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External Debt Management and Macroeconomic Performance of the Nigerian Economy, 1986 – 2011

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Abstract
The study examines impact of external debt management on macroeconomic performance in Nigeria using data spanning 1986-2011 and employs an Ordinary Least Squares (OLS) technique. Four equations were modeled in which the independent variables include external debt (EDBT), debt service payment (DSP), balance of payments (BOP) and foreign direct investment (FDI). The dependent variables were per capita income (PCI), unemployment (UNEM) and literacy rate (LITR) for model 1, 2 and 3 respectively as well as of EDBT. The OLS results reveal that impact of EDBT, DSP and BOP on PCI is negative while FDI has a positive influence on PCI. Again, EDBT, DSP and BOP have positive determining influence on UNEM while that of FDI on UNEM is negative. Empirical results further show that impact of EDBT, DSP and FDI on LITR is positive while a negative relationship exists between LITR and BOP. Finally, impact of FDT and TOT on EDBT is negative and a positive relationship exists between GDP, EXR and EDBT. The study recommends among other things that government should ensure that any deal with the London and Parish Clubs and other creditors should be deals that will open Nigeria to greater trade and investment.
Key Words: External Debt, Debt Service Payments, Economic Performance, per capita income.

Introduction

After the civil war in 1970, the Nigerian government embarked on large-scale public sector investment programs to foster growth rates in the economy and as a follow up of the government reconciliation, rehabilitation and reconstruction. This was successful because as at that time the oil sector was stable and was a major foreign exchange earner of the country's income which also stimulated the policy during this period. The major reason for this was to enhance the standard of living and also promote employment in the country. The economy, therefore, shifted from being mainly agrarian in nature to other productive and distributive activities. As the revenue from oil began to dwindle, especially in the 1980s, government had to source for funds elsewhere to finance its development projects and this lead to borrowings from external and domestic sources which eventually led to high debt accumulation. This was compounded by trade credits and defaults in settlement of obligations that fell due, such that interest payments arrears had to be capitalized.

The willingness of the International Commercial Banks (ICB) to grant loans to developing countries (Nigeria inclusive) under the guise of assigning economic development efforts added to the debt problem. Although there is nothing wrong in borrowing, the utilization of the loan is what matters. The incidence of the debt crisis in Nigeria hampered development programs because a larger portion of the country's foreign earnings is required to service the debt. Thus, the net foreign earnings were grossly inadequate to effectively finance development projects after serving the debts. Borrowing could be from domestic or external sources. The terms of borrowing, the structure and composition of debt instrument vis-à-vis the mode of financing fiscal deficits have serious implications for debt service and its sustainability. This, in turn, affects growth and development. Issues of policies and endeavours to alter the debt stock, composite structure and terms of debt with a view to maintaining over time, a sustainable level of debt services, constitute the central focus of debt management. Thus, many developing countries particularly Nigeria is found to be wallowing in debt. The external debt problem facing Nigeria has been receiving increasing attention in which adequate solutions are yet to be found.

Although, there are many studies on external debt in the literature, most of the studies carried out so far in this area have tended to focuse on the impact of external debt on economic growth and foreign direct investment both in the developed and developing economy (see Ayadi, 2008). We are therefore not aware of any study that has investigated the impact of external debt on other basic indicators of economic performance such as per capita income, literacy rate and unemployment rate in Nigeria. The purpose of this study therefore is to scrutinize the relationship between external debt and these basic indicators of economic performance in Nigeria.

The contribution of this paper therefore is to fill these gaps using an ordinary least squares technique. Expectedly, the sequence of the paper is clear. Section one focuses on introduction. In section two, relevant literatures are reviewed. Section three focuses on the methodology and the specification of the various equations. These are followed by the discussion of the estimation technique in section four. The study is rounded up with concluding remarks in section five.

Review of Related Literature

By definition, external debt refers to the portion of a country's debt that was borrowed from foreign lenders including commercial banks, governments or international financial institutions. According to Udoka and Anyingang (2010), external debt is the term that describes the financial obligation that ties ones party (debtor country) to another (lender country). It usually refers to incurred debt that is payable in currencies other than that of the debtor country. In principle, external debt includes short-term debts, such as trade debts which mature between one and two years or whose payment would be settled within a fiscal year in which the transaction is conducted. Both developed and developing nations seek for external debt to boost their economic performance because external debt is widely believed to enhance economic growth and development (Osinubi & Olaleru, 2006).

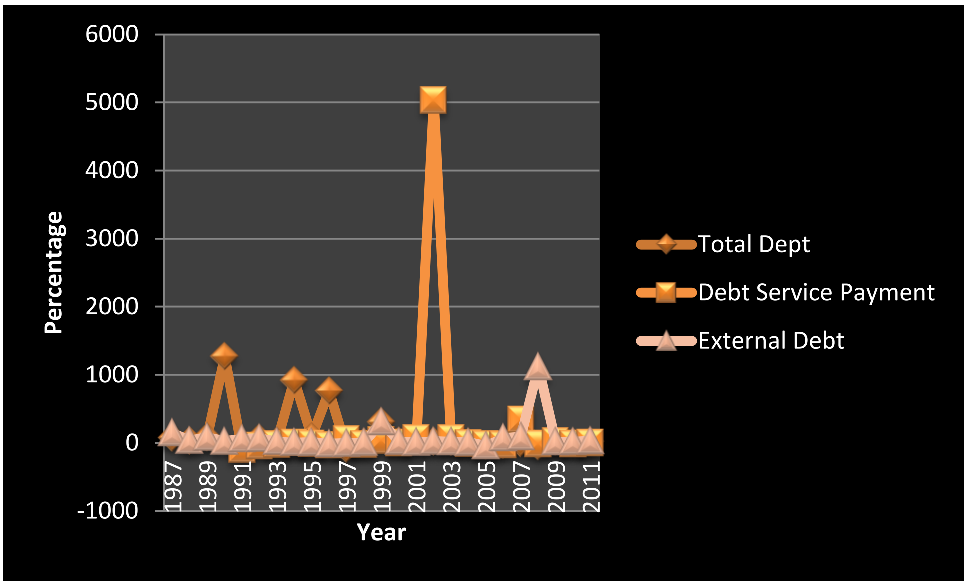
Empirically, Karagol (2002) examines the interaction among economic growth, external debt service and capital inflow using time series data for Turkey and a simultaneous equations model. The results showed that the debt servicing ratio adversely affects economic growth whereas the decrease in the rate of growth reduces the ability of an economy to service its debt. Mbanga and Sikod (2001) found that there exist a debt overhang and crowding out effects on private and public investments respectively in Cameron. Were (2001)'s study on the impact of external debt on economic growth and private investments in Kenya used an error correction formulation and the estimation result showed a debt overhang problem in both the growth and investment equation. Mukolu, and Ogodor (2012) scrutinized the relationship between external debt and macroeconomic performance in Nigeria for the period 1975 to 2005. Two macroeconomic variables of gross domestic product and interest rate were expressed each as a function of external debt and debt servicing, while the ordinary least square technique (OLS) was used to estimate the two models. The results showed that external debt has a significant and positive impact on the Nigeria Gross Domestic Product while the debt charges paid on this debt, as well as the debt serviced by the government have a negative effect on the growth of the Nigerian economy.

Adesola (2009) explores the nexus between debt servicing and economic growth in Nigeria for the data period spanning 1984-2004. The study employed debt payments to Multilateral Financial creditors, Paris club creditors, London club creditors, Promissory notes holders and other creditors (Non-Paris Creditors) as independent variables to statistically determine whether they have inverse relationship with the GDP and gross fixed capital formation at current market prices (GFCF) and employed the OLS multiple regression method. The study found that debt payments to Paris club creditors and debt payments to promissory notes holders are significantly and positively related to GDP and GFCF, while debt payments to London club creditors and other creditors shows a negative significant relation to GDP and GFCF. Ezike and Mojekwu (2011) examine the impact of external debt management on macro-economic performance in Nigerian economy for the period 1980 and 2004. Applying the OLS technique found that debt reduction enhanced macro-economic performance in the Nigerian economy. Udoka and Anyingang (2010) appraise the relationship between external debt management policies and economic growth in Nigeria, 1970-2006. The variables employed for the study were external debt, gross domestic investment, exchange rate, fiscal deficit, and terms of trade. Ex-post facto research design was adopted for the study while ordinary least squares multiple regression technique was also used for the investigation. The result of the findings revealed that, GDP, exchange rate, fiscal deficit, London Interbank offered rate, and terms of trade are the major determinants of external debt in Nigeria.

External Debt Profile in Nigeria

The growth rate of external debt and other macroeconomic variables are shown in figure 1 below. Total debt is made up of both external and internal debts as well as debt servicing payment obligations. It can be seen from the figure below that total debt stood at about 17 percent growth in 2009 and decline thereafter by 2011. In the period between 1987-2000, debt service payments were moderately low but oscillated to over 50 percent in 2003 and later decline and remain so till 2011. The graph also shows that external debt was high but never exceeded about 12 percent of total debt between 1987 and 2011.

Figure 1: Percentage Growth Rate of Total Debt, Debt Servicing Payments and External Debt, (1987-2011)



Model Specification

This study is an impact assessment and the best suitable model is the OLS as adopted by Udoka and Anyingang (2010) and Ezike and Mojekwu (2011) in their studies of external debt management and macroeconomic performance in Nigeria. The model is specified in its functional form as:

PCI = f (EDBT, DSP, BOP, FDI)………………………………………...(1)

In linear stochastic form, equation (1) becomes:

$PCI_t = \alpha_0 + \alpha_1 EDBT_t + \alpha_2 DSR_t + \alpha_3 BOP_t + \alpha_4 FDI_t + \varepsilon_t$…………………(2)

Where: $InPCI_t$ = log of per capita income at time t; $InEDBT_t$ = log of external debt stock at time t; $InDSR_t$ = log of debt service ratio at time t; BOP_t = balance of payments at time t; $InFDI_t$ = log of foreign direct investment at time t; α_0 = intercept; $\alpha_1 - \alpha_4$ = parameters to be estimated, ε = error term

Unemployment rate (UEMR) and Literacy (LITR) were also made dependent variables to equation 2 and were estimated as such. The data for literacy rate is derived by enrollment into primary, secondary and tertiary education. In equation 3 below, the determinants of external debt in Nigeria is specified thus:

EDBT = f(GDP, FDT, EXR, TOT)…………………………………… .(3)

In linear form, equation (7) becomes:

$EDBT_t = a_0 + a_1 GDP_t + a_2 FDT_t + a_3 EXR_t + a_4 TOT_t + e_t$……….............(4)

Where; $InGDP_t$ = log of gross domestic product at 1990 constant price at time t

FDT_t = fiscal deficit as a ratio of GDP at time t; $InEXR_t$ = log of exchange rate at time t; $InTOT_t$ = log of terms of trade; e = error term; a_0, $a_1 - a_4$ = intercept and parameters to be estimated; a priori expectation = a_1, a_3, and $a_4 > 0$ and $a_2 < 0$

Results and Interpretation

Regression Results of PCI and EDBT, DSP, BOP and FDI

The results of all the equations show that the DW statistics falls within the rejection region of 1.59-2.51 of no autocorrelation and as such there was therefore no need for stationarity test.

PCI = 0.02 – 1.23EDBT – 3.46DSP – 2.53BOP + 1.92FDI

(1.5) (-0.2) (-0.5) (-2.1) (2.9)

$R^2 = 0.67$, F-Stat = 10.9, DW = 2.2

It can be seen from the results that the independent variables made up of external debt (EDBT), debt service payments (DSP), balance of payments (BOP), and foreign direct investment (FDI) explained about 67 percent of per capita income (PCI) while the F-Statistics of 10.9 reveals that the equation is significant. The result further shows that the impact of external debt, debt service payments and balance of payments on per capita income is negative and this has affected economic performance in Nigeria for the period 1986-2011. For example, a one percent increase in external debt reduces per capita income by ₦1.23 million while a one percent decreases in external debt has the opposite effect. The negative value of balance of payments shows that the country exports trade has been unfavourable during the period under review. However, only BOP is statistically significant in explaining per capita income in Nigeria. Finally, the impact of foreign direct investment on per capita income is positive and significant as a one percentage increases in FDI increases PCI by ₦1.92 million.

Regression Results of UMEM, EDBT, DSP, BOP and FDI

$$UNEM = 0.00 + 8.07EDBT + 7.10DSP + 2.04BOP – 5.55FDI$$
$$(1.7) \quad (1.6) \quad (1.6) \quad (2.6) \quad (-1.3)$$
$$R^2 = 0.26, \text{F-Stat} = 1.9, DW = 2.2$$

The result shows that external debt; debt service payments, balance of payments and foreign direct investment explained about 26 percent of unemployment in Nigeria for the period 1986 – 2011. The result further shows that the impact of EDBT, DSP and BOP are positive on unemployment. This means that as any of these variables increases unemployment also increases. This shows that the debts being acquired in Nigeria is not used to create employment and wealth and the resultant effect is increase in unemployment. This problem may not be unconnected with high level corruption with government officials in Nigeria. On the other hand, impact of FDI on unemployment is negative. Increases in FDI by a unit decreases unemployment by 5.51 percent.

Regression Results of LITR, EDBT, DSP, BOP and FDI

$$LITR = 28166077.0 + 0.14EDBT + 1.97DSP – 0.75BOP + 2.6FDI$$
$$(3.5) \quad (0.3) \quad (0.4) \quad (-0.9) \quad (0.5)$$
$$R^2 = 0.90, \text{F-Stat} + 32.8, DW = 1.9$$

The result reveals that the goodness of fit statistic (R^2) is very high as the independent variables explain about 90 percent of the dependent variable. External debt, debt service payments and foreign direct investment impacted positively on literacy rate in Nigeria during the review period. On the other hand, impact of BOPs on literacy rate, a proxy for human capital development, is negative which means an increase in BOP by a unit decreases human capital up to 0.75 million. However, none of the variables is statistically significant in explaining literacy rate within the period of 1986-2011 in Nigeria. The F-statistic shows that the entire equation is significant.

Regression Results of the Determinants of External Debt in Nigeria

In the result below, the R^2 shows that the independent variables explain about 91 percent of the dependent variable while the F-stat reveals that the model is statistically significant. The results show that an increase in fiscal deficit (FDT) by a unit decreases external debt by ₦1,325,614.0 meaning that a negative relationship exist between external debt and fiscal deficit as a ratio of GDP. On the other hand, a positive relationship is observed between external debt and GDP as well as exchange rate EXR).

$$EDBT = -2308923.0 – 1325614.0FDT + 9.1GDP + 17039.8EXR – 0.58TOT$$
$$(-2.8) \quad (-2.0) \quad (2.6) \quad (3.9) \quad (-2.9)$$
$$R^2 = 0.91, \text{F-Stat} = 36.3, DW = 2.1$$

Finally, a one percent increase in terms of trade (TOT) decreases external debt by ₦0.58 million during the study period, 1986-2011. All the variables are statistically significant meaning that we reject the null hypothesis in favour of the alternative in all cases. The negative constant shows that in the absence of the independent variables external debt in Nigeria would be negative.

5. Concluding Remarks

The study sets for itself the task of investigating external debt management in Nigeria and how it has impacted on macroeconomic performance over the years. The conclusion reached by the study is that external debt and its derivatives has not be of much help to the Nigerian economy performance either due to high corruption of government officials who mismanage the funds or wrong timing of the secured loans. It is recommended therefore that government should ensure that any deal with the London and Parish Clubs and other creditors should be deals that will open Nigeria to greater trade and investment and can stimulate the private sector since external debt and debt services to these creditors has negative impact on our economic performance (per capita income and employment). Secondly, Nigeria should devote a tangible proportion of her annual foreign exchange earnings for debt servicing. This would enable the country to accommodate the creditors' requirements. Finally, the Federal Government should place embargo on new loans especially to the state governments and other government parastatals except for important economic reasons which are inevitable and for project which are self-floating and self-sustaining.

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