REGRESSION ANALYSIS OF THE EFFECT OF PUBLIC DEBT ON THE ECONOMIC GROWTH OF NIGERIA.

EZE, Onyekachi Richard¹, OGIJI Festus O²., IGWE Solomon³ and EZE Nkechi Gift⁴

1, 2&3 Department of Banking and Finance, Ebonyi State University, Abakaliki 4 Department of Accountancy, Ebonyi State University, Abakaliki Email Address: Ezerich2014@gmail.com; richard@ebsu.edu.ng

Abstract

This study focused on the effect of public debt on the economic growth of Nigeria from 2004-2021. The specific objective of the study was to ascertain the regression analysis of the effect of public debt on economic growth in Nigeria and other objectives are to: investigate the impact of external debt on the economic growth of Nigeria, determine the impact of foreign exchange rate on the economic growth of Nigeria and examine the impact of interest rate on the economic growth of Nigeria. The researcher adopted ex-post facto research design and regression analysis was used in analyzing the time series data generated through secondary data source. The study found that public debt has a negative effect on economic growth, exchange rate has positive relationship with economic growth in Nigeria and interest rate does not have significant effect on the economic growth of Nigeria. Based on the findings the study concludes that public debts are necessary to meet shortfall internal resources, and stimulate the economy. Based on the finding the study recommends as follows: government should aggressively pursue the process of diversification of the economy. This will result in buoyant and robust economy which will reduce the public debt.

Keyword: Public Debt, Economy, Foreign Exchange, Interest Rate, External Debt.

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Introduction

Over the past few years, high levels of public debt have turned into an inviting target for criticism among policymakers, professionals and other agents of economic development. The seriousness of this issue, especially in Nigeria, is exacerbated by the recent global financial crisis and the quest by various governments around the world to revamp their economy with borrowed funds (Omodero & Alpheaus, 2019). For several reasons, developing countries tend to rely on borrowed funds, foreign equity portfolio investment (FEPI) and foreign direct investment (FDI) flows to harness and grow the economy (Shkolnyk & Koilo, 2018). Moreover, given the low level of domestic economic activities to guarantee quality internally generated funds, the use of external debt by developing countries to address the challenges of economic growth and development has become more of an issue of necessity that is difficult to avoid rather than a choice. In other words, public debt considers government liabilities, future pension payments and payments for goods and services that the government contracted but have not yet paid for.

Economic growth is a concept that means different things to different people. Hence, it is difficult to have a single satisfactory definition (Feld, Hadjimicheal, & Lanahan, 2016). The term Economic growth is often confused with the term economic development due to their similar meaning. Thus, economic growth has different meaning depending on the context in which it is used. Economic growth is just a measurement of the output of a country while economic growth is a broader term that includes social and political improvement in the well-being of people living

in a country. According to Romer (2016), economic growth is the improvement in the economic well-being and quality of life of a country by accumulating wealth and diversifying the economy. This study adopt the definition of Romer (2016).

The rate of external borrowing in Nigeria has been on steady increase, rising from \$28 million in 1958 to over \$30 billion in 2005 before debt relieve. Thereafter, the loan increased again. However, the economic growth has not been on a steady increase and the government is planning to borrow more. It is important to state that when more emphasis is on the negative impact of debt it will lead to morbid fear of debt which would result into debt avoidance when it would have promoted the economy by bringing in the much needed capital for investment and economic growth, so this study would investigate to determine if external debt promotes economic growth or otherwise in Nigeria and appropriate recommendation would be made to the government (Eze, Agbo, Onwe and Ugwu, 2019).

Conceptual Review

Arnone, Bandiera and Presbiterio (2005) defined public debt as that portion of a country's debt that is acquired from foreign sources such as foreign corporations, government or financial institutions. Public debt is that part of the total debt of a country that is owed to creditors outside the country. The debtors can be the government, corporations or private households (Abula, & Ozovehe, 2016). In international economics relations, public debt is the term that describes the financial obligation that ties one's 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, public 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. Public debt may be incurred through a number of transactions such as trade, contractor-finance, supplies credit, private investment and public borrowing (Udoka and Anyingang, 2010). Source of loan that make up public debt include banks, international financial market (euro money and capital markets) international organization e.g. IMF and the World Bank international loans and multilateral private loans (Udoka and Anyingang, 2010).

In Nigeria, domestic debts are contracted by the Federal Government as well as states and local governments. In principle, states and local governments can issue debt instruments and are limited in their capacity to do so. Domestic debt instruments in issue in Nigeria usually consist of treasury bills (TBs), treasury certificates (TCs) Federal Government development stocks (DS), bonds and means advances.

The Concept of Economic Growth

Anyanwu and Oaikhenan (1995), aver that economic growth is the increase over time of an economy's capacity to produce those goods and services needed to improve the wellbeing of the citizen in their increasing number and diversity. It is also conceived as a sustained increase in the per capital income over a period of time (Claus, 2001 in Eze et al 2019). Kuznets (1990) in Todaro, (1995) defined growth as a long-term rise in the capacity of an economy to supply increasingly diverse economic goods and service to its population. It should be noted that economic growth is sometimes used interchangeably with economic development.

Public Debt Profile in Nigeria

Over the years, Nigeria's rising public debt has always been a source of concern. For instance, Rafindadi and Musa (2019) observed that in 1987 there was an unprecedented rise in Nigerian

public debt by 96.9% to N137.58 billion and up to N6.188 trillion in 2004. In 2005, the country was granted debt pardon by the Paris Club which reduces her total debt by 59% between 2004 and 2006 to N2.533 billion and N451.5 billion respectively. According to the Debt Management Office (DMO) as cited in Urama, Ekeocha, and Iloh (2018) Nigeria's debt stock profile (both domestic and foreign loan) stood at NGN22.7 trillion as at March 2017. Nigeria external debt for 2020 was \$70,524,292,158, a 17.46% increase from 2019. Nigeria external debt for 2019 was \$60,041,046,402, a 10.77% increase from 2018. Nigeria external debt for 2018 was \$54,202,577,785, a 18.4% increase from 2017. According to DMO, the comparative figure of public debt as of December 31, 2021, was N39. 56 trillion or \$95.77 billion. This means that the country's debt increased by N6. 69trn or \$7.34bn within one year. Nigeria's public debt stock which includes external and domestic debt stood at N46. 25 trillion (US\$103.11 billion) in Q4 2022 from N44. 06 trillion (US\$ 101.91 billion) in Q3 2022. This shows that public debt (in national currency) grew by 4.96% in Q4 2022.

Empirical Literature

The motive behind public debt is to boost economic growth and development of any nation but as a result of future high debt service payments, it poses a serious threat to the economy of that nation. Economic researchers have therefore sought out to investigate the effect of public debt burden on the economic growth of developing countries and have come up with diverse views.

Ekong, Effiong and Inyang (2021) examined the linkages between public borrowing and the growth in productivity. The Cobb-Douglas production function modified to include debt accumulation and other variables – broad money supply, inflation rate, exchange rate, trade openness, and interest rate – was used to achieve the objectives. The data covering 1981 to 2019 were analyzed using the unit root test, Autoregressive Distributed Lag bounds test for cointegration, and the error correction model and threshold regression. Findings from the study revealed that both domestic and foreign borrowings exhibit negative effect on growth of the Nigerian economy in the short-term and in the long-term, thereby suggesting a crowding out effect of debt on the economy.

Nzeh (2020) investigated public debt and economic growth in Nigeria using annual data spanning a period of 1981-2018 and under the framework of Autoregressive Distributed Lag (ARDL) bounds technique, the results of findings revealed that public debt contributes to the growth of the economy both in the short-run and in the long-run. The study also found the optimal threshold level of debt to be 40.2% in both the long-run and short-run. Also finding revealed that while trade openness contributes to GDP positively, both inflation and fiscal deficit adversely affect GDP.

Didia and Ayokunle (2020) examined the impact of public and publicly guaranteed debt on the economic growth of Nigeria. The study disaggregates total public and publicly guaranteed debt into external debt and domestic debt, and examines whether the two kinds of debt have differential impact on economic growth in Nigeria. Utilizing data from the Central Bank of Nigeria, and the World Bank aanalysis using the Vector Error Correction Model (VECM) and covering 1980 – 2016, revealed that domestic debt has a statistically significant positive relationship with economic growth in the long run while external debt exhibiting a negative relationship with economic growth was not statistically significant. As a policy recommendation from this study, the Federal Government of Nigeria may want to start paying more attention to the mix of domestic debt and external debt in Nigeria's loan portfolio.

Ehikioya, Omankhanlen, Osuma and Inua, (2020) examined the relations between public external debt and economic growth in African countries. The paper used the Johansen Cointegration test and system Generalized Method of Moments (sysGMM) to examine the dynamic relations between external debt and economic growth in 43 African countries over the period 2001–2018. The study used data from World Development Indicators (WDI) as published by the World Bank and the World Economic Outlook database as provided by the International Monetary Finance (IMF). The study provides an understanding of how the importance of external debt could be short-lived due to its misapplication. The result reveals evidence to support a long-run equilibrium relationship between external debt and economic growth in Africa. The result demonstrates that beyond a specific capacity, the short-run converges to equilibrium in the long-run and external debt would start to have a deteriorating impact on economic growth in Africa. The findings of this study reinforce the need for policymakers to ensure proper application of external debt on economic activities that would lead to sustained long-term economic performance. Moreover, the government and development partners must put in place a monitoring mechanism to ensure the efficient use of borrowed funds.

Olusegun, Olufemi, Olubunmi, (2020) investigated the impact of public debt on economic growth in Nigeria between 1981 and 2018 using ARDLECM estimation technique. The variables used in the study were tested for stationarity using the Augmented Dickey Fuller. The result revealed that EDS, DDS, FDI and GOVE were stationary at first differencing while GDPGR was stationary at level. The study revealed that external debt and foreign direct investment positively affect economic growth while domestic debt and government expenditure hinders economic growth in Nigeria. The error correction model coefficient which is -0.969 means that nearly 96.9 percent of any disequilibrium in economic growth is corrected by the external debt, domestic debt, foreign direct investment and government expenditure within one period (one year). The study recommends that the country can borrow from external sources when the need arise, however, caution should be taken to avoid putting the country into debt crises. Also, government should reconsider her spending structure to favour infrastructure development which would motivate both local and foreign investors to invest and in turn enhance economic growth. Lastly, government and policy makers should formulate policies that would attract foreign investors and provide enabling environment vis-à-vis security of lives and properties.

Theoretical Framework

This study anchored on the Keynesian Theory. Keynesian economics was developed by the British economist John Maynard Keynes during the 1930s in an attempt to understand the Great Depression. Keynes view fiscal policy as the best policy that brings about growth in any economy since it acts in the interest of the general public. According to Keynes, when the government embarks on public borrowing to finance its expenditure, unemployed funds are withdrawn from the private pockets such that the consumption level of private individuals remains unaffected. This funds when injected back into the economy by the government leads to a multiple increase in aggregate demand causing an increase in output and employment. Hence, public borrowing can be used to influence macroeconomic performance of the economy (Matthew & Mordecai, 2016).

Methodology

To estimate the impact and test the hypothesis, the study adopted the general formular for multiple regression:

$$y_t = \beta 0 + \beta 1 X_1 + \beta 2 X_2 + \beta 3 X_3 + \dots \beta n X_1 + U_t$$

1

The hypothesis had been stated with the view of ascertaining the external debts and Nigeria's economic growth. The functional form of the model is as expressed below;

$$GDP = f(PD, INT, EXR, IFR)$$

2

Equation 1 reads that Gross Domestic Product is a function of the ratio of total debt to GDP. In order to capture the influence of the stochastic or random variable, the equation is explicitly transformed as

$$GDP_t = \beta_0 + \beta_1 PD + \beta_2 INTR + \beta_3 EXR + \beta_4 IFRU_t$$

3

Where:

GDP = Gross Domestic Product; PD = Public Debt; INTR = Interest Rate; EXR = Exchange Rate; IFR = Inflation Rate; B_0 = Constant; B_1 = Parameter Estimates; U_t = Error Term

Result

Available data on Economic Growth (GDP), Public Debt (PD), Interest Rate (INTR), Inflation (IFR), Economic Growth (GDP), Exchange rate (EXR) we have corrected and use for the purpose of this analysis.

TABLE 1: OLS Test

Dependent Variable: LOGGDP

Method: Least Squares Sample: 2004 2021 Included observations: 18

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGPD	-0.187448	0.159765	-1.173276	0.2617
LOGINTR	-1.593784	1.318860	-1.208457	0.2484
LOGEXR	1.785045	0.531962	3.355586	0.0052
LOGIFR	-0.046396	0.181240	-0.255993	0.8020
C	7.835927	5.063859	1.547422	0.1458
R-squared	0.854394	Mean dependent var		11.11831
Adjusted R-squared	0.809593	S.D. dependent var		0.676541
S.E. of regression	0.295213	Akaike info criterion		0.627896
Sum squared resid	1.132962	Schwarz criterion		0.875222
Log likelihood	-0.651068	Hannan-Quinn criter.		0.661999
F-statistic	19.07056	Durbin-Watson stat		1.041869
Prob(F-statistic)	0.000024			

SOURCE: Researchers Own Computation (E-View version 9)

From table 1 above the variables of the intercept under co efficient which is 7.835927 shows that economic growth in Nigeria will experience a 7.835927 unit increase when other variables are held constant. This is to say that when other variables are constant, the economic growth will be 7.835927.

Public debt (PD) is -0.187448. This shows that the variable is negatively related to GDP. This means that a unit increase in the public debt is followed by a decrease in economic growth of Nigeria. The co-efficient of interest rate -1.593784. This implies that interest rate is

negatively related to economic growth in Nigeria. Thus, an increase in interest rate will have a corresponding negative effect on economic growth.

The co-efficient for exchange rate is 1.785045. This shows that the exchange rate is positively related to GDP. It indicates that a unit increase in the exchange rate is followed by an increase in economic growth in Nigeria. Furthermore, the value of inflation - 0.046396 shows a positive relationship with economic growth in Nigeria. This implies that a unit increase in inflation has an exact 0.046396 unit effect on the economic growth in Nigeria.

Decision Rule: If T calculated is greater than T tabulated will reject the non-hypothesis (Ho) and accept the alternate hypothesis (H1) or otherwise will accept the non-hypothesis (Ho) and reject the alternate hypothesis (H1). This means that the T statistics must be greater or equal to 2 which reflect that probability value of 0.05 level of significance. From the table above, the following were found:

- 1. Public debt has a negative effect on economic growth, meaning that a unit increase in the public debt is followed by a decrease in the economic growth in Nigeria by 0.187448.
- 2. Exchange rate has positive relationship with economic growth in Nigeria. Exchange rate which is one of the statistically significant variables had a coefficient of 1.785045, meaning that a unit increase in foreign exchange rate led to an increase in economic growth by 1.785045 units.
- 3. Interest Rate which is not statistically significant variables had a coefficient of -1.593784, meaning that a unit increase in inflation led to an increase in economic growth by 1.593784 units.

Conclusion

Public debts are necessary to meet shortfall internal resources, and stimulate the economy. However, it must be properly utilized to avoid serious consequences. Borrowing is not the most important issue but the use to which the fund is deployed. This should be the most important thing agitating the mind of any good accountant and Economist whenever external debt is contemplated. It should be approached with caution, ensuring optimal utilization and higher return than the interest (cost of fund). Finally, the study concludes that exchange rate fluctuation has positive impact on the Nigerian economy while interest rate and debt service payment have positive impacts on the same economy also public debt has negative impact on the economic growth of Nigeria.

Recommendation

The following recommendations were made based on the findings of the study:

- i. Debt Management Office (DMO) should set mechanisms in motion to ensure that loans are utilized for the purpose for which they were acquired. This could be achieved through proper monitoring of the use to which the funds are put.
- ii. DMO should set maximum limit of loans state and federal governments could be allowed to acquire based on certain stipulated criteria.
- iii. Government should aggressively pursue the process of diversification of the economy. This will result in buoyant and robust economy which will reduce the public debt.

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