# Effect of public debt on economic growth in Nigeria: An empirical analysis 1981 - 2018

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**Keywords**
Borrowing, Domestic debt, Economic growth, Foreign debt, Public debt

**Abstract**

*The study investigated the effect of public debts on economic growth of Nigeria for the period of thirty-eight (38) years, 1981 to 2018. Relevant secondary data were sourced from Central Bank of Nigeria Statistical bulletin and Debt Management Office. Among the objectives of the study is to: analyze the effect of domestic debts on the economic growth of Nigeria and evaluate the effect of foreign debts on the economic growth of Nigeria. The findings showed that domestic debts of the Federal government of Nigeria is positive and statistically significant to economic growth of Nigeria while foreign debts contribute less to the economic growth of the country. Cost of debts servicing is significant and has a negative effect on economic growth.*

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*First submission received: 10th June 2019*
*Revised submission received: 27th August 2019*
*Accepted: 9th September 2019*

## 1. Introduction

Government spending is a function of her income. Like corporate entities' government articulate her expected income and expenditure on yearly basis in a budget. This is a plan of action prepared by government or corporate entity expressed in financial terms, for a given period, usually a year. Sometimes the expected expenditure exceeds the expected income, when that happens, it is known as budget deficit in financial parlance. The short fall in income is in most cases financed through borrowing with attendant cost and associated terms and conditions relating to payment patterns at maturity. Essien, Agboegbulem, Mba and Onumonu (2016), observes that borrowing by countries is occasioned by inability to raise enough revenue from local sources for the administration of government business. Borrowed fund if well applied is expected to accelerate economic growth and development in a country. The attendant effect is likely to be improved welfare and standard of living of the citizens. There are arguments and counter argument about borrowing. Chinanuife, Eze, and Nwodo (2018), posit that the practice of borrowing is not bad, if borrowed fund is used judiciously.

Nigeria like any other country has also resorted to borrowing in financing her budget deficit. Her rising debt notice came to the fore in the early "70's. The causes of the debts could be attributed to three major reasons: firstly, was the effect of the civil war in the country from mid-1967 to January 1970. During the war economic activities were brought to almost zero in the eastern part of Nigeria. Nearly all the industries were destroyed while some firms moved out of the region. Many houses were destroyed while the road networks were not spared either as they were in bad shape at the end of the war. The Federal government response at the end of the war was the introduction of the policy of 3Rs, which is interpreted to mean: Reconstruction, Rehabilitation and Reconciliation. It implied that the government policy thrust was to give priority attention to these outlined aspects of the economy, especially in the eastern region. The implementation was a tall task which required huge capital out lay.

Secondly, were the bogus spending on prestigious projects such as Festival of Art & Culture (FESTAC) ''77. Most of the projects were enveloped in corrupt practices. Consequently, the cost of some of the projects rose more than five times of their original value. The third and perhaps the most devastating fact was the drop in crude oil price in the international market. Given the fact that the country failed to plan for the raining day, the drop in the oil price became widespread and noticeable. At this point, it became imperative that Nigeria had to borrow to finance her budget deficits. A position substantiated by Egbetunde (2012), who noted that nations borrow to boost economic growth and reduce the poverty level in an economy. Borrowing in an economy is classified into domestic and foreign. Asaogwa and Ezema (2005), describes Nigeria domestic debt as "instruments issued by the Federal government".

On the contrary foreign debts also known as external debt is obtained outside the shores of the country. It is usually owed to multilateral agencies such as International Monetary Fund, World Bank and African Development Bank. Others are private creditors such as the London club or Paris club. The aggregation of both domestic and foreign debts cumulates in what is referred to as public debt. Several studies, including Blake (2015), argues that public debt is a catalyst for economic growth. It is on this premise that the general objective of this study was to determine the effect of public debt on the economic growth of Nigeria, while the specific objectives were to (1) analyse the effect of domestic debt on economic growth of Nigeria (2) evaluate the impact of foreign debt on economic growth of Nigeria. While we recognize that several studies have been carried out in the field of public debt and economic growth, majority of the studies used Gross Domestic Products (GDP) as a proxy for growth. To the best of our knowledge, there is no known study that has used public expenditure as a proxy for growth. This is the gap in knowledge which this study seeks to address.

## 2. Review of Related Literature

Literature on related research were reviewed in this section in accordance with the objectives of the study. Among them are: Rafindadi and Musa (2019), who analysed the impact of Public debt management on Nigeria debt profile. They argued that the financing of ever-increasing public expenditure accounted for government borrowing. The budget is always in deficit, especially in developing countries, where there is so much dependence on aids and grants in financing government expenditure. Nigeria's debt is on the increase, however the unprecedented increase in the debt profile started in 1987, when the debt rose to ₦137.58 Billion. By 2012 the total debt amounted to ₦7,564.4 Trillion. Out of this amount, domestic debts accounted for between 82.2% and 87.2%.

As at September 2017, Nigeria's total debt amounted to ₦17,189,697 Trillion. Thus, the style of debt management adopted is believed to have a negative effect on the economic growth of the nation. Nigeria huge foreign debt on the other hand has negative effect on infrastructural development of the nation. Other projects negatively affected are health, education and other developmental projects.

On the contrary, Picarelli, Vanlaer and Marneffe (2019) examine impact of public debt on public investment in the European Union (EU) between the period 1995 and 2015. Twenty-six (26) EU countries were examined, using panel data for the period under review. Their findings reveal that 1% increase in public debt in the EU countries brings about a reduction of 3% in public investment. The findings further reveal that the negative effect of debt on investment is relatively smaller in the Eurozone than in the entire European Union.

Ujuju and Oboro (2017), justified the incurrence of public debts by nations. They argued that credit is necessary for corporate entities growth. Same is applicable to a nation, provided interest charges and administrative expenses on the loan capital is not more than the streams of income generated by the capital. Furthermore, public debt is helpful if it leads to economic growth and increased welfare of the citizens. They further observed that there is a correlation between Nigeria domestic and foreign debts. Their finding shows that there has been consistent growth in both debt profile. Most importantly, while domestic debt impact positively on growth of the Gross Domestic Product (GDP), the foreign debts shows an inverse relationship with economic growth of Nigeria.

However, Chinanuiffe, Eze and Nwodo (2018), argue that Nigeria borrows to finance future projects, thereby shifting the debt burden to future generation. When debt burden is shifted to future date, taxpayers in effect will be required to give substantial part of their future earning for debt servicing and repayment. Another implication they stressed was the ratio of public debt to Gross Domestic Product (GDP). According to them, when the ratio is high, it means the interest element of the debt will take a large share of the country's budget, thereby leading to budget deficit. Thus, the cost of servicing debt in Nigeria has remain so high to the extent that the whole economy is affected. They concluded that public debt has negative and statistically significant impact on public investment in Nigeria.

Essien, Agbogbulem, Mba and Onumonu (2016), posits, that countries borrow because they are unable to raise enough savings internally for the production of goods and services. The borrowed funds are channeled into activities that will enhance economic growth and increase the standard of living in the country. However, most developing nations, Nigeria inclusive has accumulated huge domestic debt which has resulted in sluggish economic growth of the nation. External debt on the other hand has negative effect on economic growth of nation.

Egbetunde (2012), however observed that some level of borrowing by a developing nation is needed to enhance economic growth. As part of growth strategy, countries at early stages of development borrow to supplement what they are able to generate. Such funds when properly invested increase standard of living and reduce poverty. The author concluded that public debt and economic growth are positively correlated. Hence if government is sincere with the loan obtained and use it for the purpose for which it was obtained without diversion into private hands, it will lead to economic development.

Kehinde, Olanike, Oni and Achukwu (2015), asserted that public debt in developing countries is occasioned by the desire to develop human capital, institutional and infrastructural capacity. These activities in most cases lead to high government expenditures, insufficient revenue generation and higher debt burden. They noted that foreign debt is used to create a sustained economic growth which would not have been possible with domestic resources. The aim of public debt is to assist recipient countries develop, sustain and increase their rate of streams of income. For the purpose of debt to be achieved they argue, the debt has to be well managed and the funds channeled to where it would be judiciously and effectively utilized.

## 3. Methodology

Secondary data were used in this study. The data where drawn mainly from Central Bank of Nigeria Statistical bulletin, 2017, volume 28 and the Debt Management Office. The data were considered adequate and appropriate for the study because the Central Bank of Nigeria (CBN) which collated the data is the apex banking institution with regulatory and supervisory powers in Nigeria. All the banking institutions in the country submit annual report of their operations to the CBN. In like manner, the Debt Management Office is the body statutorily charged with the responsibility to manage Nigeria's public debt on behalf of the Federal government of Nigeria. The data were classified and analyzed using ordinary least square (OLS). Federal government total expenditure (FGTE) is proxy for dependent variable while Federal government domestic debt (FGDD), Federal government foreign debt (FGFD) and cost of servicing debt (CSD) are proxies for independent variables and Federal government retain revenue (FGRR) is proxy for control variable.

Model Specification
The model is implicitly specified as:
FGTE =f (FGDD + FGFD + CSD + $U_t$)
Explicitly it was specified as:
FGTE = $a_1$ + $b_1$FGDD + $b_2$FGFD + $b_3$CSD + Ut

Where:
FGTE = Federal Government Total Expenditure
FGDD = Federal Government Domestic Debt
FGFD = Federal Government Foreign Debt.
CSD = Cost of servicing debt
FGRR = Federal Government Retained Revenue
$U_t$ is the stochastic error term
$a_1$, $b_1$-$b_3$ are the coefficients

**4. Data Analysis and Interpretation**
The datasets for the empirical analysis of this study is presented in table 1

Table 1. Nigeria Outstanding Debts (in ₦ 'Billion) 1981 - 2018

| YEAR | FGDD | FGFD | CSD | FGRR | FGTE |
|---|---|---|---|---|---|
| 1981 | 11.19 | 2.33 | 1.03 | 7.50 | 11.40 |
| 1982 | 15.01 | 8.82 | 1.17 | 5.80 | 11.90 |
| 1983 | 22.22 | 10.58 | 1.01 | 6.30 | 9.60 |
| 1984 | 25.67 | 14.81 | 1.24 | 7.30 | 9.90 |
| 1985 | 27.95 | 17.30 | 1.61 | 10.00 | 13.00 |
| 1986 | 28.44 | 41.45 | 1.63 | 8.00 | 16.20 |
| 1987 | 36.79 | 100.79 | 3.93 | 16.10 | 22.00 |
| 1988 | 47.03 | 133.96 | 9.24 | 15.60 | 27.70 |
| 1989 | 47.05 | 240.39 | 13.27 | 25.90 | 41.00 |
| 1990 | 84.09 | 298.61 | 23.82 | 38.20 | 60.30 |
| 1991 | 116.20 | 328.45 | 26.41 | 30.80 | 66.60 |
| 1992 | 177.96 | 544.26 | 19.40 | 53.30 | 92.80 |
| 1993 | 273.84 | 633.14 | 81.08 | 126.10 | 191.20 |
| 1994 | 407.58 | 648.81 | 49.40 | 90.60 | 160.90 |
| 1995 | 477.73 | 716.87 | 51.06 | 249.80 | 248.80 |
| 1996 | 419.98 | 617.32 | 53.05 | 325.10 | 337.20 |
| 1997 | 501.75 | 595.93 | 68.54 | 351.30 | 428.20 |
| 1998 | 560.83 | 633.02 | 64.39 | 353.70 | 487.10 |
| 1999 | 794.81 | 2,577.37 | 30.84 | 662.60 | 947.70 |

| | | | | | |
|---|---|---|---|---|---|
| 2000 | 898.25 | 3,097.38 | 131.05 | 597.30 | 701.10 |
| 2001 | 1,016.97 | 3,176.29 | 155.42 | 797.00 | 1018.00 |
| 2002 | 1,166.00 | 3,932.88 | 163.81 | 716.80 | 1018.20 |
| 2003 | 1,329.68 | 4,478.33 | 363.51 | 1023.20 | 1226.00 |
| 2004 | 1,370.33 | 4,890.27 | 382.50 | 1253.60 | 1426.20 |
| 2005 | 1,525.91 | 2,695.07 | 393.96 | 1660.70 | 1822.10 |
| 2006 | 1,753.26 | 451.46 | 249.33 | 1836.60 | 1938.00 |
| 2007 | 2,169.64 | 438.89 | 213.73 | 2333.70 | 2450.90 |
| 2008 | 2,320.31 | 523.25 | 381.20 | 3193.40 | 3240.80 |
| 2009 | 3,228.03 | 590.44 | 251.79 | 2643.00 | 3453.00 |
| 2010 | 4,551.82 | 689.84 | 415.66 | 3,089.18 | 4,194.58 |
| 2011 | 5,622.84 | 896.85 | 527.18 | 3,553.54 | 4,712.06 |
| 2012 | 6,537.54 | 1,026.90 | 679.30 | 3,629.61 | 4,605.39 |
| 2013 | 7,118.98 | 1,373.58 | 828.10 | 4,031.83 | 5,185.32 |
| 2014 | 7,904.02 | 1,631.52 | 941.70 | 3,751.71 | 4,587.39 |
| 2015 | 8,837.00 | 2,111.53 | 1,060.38 | 3,431.07 | 4,988.86 |
| 2016 | 11,058.20 | 3,478.92 | 2,952.51 | 2,952.51 | 5160.74 |
| 2017 | 12,578.80 | 5,787.51 | 4,622.60 | 4,622.60 | 8,302.10 |
| 2018 | 12,774.40 | 6,460.40 | 1,797.90 | 5,084.86 | 9,132.31 |

Source: CBN (2017) Statistical bulletin, Volume 28
DMO (2019) Nigeria's Total Public Debt portfolio as at 1st December 2018

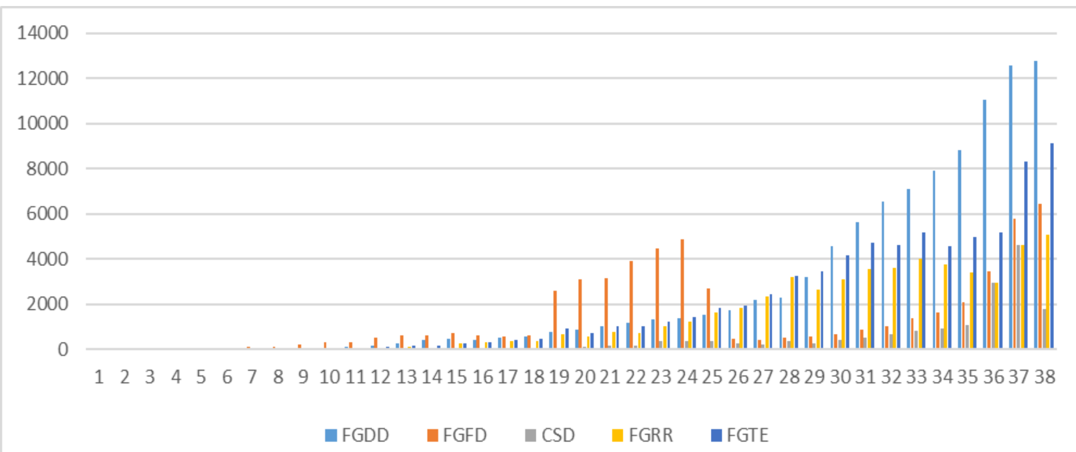


Fig. 1 Column chart representation of Nigeria Outstanding Debts (in ₦ Billion) 1981 – 2018

From the above graph, FGDD, FGFD, CSD, FGRR & FGTE from 1981 to 1988 is infinitesimal to the point that it is almost un-noticeable. From 1989 to 1999, there was a moderate increase in the debt profile and total government expenditure. From 2001 to 2018, there was a continuous increase in the Federal Government of Nigeria Debts and Expenditure.

Table 2. Regression Result
Dependent Variable: FGTE

Method: Least Squares

Date: 04/29/19 Time: 12:57

Sample: 1981 2018

Included observations: 38

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 185.9860 | 139.9557 | 1.328892 | 0.1927 |
| FGDD | 0.703732 | 0.054006 | 13.03067 | 0.0000 |
| FGFD | 0.073441 | 0.075789 | 0.969013 | 0.3394 |
| CSD | -0.451274 | 0.232142 | -1.943961 | 0.0402 |

| | | | |
|---|---|---|---|
| R-squared | 0.939820 | Mean dependent var | 1903.857 |
| Adjusted R-squared | 0.934510 | S.D. dependent var | 2428.633 |
| S.E. of regression | 621.5111 | Akaike info criterion | 15.80149 |
| Sum squared resid | 13133387 | Schwarz criterion | 15.97386 |
| Log likelihood | -296.2282 | Hannan-Quinn criter. | 15.86282 |
| F-statistic | 176.9910 | Durbin-Watson stat | 2.054165 |
| Prob(F-statistic) | 0.000000 | | |

Source: EVIEWS7

Table 3. Model Summary of OLS

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 185.9860 | 139.9557 | 1.328892 | 0.1927 |
| FGDD | 0.703732 | 0.054006 | 13.03067 | 0.0000*** |
| FGFD | 0.073441 | 0.075789 | 0.969013 | 0.3394 |
| CSD | -0.451274 | 0.232142 | -1.943961 | 0.0402** |

*** Significant at 1%, ** Significant at 5%
Source: Author's Computation 2019.

R-squared 0.939820, Adjusted $R^2$ 0.934510
SEM 621.55
F-statistic 176.99
Durbin Watson = 2.0509

**5. Findings/Results**

From the linear regression model above, the result when transposed inside the model, will give,

$$FGTE = 185.98 - 0.4512CDS + 0.\ 07037\ FGDD + 0.07344FGFD + U_t$$

The result showed a coefficient of determination of 0.9398. This implies that over 93.98% of the changes in the dependent variable were determined by the various independent variables entered in the model while the remaining 6.05% are attributed to factors not captured in the model. An F-statistic of 176.99 indicated that the overall equation was significant at 0.01level of significance while DW of 2.0509 showed that there was no autocorrelation of the variables in the model.

A look at the effect of the various independent variables on the dependent variable FGTE indicate that two variables were statistically significant. The federal Government domestic debt FGDD with a coefficient of 0.703732 was statistically significant at the 1% level with a t-Value of 13.03. This implies that a unit increase in FGDD will improve FGTE by about 7%. On the other hand, the cost of servicing debt (CSD) was negatively signed with a coefficient of -0.451274. It is statistically significant at the 0.05 level. The implication is that as the cost of servicing debt increases, the Federal Government total expenditure decreases. Thus, a unit increase in cost of servicing debt decreases the FGTE by about 4.5%

**6. Discussions and Conclusion**

Nigeria incurred both domestic and foreign debts. The debt profile has been on continuous increase during the period under review. While the findings showed that domestic debt has a positive and statistically significant effect on total expenditure of the Federal government of Nigeria (economic growth), foreign debt has a positive and non-significant effect on economic growth of the nation. The poor performance of the foreign debt could be attributed partly to payment of principal and interest that is usually repatriated outside the country whenever payment is made and partly to poor management of the loan obtained. On the other hand, cost of servicing debts has been rising, thereby leading to budget deficits and more borrowing to finance the budget. These findings are in line with previous findings by Adesola (2009), Kehinde (2015) and Chinanuife, Eze and Nwodo (2018). The study therefore concludes that the Federal government should reduce the rate at which it results to loans, especially foreign loans as a means of financing budget deficits.

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