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## Debt Management and Gross Domestic Product: Lessons from the Nigerian Economy

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### **Abstract:**

*The paper examined the fundamentals of debts accumulation and management in Nigerian economy and the extent to how it significantly influenced the Gross Domestic Product (GDP) to an appreciable level. The methodology was a time series data of the gross domestic product from 1990 to 2019 on one hand and debt growth from 1990 to 2019 on the other hand. Several literatures posited that Nigeria has always been at the mercy of external and internal creditors via incessant loans accumulation and this in return consume a chunk of the expected revenue that is meant to implement the capital project aspect of the budget. The findings revealed that there is a negative relationship between debt accumulated overtime and the GDP in successive years, meaning that debt has always increased consistently within the years but GDP has not grown reasonably to justify the debt increase. The study concluded that now that government seems to have an unquenchable thirst for debt, it is expected that more efforts should be geared towards planning to manage our debts responsibly and efficiently to the good of all. The study finally recommended on the urgent need for the Nigerian economy to be diversified aggressively to other sources of revenue like solid minerals and agriculture since it is conspicuous from the study that most of these critical sectors might not have felt the impact of the borrowed funds. It is also important that borrowed fund be used for the purpose they are meant so that by so doing the Gross Domestic Product (GDP) would be enhanced*

**Keywords:** Budget, capital project, debt management, gross domestic product, revenue

### **1. Introduction**

Debt or borrowings have been described as an important instrument of fiscal policy available to government to fund the development of a nation (Ajayi & Edewusi, 2020). Although the justification for government borrowing has its foundation in the neoclassical growth models, which prescribes the need for capital scarce countries to borrow in order to increase their capital accumulation and steady state level of output per capita (Omotosho, Bawa & Doguwa, 2016). Debt is a commitment to a financial or material course which falls due at a particular date. According to Ajayi (2005), debt can be defined as an obligation to make a payment either in cash or other goods or to provide services to another and this could also be referred to as a liability. The legal framework for debt management is codified in the Fiscal Responsibility Act (2007). Debt is created whenever the creditor has agreed with the debtor to enter into such transactions which result into either a deferred payment for goods/services or a future repayment of what has been transferred in the present (Ajayi, 2005). The phenomenon of external debt by Nigeria dates back to the colonial period when foreign loan was taken to complement the little Internally Generated Revenue (IGR) for developmental purposes (Adepoju, Salau & Obayelu, 2007). The increase in Nigerian debt situation can as well be traced to the need to finance the widening deficit gap created by profligate spending (Romanus, 2014).

According to Omolehinwa and Naiyeju (2015) public debt management responsibilities were diffused across several agencies such as Ministry of Finance, Central Bank of Nigeria and office of the Accountant General of the Federation and this led to ineffective and poor co-ordination of debt functions. The need to ascertain that Nigeria does not tread the path of financial recklessness which resulted into debt burden before the Paris Club debt deal was a major factor that gave rise to legal provisions on government borrowing in Fiscal Responsibility Act (FRA) 2007. Many borrowings are usually in form of loans owed internally or externally. Whatever category, the lender must have agreed with the borrower that repayment will take place at some future date. Borrowing could also assume other forms such as bank overdraft, short-term and long-term bank loan, loan stock (e.g. debenture stock, government loan stock, etc). These loans attract the regular payment of interest bills/certificates and development bonds by government for the purposes of financing its budget deficits. For instance in Nigeria in 2018 and 2019 about twenty five (25) per cent of the country's intended revenue was used in debt servicing. The same trend is expected to be witnessed this year 2020

going by the 2020 budget estimate as passed into law. The Gross Domestic Product (GDP) is the total level of goods and services produced within the geographical boundary of Nigeria. The manufacturing sector of the country is very instrumental to the production aspect of management while the service oriented concerns are instrumental to the service delivery affair of management (Adekola, 2020). The GDP is very fundamental to the growth rate and the per capita income status of the country. The trend of borrowings in Nigeria over the years has been on the upward with no commensurate growth rate to justify the borrowings. Nigeria's borrowing till date is estimated at about US \$ 80 billion. A delve into scenario after independence reveals that the various categories of debts that have been created in the economy have continued to increase from their 1960 levels. For instance in 1960, the Federal Government's domestic public debt stood at N23.3 million comprising only two government securities, i.e. Treasury Bills and Development Stocks. This grew to N28.44 billion in 1986; N 161.9 billion in 1992. N343.67 billion in 1996, N794.806 billion in 1999 and has soared to N 1 166 trillion in year 2001.

On the external debt scene, this originated in 1958 when a sum of US \$28 million was contracted for railway construction. According to Ndekwe (2008), the origin of the Nigeria's external debt dates back to 1958 when a loan of \$28 million United States dollars was contracted from the world bank for the purpose of constructing railway and other developmental projects. The rate of borrowing was manageable till 1977. The indebtedness that had risen to N488.8 million in 1970 was tremendously increased by the 'jumbo loan' of US\$1 billion contracted from the International Capital Market (ICM) in 1978, increasing the total external loan debt stock to US\$2.2 billion. Thereafter the degree of external borrowing increased with the entry of State Governments into large external loan contractual obligations, thereby growing to N38.394 billion in 1986; N716.866 billion (i.e. US\$32.564 billion) in 1995. N3.121.726 billion (i.e. US\$28.495 billion) in 2000, US\$30.991 billion in 2001, N4.608 trillion (i.e. US\$32.917 billion) in 2003, US\$34 billion in 2004, US\$ 50 billion in 2018 and US \$ 80 billion in 2019. On the domestic scene, the Federal Government continued to rely on new borrowings from domestic sources to finance its budget deficit. In addition to that, maturing instruments were rolled over while treasury bonds were issued to re-finance the Central Bank's Ways and Means Advances outstanding to the Federal Government. The reduction in Treasury Certificates from the 1994 level to 1995 level was even as a result of converting some of them into low interest-yield treasury bonds of long-term maturities thereby changing the structure of the outstanding government debt.

As regards banking system credit to the economy, the aggregate credit which stood at N36.820 billion in December 1986 rose to N444.710 billion in December 1995, N486.288 billion in December 1998, N632.010 billion in December 1999 and reduced to N485.798 billion in December 2000. According to Ajayi (2005), a closer look at the components of the banking system credit to the economy reveals that the increases in the aggregate sum to both the private sector and government sector have been as much as the sectorial increases among the various categories of banks (i.e. the Central Bank, commercial banks and merchant banks). It should be noted that there is nothing wrong with borrowings if only the amount involved are judiciously used for the purpose they are meant to serve.

### 1.1. Objective of the Study

The objective of this paper is to examine how debts can be managed in Nigerian economy and the extent to how this can significantly influence the Gross Domestic Product to an appreciable level.

## 2. Conceptual Review

The paper considers the key concepts upon which salient variables are predicated.

### 2.1. Composition of Debts In The Economy

The various types of debts that have been created to finance the growth of the Nigerian economy can be discussed under the main groups. These are: -

- Borrowing Obligation of the Federal Government
- Internal loans and Deposit Money Banks Credit to the Economy
- External Public Debt from IMF and World Bank

### 2.2. Borrowing Obligation of the Federal Government

According to Senibi, Oduntan, Uzoma, Senibi and Oluwaseun (2016), trends of external reserve and public debt of Nigeria revealed that the external reserve of Nigeria oscillated below US\$11 billion from 1981 to 2002 but rose sharply from about US\$7.5 billion in 2003 to US\$51.3 billion by the end of 2007.

The domestic public debt of the government 'represents the gross liability of government and properly considered, should include Federal. States and Local governments' transfer obligations to the citizens and corporate firms within the country' (Odozi, 1996). These are made up of securitised loans such as Treasury- Bills and Certificates, development stocks, treasury-bonds and state government bonds as well as insecurities loans such as public sector debt to banks and local contractors.

Treasury Bills, of 90 days tenor, were introduced in April 1960 for the main purpose of creating an avenue for investment of short-term funds. Since the late 1970's the Federal Government has been issuing them to meet its financial needs Treasury certificates (with longer maturity of one to two years) were introduced in 1968.

The managers of the economy introduced Treasury Bonds in 1989 to minimise debt service obligations on domestic debt arising from liberalization policies that were adopted. Development stocks, first introduced in 1946, are mainly float and to provide development finance, either directly to meet the needs of the Federal Government or as loan on-lent to State Governments. Their maturity usually varies between 5 and 25 years and their issues is subjected to statutory limitation as stipulated in Section 2 of the Finance Decree No 32 of 1969, which states that the level of Development stocks outstanding at any given time should not be more than 75 percent of the Central Bank of Nigeria total demand liabilities.

### *2.3. Internal Loans and Deposit Money Banks Credit to the Economy*

The internal sources of funds to the government are majorly the banks and other prominent financial institutions. Credit facilities from the banking system to the economy are extended to both the government sector and the private sector and in either case, the credit facilities are classified according to whether they emanate from Central Bank of Nigeria (CBN), commercial banks or merchant banks (Ajayi, 2005). These include short-term revolving credit facilities such as overdraft, bills discounted (e.g. bankers' acceptances and commercial papers) and medium (like term loans, hire purchase) and long-term loans (like debenture, loan stock) for project finance and assets acquisition. The deposit money banks like they are addressed in this modern era have a lot to do in promoting entrepreneurship and small scale businesses so that the possibility of impacting the Gross Domestic Product (GDP) is illuminated.

### *2.4. External Public Debt from IMF and World Bank*

The nation's external public debt has been created by the need for external finance in filling or contributing to fill the domestic savings gap, the foreign exchange gap and the technology gap in development (Ajayi, 2005). Over the years, the external public debt outstanding has been classified under various headings before 1989; the classification was into drawings from conventional loans and trade debt on the one hand and International Capital Market loans on the other hand. World Bank loans, bilateral loans and Promissory notes of both Federal and State Governments or, the other hand. However, from 1989 to date, the classification has been under Paris Club, London Club, Multilateral, Promissory Notes and Others the Paris Club of Creditors represents official government creditors (e.g. the United States of America, United Kingdom, Canada etc.). According to Romanus (2014), in 1964, the country took a loan of US\$13.1 million from the Paris Club of Creditor Nations for the building of the Niger Dam. Nigeria went to the International Capital Market (ICM) in 1978 for the much talked 'jumbo loan' of \$1 billion, and this changed the structure of Nigeria's debt from mainly concessional loans to loans with harsher repayments terms and in 2002 Nigeria's debt rose to about \$39.9bn, due largely to interests, surcharges, penalties and the crash in oil prices. The London Club of Creditors, on the other hand represents commercial banks spread all over the world. The Multilateral Creditors are such as the World Bank, International Monetary Fund (IMF), African Development Bank (ADB), International Finance Corporation (IFC), International Development Association (IDA) and International Fund for Agricultural Development (IFAD).

As regards the maturity pattern of the nation's public debts, they could be short-term, medium-term, or long-term (CBN, 2019). Short-term debts have original maturity usually of not more than one year, medium-term debts have original maturity spanning over one year but not exceeding five years. According to Ajayi (2005), other types of debts which have neither been documented nor referred to include the indebtedness of the private sector to their contractors/ suppliers through trading relations and the private sector debt through the issuance of loan stock e.g. debenture stock.

### *2.5. Historical Perspective of Nigeria's Debt Burden*

According to Romanus (2002), the phenomenon of external debt by Nigeria dates back to the colonial period. Debts contracted were the concessional debts from bilateral and multilateral sources with longer repayment periods (Adepoju, Salau & Obayelu, 2007; Omoruyi, 2010). African Forum and Network on Debt and Development (AFRODAD) (2007) noted that Nigeria's external debts increased over time because of a proportional shortage of foreign (Ajisafe, Nassar & Fatokun, 2006; Ndekwe, 2008). The debt further increased to \$33.4 billion (Essien & Onwuoduokit, 2009). Other factors that led to this sharp increase include; the entrance of state governments into external loan obligation, decline in the share of loans from bilateral and multilateral creditors etc (Winberger & Rocks 2008; Abrego & Ross, 2001). The Nigeria's attractiveness to predatory external creditors led to huge external burden on the country (Soludo, 2003; Ikeje, 2009).

The inability of many Sub Sahara African (SSA) countries has been highlighted by the Boyce and Ndikumana (2002). The reasons for the phenomenal growth in both the domestic and external public debt in Nigeria could be attributed to both the developmental financing needs-of the Government and the borrowing policies adopted from time to time. Whereas the country could be said to have pursued a very cautious external borrowing policy prior to 1978, but after their capture seemed to have been thrown to the winds and there came in an era of external borrowing spree (Nwankwo, 1984). Not only did we start to contract most loans unwisely, we also spent them unwisely (Adeosun, 1986). Many state government also successfully negotiated foreign loans (at a time when under the Constitution, only the Federal Government could borrow from abroad) and subsequently obtained Federal Government guarantees. There are

3 phases of debt cycle (Soludo, 2003) which have been undermined the economic sovereignty (Romanus, 2014). According to Ajayi (2008); Bello & Obasaki, (1999) SSA countries were plagued by heavy external debt burden. In addition, a lot of white elephant projects were embarked upon for political reasons (Anyawu, 1986; Ajayi, 2008). Over 40% of the money borrowed from international funds market got lost on the way or was not used for the purpose for which they were borrowed. Besides, the other -0% was used in establishing companies that died after a few years in operation. Debts usually subsist out of business transactions for the purpose of developing the economy. However, when the repayments appear bleak to be made as scheduled, the issue of doubtful debts arises. Furthermore, when the repayments actually stop to come as scheduled the debts are referred to as bad debts. The questions that arise are at what point does a debt become doubtful? And how do bad debts arise? These could be applied to the different categories of debts that have been identified earlier.

## 2.6. The Impact of Nigeria's Debt Problem

Nigeria was never associated with excessive borrowing in the earlier years after independence that even the civil war which took place between 1967 and 1970 was prosecuted without recourse to foreign loans (Adejuwon, James & Soneye, 2018). Nigeria has been termed the giant of Africa for a long time but it is so worrisome to note that the country suffers under the crushing weight of a debt overhang which means that the country has a huge external debt that constitute a significant proportion of the GDP (Babawale, 2007). According to Ajayi (2005), the effect of bad and doubtful debts on the economy can be discussed from various points of view and in the case of banking credit to the economy, once debts turn bad or doubtful, the lenders are burdened with how to deal with the debts with a view to recovering the whole or part of debts. This usually involves a lot of efforts from trying to make personal contacts, agreeing to re-scheduling and in very bad cases resorting to legal proceedings.

In respect of external public debt outstanding, the burden of debt servicing has become very cumbersome. For instance, the cumulative debt service payment in the country has grown from US\$1.5 billion in 1985 to US\$10.841 billion in 1990, US\$13.675 billion in 1995, US\$21.905 billion in 2000, US\$33.288 billion in 2001, US\$1.8 billion, in 2004, ₦10 trillion in 2012 and about ₦27 trillion in 2020 (Debt Management Office, 2020). These humongous amounts could have been invested into tangible self-servicing infrastructures such as durable rural-urban roads, reliable power supply, health institutions and technology that has since become the bedrock of development.

## 2.7. Debt Management Techniques

The act of borrowing creates debt and therefore debt refers to the resources of money in use in an organisation (Adejuwon, James & Soneye, 2018). Debt payment, irrespective of the type of debt involved, is a matter that should be taken seriously in terms of its management and control. According to Coyle (2004), the first step in debt management is identifying the core problems. There should always be enough attention paid to the details and especially the due date of each debt composition while appropriate action must be taken at the right time. Debt management is the key to reducing the burden of debt problem to the barest minimum by making adequate provision to offset both principal and interest. The aim of debt management is to ascertain the judicious utilization of the fund borrowed and a conscious effort towards its eventual payment. To this end caution should be exercised from the time the debt was established by subjecting the loan request to appropriate scrutiny and appraisal. Substantial planning and co-ordination must be exercised to ensure that debt is not accumulated to the extent of mortgaging the future of the nation. Where debt is used for the purpose it is meant, the future generation is projected but where the said fund is profligate the future generation is mortgaged. According to Ajayi (2005), a good debt management strategy should involve the following phases:

- Strategy Formulation
- Strategy Implementation
- Strategic Control

According to CBN (2019) External debt management is a conscious and carefully planned schedule of the acquisition, development and retirement of loans acquired either for developmental purposes or to support the balance of payment. It incorporates estimates of foreign exchange earnings. The projected returns from the investment and the repayment schedule. It also includes an assessment of the country's capacity to service existing debts and a judgment of the desirability of contracting further loans. According to Onyekwelu, Okoye and Ugwuanyi (2014), Nigeria has managed its debt in the following ways:

- Placing outright embargo on new loans
- Limit on debt service payment
- Debt rescheduling
- Debt buy back, collateralization and new money option

Consequent upon the above, the country's external debt management strategies have changed from time to time, especially since the early 1980s when the debt crisis had become pronounced. Guidelines have always been put in place as regards government borrowing, covering such areas as proper project evaluation, by both the CBN (2018) and the Federal Ministry of Finance of borrowings by State government, parastatals and private agencies. Over time are some of the measures adopted to reduce the external debt burden of the nation and these are:

- Debt conversion
- Debt restructuring through refinancing, rescheduling, and buy-back
- Limit oil debt service payments.
- Restriction on new loans

The Federal Ministry of Finance has set up the Debt Management office (DMO) to take charge of all the public debt of the nation.

## 2.8. Gross Domestic Product

Gross Domestic Product defined in terms of growth represent the total number of goods and services produced within the geographical boundary of a nation. It also represents an increase in the economic capacity to produce goods and services relative to their output in the previous years (Abbas, 2005) in Ajayi and Adewusi (2020). Economic growth can be estimated in nominal terms e.g. inflation or adjusted inflation by the percentage rate of increased in national output (GDP). According to Romanus (2014), it was expected that the debt relief is the most effective strategy for the country to recover from debt induced depression in order to resume sustainable growth that should engender the GDP. According to Akinwunmi and Adekoya (2018), the inability of Nigeria to accumulate domestic resources to bridge the abnormal budget deficit experienced in the country over the years propelled the consistent dependence on public debt especially foreign debt which is often typified by adverse lending conditions, instability of foreign exchange rates and the potential repudiation that occasions debt overhand, hence exerting negative effects on the economic growth of Nigeria.

Nigeria was expected to maximally explore her potentials which should position her on the path of economic progress and poverty mitigation. The country is blessed with very robust formal and informal sector that only need to be given a conducive trading environment and by so doing the country should pose a favorable GDP. This will no doubt keep the country far away from recession. In the light of this, Nigeria has the chance of not only meeting the sustainable Development Goals but reaffirming its position as the economic and political giant in Africa (Ikeje, 2009; Essien&Onwuoduokit, 2009; Obadan&Iyoha, 2009). According to NBS (2020) Gross Domestic Product in Nigeria is expected to reach 250.00 USD Billion by the end of 2020. It was further projected that Nigeria's GDP is projected to trend around 360.00 USD Billion in 2021 and 450.00 USD Billion in 2022.

## 2.9. Nexus between Debt and Gross Domestic Product

The economic growth and public debt of the Nigeria had been accessed by Favour, Ideniyi, Oge and Charity (2017). Result of this study indicated that external debt has significant negative impact on economic growth. A study conducted by Egbetunde (2012) revealed that a long run impact on economic growth. The study buttressed it's positive nexus between debt and GDP on the ground that the borrowed funds were more of internal loans at a reasonable rate than the external loans.

## 2.10. Theoretical Review

### 2.10.1. Ricardo Theory of Public Debt

According to Chappelow (2020), the Richardian Equivalence is an economic theory that says that financing government spending out of current taxes or future taxes will have equivalent effect on the overall economy. The theory argues that people will save based on their expectation of increased future taxes to be levied in order to pay off the debt. Ajayi and Edewusi (2020) adapted Ricardo theory to recommend that government should ensure that contracted national debts were directed towards encouraging investment in the country and government through necessary monitoring committees should ensure that national debts were directed toward the provision of basic amenities and services required for the development of communities and societies of the nation. The theory was propounded in 1891 by Ricardo. The progenitor established that the expected and unexpected expenditures of government primarily include payments approved to maintain economic balance despite the ineffectiveness of most laborers in the economy. The concept of the increasing burden stemming from the society had been highlighted by the (Precious, 2015). This theory suggests that that financing public expenditure could be productively attained by sourcing funds (Ricardo, 1819).

### 2.10.2. Agency Theory

Ross and Mitnick (1970) propounded the agency theory. According to this theory, a reputable auditor (an auditor who is perceived to meet expectations) is appointed not only in the interest of third parties, but also in the interest of management. Some form of contract exists between several groups in a company who make some kind of contributions to the company, given a certain price. Company management tries to get these contributions under optimum conditions for management: low interest rates from lenders, high share prices for investors and low wages for employees.

Jensen and Meckling (1976) supported the theory in their study of how the governance of a company is based on the conflicts of interest between the company's owners (shareholders), its managers and major providers

of debt finance. In these relationships, management is the agent while the contributors (lenders, shareholders and employees) are principals. This agency relationship has costs which include monitoring costs (costs of monitoring the agent), bonding costs (costs of insuring that the agents will not take adverse actions against the principals) and residual loss (effective loss that results despite the monitoring and bonding costs incurred). Complexities arise in the agency relationship, major among which is the fact that management has more information about the company than the principals (information asymmetry). However, management ultimately depends on the principals for the financial structuring of the business that management supervises. So, they need the approval of the principals. This therefore creates an incentive for both managers and outside investors to engage the audit market (auditors). Demsetz and Lehn (1985) supported agency theory in their study from the perspective of stewardship reporting while Laiho (2011) explored the theory in his thesis where he examined ownership structure and firm performance.

The agency theory is also used to explain the supply side of the audit market. Where the auditors fail to meet the expectation of the principals (especially in detecting and reporting irregularities and errors, even against the wish of the auditee), he suffers reputation damage/loss which may lead to a decline in their market share. The implication is that the government always borrow and act as agent to utilize the borrowed fund for projects on behalf of the people who holds as the principal. The projects should be able to add substantial value to the people.

### 2.11. Empirical Review

Senibi, Oduntan, Uzoma, Senibi and Oluwaseun (2016) in their study on public debt and external reserve: The Nigerian experience assessed the impact of public debt on external reserve in Nigeria. Izedonmi and Ilaboya (2012) assessed the public debt-growth dynamics in Nigeria from 1980 to 2010 using the cointegration and error correction mechanism. Omotosho, Bawa and Doguwa (2016) investigated the existence of threshold effects in the relationship between public debt and economic growth in Nigeria using quarterly data. Ajayi and Edewusi (2020) examined the effect of public debt on economic growth of Nigeria.

Akhanolu, Babajide, Akinjare, Oladeji and Osuma, (2018) discussed the impact of public debt on the economic growth in the Nigeria. Data from a time frame from 1982 to 2017 indicated borrowed funds particularly external debt should be minimized. Idris and Ahmad (2017) investigated the productivity of public debt in the borrowing and economic growth in Sub-Saharan region. Reinhart and Rogoff (2010) examine the relationship between high public debt levels, economic growth and inflation in 44 countries. The study indicated that high debt/GDP ratio of 90 per cent and above is associated with lower growth outcomes in both advanced and emerging market economies. The study found no conspicuous link between debt and growth for 20 advanced countries until public debt reaches a threshold of 90 per cent. The study, observed that lower levels of external debt/ GDP are associated with adverse reactions for the emerging market economies growth outcomes.

### 3. Methodology

The methodology was a time series data of the gross domestic product from 1990 to 2019 on one hand and debt growth from 1990 to 2019 on the other hand.

Year	Debt Stock (Us \$B)	Service Cost (Us \$B)	Unemployment Rate	Inflation Rate	Incidence Of Poverty	Fdi (Us \$M)
2000	28,273	1.71	N/A	N/A	N/A	N/A
2001	28,347	2.12	13.6	18.9	52.1	3,125
2002	30,991	1.16	11.2	12.9	56.4	3,478
2003	32,916	1.50	11	14	55.8	5,298
2004	35,944	1.75	12.6	15	54.4	N/A
2005	30,477	8.94	11.9	17.9	58.2	6,326
2006	3,544	6.72	13.7	16.2	56	7,842
2007	3,287	1.02	14.6	15.3	55.2	6,348
2008	3,720	0.460	14.9	11.6	54	6,812
2009	3,947	0.428	19.7	12.5	54	8,649
2010	4,578	0.354	21.4	13.7	69	6,098
2011	5,666	0.351	23.9	10.8	71.5	8,914
2012	6,527	0.298	25.7	12.2	72	7,316
2013	7,087.5	0.2579	28.86	12.01	80.15	7,939.7
2014	7,820.8	0.2178	31.44	11.96	85.5	8,067
2015	8,554.1	0.1777	34.02	11.91	90.85	8,194.3
2016	9,287.4	0.1376	36.6	11.86	96.2	8,321.6
2017	10,020.7	0.0975	39.18	11.81	101.55	8,448.9
2018	10,754	0.0574	41.76	11.76	106.9	8,576.2
2019	11,487.5	0.0173	44.34	11.71	112.25	8,703.5

Table 1: Poverty Index Table  
Source: IMF (2019) and Romanus (2014)

From the table 3.1, it can be seen that the incidence of poverty is on the rise, this is an indication that the debt relief has not in any way reduced the level of poverty in the country. Perhaps this is due to the high level of unemployment which has direct effect on poverty level. Although there is improvement in the Foreign Direct Investment (FDI), but the effect in the area of real sector development is yet to be seen.

$$Y = f(X) \setminus$$

Y = Gross Domestic Product

X = Debt = external debt, internal debt

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + U_{it}$$

$$Y = \beta_0 + \beta_1 (\text{Debt}) + \beta_2 \text{Debt}(-2) + \beta_3 \text{GDP}(-2) + U_{it}$$

#### 4. Data Analysis and Interpretation

This aspect examined the analytical procedures, method, data analysis and interpretation of the results of the model in addition to the discussion of the findings from the study. It is believed that not only would the findings and interpretation enrich the research work, it would also avail policy formulators and future researchers depth and opportunity to build on this study.

##### 4.1. Descriptive Statistics for Explained and Explanatory Variables

	<b>GDP</b>	<b>DEBT</b>	<b>GDP(-2)</b>	<b>DEBT(-2)</b>
Mean	7834.596	13635.48	7238.143	14339.73
Median	8512.55	11853.5	8257.95	11853.5
Maximum	9976.5	35944	9721.9	35944
Minimum	0	3287	0	3287
Std. Dev.	2156.042	9186.615	2655.976	9904.724
Skewness	-2.050501	1.079547	-1.613454	0.880256
Kurtosis	7.595367	3.323876	4.764573	2.539052
Jarque-Bera	44.25822	5.561017	15.78109	3.863858
Probability	0	0.062007	0.000374	0.144868
Sum	219368.7	381793.5	202668	401512.5
Sum Sq. Dev.	1.26E+08	2.28E+09	1.90E+08	2.65E+09
Observations	28	28	28	28

Table 2

Source: Authors computation, 2020

Table 2 shows the summary of the statistics of GDP, DEBT, GDP (-2), DEBT (-2) for the dependent and independent variables. The average of GDP, DEBT, GDP (-2), DEBT (-2) comprising 28 observations are 7834.596, 13635.48, 7238.143, and 14339.73 respectively. The values of GDP ranges from 0 from 9976.5, Debt ranges from 3257 to 35944, GDP (-2) ranges from 0 to 9721.9 while DEBT (-2) ranges from 3287 to 35944. In addition the value of skewness for GDP is -2.050501 which is negatively skewed while kurtosis result of 7.595367 shows series is leptokurtic and not normally distributed (greater than 3). The skewness of DEBT of 1.079547 shows it is positively skewed and not normally distributed (greater than 0) whereas the kurtosis value of 3.323876 shows DEBT is leptokurtic and not normally distributed (greater than 3).

##### 4.2. Correlation Matrix

	<b>GDP</b>	<b>DEBT</b>	<b>GDP(-2)</b>	<b>DEBT(-2)</b>
GDP	1	-0.507304	0.722971	-0.486642
DEBT	-0.507304	1	-0.333549	0.620661
GDP(-2)	0.722971	-0.333549	1	-0.652643
DEBT(-2)	-0.486642	0.620661	-0.652643	1

Table 3

Source: Authors Computation, 2020

Table 3 presents the results of preliminary correlation analyses among the variables. The results serve two important purposes. The results of the preliminary correlation analyses among the variables which indicate the level of association between each pair of the dependent and independent variables is presented in this section. The correlation analysis also examines the level of association among the independent variables to expose any association that is too high and can cause multicollinearity problem.

The correlation matrix between GDP and DEBT is -0.507304 which is a negative association between the aforementioned variables. This means as Debt increases Gdp decreases by about 50% and the implication of this is

that the impact of the debt borrowing is not being felt within the economy. There is also a negative relationship between the lag variable of Gdp and debt to a value -0.333549 which means as debt figure increases by 33%Gdp lag variable decreases by the same value.

#### 4.3. Autoregressive Model

<b>Dependent Variable: GDP</b> <b>Method: Least Squares</b> <b>Date: 01/18/20 Time: 15:39</b> <b>Sample (adjusted): 1992 2019</b> <b>Included observations: 28 after adjustments</b>				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.54E+12	2.01E+12	1.266348	0.2175
DEBT	-0.363228	0.262300	-1.384784	0.1789
DEBT(-2)	0.163825	0.353430	0.463528	0.6472
GDP(-2)	1.305167	0.078466	16.63362	0.0000
R-squared	0.974121	Mean dependent var		3.95E+13
Adjusted R-squared	0.970886	S.D. dependent var		4.44E+13
S.E. of regression	7.58E+12	Akaike info criterion		62.28294
Sum squared resid	1.38E+27	Schwarz criterion		62.47325
Log likelihood	-867.9611	Hannan-Quinn criter.		62.34112
F-statistic	301.1289	Durbin-Watson stat		1.231731
Prob(F-statistic)	0.000000			

Table 4

Source: Authors Computation, 2020

Table 4 depicts a non-significant p-values(0.1789, 0.6472) in the explanatory variables with only Gdp lag variable being statistically significant with the Gdp. The study has adopted the adjusted R Squared for analysis because it established a multiple regression. The adjusted R<sup>2</sup> of 0.97 shows that the autoregressive model is good fitted as such could be relied upon. The non-significant explanatory variables with the GDP (explained variable) show that although debt has been on the increase in the past years, it has not been able to impact meaningfully on the gross domestic product.

#### 4.4. Diagnostic Test for Serial Correlation

- H<sub>0</sub>: Model does not have serial correlation
- H<sub>1</sub>: Model have serial correlation

Breusch-Godfrey Serial Correlation LM Test:				
F-statistic	5.241118	Prob. F(2,22)		0.0138
Obs*R-squared	9.035788	Prob. Chi-Square(2)		0.0609
Test Equation:				
Dependent Variable: RESID				
Method: Least Squares				
Date: 01/18/20 Time: 15:47				
Sample: 1992 2019				
Included observations: 28				
PresampleMissing Value Lagged Residuals Set to Zero.				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-9.25E+11	1.89E+12	-0.489281	0.6295
DEBT	-0.222769	0.292779	-0.760875	0.4548
DEBT(-2)	0.220221	0.352364	0.624982	0.5384
GDP(-2)	0.068239	0.088654	0.769722	0.4497
RESID(-1)	0.529775	0.191284	2.769576	0.0112
RESID(-2)	-0.549092	0.242282	-2.266336	0.0336
R-squared	0.322707	Mean dependent var		0.001866
Adjusted R-squared	0.168776	S.D. dependent var		7.15E+12
S.E. of regression	6.52E+12	Akaike info criterion		62.03615
Sum squared resid	9.34E+26	Schwarz criterion		62.32162
Log likelihood	-862.5060	Hannan-Quinn criter.		62.12342
F-statistic	2.096447	Durbin-Watson stat		2.137767
Prob(F-statistic)	0.104244			

Table 5

Source: Authors computation, 2020

From Table 5, the study tested for the reliability of the model using the diagnostic test. The guideline is that if the Observed  $R^2$  is less than 5% we reject the null hypothesis and accept the alternative hypothesis. Likewise we accept the null hypothesis and reject the alternative hypothesis if Observed  $R^2$  is more than 5%. The above result of 0.0609 is more than 5% so we cannot reject the null hypothesis but rather we accept the null hypothesis which means that model does not have serial correlation in all ramifications.

#### 4.5. Unit Root Test for the Explained Variable

We subjected our data variables to unit root test. The unit root test is to ascertain the stationarity or otherwise of our data as this is a pointer to the credibility of the proxied variable for future decisions. The requisite model is Augmented Dickey Fuller (ADF) and the test statistic guideline is that we reject the null hypothesis where Probability Value is less than 5%. Also where the absolute value of the PDF(t-stat) is higher than the critical value, we equally reject the null hypothesis

$$\Delta Y_t = \beta_1 + \gamma Y(t-1) + a_i + e_t \quad (\text{equation i}) \quad \text{Intercept only}$$

H0: GDP has a unit root or not stationary

H1: GDP does not have unit root

Null Hypothesis: GDP has a Unit Root				
Exogenous: Constant				
Lag Length: 4 (Automatic - Based on SIC, Maxlag=7)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-5.743214	0.0001
Test critical values:	1% level		-3.724070	
	5% level		-2.986225	
	10% level		-2.632604	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(GDP)				
Method: Least Squares				
Date: 12/16/20 Time: 17:58				
Sample (adjusted): 1995 2019				
Included observations: 25 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	-0.526150	0.091612	-5.743214	0.0000
D(GDP(-1))	-0.489588	0.116148	-4.215218	0.0005
D(GDP(-2))	-0.446976	0.145099	-3.080482	0.0062
D(GDP(-3))	-0.166574	0.147676	-1.127962	0.2734
D(GDP(-4))	-0.017506	0.105680	-0.165653	0.8702
C	4871.727	782.7641	6.223748	0.0000
R-squared	0.847360	Mean dependent var		399.0600
Adjusted R-squared	0.807191	S.D. dependent var		1604.636
S.E. of regression	704.5960	Akaike info criterion		16.15869
Sum squared resid	9432656.	Schwarz criterion		16.45122
Log likelihood	-195.9836	Hannan-Quinn criter.		16.23982
F-statistic	21.09510	Durbin-Watson stat		2.256035
Prob(F-statistic)	0.000000			

Table 6

Source: Authors computation, 2020

Table 6 shows a p-value of 0.0001 which is less than 5% and this means we can reject the null hypothesis and accept the alternative. GDP does not have unit root which means series are not vulnerable to future economic threats or shocks. The implication of this stationary position by the result implies that the effect of shock dissipates over time, it equally implies that finite variance of the series is not time bound. Also the Adjusted R-square of 81%, Prob(F-stat) = 0.0000 and GDP(-1) = - 0.5262 shows the model is viable. For instance the adjusted  $R^2$  means 81% variation could be explained by factors within the model and only about 19% are as a result of factors outside the model.

#### 4.6. Granger Causality Test for the Variables

The granger causality is to test joint causatives of the variables. Therefore we can formulate hypothesis as follows:

- H0: Debt does not cause Gdp
- H1: Debt cause Gdp

Pairwise Granger Causality Tests			
Date: 12/16/20 Time: 18:11			
Sample: 1990 2019			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
DEBT does not Granger Cause GDP	28	0.03229	0.9683
GDP does not Granger Cause DEBT		1.90787	0.1712

Table 7

Source: Authors Computation, 2020

From Table 7 the result of our p-value of 0.9683 and 0.1712 shows that we cannot reject the null hypothesis at 5 % significance level because they are higher than 5% and this means we must accept the null hypothesis i.e. Debt does not cause GDP. The implication is that although debt is increasing, GDP is not being positively driven or influenced

#### 5. Discussion of Findings

The various tests conducted showed that debt accumulations by various administrations in Nigeria have not been able to significantly drive the Gross Domestic Product to a commensurate magnitude. For instance table 4.2 on correlation matrix between GDP and DEBT is -0.507304. It is crystal clear from this result that a negative relationship between debt and GDP shows that although debt has been increasing by 50% over the years, GDP on the other hand has been decreasing by the same rate of 50 %. The study agrees with the work of Izedonmi and Ilaboya (2012) where the study found a negative relationship between public debt burden and economic growth in Nigeria. The study of Izedonmi and Ilaboya (2012) also agrees with the granger causality test result which shows debt does not cause gdp attest to a rather grievous departure of our Gross Domestic Product (GDP) from the high debt that is being incurred on a yearly basis. In addition, recent study by Ajayi and Edewusi (2020) discovered 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.

Many of these studies are in conformity with our findings and supported by the various tests conducted. For example Reinhart, Reinhart and Rogoff (2012) identified 26 episodes of public debt overhang in advanced economies that is, cases where the ratio of gross public debt to GDP exceeded 90 percent in a given country on a sustained basis and the study observed that such public debt overhang episodes were associated with lower growth. In addition Oyedele, David and Omojola (2016) assessed the effect of public on economic growth in Nigeria. The position heralded by Oyedele, David and Omojola (2016), aligned with the findings of this study that because borrowed funds were not effectively channeled, meaningful impact is not being felt on the Gross Domestic Product (GDP)

#### 6. Conclusion and Recommendation

An attempt has been made in this paper to address debt management and its impact on the gross domestic product. An holistic x-ray of what constitutes debt has been given. Debt in itself is not a problem but situations where borrowed funds are mismanaged are the major worry and concern. It is evident from the analysis and findings in this study that there is a negative relationship between debt and the gross domestic product meaning that although debt appears to be on the increase the impact on the gross domestic product in terms of growth has been minimal and so the economy has not meaningfully felt the essence of many loans borrowed by the government. This position was buttressed by several other studies like Oyedele, David and Omojola (2016); Akhanolu, Babajide, Akinjare, Oladeji and Osuma, (2018), Herndon, Ash and Pollin (2013) not forgetting recent study by Ajayi and Edewusi (2020). Although there were instances of a significant relationship between debt and gdp by some other authors which largely was as a result of not factoring inflationary trends in their analysis and many of these studies relates to other economies. Examples are Pescatori, Sandri and Simon (2014), Calderon and Fuentes (2013)

Therefore, all the people involved in the debt management exercise should be committed to the cause. They should all endeavour to apply the available resources not only effectively and efficiently, but also in a transparent manner without undue leakages. All the sectors of the economy need to perform effectively and efficiently in order to enable the economy to grow. For instance, the maritime sector, the road transport sector, the oil and gas sector and the agricultural sector all need to perform well for the manufacturing sector to perform well. It is necessary that government pays attention to all these sectors of the economy all the times so that the impact of loans and other borrowings will be greatly felt. The current situation in Nigeria is a combination of all the inefficiencies of both the public and private sector operators over the years, though more could be said to have been from the former than from the latter. Now that government is interested in private sector initiatives, it is expected that more efforts should be geared towards planning to manage our debts successfully. The plan drawn up should be properly monitored and it should be noted that prevention is always better than cure. In doing this, there will be a remarkable improvement in the affairs of the various organisations that make up the corporate entity called Nigeria.

In the light of these, the following recommendations are very salient in the debt management and structure to the betterment of the people specifically and the nation in general:

- Loans borrowed must be used for the purpose for which they are meant otherwise lives of future generations will be mortgaged. This could be seen via the negative relationship between debt accumulated and the GDP
- Borrowed funds must be structured in such a way that each project pays for whatever has been invested in it to ensure easy track of all loans
- There is the urgent need for the Nigerian economy to diversify aggressively to other sources of revenue like solid minerals and agriculture so that by so doing the pressure on crude oil would be mitigated. The result makes it clear that because borrowed funds don't get to critical sectors hence effect on GDP is insignificant
- There should be adequate follow up and monitoring of projects upon which funds were borrowed to ensure accountability
- Loans must be channelled to critical infrastructures that will significantly drive the Gross Domestic Product at all times

Finally, it is fundamental to stress that although borrowings will normally be required to attain a meaningful development stage. Projects that must be initiated must be critically and carefully evaluated while adequate monitoring mechanism that will ensure that the funds are not misplaced be involved at the project's embryo till the project's adolescent stage. In a distressed or recessed economy, it becomes very essential that once a strategy has been adopted for internal and external loans, it should be subjected to continuous appraisal, monitoring, reportage and feedback from time to time, whether borrowed funds will begin to drive the gross domestic product to a reasonable position, only time will tell.

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