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Effect of Government Debt on the Growth of Nigerian Economy: An Econometric Approach

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Abstract

This study examined the effect of government debt on the growth of the Nigerian economy. The study was specifically meant to access the extent to which external debt, domestic debt and exchange rate relate with the growth of the Nigerian economy. To achieve these objectives, an ex-post facto research design was adopted for the study. Time series data was collected from the CBN Statistical Bulletin and the National Bureau of statistics for the period 1990 to 2021 using the desk survey approach. The data were analyzed using the ordinary least square multiple regression statistical technique and the correlation matrix. Results from the analysis revealed that external debt had a negative but significant effect on the growth of the Nigerian economy. Also, the study showed that exchange rate and domestic debt had positive and significant effect on economic growth in Nigeria. Based on these findings, it was recommended that funding through government external borrowing should be minimized and allocated for funding long term viable capital project. Also it will boost the level of the economy into growth and generate sufficient returns required to service the debt. Also, borrowed funds should be invested by government in providing an enabling environment to promote the export base of the country and reduce the over reliance on importation of consumables and industrial raw materials.

Keywords: External debt, domestic debt, exchange rate, GDP

1. Introduction

It is generally expected that developing countries facing scarcity of capital will acquire external debt to supplement domestic savings. Economic theory suggests that reasonable levels of borrowing by a developing country are likely to enhance its economic growth, Pattilo, Poirson and Ricci (2002). In order to encourage growth, countries at early stages of development like Nigeria, borrow to augment what they have because of dominance of small stocks of capital. The history of Nigeria external debt dates back to 1958 when the sum of $28 million was contracted for railway construction. Prior to 1978, the Nigeria external debt was not much and was sustainable. The Central Bank of Nigeria (CBN) report in 1989 stated that 91.4 percent of the debt came from official sources and were the concessionary types of loans from bilateral and multilateral agencies. Then, much importance was not attached to debt management by Nigeria Government (Eyiuche, 2003), not only that the economy then had a magnificent growth following the oil boom of the 70's, Nigeria foreign debt profile witnessed a dynamic change after 1978 following the world oil glut. Much pressure was then exerted on government finances and it became necessary to borrow for balance of payment support and financing of developmental project.

The federal government borrowing of US $1 billion from the international capital market (ICM) was referred to as Jumbo loan increasing her total external debt to $22 billion. The condition worsened between 1981 and1982 as various government agencies and state governments resorted to deficit budgeting partly financed through external loans secured from private sources under stiff conditions (CBN, 2017). The Debt Management Office

(2011) and annual report account reflected a 13.8 percent fall of official debt sources in favor of the private debt sources which rose again to an average of 82 percent. Trade areas emerged by the end of 1982 constituting a large proportion of the total external debt of the nation. The jumbo loan of 1987 was supported by the promulgation of decree No. 30 of the 1978 which limited the external loans that the Nigerian government could raise to $5 billion. The increase in the size of Nigerian externa debt was due to the preponderance of borrowing from international agencies and countries at non-concessional interest rate. This borrowing came as a result of the decline in oil earnings from the late 70's and emergence of high trade arrears due to inability of the country to neither easily produce nor foot the bills of importation of the needed goods and services.

Nigeria economic growth and development had been volatile in danger and highly discouraging, despite the huge external loan profile before the year 2000. Within the 80's, the country experienced the most economic recession with declining growth rate, hyperinflation and high unemployment rate, disequilibrium in balance of payment, industrial decadence, poor infrastructure and serious external debt burden. The poverty rate of the country stood at 65 percent and the country was classified as one of the weakest economies of the world on per capital basis. The debt crisis of Nigeria reached a maximum proportion in year 2003 when the country was to transfer as much as $2.3 billion to service its debts.

According to Okonjo-Iweala, Soludo and Muhta (2003), the accumulated effect of the debt at maturity began to yield some serious strains on the nation's macroeconomic indices. For example, the Naira was devalued, the nation's reserve and revenue started depreciating while inflation and unemployment intensified. These debt crises for Nigeria incidentally and fortunately coincided with the time the International Monetary Fund (IMF) and World Bank were granting debt relief to some highly indebted poor countries of the world. The Heavily Indebted Poor Countries (HIPC)'s initiative and Multilateral Debt Relief Initiative (MDRI) were launched by the IMF and the World Bank in 1996 and 1999, respectively. The objective was to reduce the external debt of severely indebted poor countries to a sustainable level to enhance investment and further economic growth. They did not however, consider Nigeria as a poor country because of its oil deposit and high price of the oil. The relevance of this study cannot be overemphasized because it tends to achieve the following goals:

i. To examine the effects of external debt on the growth of the Nigerian economy.

ii. To ascertain the effect of domestic debt on the growth of the Nigeria economy.

iii. To evaluate the effect of exchange rate on the growth of the Nigeria economy.

2. Theoretical Framework

The dual gap analysis explained that development is a function of investment, and that investment is essentially a product of domestic savings, which more than often is not adequate to finance development. Given this scenario, government adopts strategies of collecting from abroad the sum that can be invested in the economy, which is usually equal with the sum that is saved. In addition, the domestic resources are to be augmented from abroad, such that we have excess of import over export (i.e., M>E). I-S M-E

Hence, I-S = M-E

In national income accounting, surplus of investment over domestic saving is equal to surplus of import over export.

Income = Consumption + Import + Savings

Output = Consumption + Export + Investment

Income = Output

That is, Investment – Savings = Import-Export.

This is the foundation of dual gap analysis; it explains that if the domestic saving available falls short of the level needed to realize the target rate of growth, a savings investment gap is thought to be in existent, thus borrowing is induced. On a similar note, if the maximum import requirement necessary to realize the growth target is larger than the maximum possible level of export, then there is an export-import exchange gap.

Debt over-hang theory was propounded by Myers S. (1977). It is built on the principle that if the level of debt will surpass the country's ability to repay with some probability in the future, estimated debt service is expected to be a growing function of the country's output level. Therefore, some of the returns obtained through investing in the domestic economy are efficiently taxed away by current foreign creditors and the investment made by domestic and new foreign investor is not encouraged. Debt servicing, which includes interest payments and repayments, is likely to be a factual link from an indebted country. It only takes large benefit from the domestic economy to be able to allocate to the foreign economy. Therefore, the country declines some outstanding multiplier-accelerator effects. This reduces the domestic country's growing ability in her economy and increases her dependency on foreign debt (Yucekm 2009; Tamasehke, 1994).

3. Conceptual Framework

3.1 Debt/Financing and External Debt

Debt financing is the process of raising money in the form of a secured or unsecured loan for working capital or capital expenditures. Firms typically use this type of financing to maintain ownership percentages and lower their taxes. It also involved borrowing money from a third party, i.e., a financial institution, with the promise to return the principal with an agreed interest. Startup companies and smaller firms use debt as a way to leverage their operations and maintain ownership of their business. Debt financing means acquiring the funds to purchase an asset or expand company operations by taking out a loan.

Debt financing means when a firm raises money for working capital or capital expenditures by selling bonds, bills or notes to individual and/or institutional investors. In return for leading the money, the individuals or institutions become creditors and receive a promise to repay principal and interest on the debt.

3.2 Debt Relief and Its Impact on Growth

Any debt relief would be economically irrational if the success was low. Therefore, future policy measure should be based on careful analysis with respect to effectiveness (and efficiency). Debt relief is meant to be an instrument to reduce debt overhang, to diminish poverty, to increase growth and to improve governance structures. Hernandez and Katada (1996) in analyzing grants and Oda debt forgiveness to 32 Sub-Saharan African countries, revealed that debt relief did not reduce the debt overhang problem of Sub-Saharan African countries at all but that the nominal debt stock of many countries even double between 1984 and 1993 and their arrears increased drastically.

At a broader level, debt relief can have serious macroeconomic consequences, in terms of credit availability and price, the level of foreign investment, and potentially inflation, the interest and exchange rate depending on the structure of debt relief expenditures. It is difficult to identify the macroeconomic impacts of debt relief in Nigeria, due to the diverse influences of the reform agenda. However, any negative effects of debt relief do not seem to have dominated the overall net positive trend in Nigeria's macroeconomic performance. In September 2007, the IMF's fourth Policy Support Instrument (PSI) review stated while benefiting from a positive externa environment, a stronger policy framework was pivotal in delivering improved macroeconomic performance (IMF, 2007).

In fact, the debt deal played an important role in securing the first ever international sovereign credit rating for Nigeria. In 2006, both Fitch and Standard & Poor's credit rating agencies gave Nigeria a long term capacity rating (otherwise referred to as BB-rating). This rating opened the door for greater foreign investment into Nigeria, which can help stimulate growth and development in the economy. The reduction in debt stock, and the corresponding reduction in foreign debt servicing, immediately freed up resources. It released roughly $1 billion a year to the Nigerian government: $750 million in savings for the Federal Government, and an aggregate of $250 million to the state governments. As with all debt relief, this was not external financial assistance, but rather government funds that were no longer tied to debt repayments. These savings will be referred to as debt relief expenditures or 'debt relief funds'.

In the first year, it provided funds for the training of 145,000 teachers, 166 new primary health centers across the country, 400,000 insecticide-treated bed nets, a million doses of anti-malaria medicines, 4000km of rural roads, amongst other projects across a myriad of sectors. Both social protection and intergovernmental coordination are critically important in a poor federal country like Nigeria. Until debt relief funds were made available, neither a social safety net scheme, nor a broad-based conditional grants scheme, were thought to be close to becoming a reality. The flexibility of the virtual poverty fund made such innovations in public expenditure management possible. The debt relief was not aiming to provide additional funds to particular sectors only, but rather act as an entry point for improvements in the way government worked at all tiers that would reinforce and introduce initiative and then scale up the successes to the wider budget envelope (Presidency of Nigeria, 2007).

Combined with a series of planning and budgeting reforms made possible by the existence of the debt relief, these schemes were warmly welcomed by the national and international communities as real progress in developing Nigeria's welfare state. The activities associated with the expenditure of debt relief were seen to have been one of the most effectively managed and positively impacting aspects of the government's budgetary expenditures. The World Bank's Public Expenditure and Financial Accountability Review (2007) called it critically important programme of government.

4. Empirical Literature

Lawal, Adedoyil, Adegbola and Otekunri (2016) examined the causality among the variable using granger causality test and observed the causality exist among the variables. Findings of the study reveals that Nigeria's public debt whether aggregated or structural in form is helpful in explaining changes in Nigeria's gross domestic

product, and hence, economic performance of the country. The study therefore recommended that government should ensure that loans obtained are used to finance profitable projects that will generate reasonable amount of revenue to service the debts and also adequate record of debt payment obligation should be kept and debt should not be allowed to exit amount limits in order to prevent debt overhang.

Providing a valuable framework for predicting Nigeria's external debt, Isu (1997) drew from scholars who include Killik, Mehran, Printo and Fajana and adopted the traditional primary causants model in evaluating the determinants of Nigeria's external debt. Among the five western traditional causants-productivity index, inflation rate, foreign reserves, balance of payment on current account and population, he found only population as significant in Nigeria.

Akujuobi (2007) evaluated the comparative influences of external and domestic debts on Nigeria's economy. The results indicated negative sign for external debt with insignificant regression coefficient at 0.05 level. Domestic debt showed a positive relationship with Nigeria's GDP and a significant regression coefficient at 0.05 level. The study called for drastic reduction in the value of external debts taken by Nigeria.

Ghebreyesus (2001) applauded the international credit institutions for granting some less developed economies debt relief. However, he asserted that adequate measures have to be put in place to ensure that the excess proceeds which will result from the debt concessions as well as subsequent borrowings would be properly applied in view of the attendant moral hazards prevalent in the less developed economies. He called for extraction of strong commitments from the managers of developing economies and strict monitoring by the international organizations.

Nnanna, Englama and Odoko (2004) contended that the growth of domestic and external debts negatively impacted on both investment and economic growth in Nigeria. Although largely descriptive, the study observed that internal debt had the effect of reducing income and savings while cutting down on domestic investible resources. External debt to them, cuts deep into Nigeria's export earnings and consequently, discourages inflow of subsequent foreign investments. Also, it reduces the country's capacity not only to effects the home remittances of foreign firms, but also, weakens the available quantum of foreign exchange required for expected imports. On the other hand, they argued that debt overhang militates against domestic investment incentives. This is because local investors may tend to think that the anticipated benefits from their local ventures may be applied to servicing the country's external debts.

Spilioti and Vamvoukas (2015) calibrated fiscal policy indicators affecting growth, openness and external competitiveness as well as demographic factors into the debt-growth nexus model for the Greek economy based on data sourced from 1970 to 2010, and observed that a significant positive relationship exist between economic growth and debt for Greece. The results of Silioti and Vamvoukas (2015) is similar to that of Bashar, Dey and Rahman (2012) for Bangladesh; Cevic and Cural (2013) for turkey; Kasidi and said (2013) for Tanzania; Uzun, Karakoy, Kabadayi and Selcuk (2012) for a team of 27 transition countries; Zaman and Arslan (2014) and Fida (2011) for Pakistan but contradicts the findings of Zaman and Arslan (2014) for Romania.

Dogan and Bilgili (2014) used multivariate dynamic Markov-Switching model to examine the linkages between economic growth and development for the period 1974 to 2009 for the Turkish's economy. The study observed that public debt exerts negatively on economic growth and that the negative impact of public debt on economic growth is higher than that of private borrowing on economic growth for the Turkish's economy. The study concludes that economic growth and debt do not follow a linear path.

5. Methodology

The study adopted ex-post facto research design to determine the correlation between debt financing and economic growth in Nigeria for the period. This design was justified on grounds that historical data on debt financing exists.

The data for the study consisted of secondary data only, generated from Central Bank of Nigeria (CBN) Statistical Bulletin and other relevant materials. There was no special procedure for the collection as these figures were merely extracted from Central Bank of Nigeria (CBN) statistical bulletin.

In testing the validity of the already stated hypotheses, this model was used:

Y Gross Domestic Product (Dependent variable)

X_3 Exchange Rate (ER) (Independent variable); and β_3Coefficient of X_3, X_4External Debt (ED) (Independent variable); and β_4 Coefficient of $X_3 \varepsilon i$ error term.

The Table showed R-squared, coefficient of determination, i.e., the squared value of the multiple correlation coefficient value to be .694; meaning that, approximately 69.4 percent of the variance in the dependent variable

(GDP) is explained by the model (External debt, domestic debt and Exchange Rate). Adjusted R-square value is .673 (approximately 67.3 percent model accuracy).

The computed F-value is to test the acceptability of the model from a statistical perspective, the decision criterion is stated below as follows: Since 31.817 is greater than 3.34 (0.05), the null hypothesis is rejected and the alternate accepted. Thus, there is a significant relationship between Nigeria's debt payment (financing) and Gross Domestic Product as the study reveal that government domestic debt had a positive and significant relationship with economic growth in Nigeria.

Where;

GDP = Gross domestic product

EXR = Exchange rate

DD = Domestic debt

EXD = External debt

Δ in GDP = Economic Growth

GDP $\neq$ EG

For estimation purposes, equation (1) and (2) are re-written as:

$$GDP = \beta_0 + \beta_1 TD + ei \quad (3)$$

Where;

β_0 = Constant term

β_1 = Regression coefficient for total debt

EXR = Exchange rate

ei = Error term and

$$GDP = \alpha_0 + \alpha_1 DD + \alpha_2 EXD + \alpha_3 EXR + ei \quad (4)$$

Where;

GDP = Gross domestic product

α_0 = Constant term

α_1 = Regression coefficient for total debt

DD = Domestic debt

α_2 = Regression coefficient for external debt

EXD = External debt

EXR = Exchange rate

ei = Error term

The model used is shown below:

y = a+bx

Where;

y = dependent variable

x = independent variable

a = intercept of y

b = regression coefficient

6. Result

Table 1. Regression result (Dependent variable: LRGDP)

Variable	Coefficient	Std. error	t-statistic	Prob.
C	2.533467	0.398488	6.357706	0.0000
LEXD	0.237579	0.061251	-3.878794	0.0006
LDMD	0.950995	0.075959	12.51986	0.0000

LEXR	0.008299	0.001634	5.080243	0.0000
R-squared	0.981062			
Adjusted R-squared	0.979103			
F-statistic	500.7688	Durbin-Watson stat.		0.514766
Prob(F-statistic)	0.000000			

Source: E-views 9.5 computation, 2023.

From Table 1, when government debt variables are held constant, real GDP stood at 2.53 percent, meaning that holding debt variables constant, Nigerian economy remained static at 2.53 percent within the period under review. Also, Table 1 showed a negative relationship between external debt and the growth of the Nigeria economy. This is so as the regression result shows a negative coefficient of 23.76 percent decrease in the growth of the Nigerian economy. Furthermore, Table 1 showed that domestic debt and exchange rate had positive effects on the growth of the Nigerian economy. This implies that one percent increase in the domestic debt and exchange rate led to 95.1 percent and 0.83 percent increase in the growth of the Nigerian economy.

The goodness of fit of model as indicated by the R^2 and adjusted-R^2 values of 0.911 or 98.11 percent and 0.979 or 97.91 percent indicates that the total variation in the observed behavior of the Nigerian economy is jointly explained by the variations in external debt, domestic debt and exchange rate up to 97.91 percent. Here, the high significance of the f-statistics value of 500.7688 confirmed that the high explanatory power of the model did not occur by chance, it actually confirmed that the data fits the model well.

The individual statistical significance of the parameters of the respective, independent variables was also tested. The result obtained showed that the external debt is statistically significant, as its t-statistic value of 3.8788 has a corresponding probability value less than 5 percent required for significance. Domestic debt was also statistically significant as its t-statistics value of 12.5199 and its corresponding probability less than five percent required for significance. Lastly, exchange rate was also statistically significant as its t-statistics value of 5.0802 and its corresponding probability less than five percent required for significance.

To test for auto correlation in the residuals of the model we compared the reported DW statistics value with the table DW-statistics value. The decision rule for non-auto correlation is that the DW statistics calculated should be at least 2.00. From the result obtained, the DW value of 1.9897 fell within the autocorrelation region, however, the calculated DW stats may be rounded up to 2.00. Relying on this therefore, it could be said that the result of this study is free from serial correlation.

7. Findings

This study examined the effect of government debt on the growth of the Nigerian economy. The study adopted ordinary least square (OLS) multiple regression technique to assess the effect of the government external debt, government domestic debt and exchange rate on the growth of the Nigerian economy. The following major findings were made:

1) Government external debt has a negative and significant effect on the growth of the Nigerian economy.
2) Government domestic debt has a positive and significant effect on the growth of the Nigerian economy.
3) Exchange rate has a positive and significant effect on the growth of the Nigerian economy.

8. Recommendations

Based on the findings of this study, the following recommendations were made:

(i) Funding through government external borrowing should be minimized and allocated only for funding long term viable capital project that will boost the level of the economy into growth and generate sufficient returns required to service the debt.

(ii) Government should increase its funding through the domestic debt channels and monitor the use of these funds to ensure that they are misappropriated as this will boost the growth of the Nigerian economy.

(iii) External debt should only be utilized by Nigeria either as a matter of last resort or to fund a project with high foreign exchange content.

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