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Impacts of Public Debt on the General Welfare and Economic Stability in Nigeria: Ordinary Least Square Approach

Sabi'u Ya'u Abdullahi
Department of Banking and Finance
College of Administration and Management Studies
Hassan Usman Katsina Polytechnic Katsina State, Nigeria

Abstract: *Due to substantial increase in government expenditure and disproportionate and dismal increase in government revenue in Nigeria, running governments had become unavoidably dependent on both internal and external borrowings. This paper investigated the impacts of public debt or government borrowings on the general welfare and economic stability in Nigeria. To achieve this objective, annual time series data for thirty three years spanning from 1990 to 2023 were used. Ordinary Least Square Approach (OLS) was applied. The results show that Public Debt has significant positive impact on the general welfare and economic stability in Nigeria. The paper recommends alternative sources of income to the government, massive job creation, prudence and accountability in expenditure on infrastructure, application of effective monetary and fiscal policies, economic development planning and evaluation as well as zero tolerance to indiscipline and corruption, to achieve sustainable economic growth and development.*

Key Words: *Public Debt, Welfare, Economic Stability, Least Square*

Introduction

Nigeria like other developing countries has been excessively indebted internally and externally for decades. In addition to assets handed over to successive governments, debt on the other hand is a liability that virtually every administration battles with. Even though, debt or borrowings have been described as an important instrument of fiscal policy available to government to fund the development of a nation. For without debt, running governments at all levels tends to be very difficult and sometimes impossible. The World Bank (2020) emphasized that nations, especially resource-scarce economies, borrow to improve capital formation and investments, which are often deterred by the lack of domestic savings. Ogunlana, (1995) cited in Onyele and Nwadike, (2021), also opined that the right blend of domestic savings and debt was fundamental to attaining sustainable economic growth.

Even though, debt weakens governments spirits to fully pursue their mandate of maintaining peaceful coexistence, provision of welfare services to citizens as well as financing economic infrastructure for sustainable growth and development. Sachs, (1989) indicated that in a situation where revenue mobilization was geared towards debt servicing; economic instability was likely to occur since it created much leakage in the domestic economy.

Dent profile in Nigeria has been increasing year after year, more especially in recent years. According to Nigeria's Debt Management Office DMO (2019), Nigeria recorded a government debt equivalent to 17.50 percent of the country's Gross Domestic Product in the year 2018. Government Debt to GDP in Nigeria averaged 32.40 percent from 1990 until 2018, reaching an all-time high of 75 percent in 1991 and a record low of 7.30 percent in 2008.

The gross increase in the total debt stock has exposed the nation to high debt burden and has resulted to the poor growth of the nation's Gross Domestic Product. Nigeria's high debt burden has had grave consequences for the economy and on the welfare of the people. It is evident that, despite the huge natural resources, oil and booming non-oil revenues in Nigeria, the larger portion of the Nigerian citizens ridiculously live in absolute poverty. A number of Nigerian youths are unemployed, many families hardly eat three times a day and lack access to qualitative education and essential social services.

This paper however, investigated empirically the impact of public debt on the general welfare and economic stability in Nigeria for thirty three years, from 1990 to 2023. Ordinary Least Square (OLS) approach was applied. It was observed that many scholars conducted similar research in Nigeria but using different methodology, and those who used OLS did not cover the same period with the author of his paper. It was observed that, their study did not extend to the year 2023 and the size of their sample is not as large as the sample used in this study.

Public Debt

According to Owonye and Obonofiemro, (2022), Public debt is described as the aggregate of borrowings acquired by government bodies of a country; this includes funds owned to private organizations, public entities, foreign government etc. In the discourse of public debt, future pension payments, government liabilities and good and services received by government on credit are all considered. In other words, it is those debts which includes both internal (domestic) and external debts is considered when the revenue realized by the governable is insufficient for its projected expenditures (Efanga *et al*., 2020).

Public debt may also be grouped either in terms of term or area sourced from. In terms of term, public debt may be classified in to long-term debt when the debt is expected to last for a longer period of time and short-term debt if debt is designed to last for one or two years only. Also, it can be classified in terms of source; that is external debt and domestic debt (Ajayi & Edewusi, 2020).

Liberal Economic Theory

The liberal economic hypothesis also offers reasonable argument on the debt predicament in developing countries. The key disagreement here is that economic liberalization will help in the increases of flow of overseas investment into the developing countries, as a result of the reduction of trade and exchange limitations. The idea is that in the process of homogenizing the political economy of every member state of the international community that the purpose of creating a market society on a universal scale is within reach (Biersteker, 1993). One of the major objectives of liberalization is to decrease the resource gap in the Less Developed Countries, by improving the trade balance and encouraging a net capital inflow. Thus, the rising significance of global organizations such as the G7, IMF and World Bank is indicative of the sway of liberal economic internationalism in the post-Cold War period. Nevertheless, events in the developing world provide us with some reasons why attempts made in redressing the situation through the encouragement of increased foreign borrowing have contributed to the current debt crisis by increasing the resource gap even further. These influential transnational bodies which embody free trade liberalism as their governing ideology however impose free market restrictions on developing societies.

Crowding-Out Effect theory

Crowding-Out Effect theory of Public Debt postulates that economic stability is undermined by debt burden if debt service cost weighs down public expenditures (Zaheer *et al.*, 2019). This implies that public investments are crowded-out as rising national debt obligations consume a large proportion of government revenue. By the crowding-out effect, a decrease in public investments transmits to a reduction in private investments due to the complementary of some private and public investments. In as much as extreme national debt can result in liquidity constrain by crowding-out domestic investments in the debtor country; reliance on debt is a necessity for unindustrialized economies at their early stage of development since available financial resources at that phase could be inadequate to enhance the needed growth and development (Todaro & Smith, 2006).

In line with the postulations of this theory, Nigeria has been using almost 25% of the country's income to service debt. These funds would have been used in the provision of deficient infrastructure critical to growth and development of the economy. Many parts of Nigeria for instance lack sufficient electricity supply, access roads and basic technology. Ironically, a country that spends hugely in debt servicing, borrows massively to finance deficits in its annual budgets. This is probably one reason why the country's economic performance is continuously below expectation. This paper however, adopts Crowding-Out Effect theory because its postulations reflects the debt situation in Nigeria.

Literature Review

Several scholars have conducted researches on the impacts of public debt on economic growth, general welfare and economic development in different parts of the world, using different methods and sample size. The studies revealed diverse findings depending on a country. For instance, Akram, (2013) explored the nexus between public debt and economic growth of Bangladesh, India, Pakistan and Sri Lanka from 1975 to 2011 using panel data estimation techniques. The results showed that both external debt and the cost of debt servicing as well as domestic debt negatively affected economic growth and investments. In another research by Egbetude, (2012), on the causal linkages between economic growth and public debt using data spanning from 1970 to 2010. From the results obtained through the Vector Auto-regressive (VAR) analysis, it was observed that a bi-directional causality existed between public debt and economic growth. Saifuddin, (2016) examined how economic growth was influenced by public debt. The technique used for the estimation was the two stage least squares (TSLS). The outcome of the TSLS indicated that a positive influence of public debt on investments triggered economic growth.

Njoroge, (2020) used the vector error correction model and ARDL methods to analyze archival data, which showed a positive long-run causality between public debt and real GDP growth in Kenya. Dritsaki, (2013) examined the linkages between economic growth, exports and government debt between 1960 and 2011. The investigation was done using the vector error correction model (VECM) and the Granger causality approach. Specifically, the results indicated a one-way causal flow exports to economic growth and economic growth to public debt. In the long run, there was a one-way causal flow from economic growth to government debt.

Ochuko and Idowu, (2019) investigated the effect of national debts on economic enhancement in Nigeria from 1981 to 2018. The estimation showed that external debt contributed less to the Nigerian economy, while domestic debt significantly enhanced economic growth. On the other hand, debt servicing cost had a negative and significant influence on economic growth. Ajayi and Edewusi, (2020) examined the effect of public debt on economic growth of Nigeria. The study found that external debt exerts a negative long run and short run effect on economic growth of Nigeria and domestic debt was ascertained to exert positive long run and short run effect on economic growth of Nigeria.

Odubuasi, Uzoka and Anichebe, (2018) investigated the effect of external debt on the Economic Growth of Nigeria. The results indicate that external debt stock and government capital expenditure have positive and significant effect on economic growth in Nigeria, whereas external debt service cost is not significant in explaining economic growth. Ndubuisi, (2017) assessed the impact of external debt on Economic Growth in an Emerging Economy using secondary covering the period 1985 to 2015. The study employed the Ordinary Least Square (OLS) method to analyze the data. Results showed that debt service payment has negative and insignificant impact on Nigeria’s economic growth while external debt stock has positive and significant effect on Nigeria’s growth index.

Methodology

For the purpose of investigating the impacts of public debt on the general welfare and economic stability in Nigeria, annual time series data for a period from 1990 to 2023 were used. The data were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin, (2023), National Bureau of Statistics and World Bank online data bank. Classical Least Regression Model was adopted. The choice of this method is predicted on the basic features of Ordinary Least Square (OLS) called BLUE, meaning; Best, Linear and Unbiased Estimator.

The econometric model for this study is expressed as:

$GDP = \beta 0 + \beta_1 PUD_{t-1} + \beta_2 INFR_{t-2} + \mu i$

Where:

GDP = the dependent Variable Real GDP

PUD_{t-1} = Independent Variable Public Debt

$INFR_{t-2}$ = Independent Variable Inflation Rate

β = Constant Parameter

β_1 = Coefficient of the Real GDP

β_2 = Coefficient of Price Level

μi = the stochastic error term.

Variables Measurement

Total annual debt in United States Dollar was used to measure Public debt, while the Gross Domestic Product GDP was used to measure economic stability, and inflation rate was used to determine the general welfare. Keynes (1946) identified economic growth, price stability and full employment as key determinants of the macroeconomic stability.

Table 1: Results of Descriptive Results

Variable	GDP Billion (USD)	Public Debt Billion (USD)	Inflation Rate (%)
Mean	35.24	33.83	28.14
Median	238.50	17.40	8.20
Minimum	54.04	32.90	5.38
Maximum	111.60	114.35	57.16
Stand. Dev.	89.54	62.04	37.50
Observations	33	33	33

Source: Author's Computation

Table 1 above presents the minimum and maximum values of the Gross Domestic Product, Public debt and inflation rate. The maximum value of the GDP in 2023 was 111.60, while 54.04 billion was the minimum value, 35.24 billion and 238.50 billion were the mean and median respectively for the GDP, and 89.54 is the value for the standard deviation. The maximum debt was 114.35 billion, and 32.90 was the minimum debt in the country during the period under investigation. 33.83 and 17.40 billion were the mean and median for the debt respectively, while 62.04 billion USD was the value for standard deviation. The highest rate of inflation was 57.16 and 5.38 was the lowest. 28.14 and 8.20 were the mean and median respectively, while 37.50 was the standard deviation for the inflation,

Table 2: Regression Results

Variable	Coefficient	Standard Error	T-Statistics	P> (t)	95% Conf. Interval
Constant	12.7574	0.550495	21.08	0.0000	10.47682 12.7286
Gross Domestic Product	0.7249	0.0537163	5.050	0.0000	0.1614944 0.38121
Price Level	0.8067	0.42456	32.34	0.0000	0.934512 0.41831

Source: Author's Computation

From the result above, if all the independent variables are equal to Zero, the intercept for the GDP becomes 12.7574, meaning that, a unit increase in the public debt increases the Gross Domestic Product by 0.7249. This shows a positive relationship between Public Debt and Economic stability. Similarly, public debt increases price level by 0.8067. An increase in public debt, increased the price level, indicating a positive relationship between public debt and price level.

Table 3: R^2 and Adjusted R^2 Values

Prob > F	R-squared	Adjusted R-squared	Root MSE
0.0000	0.7346	0.4958	1.4958

Source: Author's Computation

From table 3, the adjusted R2 value was 0.4958, the Prob > F is 0.0000 while the R square and MSE value ware0.7346 and 1.4958 respectively. From the result obtained in the regression, R2 is showing a goodness of fit, on the grounds that the explanatory variable explains 49.81% of the dependent variable.

Table 4: T-Test Result

Variable	T-Statistics	5% Critical Value	Decision
Constant	20.42	±2.045	Significant
Gross Dom. Prod.	4.96	±2.045	Significant
Price Level	6.04	±2.045	Significant

Source: Author's Computation

In order to test whether the independent variables are statistically significant, n-k degree of freedom at 0.05 level of significant was used. At 0.05 level of significance, the critical value is ±2.045. The null hypothesis (H0) is rejected since T calculated is greater than the critical value 2.045. The results shows that public debt has significant impacts on the Gross Domestic Product and the general welfare.

Evaluation of the Hypothesis

The hypothesis as formulated are:

H0: Public Debt has no significant impact on the general welfare and price stability

H1: Public Debt has a significant impact on the general welfare and price stability

Going strictly by the result of the tables presented above, Public Debt was revealed to have a significant impact on the general welfare and price stability, and therefore we reject the null hypothesis and conclude that Public Debt has a significant impact on the General Welfare and Economic Stability in Nigeria. This shows that government borrowing helps significantly in increasing economic activities and price stabilization in Nigeria.

Conclusion

This paper investigated the impacts of public debt on the general welfare and economic stability in Nigeria. Ordinary Least Square Approach (OLS) was applied. Time series data on Public debt, Gross Domestic Product and inflation rate for a periods from 1990 to 2023 were used in the analysis. The paper concludes that Public Debt has significant positive impact on the General Welfare and Economic Stability in Nigeria.

Recommendations

1. Debt accumulation will not be healthy to Nigerian Economy especially in the long-run. There is need for government to lookout for alternative sources of income other than debts to prevent the economy from recession in future.

2. Since positive impact of public debt on the economy is observed, government should ensure prudence and accountability in expenditure on infrastructure and other developmental projects.

3. Public expenditure should be directed towards provision of infrastructural facilities that have direct bearing on economic growth and development.

4. Application of effective monetary and fiscal policies is necessary to ensure stable price for enhancement of general welfare and increase living standard.

5. There is need for sector and regional planning to pave way for development of natural resources in each region of the country, this will enable job creation, increased household income and general welfare.

6. It is necessary for Nigerian government to improve on the fight against indiscipline and corruption. This will help reduce siphoning public funds and increase the impact on the general welfare of citizens and eventually propel economic growth and development.

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