not bear (or are able to avoid) the full cost of their actions.

2.2 Empirical Studies

Debt is acquired to contribute meaningfully to the economy but the future debt service payment may pose a threat to economic growth. A number of researchers have examined the effect of external debt on economic growth since the beginning of the new millennium.

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, this study did not find any adverse impact of debt servicing on economic growth; however, it confirmed some crowding-out effects on private investment.

Karogol (2002) investigated both the short-run and long-run relationships between economic growth and external debt service for Turkey during 1956-1996. The study employed a standard production function model analyzed using multivariate co-integration techniques. The Vector Autoregression estimates showed that there exists one Co-integration equation. It also revealed that debt service is negatively related to economic growth in the long-run. The causality test showed uni-directional causality between debt service and economic growth.

Clements,Bhattacharya and Nguyen (2003) examined the channels through which external debt affects growth in low income countries. Their results suggest that the substantial reduction in the stock of external debt projected for highly indebted poor countries (HIPC) would directly increase per capita income growth by about 1 percentage point per annum. Reductions in external debt service could also provide an indirect boost to growth through their effects on public investment.

Audu (2004) examined the impact of external debt on economic growth and public investment in Nigeria from 1970-2002. The empirical investigation was done using the Co-integration test and Error Correction Method. The study shows that debt servicing pressure in the country has had a significant adverse effect on the growth process and past debt accumulation negatively affect public investment.

Abdelmawla and Mohammed (2005) investigated the impact of external debt on economic growth of Sudan from a period spanning 1978 – 2001. The study showed that export earnings have a significant positive impact while external debt and inflation had negative impact on Sudan's economic growth.

Villanueva et al. (2006) used standard neo-classical growth model to explore the dynamics of capital accumulation, external debt and economic growth for Philippines over a period of 2000-2003. They used goal seek technique to estimate the steady state ratio of external debt to GDP, associated with doubling the per capita income. Additionally, he also tried to estimate the optimal savings rate that is "consistent with maximum real consumption per unit of effective labor in the long run". He concluded that higher ratio of change in interest rate spread to change in debt-to-GDP lowers welfare in long run.

Adepoju, Salau and Obayelu (2007) analyzed the effects of external debt management on the economic growth of Nigeria for a period of 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.

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.

Butts and Hector (2009) empirically investigated the effect of external debt service payment practices on the economic growth of Nigeria. Ordinary Least Square method of multiple regressions 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.

Choong, Lau, Liew, and Puah (2010) examined the effect of different types of debts on the economic growth in Malaysia during the period 1970-2006. Using Co-integration test, the findings suggest that all components of debts have a negative effect on long run economic growth. The Granger causality test reveals the existence of a short-run causality linkage between all debt measures and economic growth in the short-run.

Malik, Hayat, and Hayat (2010) explored the relationship between external debt and economic growth in Pakistan for the period of 1972 – 2005, using time series econometric technique. Their result shows that external debt is negatively and significantly related to economic growth. The evidence suggests that increase in external debt will lead to decline in economic growth.

All these studies from Nigeria and other countries were mainly on the impact of external and internal debt on economic growth, some of the studies showed negative relationship while others indicate positive relationship to the economy. Here the study is focusing on impact of debt servicing on social services provision in Nigeria, making it unique for economic planning and implementation of social services provision.

3.0 Research Methodology

The study employed data that are secondary in nature. The annual time series data was obtained from the Central Bank of Nigeria Statistical Bulletin and Debt Management Office from 1980-2010. The methods of analysis or estimation techniques include Ordinary Least Square (OLS) method, Augmented Dickey-Fuller (ADF) Unit Root test.

The study hypothesized that debt and its servicing have no significant effect on the Social Services Provision (SSP) of Nigeria. The model adopted Social Services Provision (SSP) as the endogenous variable, while Internal Debt (INTD), External debt (EXTD), Debt Servicing (DTS) and Exchange Rate (EXCHR) represent the exogenous variables. The a priori expectation for the coefficients in the model are B1, B2, > 0 while B3, B4, < 0

The econometric form of the model is specified as;

SSP= f(INTD, EXTD, DTS, EXCHR)………………………………………………….(3.1)

The econometric equation becomes;

$SSP = B_0 + B_1 INTD + B_2 EXTD + B_3 DTS + B_4 EXCHR + e$………………… (3.2)

Where;

B_0 = Intercept of relationship in the model (constant).

$B_1 – B_4$ = coefficient of each exogenous variable e = stochastic or error term

Taking the natural log of the equation above we have:

$$logSSP = B_0 + B_1 logINTD + B_2 logEXTD + B_3 logDTS + B_4 logEXCHR + e \quad (3.3).$$

The above equation 3.3 is used for the estimation and analysis of this study.

3.1 Data presentation and Analysis

This section deals with the analysis of data and interpretation of findings. The method of data analysis employed the Ordinary Least Square (OLS) method, Augmented Dickey-Fuller (ADF) Unit Root Test, Johansen Co-integration.

The data for analysis is presented in table 4.1 below; the variables are the Social Services Provision (SSP), Internal Debt (INTD), External debt (EXTD), Debt Servicing (DTS) and Exchange Rate (EXCHR). These data are from 1980 to 2010.

Table 3.1: Data Presented for Estimation and Analysis

Year	SSP	INTD	EXTD	DTS	EXCHR
1980	129.7	10,171.0	1,233.0	256.95	0.55
1981	42.4	11,192.60	2,331.20	1027.41	0.61
1982	46.9	15,007.60	8,819.40	1167.17	0.67
1983	51.4	22,221.40	10,577.70	1007.08	0.72
1984	59.8	25,672.10	14,808.70	1235.32	0.76
1985	64.9	27,949.10	17,300.60	1606.05	0.89
1986	71.5	28,438.70	41,452.40	1631.59	2.02
1987	75.3	36,789.10	100,789.10	3928.95	4.02
1988	81.5	47,029.60	133,956.30	9238.70	4.54
1989	92.7	47,049.60	240,393.70	13273.70	7.39
1990	100.0	84,093.10	298,614.40	23822.30	8.04
1991	110.9	116,198.70	328,453.80	26414.40	9.91
1992	149.9	177,961.70	544,264.10	19400.26	17.30
1993	198.4	273,836.40	633,144.40	81081.58	22.05
1994	312.1	407,582.70	648,813.00	49400.32	21.89
1995	467.3	477,733.89	716,865.60	51058.40	21.89
1996	580.0	419,975.60	617,320.00	53047.50	21.89
1997	631.3	501,751.10	595,931.90	68539.74	21.89
1998	813.7	560,830.20	633,017.00	64394.54	21.89
1999	973.2	794,806.60	2,577,374.40	30843.38	92.69
2000	1183.0	898,253.90	3,097,383.90	131048.02	102.11
2001	1048.7	1,016,974.00	3,176,291.00	155416.22	111.94
2002	1066.7	1,166,000.70	3,932,884.80	163811.32	120.97
2003	1273.6	1,329,680.00	4,478,329.30	363510.32	129.36
2004	1574.6	1,370,325.20	4,890,269.60	382509.94	133.50
2005	1895.3	1,525,906.60	2,695,072.20	393953.41	132.15
2006	2296.7	2,725,947.30	451,461.70	415362.78	128.65
2007	2440.7	4,127,973.50	431,079.85	511643.65	117.96
2008	2461.6	2,320,307.16	523,254.09	381200.0	130.75
2009	2476.0	3,228,029.02	590,437.13	251791.2	158.50
2010	2665.9	4,551,820.00	689,837.49	415621.70	153.13

Sources: online cbn statistical bulletin for 2012 and Debt Management Office

Table 3.2: Result of Augmented Dickey-Fuller (ADF) Test for Stationarity

VARIABLES	ADF STATISTIC	1% Critical Value	5% Critical Value	DIFFERENCE
SSP	5.432041	-3.6752	-2.9665	1ST
INTD	5.930097	-3.6852	-2.9705	2ND
EXTD	5.278954	-3.6752	-2.9665	1ST
DTS	5.862866	-3.6959	-2.9750	3RD
EXCHR	5.645654	-3.6852	-2.9705	2ND

Source: computation from table 3.1E-views software 7.0)

From the Table 3.2, the Social Services Provision (SSP) and External debt (EXTD) in Nigeria are stationary at first difference with ADF statistic value of 5.432041 and 5.278954 at 1 percent respectively, Internal Debt (INTD) and Exchange Rate (EXCHR) are stationary at second difference with ADF value of 5.930097 and 5.645654 at 1 percent respectively and Debt Servicing (DTS) is stationary at first difference with ADF value of 5.278954 at 1 percent. Therefore data are fit to be used for regression estimation and for economic analysis and inference.

Table 3.3: Data Estimation Results

VARIABLES	COFFICIENT	STANDARD ERROR	T-STAT	PROB.
C	0.6116	0.1940	0.3151	0.7551
LOG(INTD)	0.7183	0.167	4.294	0.0002
LOG(EXTD)	-0.2008	0.079	-2.531	0.0178
LOG(DTS)	-0.2439	0.120	-2.026	0.0431
LOG(EXCHR)	0.4819	0.194	2.477	0.0201
R-SQUARE	0.959			
ADJ R-SQUARE	0.953			
F-STATISTIC	153.645			
D-W STATISTIC	1.98			
PROB	0.0000000			

Source: computation using E-views package

3.2 Interpretation and Discussion of Results

The result in table 4.3 shows that Internal Debt (INTD) and Exchange Rate (EXCHR) have a positive relationship with Social Services Provision (SSP), thus if Internal Debt (INTD) and Exchange Rate (EXCHR) increased by a unit each Social Services Provision (SSP) is expected to increase by 0.718310 and 0.481950 percent respectively.

While External debt (EXTD) and Debt Servicing (DTS) are negatively related to Social Services Provision (SSP) which suggests that a percent increase in External debt (EXTD) and Debt Servicing (DTS) will cause 0.200892 and 0.243828 in Social Services Provision (SSP) respectively.

However, the result shows that Internal Debt (INTD), External debt (EXTD), Debt Servicing (DTS) and Exchange Rate (EXCHR) are statistically significant and strongly related to social service expenditure. The data on Internal Debt (INTD) and Exchange Rate (EXCHR) are positively related to Social Services Provision (SSP), this may be due to the fact that the internally borrowed funds are utilized towards financing budget deficits than the external funds because from the result the external debt and debt servicing have negative impact on the Social Services Provision (SSP) in Nigeria.

The value of F- statistics with a value of 153.6459 shows that the equation has a good fit that is the explanatory variables are good explainers of changes in Social Services Provision (SSP) in the Nigerian economy. The Durbin Watson statistics with a value of 1.981 illustrates the absence of autocorrelation among the variables in the model.

4.0 Conclusion and Recommendations

4.1 Conclusions

In conclusion, the paper examined the impact of debt and its servicing on the provision of social services in Nigeria, using secondary data from central bank of Nigeria (CBN) and Debt Management office from 1980 to 2010. The research results showed clearly that external debt and its servicing have a negative impact on the provision of social services in Nigeria, this implies that more external debt in the country will lead to high debt servicing which in turn have negative impact on the provision of social services in Nigeria as it reduces the quantum of budgetary provision available towards financing social services provision and delivery.

Based on theories and empirical studies, debts, both internal and external are incurred to contribute positively towards the provision of economic assets and social services in Nigeria, but this study has shown that it is only the internal debts that have positive impact on provision of social services and external debts have negative impact on provision of social services in Nigeria.

The study shows that internal debt, external debt and debt servicing in Nigeria play significant roles in explaining the variation in the level and total provision of social services in the Nigerian economy and one of the major challenges of debt and its servicing in Nigeria is the use of mostly domestic debt proceeds towards financing recurrent expenditure components of our annual budgets.

Superficially, this macroeconomic management model may appear acceptable and have some positive impact on social services provision, the long run impact on the economy is dire as the expenditure items financed have no internal rate of return, hence shifting the burden of repayment of the loan and its servicing to future generations who are non-beneficiaries of current expenditure outlays.

4.2 Policy Recommendations

4.2.1 The need to have a clearly defined threshold of budget deficit as a proportion of GDP of not more than 3% to insulate the national economy from excessive debt burden. This would reduce significantly the recourse to contracting domestic debt towards financing recurrent expenditure components

4,2.2 Prudent utilization of existing resources through the reverting of our national economy to medium term national development planning culture and a programmed based budgeting. This would significantly help in channeling resources to already costed programmes and projects, hence reducing duplication and preventing avoidable waste.

4.2.3 Reform of the tax system at all tiers of government as a strategy of improving the volume and quality of tax revenues, hence improving resource availability for expenditure financing and reducing the need for deficit financing to the barest minimum.

4.2.4 Institutional acceptance and implementation of Public-Private –Partnership model towards Infrastructure financing capital expenditure components as a way of enhancing the quality and size of national economic assets, hence improving the overall productive capacity of the economy, reducing deficit financing and freeing more resources towards social services provision as a complement to an expanding national economic assets base.

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APPENDIX I

Dependent Variable: LOG(SSP)
Method: Least Squares
Date: 01/15/14 Time: 07:28
Sample: 1980 2010
Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.611603	1.940469	0.315183	0.7551
LOG(INTD)	0.718310	0.167279	4.294082	0.0002
LOG(EXTD)	-0.200892	0.079381	-2.530717	0.0178
LOG(DTS)	-0.243828	0.120328	-2.026360	0.0431
LOG(EXCHR)	0.481950	0.194538	2.477404	0.0201

R-squared	0.959412	Mean dependent var	5.877253
Adjusted R-squared	0.953168	S.D. dependent var	1.461166
S.E. of regression	0.316208	Akaike info criterion	0.681855
Sum squared resid	2.599670	Schwarz criterion	0.913143
Log likelihood	-5.568750	F-statistic	153.6459
Durbin-Watson stat	1.981885	Prob(F-statistic)	0.000000