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Public Debt and the Living Condition of People in Nigeria

Cordelia Onyinyechi Omodero¹

Abstract. This study assesses the influence of public debt on the condition of living in Nigeria using per capita income (PCI) which signifies the income per person in the country. Due to the fact that public debt is deemed to be suppressing an economy, the standard of living becomes the target of the estimated suppression. Thus, the study employs secondary data from 2000 to 2018 and multiple regression technique is used to carry out the analysis to establish the impact of public debt on PCI. The study finds that the foreign debt is having a substantial harmful effect on PCI while the domestic debt has a weighty favorable impact on PCI. These findings lead to a conclusion that the country is better off with local borrowing instead of external fund sourcing. Therefore, the study suggests that the government can borrow when it is highly necessary and really relevant to the accomplishment of a major capital project that will improve the income of the citizens, but the borrowing should be more domestic based and restricted to marketable securities.

Keywords: Public debt; living condition of people; economy; per capita income; foreign debt; domestic debt

JEL Classification: H81; H63; I31; F43; O47; F34; H74

1. Introduction

Public debt accumulation is becoming a global challenge in the recent times. It has ceased to be a specific problem of the emerging nations but now extends to the industrialized nations such that countries like Japan, Greece and even the United States are now contending with debt crisis (Kurihara, 2015). Debt is referred to as the payout of fund by a rich entity or institution to an indigent nation or institution basically for development and economic consumption purposes, based on repayment terms (Senibi, Oduntan, Uzoma, Senibi & Oluwaseun, 2016) agreed by both the lending entity and the borrowing nation. Public debt refers to a nation's total debt profile comprising both local and foreign debt. In Nigeria, domestic borrowing is usually a mechanism used by the government to source fund locally by allowing the public to invest in government securities such as treasury bills, development stock, treasury certificates and bonds among others. These forms of fund sourcing by the government locally help to enhance economic growth in a nation since most of them are marketable securities which in turn boost the operation of the capital market of a country (Omodero, 2019). Although foreign borrowing has been found injurious to an economy in several studies (Akram, 2016; Udeh, Ugwu & Onwuka, 2016; Mbah, Agu & Umunna, 2016; Onakoya & Ogunade, 2017; Afolabi, Laoye, Kolade & Enaholo, 2017; AL-Tamimi & Jaradat, 2019, Omodero, 2019; Omodero & Alpheaus, 2019), however, the government goes into it as the last resort when domestic savings fail and it becomes imperative for the government to finance budget deficit, investment opportunities and other forms of public services.

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According to Tawfiq and Shawawreh (2017), public debt which comprises both foreign and domestic debt is a major source of financing which the government relies upon to pursue and realize its economic and social goals. This is most important where there is need to fill a gap existing between investments and savings. When domestic saving is not sufficient to match with the investment need of a nation, it automatically calls for public borrowing which can be locally or internationally. Economists have a tendency to believe that in the short run, a rise in public debt emanating from fiscal growth stimulates aggregate demand, which in turn enhances economic growth but its long run effect is still subject to a more extensive deliberation (Chudik, Mohaddes, Pesaran & Raissi, 2018).

The appropriateness of public borrowing depends on the purpose for which the fund will be used and the conditions the funds are subjected to (Akhanolu, Babajide, Akinjare, Oladeji & Osuma, 2018). When a debt is incurred for the purpose of infrastructural development, such as building of refineries, factories and power stations, it becomes reproductive. Okoduwa (1997) posits that the purpose of government borrowing much include: the need to address emergencies such as war and depression; financing of capital and recurrent expenditures and generally for public service delivery. In other words, countries that have challenges with substantial revenue generation usually borrow in order to meet the capital and recurrent expenditure (Lartey, Musah, Okyere & Yusif, 2018). However, borrowing to finance regular government expenses, wars and other natural disasters may be referred to as a dead-weight debt (Senibi *et al.* 2016).

The citizens' condition of living is the major criterion for economic growth assessment of a nation. In Nigeria the living condition of people is a vital issue to be addressed when all economic determinants are being considered. A nation's economic growth is determined by the quality of living in the country which focuses on education, health care services, job opportunities and good employments to ensure income earning. This study aims at examining the extent to which public borrowing affects the quality of life in Nigeria and this is represented by the per capita income which shows the income each Nigeria is assumed to have earned in the periods covered by this study. This is the measure with which the study tends to assess the level of economic growth achieved through public debt accumulation in the country.

2. Literature Review

2.1. Theoretical review

2.1.1. Dual Gap Analysis Theory

Chenery and Strout (1966) established a dual gap theory which holds that the required level of economic growth can only be attained by emergent economies, by filling the gap between domestic saving and investment needs through foreign resources. According to these economists, if domestic saving lacks the potential or becomes insufficient to match with investment needs in the country, there should be room for foreign resources to flow in order to meet such investment opportunities which lead to economic growth. Following the postulation of Chenery and Strout (1966), economic growth is a function of investment and that such investment requires domestic savings, but where such local saving is not commensurate with the investment needs, the country has the right to obtain funds externally to fill the gap.

2.1.2. The Ricardo Theory of Public Debt

This study also hinges on the theory of public debt propounded by David Ricardo in 1819. David Ricardo came up with the theory of public debts by affirming that the ordinary and extraordinary spending of government were mainly payments made to sustain unproductive laborers. Therefore, any saving from the government incidentals would be incorporated in the income if not to the capital providers. In the letter written by Ricardo to McCulloch in 1816, he hypothesizes that public outlay is an uneconomical undertaking the state embarks on. According to Precious (2015) Ricardo's theory of public debt was then based on the fact that government acquisition of debt emanated from the wasteful nature of public expenditure rather than being an attempt by the government to finance public expenditure relevant for economic growth. The theory suggests that in public expenditure financing, concentration should be more on obtaining the resources from the abundant possessions of the public. The reason is that whether the fund to sustain the economy is realized through tax or loans, it does not matter to an economy. Therefore, when nations acquire a loan, it is unclear whether the loan would be used effectively or fruitlessly. The wrong application of such loans affects the economy negatively while if it is properly utilized, the economy will be boosted (Okoye, Modebe & Egbuomwan, 2013). This theory is pertinent to this study as it will help in the assessment of the public debt influence on the living standard of people in Nigeria and to establish whether public loans have been effectively or fruitlessly utilized to improve the standard of living in the country or not.

2.2. Empirical Review

Panizza and Presbitero (2013) surveyed recent literatures on the relationship between public debt and economic growth of the advanced countries. The literatures had it that the effect of public debt on growth in the Advanced Countries appeared negative but based on calculations it was found to be very minute. However, the study suggested that expansionary fiscal policies could positively affect economic growth in the long run. Dinca and Dinca (2013) assessed the link between public debt and GDP growth of five former communist bloc countries namely: Bulgaria, The Czech Republic, Romania, Hungary and Slovakia for a period covering 1996 to 2010. The study found that public debt negatively affected economic growth when it rose beyond 44.42 percent of GDP. The level was found very significant for the countries used for the study as a result of the structural lapses and the complexity of having access to the financial markets during recession. In another study, Panizza and Presbitero (2014) employed instrumental variable approach to explore the causal effect of public debt on economic growth using a sample of OECD countries. The study confirmed the existence of a negative relationship between debt and growth following the robustness test conducted. However, their findings were in agreement with the existing studies that showed a negative correlation between debt and economic growth.

Kurihara (2015) elaborated the challenges Japan faced in managing public debt profile and the effect of the debt on economic growth of Japan. The extent of debt accumulation in Japan was evaluated and the study established that public debt in Japan was having a negative relationship with economic growth. Thus, the study recommended the use of export to reduce dependency on debt. Lee and Ng (2015) considered the interaction between public debt and economic growth in Malaysia. The study ranged from 1991 to 2013 using other economic forces such as debt burden, budget deficit, budget expenditure,



government consumption and external debt service. The findings disclosed that public debt had a negative impact on GDP over a long period of time, while other economic indicators employed also had a reducing effect on the GDP. Ntshakala (2015) examined the effect of public debt on economic growth in Swaziland using Ordinary Least Squares (OLS) method to analyze the data which covered a period from 1988 to 2013. The result of the study showed that there was no significant relationship between external debt and economic growth in Swaziland. On the contrary, domestic debt had a significant positive nexus with economic growth. Thus, the study suggested a sustainable domestic and foreign sourcing of funds.

Kobey (2016) used linear regression model to analyze the effect of public debt on economic growth in Kenya for a period spanning from 1994 to 2015. The study employed some control variables such as unemployment rate and inflation rate. Thus, the findings specified that both the public debt and the control variables had an inconsequential negative effects on the economic growth in Kenya. Saifuddin (2016) assessed how public debt in Bangladesh may impact on economic growth. The study made use of investment and growth models while the data employed ranged from 1974 to 2014. A TSLS regression was used to estimate the models and the result came out that public debt was positively linked with both investment and economic growth. In other words, public debt in Bangladesh influenced investment positively and also has a positive multiplier effect on the general economy. Senibi *et al.* (2016) investigated the effect of public debt on Nigeria's external reserve from 1981 to 2013. The study employed Johansen Co-integration and FMOLS Method and the result indicated that public debt had a weighty positive impact on external reserve in the long run.

Chiu and Lee (2017) examined the nonlinear impacts of four country risk indices on the debt-growth nexus for 61 countries using a panel data structure. The study found indication of fluctuating debt-growth relationship founded on the degree of hazard the country is vulnerable to. In assessing the low political and financial risk environments, public debt had negative effects on economic growth while in a low composite and economic risk environments, public debt was found as an enhancement to economic growth. Tawfiq and Shawawreh (2017) investigated the impact of public debt on economic growth of Jordan using data from 2000 to 2015 and applying least squares method and regression model for impact analysis. The result of the study indicated that the total public debt had a negative impact on economic growth. The findings also revealed that the negative effect of the external debt was found more severe on the economic growth.

Akhanolu *et al.* (2018) investigated the effect of public debt on economic growth in Nigeria using data spanning from 1982 to 2017 and two-stage least square regression tool. First, the study revealed that external debt negatively impacted on the economy while the internal debt had a positive impact. Other findings showed that GDP, total savings and capital expenditure had a significant relationship with the internal debt. Eneida (2018) studied the relationship between public debt and economic growth in Albania under the post-dictatorship era. The study employed a simple percentage method and use of graph to express and compare the percentage increase in economic growth and public debt in Albania. The data used for the study covered a period from 1990 to 2015. The study made bare that the diminution in economic growth overlapped with the periods which the public debt was briskly escalating. Ncanywa and Masoga (2018) focused their study on South Africa using autoregressive distributive lag, Granger Causality, impulse response function and variance decomposition in order to

achieve the study objective. The study via co-integration test establish the existence of a long term link among the variables and the public debt was found to be having a negative relationship with investment.

Pharm (2018) examined the influence of public debt on economic growth in six ASEAN countries comprising Vietnam, Thailand, Singapore, Philippines, Malaysia and Indonesia. The study covered a period from 1995 to 2015 and also included some control variables such as FDI, real effective exchange rate and gross fixed capital formation. Using General Method of Moments (GMM) estimation, the result showed that public debt had a significant and positive impact on the real GDP per capita growth rate. The study concluded that the ASEAN countries under study could have utilized the public debt to finance profitable public investment at the start up stage and so in the long run, the returns from the investment helped to heighten economic growth. Ndieupa (2018) investigated the effect of public debt on economic growth of six Central African Economic and Monetary Community (CEMAC) countries from 2000 to 2016. The study made use of both fixed and random effects models and the results point out that public debt had a noteworthy harmful effect on economic growth.

Chudik et al. (2018) examined the connection between public debt accumulation and economic growth using panel data of 40 economies spanning from 1966 to 2010. The study found no evidence for a unanimously appropriate threshold effect in the relationship between public debt and economic growth. However, the findings revealed that countries with rising debt-to-GDP ratios exceeding 60 percent tend to have lower real output growth rates. The result implied that debt trail could be more indispensable for economic expansion than the level of debt. Wangmo (2018) studied the impact of government debt on the economic growth Bhutan from 1990 to 2016 using Vector Error Correction Model (VECM) and other statistical tools. The study found evidence that debt is statistically significant and has a negative impact on economic growth of Bhutan. The study forecasted that if the government of Bhutan continued borrowing, the Bhutanese economy might not be able to sustain economic development.

Lartey *et al.* (2018) used 50 African countries to examine the effect of public debt on economic growth. The study employed a panel data spanning from 1980 to 2015 and both the Ordinary Least Square (OLS) technique and the generalized method of moment (GMM) estimation technique were used for the data analysis. The findings provided evidence that public debt and economic growth had a non-linear relationship. The study further revealed that inflation and government consumption expenditure had momentous undesirable correlation with economic growth while capital formation, population growth and openness of trade were having substantial favorable relationship with economic growth. Panagiotis (2018) did an empirical study on the determinants of economic growth in Greek using economic factors such as investment, private and government consumption, trade openness, population growth and government debt. The study covered a period from 1970 to 2016 and by applying the necessary econometric tools, the findings revealed a long run relationship between variables. It was discovered that investment as private and government consumption and trade openness affect growth positively while government debt and population growth have a long run negative effect on growth. The study identified that debt level before the year 2000 was insignificant to economic growth but became rather negative as the government increased the level of debt after the year 2000.

Thilanka and Ranjith (2018) investigated the impact of public debt on the private investment in Sri Lanka using the annual data for a period covering 1978 to 2015. The study employed the econometric tool of Vector Error Correction Model (VECM) in order to establish the long run effect. The finding

revealed the presence of crowding in effect of public debt on private investment in the long run. The implication is that borrowed funds might have suffered some diversion that affected the private sector. In another study on Nigeria by Eze, Nweke and Atuma (2019), public debt was divided into external and domestic debts and their impacts on economic growth in Nigeria assessed from 1981 to 2017. The findings revealed that external debt had a significant negative influence on investment while domestic debt had an insignificant positive effect on investment. The study also revealed that external debt had a significant negative impact on GDP while the domestic debt exerted an insignificant negative effect on GDP.

3. Methodology

This study examines the implication of public debt on living conditions of people as means of determining economic growth in Nigeria. Thus the study uses causal research design which helps to effectively assess the effect of one variable on another (Kothari, 2004). Causal research design is consistent with this study and the econometric method adopted for analysis is the ordinary least squares (OLS) multiple regression technique due to its absence of complexity and unambiguity in providing the statistical evidence required in a study. The study made use of the secondary form of data straddling from 2000 to 2018. All the data employed in this study were gathered from the Central Bank of Nigeria Statistical Bulletin, 2018 edition, and the World Bank. All the data set were collected and expressed in billions of NGN and figure 1 below confirms that they are normally distributed.

3.1. Model Specification

The functional and econometric relationship between the dependent variable and the independent variables can be observed in the following equations:

$$PCI = f(DDT, FDT) \quad (1)$$

$$PCI = \beta_0 + \beta_1 DDT + \beta_2 FDT + \mu \quad (2)$$

Where:

PCI = Per Capita Income; DDT = Domestic Debt; FDT = Foreign Debt;

β_0 = Constant;

β_1 – β_2 = Regression coefficients;

μ = Error term.

A priori, we expect: $\beta_1 > 0$, $\beta_2 > 0$.

3.2. Normality Test

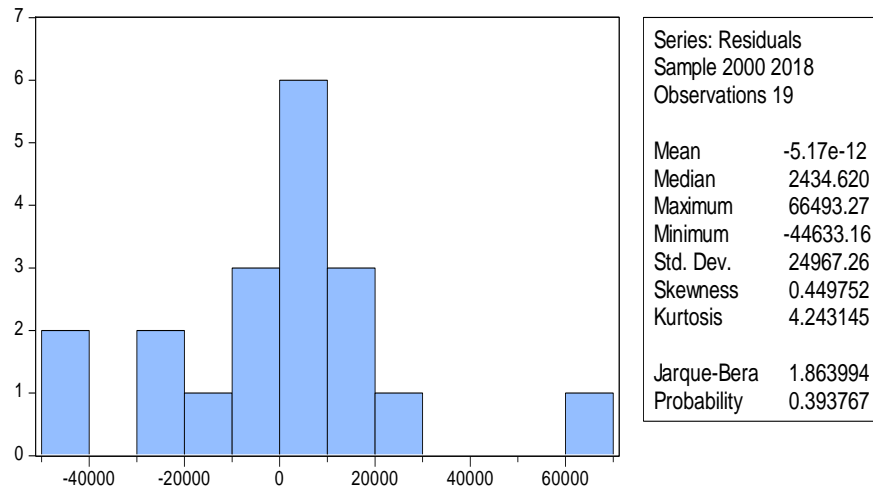


Figure 1.

4. Data Analysis and Interpretation

4.1. Trend analysis of data

VALUE NGN BILLIONS YEARS

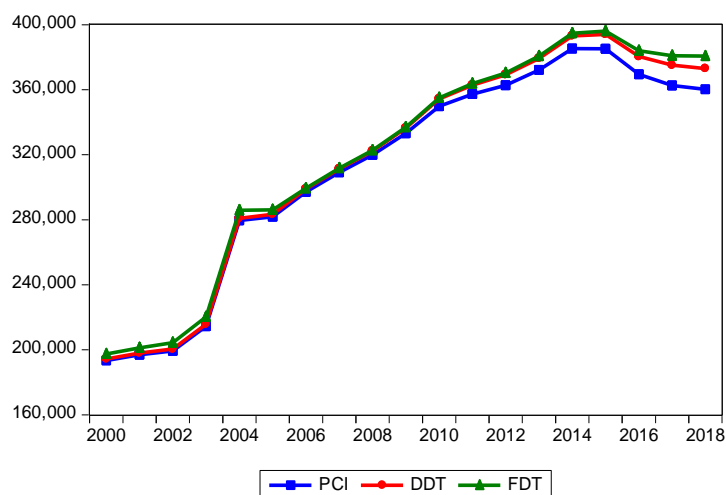


Figure 2. Trend of Data from 2000 to 2018

Source of data: World Bank and CBN Statistical Bulletin, 2018 Edition

From figure 2 above, the data trends from 2000 to 2018 indicate the interaction among the variables. The interface reveal that both the domestic debt and the foreign debt significantly affect the per capita income in Nigeria within the period under review. The purpose for public debt is specifically for investment in infrastructure, industry set ups, establishment of factories, building roads and markets and ensuring that the citizens find employment to earn income. This is the best way to enhance economic



growth in the country. If the significant influence of both the domestic debt and foreign debt is in the affirmative, it shows there is proper utilization of borrowed funds. If reverse is the case, then funds acquired as loans have not been put into proper use. Thus, it is more profitable to allow borrowed money in the country to be properly invested in ventures that make employment available for the citizens in order to boost the per capita income. Therefore, an economy is not deemed to be growing when there is no employment for the citizens due to wrong application of borrowed funds.

4.2. Multicollinearity Test

Table 1.

Date: 09/30/19 Time: 11:25

Sample (adjusted): 2002 2018

Included observations: 17 after adjustments

Variance Inflation Factors

Date: 09/30/19 Time: 11:31

Sample: 2000 2018

Included observations: 19

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
DDT	2.711416	2.950206	1.160833
FDT	10.43805	3.045094	1.160833
C	1.22E+08	3.306683	NA

Source: Author's Computation, 2019

Multicollinearity is a situation that takes place when there is a presence of a sturdy correlation or an intersection between two independent variables or among independent variables used in a study. The Variance Inflationary Factor (VIF) is used to quantify the rate at which the variance of a variable is increasing. VIF indicates how the variance of a variable rises due to the existence of multicollinearity. The degree of collinearity expands as the variance of a variable upturns (Gujarati & Porter, 2009). The law is that if the value of VIF of a variable surpasses 10, then there is a high collinearity between that variable and other independent variables (Gujarati & Porter, 2009). The VIF values of all the independent variables used in this study are all less than 10, therefore, there is absence of multicollinearity among the predictor variables.

4.3. Regression result and the interpretation

Table 2.

Dependent Variable: PCI
Method: Least Squares
Date: 09/30/19 Time: 11:38
Sample: 2000 2018
Included observations: 19

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDT	16.00454	1.646638	9.719524	0.0000
FDT	-18.16090	3.230797	-5.621181	0.0000
C	279950.7	11047.56	25.34049	0.0000
R-squared	0.861024	Mean dependent var		312061.6
Adjusted R-squared	0.843652	S.D. dependent var		66973.27
S.E. of regression	26481.78	Akaike info criterion		23.35024
Sum squared resid	1.12E+10	Schwarz criterion		23.49936
Log likelihood	-218.8273	Hannan-Quinn criter.		23.37548
F-statistic	49.56404	Durbin-Watson stat		0.926178
Prob(F-statistic)	0.000000			

Source: Author's Computation, 2019

From table 2 above, the regression result of the study indicates the existence of a strong correlation between public debt and per capita income. The F-statistic is statistically significant which shows that the model is suitable for the study. The Durbin-Watson is within the acceptable range which does not give cause for worry. The impact analysis is carried out with the t-statistic and the result indicates that FDT is substantially very harmful to PCI (proxy for living condition of people in Nigeria). This result agrees with previous studies by (Dinca & Dinca, 2013; Panizza & Presbitero, 2014; Kurihara, 2015; Lee & Ng, 2015; Tawfiq & Shawawreh, 2017; Akhanolu, *et al.*, 2018; Ncanywa & Masoga, 2018; Ndieupa, 2018; Wangmo, 2018; Panagiotis, 2018). However, DDT is found to be having a significant positive influence on PCI. This finding is consistent with the studies of (Akhanolu *et al.*, 2018; Pharm, 2018; Saifuddin, 2016; Ntshakala, 2015).

5. Conclusion and Recommendation

This study examines the effect of public debt on the living condition of people in Nigeria which is represented by the per capita income in the country. The public debt comprises both external and internal debt sources and their effects on standard of living are being assessed from 2000 to 2018. The findings show that foreign debt is more harmful to the per capita income (proxy for living condition of



people) while the domestic debt has a favorable influence on per capita income. The implication is that foreign debt accumulation in Nigeria suppresses the economy and declines the income every individual in the country earns. Thus, the practice of domestic borrowing is more appreciated since it leads to acquisition of marketable securities by the buoyant community still within the country. When the government borrows locally especially through securities that are saleable, it improves the economy and the financial markets help private sectors and individuals to make more money from the investments in government securities. The adoption of basic accounting principle of relevance by the policymakers is necessary in the Nigeria's borrowing pattern. This is recommended because loans should be contracted only when it is highly relevant to tackle a major capital project deemed profitable to the country. Economic principle of spending within means, which is spending from what the country can afford is also advisable. In other words, the budget for government spending should be limited to the resources that are available.

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