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CO-INTEGRATION APPROACH TO ANALYZING THE IMPACT OF EXTERNAL DEBT MANAGEMENT ON ECONOMIC GROWTH OF NIGERIA

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Abstract

This study examined the impact of external debt management on economic growth of Nigeria. This study has used annual time series data collected over the period of 33 years (1986 – 2018). The data for the study were collected from the Central Bank of Nigeria statistical bulletin annual report. The variables on which data were collected include: real gross domestic product, external debt, external debt service, balance of payment and exchange rate. Data were analyzed using the Ordinary Least Squares (OLS) multiple regression analysis. It proceeded with descriptive statistics; Augmented Dickey Fuller (ADF) unit root test, co-integration test and Auto-Regressive Distributed Lag (ARDL). The study revealed that the impact of external debt management on economic growth of Nigeria over the period under review was statistically significant with external debt, external debt service payment and balance of payment but statistically insignificant with exchange rate. The study recommended that governments should establish and adopt an optimal balance between external debt acquisition and application /allocation of the acquired funds to productive projects for the purpose of making a high output and a steady economic growth. The management should live up to expectation by encouraging efficient commitment of borrowed funds to productive projects so as to comply with debt serving agreement and outright payments, measures such as improving exports should be implemented to ensure that local currencies are stable.

Keywords: External Debt, External Debt Management, External Debt Service Payment, Balance of Payment, Exchange Rate, Economic Growth.

1. INTRODUCTION

It is in the habit of developing countries to borrow fund for development needs. Since domestic fund is insufficient to meet the needs of economic growth, Nigeria being a developing country has to depend on various sources of external fund. External debt is simply a part of a county's debt that was loaded from overseas lenders together with commercial banks, Government and international financial institutions. The inability to utilize the debt on productive projects that will yield positive output and to efficiently meet the requirements of servicing the debt is some of the major problems face by Nigeria. External debtappears to be a general occurrence in recent time due to its accumulation, especially for the emerging nations which are at the stage of economic recovery and development where the supply of internalsavings are not enough withhighcurrent account payment deficit and in-depth need of import of capital to increase domestic resources. The essence of external debt is to enable countries without sufficient internal financial resources source for foreign aid (Udeh *et al.*, 2016).

Nigeria's external debt management is one major macroeconomic problem both to the economic agent particularly at the beginning of the years of her independent (Ogege & Ekpudu, 2010). Despite the fact that many efforts were made to control and reduce debt on Nigeria's economy by the government over the years. Such efforts include: the deliberate application of essential resources towards debt servicing, the renewal of the terms of loans and the alteration of structure to debt conversion programme. One particular interest of the government is on the pressure caused by the country's debt compared in the direction of the nation's money owing overhaul capability (Udeh *et al.*, 2016).

Foreign borrowing can be beneficial in providing the resources necessary to prop up economic increase and development; it has its salient detrimental costs (Uma, Eboh & Obidike 2013). These costs gradually outweigh the benefits for many developing nations. The major cost connected with the accumulation of a huge external debt is ''debt serving''. Debt servicing is the payment of cashof the principal and piled up interest. Balance due servicing is a contractually stable exchange on domestic real income and savings as the debt becomes bigger or as interest rate increase. With the purpose of saying, debt servicing requirement can be carried out through export earnings (Kehinde, 2012).

The genesis of external debt of Nigeria was in 1958 as 28 million US dollars was borrowed from the World Bank intended for railway building. Within the interval of 1958 as well as 1977, the call for external debt was not a lot. The decrease in oil prices in 1978 caused a negative influence on the finances of the government. The government had to borrow to be free from the difficulties of balance of payment and to finance some projects. A jumbo loan of 1 million

U.S dollars was the first money borrowed by the government from the global capital market (GCM) but in 1978, it increased to 2.2 million U.S dollars.

Since then, the rate of lending increased which leads to external debt contractual requirement by the state government. As stated by Debt Management Office (DMO), Nigeria sustained external debt of ₦17.3 million in 1980. In order to resolve the problem, various external debt-financing options were taken to consideration in the Structural Adjustment Programme (SAP) in 1986. Since the introduction of this programme, Nigerians have been falling into one difficulty after another starting from the devaluation of the country's currency (naira) through Second Tie Foreign Exchange Market (SFEM), now Foreign Exchange Market (FEM) to the increasing prices of inflation goods such as raw materials and agricultural products etc.

Prior to the $18 million debt termination approved for Nigeria in 2005 by Paris Club, the external money owing of the country was close to $40 million with over $30 million of the sum being payable to Paris Club alone. The history of Nigeria's enormous debts can barely be separated from its decades of misrule and the continued irresponsibility of its rulers. In 1971, Nigeria's debt stock amounted to $1 million. Within 1991, it increased to $33.4 million, and instead of decreasing, continued to increase, especially the unquenchable desire of political leaders to acquire loan for carrying out uncertain projects and also with the undefeatable system of debt servicing.

Nigeria was to disburse a huge sum of $4.9 millioneach year lying on debt service prior to the debt termination deal (Aluko&Arowolo, 2010). Such indebtedness would have made it impossible to attain exchange rate constancy or significant growth in the country. The consequence of the Paris Club debt termination was instantaneously observed in the chronological decrease of the Nigeria's exchange ratein comparison with the US Dollar from 130.6 Naira within 2005 up to 128.2 Naira in 2006, and decreased down to 120.9 in 2007 (CBN, 2009). Even as at that, the economic growth rate increased by Nigeria has been contradictory in the period of post-debt relief as it plunged from 6.5% in 2005 to 6% in 2006 and subsequently increased to 6.5% in 2007 (CBN, 2008). It was expected that as the year goes by, the benefits for the terminationof debt will manifest.Instead it was cleared up in 2009 via the international financial and economic disaster, which was impulsive in August 2007 by the disintegration of the major lending market in the United States. The consequence of the catastrophe on swap over rate of Nigeria was unusual as the Naira exchange rate in comparison with the US Dollar rose astronomically from about N120/

$ in the last quarter of 2007 to more than N150/$ (about 25% increase) in the third quarter of 2009 (CBN, 2009). This is attributed to the sudden drop in foreign earnings of Nigeria as a consequence of the constant fall of crude oil price, which plunged from US$147 per barrel in July 2007 and by December 2008 the price for a barrel was as low as US$45 (CBN, 2008).

Nigeria's external debt stock was increasing subsequent to the debt termination in 2005; available statistics is an evidence of this. Nigeria's external debt outstanding rose in the year 2006 to the year 2009, with the following figures $3,545 million, $3,654 million, $3,720 million $3,947 million respectively and so it continues to increase to date (CBN, 2018). The study therefore, empirically ascertained the impact of external debt management on economic growth of Nigeria within the period of 33 years (1986 – 2018).

1.1. Statement of the problem

The Nigeria's debt profile despite cancellation of some external debt by London club, have remained worrisome in the minds of researchers and policy makers. Prior studies on the related subject matter appear to have laid more emphasis on positive significant of external debt at the cost of its negative significant on the economic growth of Nigeria. This outcome leads to imbalance in such empirical studies and therefore constitutes a lacuna for the present study.

One of the problems faced by Nigeria in her external debt management is the inability to utilize the debt properly for economic growth. Due to corruption, the debt has been converted to unnecessary projects that its output will not be enough to cover the principal payment and the interest. The consequence of this is that Nigeria economy could not get to the height it ought to reach. This plainly explains that the utilization of loan is what matters. Borrowing to fund government expenses is not bad but what the debt is spent on and the mode of debt serving is the issue of concern.

According to (Udeh *et al.*, 2016), debt does not essentially mean a slow growth of an economy; it is a nation's incapability to comply with debt service requirements coupled by insufficient awareness on the type and structure of the debt as well as the money the nation is required to pay raise hardship in the economy and woes in the nation.

This is another important call out that developing nations are facing, including Nigeria. The incapability of Nigeria as a country to successfully meet up with its debt servicing necessities/payments has exposed the country to a huge responsibility of debt service. The consequences of this debt service responsibility causes further problems for the country, in addition toa rise in the fiscal short fall also which is caused by debt servicing level. This causes a severe risk to the economy as a huge sum of the nation's income has gone to waste. Meanwhile, despite the substantial in literature on the subject matter, earlier studies remained silent on the significant of external debt management on economic growth of Nigeria.

It is on this premise that this study is set to evaluate the impact of external debt management on economic growth of Nigeria within the past 33 years.

2. REVIEW OF RELATED LITERATURE

2.1. Conceptual framework

External debt is defined as that fraction of money owing by a country which was borrowed from other countries lenders such as commercial banks, international financial institutions or government.The necessity of external debt was due to insufficient domestic financial resources of a country to fund public goods that would raise the welfare of the nation and stimulate economic growth (Ademola *et al.*, 2013). External debts are source of finance from outside the nation's resident which is mainly in foreign currency with interest to finance précised project.

Momodu (2012) states that the Asian Tigers- Malaysia, Singapore, Indonesia and Taiwan and South American country, Brazil proved this theoryto be significant in their countries. These countries were developed through the proper implementationof external debt.

External debt is termed as an undesirable significant on the economic growth and development of a country, for instance at a stage when the debt could not be paid let alone the interest. The debt then became a burden to the country thereby bridging economic growth. Debt servicing reduces funds that a country has for investment purpose.

In debt management,the following rules regarding to debt ought to be considered, total debt to local revenue ratio, debt to gross domestic product ratio.

External debt service refers to the maintenance accorded to the borrowed fund so as to keep the repayment agreement fresh in the mind of the borrower (Safadari & Mehrizi, 2011). It is the agreed interest rate paid to the lenders. In like manner, balance of payments simply means an orderly record of financial transactions of a nation / economy for a specific era of point in time, typically one year, between residents of a nation and non residents all over the world. These transactions involve goods and services, changes in claims of the liabilities all over the world, the prerequisite and accepting of authentic assets and income. Especially, the records transactions of balance of payments on goods and services as well as income, ownership change as well as added changes in an economy's holdings of special drawing and monetary gold's (Obudah & Tombofa, 2013).

Atiqueand Malik (2012) opined that some countries with a weak balance of payments position will eventually experience low growth in the economy because of low turnout of local industries; this may be viewed as too costly from a political or social point of view. They stress that an efficient and appropriate administration of balance of payments can be very useful to all developing nations in a way to make sure the contentment of fundamental needs, general resources mobilizationand to ensure permanent and equilibrium of payment viability. Amassoma, (2011) observed that nations undergoing problems within balance of payments should strictly boost local production so as to produce for exports and encourage gradual appreciation of her currency to result to a change on the expenditure problems.

2.1.1. Concept of Debt

According to Cambridge Academic Content Dictionary, debt is the amounts of money that is owed by a person, company, country, etc. and that is usually have to pay interest on. It is a condition in which an individual or a nation owes something, especially money that is still to be paid to someone else. Oyejide *et al.* (2011) posited that debt is seen like the resource or cash used in a business / society so as tonot contribute via its vendor by means of and does not in any supplementary way fit in to them. Debt is also a liability that is represented by a monetary tool or other recognized equivalent.

Debt, be it internal debt or external debt could be classified into two such as:

a) Productive debt and

b) Dead weight debt.

Productive debt: This refers to finance that is gotten to facilitate the country purchase some kind of assets that will be use for economic development.

Example is loan obtained for acquiring refineries, electricity, factories, and other valuable assets.

Dead weight debt: This refers to as a loan obtained from foreign countries for war and also expenses on current expenditure. Once a nation obtains an advance from foreign nations, it means that a nation can import from foreign nations goods and services in the direction of the rate of the money that was borrowed, andequally export something of importance in exchange. Once it is time for the repayment of the capital and interest, that same nation has to go throughthe trouble of exporting ofgoods and service without getting any kind of imports in exchange. In the case of these two classes of debt mentioned the borrowing countries (borrowers) future savings is required to cover the repayment of the capital and the interest as well. Therefore, any investment financed throughdebt should be very productive and should be managed very well enough as to yield a very high profit that will be higher than the debt servicing cost (Ajayi & Oke, 2012).

Without regard to danger or safety, Nigeria in her quest to finance economic growth embarks on foreign loans in a rigid condition. Yet all these efforts and requirements taken by Nigeria such as devaluation inter alia could not increase the value of productivity Nigeria's ability to pay the loan and resulted to what could be termed as external debt crisis (Uma *et al.*, 2013).

2.1.1.1. External debt

External debt is assumed to be the funds of money employed in a country which is not generated within and does not in any way come from any common people, whether corporate or person (Ogbonna&Appah, 2016). It is posited that external debt is that section of a nation's debt which is gotten from overseas sources such as overseas corporations, government or global financial institutions. Those loans, as well as interest must usually be paid in the currency in which the loan was acquired. External debt is that part of the sum money owing of a country which is due to creditors in another nation.

When home savings is not enough to fund investment, there is call for external debt to link the gap between home savings and investment. Therefore, CIA world fact book (2018) posits that external debt gives the whole public and personal debt payable to non-residents repayable in globally conventional currencies, goods or services. The figures are calculated based on the exchange rate basis, i.e., not in purchasing power parity (PPP) form.

2.1.1.2. External debt Management

Ogbonna and Appah (2016) posited that external debt management to be gamut of institutional and technical arrangement in organizing the liabilities of a country so that the debt service burden is kept within sustainable level.

The core objective of management of external debt is to make sure that the governments financing desires and its payment obligations are met at the buck probable cost above the intermediate to long run, steady with a careful degree of peril (guidelines for public debt management).

Bhatia (2008) suggests that external debt management refers to as the establishment of the conditions of issue and emancipation of public securities/ foreign loans. It entails the method of administering the external public debt that is provided for the payment of interest and is arranged for the refinancing of maturing bond/ debt. It involves a cognizant and cautiously planned timetable to the gaining deployment underlying rule or to keep up the balance of payments. It also involves how it is administered to avoid unfavorable economic debt and non government debt is involved.

External debt management comprises of three following definite interrelated processes:

a) Selecting the proper financing
b) Deciding how much to borrow and
c) Keeping absolute up – to date records on debt.

2.1.1.3. External debt service payment

World Bank (2013) explained exterior debt service payment as the totting up of most important repayment and interest repayments at the specified year. External debt service payment refers to imbursement in respect of mutually principal and interest. Real debt service is the set of paymentsreally made to please a debt responsibility, including principal, interest and any late imbursement fees.

Exterior debt service payment comprises of two following terms of payments such as:

a) The long term external debt service payment
b) The external debt service payment can be in short term,

The lengthy term external debt service payments are debt that has original or external ripeness of more than one year and is payable to non – resident by resident of an economy and repayments in alien currency, goods or service and interest in arrears on long term debt. While the external debt service payment in short term are debt within external ripeness of one year or less.

Nigeria's exterior debt service payment data was reported at 192.440 USD in December 2018. This records a reduction from the prior number of 849.973 USD million for September 2018. Nigeria's external debt service payment data is streamlined quarterly, averaging 95.286USD million from March 2008 to December 2018, with 44 comments that data reach an all – time elevated of 849.973 USD million in September 2018 and a documentation low of 47.998USD million in June 2016. Nigeria's external debt service payments data relics lively state in CEIC as well as is reported via Debt Management Office Nigeria (2018).

2.1.1.4. Economic Growth

According to Jhingan (2010)economic growth is said to be a raise in aggregate production in an economy. Frequently, but not necessarily aggregate gains in production correlate by means of increase average marginal productivity. That leads to a raise in income, stimulating consumers to open up their wallets and buy additional, which means a top substance quality of life or standard of livelihood. Economic growth is an addition to in the formation of economic goods and services, compared from one era of time to another. It can be calculated in normal or actual (adjusted for inflation) terms. Traditionally, collective economic growth is calculated in requisites of gross domestic product (GDP) or gross national product (GNP) though alternate metrics are used sometimes

It also refers to an amplify in the standard of living in a nation's population amid persistent growth from simple, low – income economy to an up to date high – income economy. It involves achieving an equilibrium in all sector of the economy in the procedure of creation of goods and services be it agriculture, finance, manufacturing, health, education, etc. (Jhingan, 2010).

Economic growth is calculated by the increase in a country's total output or real gross domestic product (RGDP) or gross national production (DNP). The gross domestic product (GDP) of a country is the totting up value of every final goods and services created inside a country over an epoch of time. Hence an increase in GDP is the addition to in a county's production.

2.2. Theoretical framework

There are several theories that contribute to the impact of external debt management on economic growth of Nigeria. However, this study is hinged on the dependency theory.

2.2.1. The Dependency Theory

In the 1770s, the developing nations initiated the dependency theory. This theory is derived on the supposition that income flows from outside boundary (periphery) of poor and not fully developed countries to rich countries thereby enriching the latter at the cost of the former. Dependency theory indicates that the poverty of the countries in the periphery is not because they are not coordinated or fully coordinated into the world system as is often debated by free market economists, but because of how they are coordinated into the system (Charles 2018).

From this point of view, a general school of thinking is the bourgeoisie scholars. To them, the state of underdevelopment and the steady reliance on countries that are not fully developedrelying on developed countries are as an end result of their domestic mishaps. They believe this matter can be expounded by their deficient in of seal integration, dispersal of capital, low altitude of technology, reduced institutional framework, poor headship, dishonesty, mismanagement, etc. (Momoh & Hundeyin, 1999). They see the under-development and reliance of the countries of the third world as being within inflicted relatively than outwardly afflicted. To this school of thought, the alternative way toprevent the crisis is for third world countries to seek overseas support in terms of help, loan, investment etc. and permit free of disruption in the functions of the Multinational Enterprises (MNEs). Owing to the immature nature of most LDCs, they are reliant on the developed countries for almost the whole thing ranging from technology, aid, technical support, to way of life, etc. the reliant position of most small countries has made them open tothe products of the Western municipal countries and Breton Woods institutions (Ajayi & Khan, 2011). The dependency theory gives a comprehensive account of the factors liable for the position of the rising countries and their steady and nonstop dependence on external aid for their economic development and development.

2.3. Empirical Review

A number of researches have been approved reviewing the impact of external debt on the economy. Ajili andAyoub (2020) analyze the social sustainability of the external public debt of some MENA countries, namely, Egypt, Lebanon, Morocco, Tunisia, and Turkey between 1990 and 2018. The study carries out a dual statistical and econometric analysis to determine the impact of external public debt on the population welfare. The first analysis aims to examine the evolution of the debt social sustainability indicators and the second uses the Auto Regressive Distributed Lag (ARDL) panel data estimation technique. Statistical analysis reveals that the external public debt service weighs heavily on public spending in health, education, and public investment. While the econometric study establishes that the ratio of external public debt as a percentage of Gross Domestic Product (GDP) has a negative effect on the population's standards of living.The study concludes that external public debt in MENA countries has been used to finance non-productive expenditures, which have no effect on the population's living conditions.

Ajili (2020) determines whether the sovereign debt management process in developing countries is economically viable, socially equitable, and ecologically sustainable. The analysis advocates rethinking the sovereign debt around the idea of social sustainability, that is, the non-questioning of the living conditions of present and future generations and their economic, social, and political choices. The chapter suggests the need for developing countries (1) to ensure a comprehensive management of public debt based on the co-responsibility of both the indebted countries and their creditors, (2) to borrow in priority to finance the most productive investment expenditures, which can have an impact on the populations' standards of living and on economic prosperity, and (3) to reduce the use of austerity programs and anti-social policies.

Akram (2010), in a study of the impact of external debt on economic growth and investment in Pakistan, developed a mixed model that clearly blends the function of external debt in the equations of growth. He adopted the Autoregressive distributed lag (ARDL) technique in estimating the model and the analytical result showed that both domestic debt and external debt have a negative impact on per capita GDP and investment, therefore, there is an existence of "debt overhang effect" which crowds out private investment.

Ogege and Ekpudu (2010) oversee the impact of debt burden on the Nigerian economy with the use of annual time series data from 1970-2007. Ordinary least square (OLS) method was adopted for the regression of data analysis and to test the hypotheses. The result showed a negative relationship between debt stocks of internal and external; and gross domestic product, meaning that an increase in debt stock will lead to a decrease on the economic growth rate of Nigeria.

Ezeabasili *et al.*, (2011) examined the correlation connecting Nigeria's external debt and economic growth between 1975 and 2006 applying econometric analyses. The outcome of the error correction estimates revealed that external debt has a negative correlation with the growth of Nigeria economy. They recommended that Nigeria government should put to consideration the ability to absorb more debt considering low debt to gross domestic product (GDP) as well as low debt service. Also, future debt negotiation should be considered using GDP capacity ratios.

In a related study conducted by Amassoma (2011) investigating the fundamental nexus between external debt, internal debt, and economic growth in Nigeria, employed the causality test of Granger in determining the course of causality of the variables. He found that a bi-directional causal relationship exists between internal debt and Nigeria's economic growth, whereas external debt and the country's economic growth have a causal relationship that is unidirectional; suggesting that economic growth causes external debt in Nigeria.

Atique and Malik (2012) researched on the impact of domestic and external debt on the economic growth of Pakistan independently within the period of 1980-2010. The ordinary Least Square (OLS) approach was adopted, and also co-integration test. The result revealed a significant inverse relationship in both, that is, an opposite relationship among domestic debt and the nation's economic growth, and external debt and the nation's economic growth.

Similarly, Momodu (2012) looked into the affiliation between debt servicing and economic growth in Nigeria. The study required to find the affiliation among the gross domestic product (GDP) and gross fixed capital formation of current market prices (GFCF). The Ordinary Least Square multiple regression method was employed for the analysis of data. The outcome of the analysis showed that there is a significant impact of debt payment to Nigerian creditors on thegross domestic product (GDP) and gross fixed capital formation of current market prices (GFCF).

Oke and Sulaiman (2012) oversee the correlation of external debt, economic growth level and investment volume in Nigeria designed for 28 years, starting from 1980 – 2008. The dependent variable in the study was the gross domestic product (GDP) whereas, external reserves ratio to external debt, private investment, exchange rate, interest rate, debt service ratio and inflation rate served as the explanatory variable in the study. Multiple regression analysis was used for analyzing the data. The results showed that there exist a positive relationship among external debt, economic growth and investment in Nigeria.

Charles (2018) verified the impact of external debt on economic growth in nineteen transitional economies. The adoption of panel Autoregressive distributed lag (ARDL) model was applied. It was discovered that there is a positive and significant impact of external debt on economic growth. Also, in the long run, a positive impact exists on the openness of the economy, whereas in the short run, external debt to export ratio showed a negative impact on the rate of growth of the transitional economies.

Paul (2017): in his research on the impact of external debt on economic growth of Nigeria from 1985 to 2015. Data are analyzed by the ordinary least square regression, ADF unit root test, Johnsen co-integration and error correction test. Findings reveal that external debt service payment has impacted negatively and insignificantly on Nigeria's economic growth whereas external debt stock impacted positively and significantly on the index of Nigeria's economic growth. On the control variable, external reserve impacted positively and significantly on exchange rate on growth. The study recommended from the findings that government should employ external borrowings to infrastructural development, through legislation government should improve business environment, exchange external borrowing for human capital development and begin a proper debt management policies.

Ogbonna and Appah (2016) surveyed external debt management and economic growth in Nigeria from1981 – 2013. Relevant diagnostic test were used for data analysis. Such include the multiple regression models, the unit root test and granger causality test. The analytical result showed a significant relationship among external debt payment and external debt stock on the gross domestic product (GDP) of Nigeria.

Udeh *et al.* (2016) in his study of the impact of external debt on the Nigeria economy collected data from the secondary source while the regression and granger causality of the method of analysis were applied. From the regression analysis result indicated that external debt relationship with gross domestic product (GDP) is negative. External debt service in like manner has a negative relationship with gross domestic product (GDP). The granger causality test shows that gross domestic product (GDP) has unidirectional causal relationship with external debt service which runs from gross domestic product (GDP) to external debt services, Uni-directional causality exists among external debt and gross domestic product (GDP). It recommends that external debt should mainly be for economic growth and development reasons instead of social or political reasons because it makes the economic products to enlarge in size for the advantage of the nation and the citizens as well.

3.1. Research design

This research is designed to evaluate the impact of external debt management on economic growth of Nigeriafrom 1986 to 2018. The ex post facto (after - the- fact) research design wasused for thirty threeyears study period because secondary sources of date wereexplored.

3.2. Model specification

The model adopted in this study is similar to that used by Ajayi, and Oke (2012). They carried out an empirical analysis of the effect of external debt on economic growth and development of Nigeria. They presented the extent to which external debt and economic growth of Nigeriawere related as a simple open macro-economic debt growth model. The utilitarian association among the variables is mathematically expressed as:

$$NI = F(DSP, EXTR, INTR)$$

The model engaged in their study include the following

$$NI = \beta_0 + \beta_1 DSP + \beta_2 EXTR + \beta_3 INTR + U \qquad (3.1)$$

Where:

NI = National Income

DSP = Debt Services Payment

EXTR = External Reserves

INTR = Interest Rate

U = Stochastic error term

β_1, β_2, β_3 = slope of the regression equation.

This study employed with modification the model similar to the above authors. Subject to the agreement with previous empirical studies, our models were therefore, specified mathematically as follows:

$$RGDP = f(EXD, EXDS, BOP, EXR) \quad (3)$$

Where;

RGDP = Real gross domestic product

EXD = External debt

EXDS = External debt service

BOP = Balance of payments

EXR = Exchange rate

Following little modifications made on the previous empirical model adopted the mathematical form of the equation to ascertain the impact of external debt management on economic growth of Nigeria is stated as follows:

$$RGDP = \beta_0 + \beta_1 EXD + \beta_2 EXDS + \beta_3 BOP + \beta_4 EXR + e$$

Where:

β_1, β_2, $\beta_{3,}\beta\hat{a}_4$ = the slope of the regression equation.

E = the error term.

In the equation, other variables remain as explained above.

The equations above were formed from determining the solution of the behavioral demand and supply function for the growth of Nigeria economy. It is expected that all the independent variables shall be positive and significant in the model.

4. DATA ANALYSIS AND INTERPRETATION

4.1. Unit Root Test

Table 4.1: Unit Root Test Result (Summary)

Variables	*Levels*					*1st Differences*					*Order of*
	ADF	*Critical Values*				*ADF*	*Critical Values*				*Integration*
	t-stat	*@ 1%*	*@ 5%*	*@ 10%*	*p-value*	*t-stat*	*@ 1%*	*@ 5%*	*@ 10%*	*p-value*	
RGDP	-2.79	-4.27	-3.55	-3.21	1.0000	-7.85	-4.28	-3.56	-3.21	0.0003	I(1)
EXD	-1.91	-4.28	-3.56	-3.21	0.6231	-5.59	-4.28	-3.56	-3.21	0.0269	I(1)
EXDS	-3.19	-4.27	-3.55	-3.21	1.0000	-5.80	-4.28	-3.56	-3.21	0.0299	I(1)
BOP	-3.00	-4.37	-3.60	-3.23	0.1497	-6.97	-4.37	-3.60	-3.23	0.0293	I(1)
EXR	-1.64	-4.27	-3.55	-3.21	0.7511	-5.06	-4.28	-3.56	-3.21	0.0015	I(1)

Source: Computed by the author using E-view 9 econometric and statistical package

Table 4.1 showed the unit root test result on all the variables and it indicated that they are non stationary in the same order. This is proven by comparing the values presented carefully in the statistical test of Augmented Dickey fuller (ADF) at 1 percent, 5 percent and 10 percent level of significance. From the test result, the variables showed differenced at once and at first difference,the variables are stationary. This means that, the variables were in the same order integrated I(1). Meanwhile, the result of the test had a mixed order of integration which necessitates the application of Auto-Regressive Distributed Lag (ARDL) co-integration approach to verify possible long run relationship.

4.2. Co-integration test

Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	*Eigenvalue*	*Trace Statistic*	*0.05 Critical Value*	*Prob.***
None *	0.900776	130.7288	69.81889	0.0000
At most 1 *	0.647420	59.10729	47.85613	0.0031
At most 2	0.458796	26.79045	29.79707	0.1069
At most 3	0.221362	7.757730	15.49471	0.4917
At most 4	3.99E-05	0.001238	3.841466	0.9713

Trace test point out 2 co-integratingeqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

The results in Table 4.2 are estimated using Johansen co-integration approach. The long-run relationships among the variables were estimated over a thirty three year period (1986-2018). The Johansen co-integration trace test result betokens 2 co-integrating equations at 0.05 level of significance. It implies that external debt variables and economic growth of Nigeria have a long run relationship within the reference period.

ARDL result onthe impact of external debt management on economic growth of Nigeria

The regression result of ARDL is presented in Table 4.3 and discussion exhaustively:

Table 4.3: ARDL regression result

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.**
RGDP(-1)	0.490673	0.157205	3.121221	0.0262
RGDP(-2)	0.304642	0.208849	1.458669	0.2045
RGDP(-3)	-0.520908	0.184343	-2.825750	0.0369
EXD	0.909678	0.514275	1.768855	0.1371
EXD(-1)	0.865502	0.544784	3.588706	0.0130
EXD(-2)	-0.580277	1.090113	-0.532309	0.6173
EXD(-3)	0.048478	0.593532	0.081677	0.9381
EXD(-4)	-2.045316	0.830480	-4.462812	0.0070
EXDS	14.13705	6.010680	2.351988	0.0654
EXDS(-1)	4.915305	5.264859	0.933606	0.3934
EXDS(-2)	15.68350	5.792002	2.707785	0.0424
EXDS(-3)	22.48635	5.632838	3.992011	0.0104
EXDS(-4)	-14.16097	5.509409	-2.570326	0.0500
BOP	0.644525	0.208530	3.090810	0.0271
BOP(-1)	1.184858	0.282493	4.194287	0.0085
BOP(-2)	1.368991	0.445600	3.072245	0.0277
EXR	3.311399	16.83096	0.196745	0.8518
EXR(-1)	-16.31137	14.25764	-1.144044	0.3044
EXR(-2)	29.26955	23.57520	1.241540	0.2695
EXR(-3)	24.61201	15.03585	1.636888	0.1626
EXR(-4)	-14.38044	23.77993	-0.604730	0.5718
C	-410.3936	184.1927	-2.228067	0.0764
R-squared	0.732984	Mean dependent var		36055.83
Adjusted R-squared	0.729909	S.D. dependent var		39581.11
S.E. of regression	376.9102	Akaike info criterion		14.59921
Sum squared resid	710306.5	Schwarz criterion		15.73076
Log likelihood	-187.6885	Hannan-Quinn criter.		14.95359
F-statistic	13425.28	Durbin-Watson stat		2.252055
Prob (F-statistic)	0.000000			

Source: Source:Computed by the author using E-view 9 econometric and statistical package

E-view Auto- Regressive Distribution Lag (ARDL) calculate many diagnostic statistic; the coefficient, the coefficient of multiple determination (R^2), the F-statistics, Durbin-Watson statistics and the probability values will be considered in the interpretation of result.

The Coefficient: Following the values of coefficient for external debt (EXD) in all the lags are 0.909678, 0.865502, - 0.580277, 0.048478 and - 2.045316. The value of coefficient for external debt service (EXDS) are14.13706, 4.915305, 15.68350, 22.48635 and - 14.16097. The values of coefficient for balance of payment (BOP) are 0.044525, 1.184858 and 1.368991. The values of coefficient for exchange rate are 3.311399, -16.31137, 29.26955, 24.61201 and – 14.38044. While the constant intercept (C) is – 410.3936. The value of – 410.3936 for C represents what economic growth (RGDP) output will amount to without external debt (EXD), external debt service (EXDS), balance of payment (BOP) and exchange rate (EXR).

The coefficient values of 0.909678 and 0.048478 for external debt (EXD) implies that holding other factors constant, a unit raise in external debt leads to 0.909678 and 0.048478 percent increase in economic growth (RGDP). The same interpretation holds true for external debt service payment, balance of payment and exchange rate with positive coefficients values.

Still on the coefficient of external debt; the values of – 0.580277 and -2.045316 imply that a unit decrease in external debt leads to – 0.580277 and – 2.045316 percent decrease in economic growth (RGDP). Also, the same interpretation holds true for external debt service payment, balance of payment and exchange rate with negative coefficient values.

The coefficient of multiple determinations (R^2): The R^2 value of 0.732984 means that the explanatory variables account for about 73 percent variation in economic growth of Nigeria. In other words, EXD, EXDS, BOP and EXR account for about 73% variation in RGDP.

The F-Statistics: The estimated F- value of 13425.28 is highly significant because the P- value is zero (0.000000). In other words, all the variables are statistically significant on the growth of Nigeria economy.

Durbin – Watson statistic: Durbin – Watson statistic with the value of 2.252055 indicates the absence of serial correlation in the error terms. This means the outcome of the regression should be relied upon.

The Probability value: Considering the value of probability at 5% significance level on the independent variable, EXD, EXDS and BOP implies that they are statistically significant on the growth of Nigeria economy. While the probability value for exchange rate is statistically insignificant on the growth of Nigeria economy.

DISCUSSION OF RESULTS

The study being both quantitative and explanatory brought to bear the impact of external debt management on economic growth of Nigeria with the use of annual time series data within the period of 1986-2018. The study employed a multiple regression using ARDL model which made it possible to predict the prediction of the impact on the independent variables on the dependent variables. The coefficients of the predictors which is significant at 5% level were mixed, i.e. both negative and positive showing the extent of impact the variables had contributed on Nigeria's economic growth.

Study over the years on the impact of external debt on the economic growth of a nation has aroused the interest of many scholars, even though the empirical results from a number of these studies are diverse in nature of uniformity. Our finding from the analytical result revealed that of the four independent variables tested, external debt (EXD) and external debt servicing (EXDS) exhibited an impact that is statistically significant on Nigeria's economic growth proxy by (RGDP), although this relationship is heterogeneous across the various lags. The implication of this relationship is that strategic management of the various fund obtained through external debt at one time or the other has promoted economic productivity.

Furthermore, the external debt servicing (EXDS) have impacted statistically significant on the real gross domestic product (RGDP) of Nigeria. This is an evidence that the Nigerian economy has gained at some points in time following the debt serving in operation by the nation. This significant impact is appropriate with the study by Amassoma (2011). However, our result with significant impact for external debt accumulation is in variance with Ogege and Ekpudu (2010) who found that external debt accumulation and volatility of exchange rate has hindered growth in Nigeria.

Furthermore, from the findings, balance of payment (BOP) showed a significant impact on real gross domestic product (RGDP). This means that within the reference period, the balance of payment have contributed meaningfully to the economic output in the country. Also, exchange rate (EXR) showed an insignificant relationship with real gross domestic product (RGDP). It means that within the time frame covered onthe study, the exchange rate has not contributed meaningfully to the economic output in the country. The finding of insignificant contribution of exchange rate is appropriate with Kabadiyaetal.(2012) which also discovered a negative impact between exchange rate volatility and economic growth.

5. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

This study ascertained the impact of external debt management on economic growth of Nigeria.

External debt management refers to as the establishment of the condition of issue and redemption of public securities/foreign loan. Its aim is to see that the need for borrowed fund by the government and the agreement of payment are done at a considerable cost in the long run, consistence with wise degree of risk. On the other hand, economic growth is when the production of economic goods and services gets higher from a particular period to another period. Just as the economic growth of Nigeria is important, so external debt and external debt management is an important component of the economic picture of Nigeria and failure to make repayment can cause serious economic upheaval. However, the study was carried out to evaluate the impact of external debt management on Nigeria's economic growth.

From the study, result of findings revealed the outcome of all the variables on economic growth of Nigeria.

1. External debt exerted a significant impact on economic growth of Nigeria.
2. External debt service payment also shows a significant impact on economic growth of Nigeria.
3. Similarly, balance of payment revealed significant impact on economic growth of Nigeria.
4. However, exchange rate is statistically insignificant in economic growth of Nigeria.

The empirical result reported that rise in external debt affects economic growth. The result found that not all the variables were significant on the model of economic growth within the reference period except exchange rate which was statistically insignificant, meaning that the contribution of exchange rate over these years has been minimal on RGDP. On the aggregate, there was a strong influence of the external debt on the aforementioned country's economic growth.

5.2. Recommendations

Based on the results, summary of findings and conclusions discussed in the foregoing paragraphs,the government and policymakers in Nigeria should consider the following recommendations to improve external debt management for economic growth.

1. On Nigeria's external debt, the government should establish and adopt an optimal balance between external debt acquisition and application/

allocation of the acquired funds to productive projects for the purpose of making a high output and a steady economic growth.

Furthermore, to maintain economic growth, Nigeria should not have high external debt (EXD) and low real gross domestic product (RGDP) as this will cause a risk of defaulting on external debt payments.

2. External debt service payments (EXDS) had positively and significantly impacted on the country'sreal gross domestic product (RGDP), which led to economic growth of the nation Nigeria. It explains right application of the borrowed fund which encourages responsiveness of the government to service/pay back borrowed funds from external bodies. This study recommends that the management should live up to expectation by maintaining and encouraging effective and efficient commitment of money borrowed to productive projects so as to comply with debt servicing agreement and outright payments.
3. Balance of payment (BOP) also with positive impact on real gross domestic product (RGDP); has been an instrument in enhancing the nation's economic growth. The government should therefore, produce enough economic output to maintain the payment for its growth, with improve export performance and a lower income elasticity of demand for import, as a faster economic growth will be achieved.
4. The negative impact of exchange rate (EXR) on the nation's real gross domestic product (RGDP), if it continues will indicate no future hope for the Nigeria economy through productivity and currency appreciation. This is because economic productivity and exchange rate stabilization is central to effective foreign exchange policy formulation and debt management. This means that measures such as improving exports should be implemented to ensure that local currencies are stable. As a result, the value of foreign currency denominated external debt will not increase significantly as local currencies depreciate over time.

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