# External Debt and Macroeconomic Indicators: Time Series Evidence from Nigeria

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***ABSTRACT***
*This study investigated the relationship between external debt and macroeconomic indicators in Nigeria. The objective was to investigate the effect of external debt on Nigerian macroeconomic indicators. The study used of time series data sourced from Central Bank of Nigerian statistical bulletin. Data were analysed using Statistical Package for Social Sciences. Macroeconomic indicators were proxy by real gross domestic product, inflation rate, unemployment rate and balance of payment while external debt was proxy by Nigerian external debt to London club of creditors, multilateral club of creditors, Paris club of creditors, promissory notes and external debt servicing. Ordinary least square method with the aid of statistical package for social sciences was used as data analysis method. The study found 71.3 percent while the R-square is 66.3 percent. External debt variables explained 68.6 percent variation on the dependent variable which is balance of payment. However, the beta coefficient of the variables found that all the independent variables have positive but insignificant effect on the dependent variable which is balance of payment, the study found that external debt explained 77.1 percent variation on Nigerian unemployment rate the beta coefficient of the variable shows that all the independent variables have positive relationship except Nigerian external debt with London club of creditors and found that 78.4 percent variation on Nigerian inflation rate while the coefficient shows that external debt with multilateral club, Paris club and Promissory note have negative relationship with Nigerian inflation rate while debt servicing and Nigerian external debt with London club of creditors have positive effect on Nigerian inflation rate. The study concludes that external debt has significant effect with Nigerian macroeconomic indicators. We recommend that external debt in Nigeria should be well utilized for better macroeconomic indicators.*

***Keywords**: External Debt, Macroeconomic Indicators, Gross Domestic Product, inflation Rate, Unemployment Rate, Balance of Payment, Multilateral Club of Creditors, Paris Club of Creditors, London Club of Creditors*

## INTRODUCTION

Developing countries, particularly the Sub-Saharan African countries have been confronted with key economic elements such as external debt. When the total expenditure of a country exceeds

its revenue, there will be need for such country to source for funds internally or externally in order to fill up the gap and such an act of borrowing creates debt. Therefore, debt refers to the resources of money in use in an organization which is not contributed by its owners and does not in any other way belong to them (Udoka & Ogege, 2012). Debt in any country can be external or internal debt. External debts are debts incurred outside the country while internal debts are debts incurred within the country.

The need to balance the savings-investment gap and offset fiscal deficits in developing countries compels government to source for finance outside taxation, its established main source of revenue (Ajayi & Oke, 2012). Multilateral finance institutions including International Monetary Fund (IMF), International Development Association (IDA), Africa Development Bank (ADB) and the World Bank have to the rescue. Chimniya (2013) and Ebi, Abu and Clement (2013) have identified bilateral and consortium of credit sources to include both the London and the Paris clubs. The literature has reported conflicting impact of a country's external debt on the economic agents. The rationale is that a country should borrow provided that the capital borrowed produces a rate of return that is higher than the cost of borrowing. In effect, the marginal product of external debt must be higher than its interest rate.

The issue of external borrowing as a policy to promote economic growth creates serious debate among economists and policy makers. The main concern is whether or not external borrowing leads to economic growth in debtor countries like Nigeria. This debate results in two main perspectives for explaining the relationship between external debt and economic growth. On one hand, the Neoclassical and the Endogenous growth models advocated that there is a positive relationship between external debt and economic growth. They emphasized that debt is one of the sources for financing capital formation and if financing capital formation through this means impact positively on investment, it could promote economic growth (Adesola, 2009). On the other hand, among other scholars Krugman contradict this view by mentioning external debt as one of the factors hampering economic growth (Bamidele and Joseph, 2013). Kalonji (2018) explained that heavy external debt is the cause of poverty in the debtors' country while Chongo noted that public debt is a double edged sword. This is seen in the mix opinion by Ojo and Sulaiman (2018) who examined the impact of external debt on the level of economic growth and the volume of investment in Nigeria and found that the current external debt ratio of gross domestic products stimulate growth in the short-run, but the private investment which is a measure of real and tangible development shows a decline.

External borrowing become burdensome rather than stimulate the economy (Pattillo, Ricci, & Poirson, 2002; Soludo, 2003). Significant positive impact of external debt on economic growth was reported by Utomi (2014) and Ebi et al. (2013). Together with Izedonmi (2012) and Kadiu (2015) they see external debt as a source of trade and aid, stressing its importance to the growth process of a nation. Some other studies which argue that external debt carries huge risk that far outweigh its benefits, cited the examples of some heavily indebted poor countries in Africa suggested a contrarian effect (Ijeoma, 2013; Faraji and Makome, 2013; Ezenwa (2012).

External debt is both useful and harmful to an emerging economy (Shahzad, Zia, Ahmed, Fareed and Zulfiqar, 2014). However, if it is used for a lucrative public capital investment and

infrastructural provisions, it becomes very beneficial to a developing country. Borrowing for economic development and execution of capital projects is common among unindustrialized countries. Foreign loans are usually acquired to finance public investments required to unlock economic growth opportunities of a nation (Mahmoud, 2015).

Shehu and Aliyu (2014) opined that countries borrow for macroeconomic reasons, which involves financing of capital investment, higher consumption and improvement of budget deficit. Thus, it is imperative for emerging countries to apply the external loans to financing of developmental projects such as schools, road and railway constructions, provision of electricity generating plants and every other capital investment capable of developing the debtor country (Odubuasi, Uzoka & Anichebe, 2018). Therefore, in order to achieve economic growth, most developing countries depend on external borrowing, which requires fixed repayment irrespective of the actual returns on the funds invested (Abuzaid, 2011).

The debt overhang hypothesis basically indicates that the accumulated debt acts as a tax on future output, discouraging productive investment plans of the private sector and adjustment efforts on the part of governments. Foreign debt acts like a tax when the debt situation is such that given any improvement in the economic performance of the indebted country, part of gains goes to higher debt repayments; that is, creditors receive part of the fruits of increased production or exports by the debtor country (Adesola, 2009). The above shows that there two school of thought on the effect of external debt on economic growth, this study wants to examine the real effect of external debt on Nigeria economic growth.

In Nigeria, studies on the effect of external debt have largely been devoted to describing the origin, causes and sustainability of the debt problem. Other group of studies focused on the effect of selected external debt indicators on the growth of Nigeria economy and does not focus on the sources and the compositions of the external debt. Some of these studies include: Raheem (1998; 1994), Ajayi (1991; 1995), Nyatepe – Cool (1993), Chibber and Pahwa (1994), Uwah (1995), and Iyoha (1997), Adedoyin, Babalola, Otekinri and Adeoti (2016); Adeniran, Azeez and Aremu (2016); Ajayi and Oke (2012); Aminu, Ahmadu and Salihu (2013). While all the above studies have looked into one aspect or the other of external debt, they failed to explain the effect of Nigeria source of external debt and the effect on the economic growth and therefore the studies are limited in scope, nature and analysis of external debt. Methodologically, most of them employ single equation framework which is inadequate in analyzing the long-term inter-temporal relationship between external debt and growth, thus making it difficult to capture the dynamic behaviour of the economy being modeled. This study examined the effect of external debt on Nigeria economic growth.

## LITERATURE REVIEW

### Historical Perspective of Nigeria's External Debt

According to Pattillo et al (2002); Safdari and Mehrizi (2011), it is generally expected that developing countries, facing scarcity of capital will acquire external loan to supplement domestic savings. The rate at which they borrow abroad that is, "sustainable" level of foreign borrowing depends on the links among foreign and domestic saving, investment and economic growth.

In 1958, Nigeria contracted her first external loan of US $28 million from World Bank for construction of railway. Between 1958 and 1977, foreign borrowing was minimal as debts contracted during the period were concessional loans and did not exert much pressure on the economy because interest charged on them was low and with longer repayment period. During this period, Nigeria had a sound external reserve because of inflow of foreign exchange receipts from crude oil exports. In 1974, the country was able to lend to international monetary fund under the oil facility as such Nigeria was regarded as "under borrowed" in relations to absorptive capacity of the economy (Sanusi, 1987).

The emergence of oil glut in 1978 led to the promulgation of Decree No 3 of 1978 that limited external loans federal government could borrow to (US $7.7billion). Hence, faced with serious imbalance in foreign exchange position, the Nigerian authorities were forced to raise the first "Jumbo loan" of US $1billion from International Capital Market (ICM) in 1978, which was the largest Euro loan ever obtained by an African country. Although loans from International Capital Market were generally of less favourable terms and it attracted a floating interest rate. The level of total debt drawn and outstanding increased two fold from the level of US $3.1billion in 1977 to US $6.2 billion in 1979 and it was comfortable at 37.1 percent of exports and 8.1 percent of GDP.

In 1980/81, the prices of oil rose to an all-time high of US $40 per barrel which gave a notion of buoyant economy which opened flood gates for imprudent borrowing by the Obasanjo led military administration at higher interest rates and stiffer conditions. Therefore, a new consumption pattern that favoured imported goods emerged at an indiscriminate and excessive level. There was decline in foreign exchange earnings because the production and consumption pattern that emerged in the era of oil boom was not sustained. Rather than address the problem of declining foreign exchange revenue, both federal and state governments embarked on massive external borrowing from international capital market which resulted in low external reserves, accumulated trade arrears in respect to both insured and uninsured trade credit and huge imbalance of government finances.

The report of the Debt Management Office (DMO), states that the country has been under the burden of an unprecedented debt crisis and the debt stock incurred from 1978 to 2005 has been on a steady increase, rising from US $ 5.09billion in 1978 to US $ 8.65billion in 1980 an increase of over 73.96 percent and 2004 it rose to US $35.94billion. During the period there was accumulation of trade arrears and foreign creditors refused to open new lines of credit due to the country's inability to settle her import bills, until it became necessary to seek relief by refinancing the trade arrears. (Ayadi and Ayadi 2008), in Festus et al (2019); in 1986 Nigeria had to adopt a World Bank/International Monetary Fund (IMF) sponsored Structural Adjustment Programme (SAP), with a view to revamping the economy and this made the country better-able to service her debt. According to Debt Management Office (DMO, 2015), the debt stock of Nigeria as at December, 2014 was N12.4 trillion.

After the debt relief recently granted, Nigeria became better positioned with respect to debt to the debt relief in 2006. Although substantial amount was forgiven but debt figures have continued to increase especially with increasing borrowing especially by state governments. The external debt to GDP ratio was 15% in 1977 rose to as high as 45% in 1987, with a slight decrease in 2003

which later reduced to 12% in 2016. It is believed that with prudential borrowing and consistent debt management strategies the country's economy will fall back to the right track.

**External Debt**

External debt according to World Bank (2004) is defined as debt owed by the government to non-residents repayable in terms of foreign currency, food or service. It is a source of financing capital formation of an economy. Ayadi and Ayadi (2008) opined that the amount of capital available in most developing countries treasury is grossly inadequate to meet their economic growth needs mainly due to their low productivity, low savings and high consumption pattern. The reported financial inadequacies lead countries to source for supplementary financing.

Sulaiman and Azeez (2012) noted that external debt is one major source of aid to developing nations. But the rate at which they borrow depends on the links among foreign and domestic savings, investment and economic growth so that the borrowing countries can increase their capacity output with the aid of foreign savings (Ijirshar, Fefa and Godoo, 2016). It is required that the borrowing nation should be able to invest the borrowed fund wisely especially in financing development projects like railway construction, electricity generation plants, road construction and any other major capital project of the economy. However, Ijirshar et al (2016) pointed out that external debt can only be productive if well managed by making the rate of return higher than the cost of servicing the debt.

**Economic Growth**

Economic growth refers to the increase in the amount of the goods and services produced by an economy over time. It is conventionally measured as the percent rate of increase in real gross domestic product, or real Gross Domestic Product. Growth is usually calculated in real terms, i.e. inflation adjusted terms, in order to net out the effect of inflation on the price of the goods and services produced. In economics, "economic growth" or "economic growth theory" typically refers to growth of potential output, i.e., production at "full employment," which is caused by growth in aggregate demand or observed output Arthur Lewis (1963) in his concept of economic growth incorporates the human element and sees the goal of economic growth as "the growth of the output per head of population. Sichel and Eckstein (1974) defined economic growth as an increase in the ability of the economy to produce commodities service.

**The Dual Gap Theory**

This theory was propounded by Chenery (1966) who postulates that economic growth depends on investment and that is a function of savings. Omoruyi (2005) stated most economies have experienced a shortfall in trying to bridge the gap between the level of savings and investment and have resorted to external borrowing in order to fill this gap. Ayadi and Ayadi (2008) argue that acquisition of external fund depends on the relationship between domestic savings, foreign funds, investment and economic growth. The dual gap theory is coined from a national income accounting identity which connotes that excess investment expenditure (investment- saving gap) is equivalent to the surplus of imports over export (foreign exchange gap). According to Hunt (2007) it is observed that countries with low income have a weak economic growth. This is as a result of the lack of savings able to support the investment in public sector as well as private sector. In other words, the economic growth is supported and sustained by savings and investments. The economic growth is sustained and maintained when the capital gets to a certain threshold point. The increase of capital and investment caused by the increase in external debt,

enhance automatically the economic growth due to the increase of savings over time. Thus this mechanism is known as the dual gap theory.

Mckinnon (1964) explained that the external debt is an urgent support to feel the gap in developing countries. The necessary and sufficient condition of acquiring external debt is to make sure that the borrowed funds will generate a higher return able to meet the debt obligation during the maturity and provide the economic growth to the nation. Therefore, it is expected that the external debt is able to enhance the productivity meaning the nation output. The function of external debt in the developing countries is known as a dual-gap since it allows those countries to invest more than their domestic savings.
Laurenceson (2002) developed a two-gap model for sustaining external debt. This model implies that inflows of foreign capital cause economic growth in developing countries. Thus, the assumption in the present model is that when the developing countries will receive the external debt, there will be observed an increase in investment greater than the domestic savings. By assuming that foreign exchange gap is binding, the increase in import is provided by a foreign capital inflow which implies economic growth.

Dual gap theory states that development is dependent on capital investment, which emanates from domestic savings that is insufficient in achieving the needed development of a nation. Based on this premise, the government of a developing nation seeks to acquire some form of external loans that are necessary to augment the existing domestic savings in order to be able to invest adequately in infrastructure and other developmental projects. In other words, capital projects financing is not a domestic affair, it requires external loans to be able to meet the required financial obligations for their construction, be it a dam, road and railway constructions, hospitals, schools, power stations among others.

Dual gap theory specifies that there should be excess of import over export (i.e. M>E). That is, Investment – Savings = Import – Export (I – S = M – E). In the national income accounting, surplus of investment over domestic saving is equal to surplus of import over export. Income = Consumption + Import + Savings; while Output = Consumption + Export + Investment Income. This is the basis for dual gap analysis; it indicates that savings investment gap exists when domestic saving is less than the required level necessary to achieve the target growth rate. In a similar vein, if the maximum import requirement necessary to realize the growth target is larger than the maximum possible level of export, then there is an export- import exchange gap (Adedoyin, Babalola, Otekunri & Adeoti, 2016).

Omoruyi (2005) stated that most economies have experienced a shortfall in trying to bridge the gap between the level of savings and investment and have resorted to external borrowing in order to fill this gap. This gap provides the motive behind external debt as pointed out by (Chenery, 1966) which is to fulfill the lack of savings and investment in a nation as increases in savings and investment would vis-à-vis lead to a rise in economic growth (Hunt, 2007). The dual-gap analysis is provides a framework that shows that the development of any nation is a function of investment and that such investment requires domestic savings which is not sufficient to ensure that development take place (Oloyede, 2002). The dual-gap theory is coined from a national income accounting identity which connotes that excess investment expenditure (investment-

savings gap) is equivalent to the surplus of imports over exports (foreign exchange gap).

**Dependency theory**

The dependency theory seeks to outline the factors that have contributed to the development of the underdeveloped countries. This theory is based on the assumption that resources flow from a "periphery" of poor and underdeveloped states to a "core" of wealthy states thereby enriching the latter at the expense of the former. The phenomenon associated with the dependency theory is that poor states are impoverished while rich ones are enriched by the way poor states are integrated into the world system (Todaro, 2003; Amin, 1976).

Dependency theory states that the poverty of the countries in the periphery is not because they are not integrated or fully integrated into the world system as is often argued by free market economists, but because of how they are integrated into the system. From this standpoint a common school of thought is the bourgeoisie scholars. To them the state of underdevelopment and the constant dependence of less developed countries on developed countries are as a result of their domestic mishaps. They believe this issue can be explained by their lack of close integration, diffusion of capital, low level of technology, poor institutional framework, bad leadership, corruption, mismanagement (Momoh and Hundeyin, 1999). They see the under-development and dependency of the third world countries as being internally inflicted rather than externally afflicted. To this school of thought, a way out of the problem is for third world countries to seek foreign assistance in terms of aid, loan and investment and allow undisrupted operations of the Multinational Corporations (MNCs). Due to the underdeveloped nature of most LDC's, they are dependent on the developed nations for virtually everything ranging from technology, aid, technical assistance, to culture. The dependent position of most underdeveloped countries has made them vulnerable to the products of the Western metropolitan countries and Breton Woods institutions (Ajayi, 2000). The dependency theory gives a detailed account of the factors responsible for the position of the developing countries and their constant and continuous reliance on external for their economic growth and development.

This theory is predicated on the assumption that resources flow from a "periphery" of poor and underdeveloped states to a "core" of wealthy states, enriching the latter at the expense of the former. It is a central contention and standpoint of dependency theory that poor states are impoverished and rich ones enriched by the way poor states are integrated into the world system (Todaro, 2003; Amin, 1976).

Dependency theory states that the poverty of the countries in the periphery is not because they are not integrated or fully integrated into the world system as is often argued by free market economists, but because of how they are integrated into the system. There are two schools of thought with different standpoints on the issue. One of these is the bourgeois scholars and the second one is radical scholars of the neo-Marxian political economy (Adejuwon, James & Adebayo, 2010). To the bourgeois scholars, the underdevelopment and the consequent dependence of most of TWCs is as a result of their internal contradictions. To them, this problem can be explained by their lack of close integration, diffusion of capital, technology and institutions, bad leadership, corruption, mismanagement (Momoh and Hundeyin, 1999). The standpoint views the under-development and dependency of the TWCs as internally inflicted

rather than externally inspired. To this school of thought, a way out of the problem is for TWCs to seek foreign assistance such as aid, loan, investment, etc. and allow unhindered operations of the Multinational Corporations (MNCs).

Due to the underdeveloped nature of most TWCs, they are dependent on the West for virtually everything ranging from technology, aid, technical assistance, loan, to culture. The dependent position of most TWCs has made them to be susceptible and vulnerable to the machinations of the Western metropolitan countries and Breton Woods institutions (Ajayi, 2000). Whether to ascribe the underdevelopment and dependency of the Third World to the eloquent submission of the bourgeois scholars or to subscribe to the europhoric explanations of the neo-Marxian theorists, the fact is that the dependency theory explains in details the factors responsible for the position of the Third World Countries and their constant demand for loan, and continuous reliance on foreign loan for developmental efforts.

**Overhang Debt Theory**

This theory was propounded by Krugman (1982) who explained that debt overhang as one whereby the expected repayment amount of debt exceeds the actual amount at which it was contracted. Myer (1977) presented debt overhang as excessive debt that inhibits investment, arising from the fact the benefits derived by the firm using high risky financing accrue largely to existing debt holders instead of shareholders. This theory is built on the principle that if the level of debt will surpass the country's ability to repay with some probability in the future, estimated debt service is expected to be a growing function of the country's output level. Therefore some of the returns obtained through investing in the domestic economy are efficiently taxed away by current foreign creditors and the investment made by domestic and new foreign investors is not encouraged.

Myers (1977) presents debt overhang as excessive debt that inhibits investment, arising from the fact that the benefits derived by the firm using high risky financing accrue largely to existing debt holders instead of shareholders. In other words, high level of public debt is crowding out private investment. Again debt overhang is presented when a country's debt accumulation is greater than its strength and capacity of repayment in the future. According to Krugman (1988), the debt overhang theory shows that if there is some likelihood that in the future debt will be larger than the country's repayment ability; expected debt-service costs will discourage further domestic and foreign investment because the expected rate of return from the productive investment projects will be very low to support the economy as the significant portion of any subsequent economic progress will accrue to the creditor country. Monogbe, (2016) maintained that the inability of the present generation to service the borrowed fund may be transfer to the future generation as a debt burden.

**Empirical Review**

Ajayi and Oke (2012) investigated the effect of the external debt burden on economic growth and development of Nigeria and their findings indicates that external debt burden had an adverse effect on the nation income and per capital income of the nation. High level of external debt led to devaluation of the nation currency, increase in retrenchment of workers, continuous industrial strike and poor educational system. This led to the economy of Nigeria getting depressed. Ali

and Mustafa (2012) examined the long run and short run impact of external debt on economic growth of Pakistan for the period 1970-2010. The study reveals that external debt exerts a negative impact on Pakistan economic growth.

AL-Kharusi and Mbah (2018) employed autoregressive distributed lag co-integration approach and error correction mechanism to investigate the short-run effect of external debt on the economic growth. The study made use of time series data ranging from 1990 to 2015 and were collected from the World Bank and the Central Bank of Oman. The findings indicated a significant negative influence of external debt on the economic growth of Oman. The study further revealed that fixed capital had a significant positive impact on economic growth.

AL-Refai (2015) investigated the impact of debt on the economic growth of Jordan for 1990 to 2013. The study applied Cobb-Douglas production function and the ordinary least squares method to empirically establish the relationship between debt and economic growth. The findings indicated that external debt and labour impacted negatively on Jordan's economic growth while domestic debt and gross fixed capital formation had a significant positive effect on the economic growth of Jordan.

Al-Zeaud (2014) empirically assessed the impact of public debt on Jordan economic performance using time series data that covers the period 1991 to 2010. Per capita growth was the dependent variable while the independent variables are population growth rate, investment rate, terms of trade, inflation rate, ratio of fiscal balance to economic growth, ratio of public debt to GDP, and debt service payment in Jordan. Using ordinary least square technique, results estimated showed that public debt has a positive impact on economic growth while debt service has a negative impact on economic growth in the Jordanian economy. Babatunde, Sani and Sani (2016) used quarterly data from 2000 to 2014 to determine the optimum public debt threshold for Nigeria's economic growth. The study found a threshold level of 73.70 percent for public debt as a percentage of GDP, while the external and domestic debts were projected at 49.4 and 30.9 percent, respectively. The findings implied that if the accumulated debt exceeded the expected threshold levels, it would have an unfavourable influence on economic growth.

Choong, Lau, Liew, and Puah (2010) examined the effect of different types of debts on the economic growth in Malaysia during the period 1970 – 2006. Using co-integration test, their findings suggest that all components of debts have a negative effect on long run economic growth. The Granger causality test reveals the existence of a short-run causality linkage between all debt measures and economic growth. Put together, the outcomes of these studies suggest that the relationship between external debt and economic growth is mostly negative but still inconclusive.

Ekperiware and Oladeji (2012) examined the effect of external debt relief on economic growth in Nigeria using regression technique on quarterly time series of external debt, external debt service and real gross domestic product. Applying Chow- test to the regression result they found that there was a structural break in the relationship between economic growth and external debt in Nigeria during the period 1975 to 2005. The study concluded that the external debt relief made more resources available for economic growth in Nigeria and recommended a shift towards

discretional concessional borrowing. It also identified external debt relief as a good option for poor unsustainable indebted countries as a way of making resources available for economic growth with the real sector being the focal point where value is created rather than impeding it with mismanagement and servicing debt.

Ezeabasili, Isu, and Mojekwu, (2011) investigated the relationship between Nigeria's external debt and economic growth between 1975 and 2006 applying econometric analyses. The result of the error correction estimates revealed that external-debt has negative relationship with economic growth in Nigeria. They stated that Nigeria must be concerned about the absorptive capacity noting that consideration about low debt to GDP, low debt service/GDP capacity ratios should guide future debt negotiations.

Ijirshar, Fefa and Godoo (2016) investigated the relationship between external debt and economic growth in Nigeria for the period of 1981-2014. They used both descriptive and econometric tools in empirically analyzing the time series data generated. The findings show a significant relationship between external debt and economic growth in Nigeria in a long run, while external debt servicing had both long run and short run negative effect on Nigeria economic growth. They recommend that external loan stock borrowed be effectively managed since it increases growth rate.

Imimole, Imoughele and Okhuese (2014) analyzed the determinants of external debt in Nigeria using time series data covering 1986 to 2010. Terms of trade, openness of the economy, budget deficit, gross domestic product, foreign direct investment, and exchange rate are some determinants of external debt evaluated in the study. Johansen cointegration test shows the existence of at least two co integrating relationship among the variables in the long run and the error correction model shows that exchange rate, gross domestic product, and external debt services are significant determinant of external debt in Nigeria.

Nwanne and Eze (2015) investigated the relationship between external public debt servicing and receipt and exchange rate fluctuations in Nigeria from 1981 to 2013. The findings of the study showed that external debt receipts and external debt servicing have positive short and long-run relationships with naira exchange rate fluctuations. The study concluded that whereas external public debt receipts affect exchange rate positively, external public debt servicing affects exchange rate negatively.

Udofia and Akpanah (2016) investigated the impact of external debt on economic growth in Nigeria. The issue was empirically examined using the cointegration test and the error correction test for Nigeria over the period 1980 to 2012. Findings from this study supported the traditional view between external debt and growth. Also, the study found the non-existence of debt overhang problem for Nigeria. It is recommended from the study that development activities in Nigeria be financed through increased export earnings spearheaded by export led growth strategy as well as investment in human capital as these can be the best alternative to external debt in the long run.

Ugwu and Nzewi (2016) evaluated the effect of external debt on economic growth parameters in

Nigeria. They employed ex post facto research design and the result show that positive relationship exists among external debt and economic growth parameter (GDP, exchange rate, capital expenditure). They conclude that small external debt accumulation stimulates the economy while huge debt s negative impact on the economy. Ugwuegbe, Okafor and Azino (2016) used annual time series data to investigate the effect of external borrowing and foreign aid on economic growth in Nigeria from 1980 to 2013. They used GDP as a parameter for economic growth and external debt, foreign aid, exchange rate regime and foreign reserve as the exogenous variables. Econometric techniques of Ordinary Least Square (OLS) multiple regression, Augmented Dickey Fuller (ADF), Johansen Co-integration, Error Correction Method (ECM) were applied. The results show that external debt has a positive and significant effect on economic growth, foreign aid has positive and insignificant effect on economic growth in Nigeria.

Uma,Eboh and Obidike (2013) examined of an empirical investigation of the influence of total domestic debt, total external debt cum servicing of external debt from 1970-2010 on the economic development of Nigeria show that total domestic and total external debts are inversely related to real gross domestic product, a proxy for economic development, but at an insignificant level, while Interest on total external debt relates positively.

## METHODOLOGY

This study adopted ex-post facto experimental research design to study the effect of external debt on Nigeria macroeconomic indicators. The secondary data sources of data as used in the study include: Central Bank of Nigeria (CBN) Publications and the federal office of statistics.

### Model Specification

The formulation of the model used in this study is based on theories, an empirical studies, and conceptual analysis of the effect of inflation and stock price. The study adopted the model formulated by Essien et al., (2016) on the empirical analysis of the macroeconomic impact of public debt in Nigeria. From the above stated model, we adopt the models below in this study

$$RGDP = f(EXM, EXP, EXL, EXP, DS) \quad 1$$

$$RGDP = \beta_0 + \beta_1 EXM + \beta_2 EXP + \beta_3 EXL + \beta_4 EXP + \beta_5 DS + Et \quad 2$$

$$IFR = f(EXM, EXP, EXL, EXP, DS) \quad 3$$

$$IFR = \beta_0 + \beta_1 EXM + \beta_2 EXP + \beta_3 EXL + \beta_4 EXP + \beta_5 DS + Et \quad 4$$

$$UMER = f(EXM, EXP, EXL, EXP, DS) \quad 5$$

$$UMER = \beta_0 + \beta_1 EXM + \beta_2 EXP + \beta_3 EXL + \beta_4 EXP + \beta_5 DS + Et \quad 6$$

$$BOP = f(EXM, EXP, EXL, EXP, DS) \quad 7$$

$$BOP = \beta_0 + \beta_1 EXM + \beta_2 EXP + \beta_3 EXL + \beta_4 EXP + \beta_5 DS + Et \quad 8$$

**Where:**

RGDP = Gross Domestic Product
INFR = Nigerian Inflation Rate
UMER = Unemployment Rate
BOP = Balance of Payment

EXM = Nigerian External Debt with Multilateral Club of Creditors
EXP = Nigerian External Debt with Paris Club of Creditors
EXL = Nigerian External Debt with London Club of Creditors
EXP = Nigerian External Debt in Promissory Note
DS = Debt Servicing as percentage of Gross Domestic Products
Et = Error Term
$\beta_0$ = Regression Intercept
$\beta_1$- $\beta_5$ = Coefficient of the Independent Variables to the Dependent Variables

**Data Analysis Method**

The method of data analysis to be used in this study is the multiple linear regressions using ordinary least square method. This approach, which is a quantitative technique, includes tables and the test for the hypotheses formulated by using ordinary least square with Econometric View regression analysis at 5% level of significance.

Moreover, in order to undertake a statistical evaluation of our analytical model, so as to determine the reliability of the result obtained and the coefficient of correlation (r) of the regression, the coefficient of determination ($r^2$), the student T-test and F-test where employed.

(i) Coefficient of Determination ($r^2$) Test – this measures the explanatory power of the independent variables on the dependent variables. For example, to determine the proportion of economic growth into our model, we used the coefficient of determination. The coefficient of determination varies between 0.0 and 1.0. A coefficient of determination says 0.20 means that 20% of changes in the dependent variable is explained by the independent variable(s).

(ii) F-Test: This measures the overall significance. The extent to which the statistic of the coefficient of determination is statistically significant is measured by the F-test. The F-test can be done using the F-statistic or by the probability estimate. We use the F-statistic estimate for this analysis.

(iii) Student T-test: measures the individual statistical significance of the estimated independent variables, at 5% level of significance.

(iv) Durbin Watson Statistics: This measures the colinearity and autocorrelation between the variables in the time series. It is expected that a ratio of close to 2.00 is not auto correlated while ratio above 2.00 assumed the presence of autocorrelation.

(v) Regression coefficient: This measures the extent in which the predictor variables affect the dependent variables in the study.

(vi) Probability ratio: It measures also the extent in which the predictor variables can explain change to the dependent variables given a percentage level of significant.

## RESULTS AND DISCUSSION OF FINDINGS

**Table 1: External Debt and Real Gross Domestic Product**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B | | Correlations | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Lower Bound | Upper Bound | Zero-order | Partial | Part | Tolerance | VIF |
| 1 | (Constant) | -9.158 | 8.801 | | -1.041 | .308 | -27.249 | 8.933 | | | | | |
| | EXM | .176 | .110 | 1.787 | 1.603 | .121 | -.050 | .401 | .162 | .300 | .270 | .023 | 43.871 |
| | EXP | .111 | .087 | 1.140 | 1.273 | .214 | -.068 | .291 | -.163 | .242 | .214 | .035 | 28.299 |
| | EXL | .354 | .134 | .860 | 2.638 | .014 | .078 | .629 | .169 | .460 | .444 | .266 | 3.752 |
| | EXP1 | -.009 | .145 | -.017 | -.064 | .950 | -.307 | .289 | -.195 | -.013 | -.011 | .380 | 2.628 |
| | DS | .028 | .044 | .117 | .634 | .532 | -.063 | .119 | .104 | .123 | .107 | .834 | 1.199 |

| Model | R | R Square | Adj R Square | Std. Error | R Square Change | Change Statistics F Change | df1 | df2 | Sig. F | D. W |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .713[a] | .663 | .621 | 3.03790 | .263 | 1.857 | 5 | 26 | .137 | 1.555 |

a. Predictors: (Constant), DS, EXM, EXP1, EXL, EXP
b. Dependent Variable: RGDP
Source: SPSS 22.0

From the results, the correlation coefficient is 71.3 percent while the R-square is 66.3 percent. The beta coefficient found that Nigerian External Debt with Multilateral Club of Creditors have positive impact, external debt with Paris club have positive impact, external debt with London club have positive impact while external debt in promissory note have negative impact while external debt servicing have positive impact on Nigerian Real gross domestic products.

**Table 2: Effect of External Debt on Balance of Payment**

**Coefficients**

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B | | Correlations | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | Lower Bound | Upper Bound | Zero-order | Partial | Part | Tolerance | VIF |

| Model | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | (Constant) | -172.262 | 148.171 | | -1.163 | .256 | -476.832 | 132.308 | | | | | |
| | EXM | 1.245 | 1.844 | .791 | .675 | .506 | -2.546 | 5.035 | -.106 | .131 | .119 | .023 | 43.871 |
| | EXP | .917 | 1.471 | .587 | .624 | .538 | -2.105 | 3.940 | .126 | .121 | .110 | .035 | 28.299 |
| | EXL | 2.427 | 2.257 | .369 | 1.075 | .292 | -2.212 | 7.067 | .126 | .206 | .190 | .266 | 3.752 |
| | EXP1 | 1.319 | 2.441 | .155 | .540 | .594 | -3.698 | 6.336 | .018 | .105 | .096 | .380 | 2.628 |
| | DS | 1.534 | .742 | .400 | 2.067 | .049 | .009 | 3.060 | .367 | .376 | .366 | .834 | 1.199 |

| Model | R | R Square | Adj R Square | Std. Error | Change Statistics | | | | | D.W |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F | |
| 1 | .732[a] | .686 | .630 | 51.1439 | .186 | 1.192 | 5 | 26 | .340 | 2.519 |

a. Predictors: (Constant), DS, EXM, EXP1, EXL, EXP
b. Dependent Variable: BOP

Source: SPSS 22.0

Evidence from the table above shows that the independent variables can explain 68.6 percent variation on the dependent variable which is balance of payment. However, the beta coefficient of the variables found that all the independent variables have positive but insignificant effect on the dependent variable which is balance of payment.

**Table 3: External Debt and Nigerian Unemployment Rate.**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B | | Correlations | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Lower Bound | Upper Bound | Zero-order | Partial | Part | Tolerance | VIF |
| 1 | (Constant) | -2.756 | 12.228 | | -.225 | .823 | -27.892 | 22.379 | | | | | |
| | EXM | .149 | .152 | 1.089 | .982 | .035 | -.163 | .462 | -.141 | .189 | .164 | .023 | 43.871 |
| | EXP | .169 | .121 | 1.243 | 1.395 | .035 | -.080 | .419 | .283 | .264 | .234 | .035 | 28.299 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EXL | -.043 | .186 | -.076 | -.233 | .817 | -.426 | .339 | -.188 | -.046 | -.039 | .266 | 3.752 |
| | EXP1 | .122 | .201 | .165 | .608 | .549 | -.292 | .536 | -.054 | .118 | .102 | .380 | 2.628 |
| | DS | .068 | .061 | .204 | 1.112 | .276 | -.058 | .194 | .331 | .213 | .186 | .834 | 1.199 |

| Model | R | R Square | Adj R Square | Std. Error | Change Statistics | | | | | D.W |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F | |
| 1 | .821[a] | .771 | .631 | 4.22074 | .271 | 1.936 | 5 | 26 | .123 | 2.327 |

a. Predictors: (Constant), DS, EXM, EXP1, EXL, EXP
b. Dependent Variable: UNER

Source: SPSS 22.0

From the table, Nigerian external debt explained 77.1 percent variation on Nigerian unemployment rate while significant unexplained variation 22.9 was traced to factors not captured in the model, the beta coefficient of the variable shows that all the independent variables have positive relationship except Nigerian external debt with London club of creditors.

**Table 4: External Debt and Inflation in Nigeria**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B | | Correlations | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Lower Bound | Upper Bound | Zero-order | Partial | Part | Tolerance | VIF |
| 1 | (Constant) | 21.666 | 52.361 | | .414 | .682 | -85.963 | 129.295 | | | | | |
| | EXM | -.115 | .652 | -.219 | -.176 | .862 | -1.454 | 1.225 | -.266 | -.035 | -.033 | .023 | 43.871 |
| | EXP | -.031 | .520 | -.059 | -.059 | .953 | -1.099 | 1.038 | .218 | -.012 | -.011 | .035 | 28.299 |
| | EXL | .161 | .798 | .073 | .202 | .842 | -1.478 | 1.801 | .238 | .040 | .038 | .266 | 3.752 |
| | EXP1 | .252 | .863 | .089 | .292 | .773 | -1.521 | 2.025 | .238 | .057 | .055 | .380 | 2.628 |
| | DS | -.007 | .262 | -.006 | -.028 | .978 | -.547 | .532 | -.045 | -.006 | -.005 | .834 | 1.199 |

**Model Summary[b]**

| Model | R | R Square | Adj R Square | Std. Error | Change Statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Chang | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .790[a] | .784 | .592 | 18.07330 | .084 | .478 | 5 | 26 | .789 | 1.045 |

a. Predictors: (Constant), DS, EXM, EXP1, EXL, EXP
b. Dependent Variable: INFR

Nigerian external debt can explain 78.4 percent variation on Nigerian inflation rate. The beta coefficient shows that external debt with multilateral club, Paris club and Promissory note have negative relationship with Nigerian inflation rate while debt servicing and Nigerian external debt with London club of creditors have positive effect on Nigerian inflation rate.

**Discussion of Findings**

External debt is a component of expansionary fiscal policy, from the Keynesians perspective of government intervention. It is expected that public receipt such as external debt have a significant effect on macroeconomic stability of a country most especially the developing countries like Nigeria characterized with idle human and natural resources. The objective of this study was to examine the effect of external debt on Nigerian macroeconomic stability using real gross domestic product, balance of payment, inflation rate and unemployment rate as dependent variable. While the independent variables are Nigerian external debt with multilateral club of creditors, external debt with Paris club of creditors, London club of creditors, external debt on promissory note and Nigerian external debt servicing as creditor variable. Results from the models formulated found that external debt have no significant effect on Nigerian macroeconomic stability. This finding is contrary to expectation and the theory of fiscal policy as advocated by the Keynesians economics on government intervention to bridge the deficiencies in the market system. The insignificant effect of external debt on Nigerian macroeconomic stability could be traced to non-accountability of the debt contracted, embezzlement and other macroeconomic factors. Empirically, the positive effect of the variable contradict the findings of Utomi (2014) who established a long run relationship among external debt, debt servicing, exchange rate and real gross domestic product. However, the negative findings contradict the findings of Ugwuegbe, Okafor and Azino (2016) that external debt has a positive and significant effect on economic growth and the findings Ugwu and Nzewi (2016) that small external debt accumulation stimulates the economy.

## CONCLUSION AND RECOMMENDATIONS

**Conclusion**

This study examined the effect of external debt on Nigeria macroeconomic indicators. External debt was disaggregated by different clubs of creditors such as multilateral club of creditors, London club of creditors, Paris club of creditors, Promissory note and external debt servicing while macroeconomic stability was proxy by Nigerian real gross domestic product, inflation rate, balance of payment and unemployment rate. From the results, the correlation coefficient is 71.3

percent while the R-square is 66.3 percent. External debt variables explained 68.6 percent variation on the dependent variable which is balance of payment. However, the beta coefficient of the variables found that all the independent variables have positive but insignificant effect on the dependent variable which is balance of payment, the study found that external debt explained 77.1 percent variation on Nigerian unemployment rate the beta coefficient of the variable shows that all the independent variables have positive relationship except Nigerian external debt with London club of creditors and found that 78.4 percent variation on Nigerian inflation rate while the coefficient shows that external debt with multilateral club, Paris club and Promissory note have negative relationship with Nigerian inflation rate while debt servicing and Nigerian external debt with London club of creditors have positive effect on Nigerian inflation rate. From the result analyzed above, this study concludes that external debt has significant effect with Nigerian macroeconomic indicators.

**Recommendations**

i. External debt contracted in Nigeria should be well accounted for and properly invested in the domestic economy to achieve desired macroeconomic stability. Factors that lead to negative impact of external debt on Nigerian macroeconomic indicators should be discouraged and factors that will enhance the utilization of external debt such as public policy implementation and 100 percent budget implementation should be strengthened.

ii. Macroeconomic variables should be properly monitored by the regulatory authorities and the policy makers to enhance effective utilization of public debt contracted in Nigeria and policies should be directed towards achieving macroeconomic stability by the application of external debt in Nigeria.

**iii.** The study recommends adequate measures to be put in place to manage borrowed fund by ensuring that borrowed fund are expended on capital project that will generate income and there should be appropriate measures in place that will serve as checks and balances on government spending such as institutional framework for analyzing and managing public investment projects.

**iv.** Borrowed funds should be channeled to the purpose in which they have been borrowed this will help foster economic development. The government should work towards freeing up more expenditure for capital project, as this stimulates growth, encourage productivity as against the current focus on more recurrent spending, which only compounds our fate as a consuming nation, thereby affecting long run growth in the country.

**v.**

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