Effect of Foreign Debt on Economic Growth in Nigeria

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Abstract

Nigeria has been on a foreign debt a rising profile overtime, however it is not commensurable with her developmental purposes; hence this study examined the effect of foreign debt on economic growth in Nigeria for the period of 1986-2022. It used time series data sourced from Central Bank of Nigeria Statistical Bulletins and World Bank Development Indicators. Using descriptive statistics which shows that the data were normally distributed based on Jacque Bera Statistics and its Probability. It applied Augmented Dickey Fuller (ADF) test which revealed that I (1) and (0) order of integration exist among the studied variables which necessitated the adoption of Autoregressive Distributed Lag model (ARDL). The ARDL F-bounds test reveals that long-run relationship exist among foreign debt, foreign debt servicing, exchange rate, inflation rate and economic growth in Nigeria. Furthermore, long-run result showed that foreign debt and exchange rate have positive effect on economic growth and statistically significant in the model except exchange rate that was insignificant. On the part of short-run dynamics, ECM revealed the speed of adjustment that foreign debt variables and economic growth converged back to equilibrium point in 1year and 8 Months period. It also revealed that foreign debt, exchange rate have positive effect on economic growth in Nigeria and statistically significant. Whereas, foreign debt servicing and inflation rate have negative effect on economic growth and statistically significant in the short-run. Therefore, this study submits that foreign debt has positive and significant effect on economic growth within the period of the study. Finally, the study recommended the following policy options for the government, policy makers, and institutions regulators to formulate fiscal policy that will open ways for alternative sources of finance rather than depending on foreign debt to execute developmental projects and infrastructural needs, minimise the negative effect of foreign debt servicing on Nigerian economy through full implementation of diversification policy of Federal Government of Nigeria, encourage and improve export production base of Nigerian economy in order to reduce the effect of exchange rate hikes and ensure price stability to ameliorate the negative effect of inflation on inclusive economic growth prospects in Nigeria.

Keywords: *Foreign Debt, debt servicing, debt components, ARDL,*

1.0 INTRODUCTION

Foreign debt has been a vital instrument used in both developed and developing economies to augment the national resources for economic growth and development. Meanwhile, foreign debt is a fund borrowed in foreign currency from non-resident creditors or other countries. In the word of Todaro and Smith (2011), it is the total private and public foreign debt owed by a country. According to Ajie, Akekere, and Ewubare (2014), foreign debt refers to the unpaid portion of external resources acquired for developmental purposes and balance of payments support, which could not be repaid in later period.

In recent time, many advanced nations have used foreign debts as alternative sources of capital or funds for building the economy or supplementing the national resources. For instance, USA and China are using foreign debt to build their economies (The world Fact Book, 2021). Meanwhile, United Kingdom and France utilized foreign debt to develop their economies; proving that foreign debt is an essential tool for macroeconomic goals attainment of improving the standard of living, stabilize prices, reduce rate of unemployment, ensuring balance of payment equilibrium, improving economic growth and development of the nations.

On the part of Africa, South Africa and Egypt were making use of foreign debts to develop and strengthen their economic growth and development (World Bank, 2021). As regard to the Nigerian economy, foreign debt has been used for developmental projects even before independence in 1960 (Aladejare, 2021). The country secured her first loan of $28 million for railway construction in 1958 (George & Inimino, 2020). Since then, the Nigerian foreign debt were on the increase. Moreover, the available statistics reveals that Nigeria's external debt stock was $13.1 billion as of 1982 and it grew further to $23 billion in 1987. It even went to $28.7 billion in the year 1988 just a period of one year (Gbosi, 2015).

In addition, the foreign debt in Nigeria has been on the rising path as from 1982 to date. For example, in 1993, the foreign debt stood at ₦633.144.4 million. In this outstanding debt, the Paris Club is amounted to 83.2 % in 1993. The remaining part of the outstanding was owed to the London Club, Promissory Note Transfers, the unilateral creditors and other sources (Central Bank of Nigeria's annual report, 1994). More to that, the foreign debt in Nigeria grew to ₦648.81 billion in 1994 and it continuous to 1999 prio to democracy it reached N2, 577.37 billion. That is, the foreign debt increased by 297% within this period (CBN, 2021).

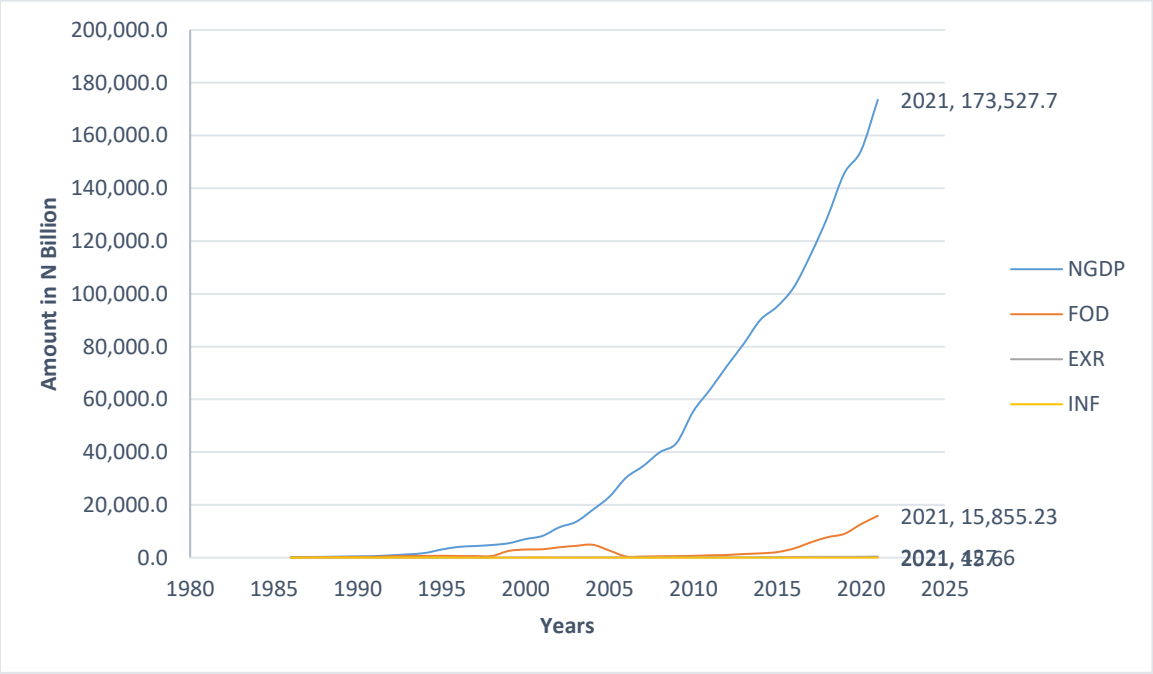
As the country introduced democracy in 1999, the foreign debt took different dimensions. In addition, the foreign debt continued its trajectory growth from ₦3, 097.38 billion in 2000 to ₦4, 890.27 billion in 2004 which is about 58 % increase in the foreign debt. However, Nigeria was able to negotiate for foreign debt relief which amounted to the tune of$18billion out of $30.85billion owed to Paris Club in 2005 (Debt Management Office, 2007). This effort really minimised the level of external debt burden on Nigerian economy as seen in the debt trend of ₦451.46 billion to ₦896.85 billion for the period of 2006 to 2011. In this periods, Nigerian economy experienced the lowest foreign debt burden as compared to any other time in Nigeria (Debt Management annual report, 2013).

In the same vein, as from 2012 to 2022, the amount of external debt has grown N1026.38 billion in 2012 to ₦15, 877.37 billion in 2022 (CBN, 2022). This worsened the Nigerian economic situations where unemployment rate became high, inflation rate tend to hyper-inflation, exchange rate fluctuation, and high debt servicing, unfavourable balance of payment, and economic recession are common experience in the country.

Foreign debt (FOD) was ₦45.45 billion in 1986 but it increased to ₦15, 855.23 Billion in 2022 within the study period. Some of the reasons for geometric growth in the Nigerian foreign debt are mismanagement of borrowed funds, diversion of loans for private use, misallocation of loan for white elephant projects (Ajaokuta steel industry that gulfed $5 billion without returns, reconstruction, rehabilitation and reconciliation of southeast zone back to Nigeria government after the civil war, 1969-1970), over dependence on crude oil as sole sources of foreign earnings and abandoned of agricultural sector. More to that, high level of foreign exchange rate fluctuations, inflation rate and high debt servicing by the Nigerian government.

Recently, unemployment, insecurity and uncontrollable spending during election may be responsible for the high growth in foreign debt in Nigeria. Apart from that, embezzlement of public funds by the new generation politicians, political instability, perks and allowances for political appointees and corruption are some of the reasons for the increase in external debt in the country. This study graphed this phenomenon in Figure 1.

Figure 1: **Nigerian Real Gross Domestic Product and Foreign Debt: 1986- 2022**



Source: CBN Statistical Bulletins Data, 2022.

From Figure 1, external debt is revealed to influence gross domestic product positively within the study period. For instance, in 1986, foreign debt was ₦45.45 billion and real gross domestic product (GDP) valued at ₦198.1 billion. Moreover, as of 1987 to 1996, foreign debt was ₦100.7 billion in 1987, and it grew to ₦617.32 billion in 1996. Meanwhile, GDP was ₦244.70 billion in 1987 as a result of debt; it rose to ₦4, 086.1 billion (Debt Management Office, 2007).

Furthermore, as of 1997, foreign debt was ₦21.8861 billion and real gross domestic product (GDP) stood at ₦595.93 billion. In the same vein, within the period of 1997 to 2006, foreign debt was ₦595.93 billion in 1997, and it grew to ₦451.46 billion in 2006. Meanwhile,

GDP was ₦4, 418.7 billion in 1997 as a result of debt; it increased to ₦30, 375.2 billion (CBN, 2009).

In addition, between the periods of 2007 to 2015, the foreign debt in Nigeria stood at N438.89 and GDP was valued at ₦34, 675.9 in the country. Moreover, the debt increased to ₦2, 111.51 and GDP was ₦95, 177.7 in 2015 respectively. This growth in external debt is as a result political instability and mismanagement of National resources by the Nigeria government (National Bureau of Statistics, 2020)

Finally, foreign debt take a centre stage in the current administration that engaged in it due to the reasons of construction of Abuja- Kaduna Railway, Ibadan express Road, Ibi Bridge, Mambilla hydroelectric power in Taraba state and financing of medium term plans of Federal Government (ERGP, 2017). These reasons have made the Nigeria government to borrowed loans to the tune of ₦3, 478.92 billion in 2016 and it grew to ₦15, 855.23 billion in 2021. Meanwhile, this foreign debt has contributed minimally to real GPD that stands at ₦173, 527.7 billion in 2021 in Nigeria

This shows that foreign debt over the years has contributed to the economic growth and development of the country but the growth was not reflecting in the life of average Nigerians who suffer poverty, unemployment, harsh exchange rate and poor human development index in the economy (United Nations development programme, 2018).

Moreover, in the trend of foreign debt in Figure 2, it indicates that greater amount of revenue of the country is allocated to finance external debt. It means, the revenue which could have been applied to fight poverty, reduce unemployment rate, improve standard of living and economic growth is diverted to servicing external debts for the country. From the above evidence, it requires empirical examination of the effect of foreign debt on economic growth in Nigeria. Hence, the need to examine the effect of foreign debt on economic growth in Nigeria arises.

Purpose of the study

The main purpose of this study is to examine the effect of foreign debt on economic growth in Nigeria. Meanwhile, the specific objectives of the study include to:

i. evaluate the effect of foreign debt servicing on economic growth in Nigeria,
ii. assess the long-run effect of foreign debt on economic growth in Nigeria and
iii. determine the component of foreign debt with the most impact on the Nigerian economy.

Research hypothesis

This study on effect of foreign debt on economic growth in Nigeria has formulated these hypotheses for statistical verification in the course of the analysis as:

Ho_1: Foreign debt servicing payment has no effect on economic growth in Nigeria,
Ho_2: Foreign debt has no effect on economic growth in Nigeria and
Ho_3: There are no component of foreign debt that have most impact on the Nigerian economy.

Furthermore, the scope of this study covered a period of 36 years (1986 – 2022). It restricted its analysis to the Nigerian economy. Moreover, the variables included in the study are real gross domestic product, outstanding of external debt, debt servicing ratio to GDP, exchange rate, effective governance index and inflation rate.

This study on effect of foreign debt and economic growth in Nigeria would be useful to many stakeholders and policymakers in the Nigerian economy. It has contributed to the empirical literature in providing in-depth review on the component of foreign debt in Nigeria.

Theoretically, it verified some of the theories formulated on public finance in advanced economies to see whether the theories can be apply in Nigeria situation or not. For instance, it tested the applicability of Keynesian theory of Public expenditure on the Nigerian economy to see whether it works for Nigerian economy. Moreover, Keynes regard external debt as an economy's asset, given that a constantly deficit financing is always seen as significant and positive impact on economic in Nigeria.

2.0 LITERATURE REVIEW

In this section II, the analysis uncovered the concept of foreign debt, its compositions or sources, rationale for the external debt, overview of foreign debt in Nigeria, determinants of external debt, external debt servicing, exchange rate, inflation, interest rate, economic growth in Nigeria.

Foreign debt is interchanged with external debt in this research. Foreign debt refers to stock of liabilities with different tenors accumulated by government operations in the past and scheduled to be fully repaid by government in the future (CBN, 2022). According to Central bank of Nigeria (2022), foreign debt covers only recognized direct financial obligations of government on which government pays interest on redemption.

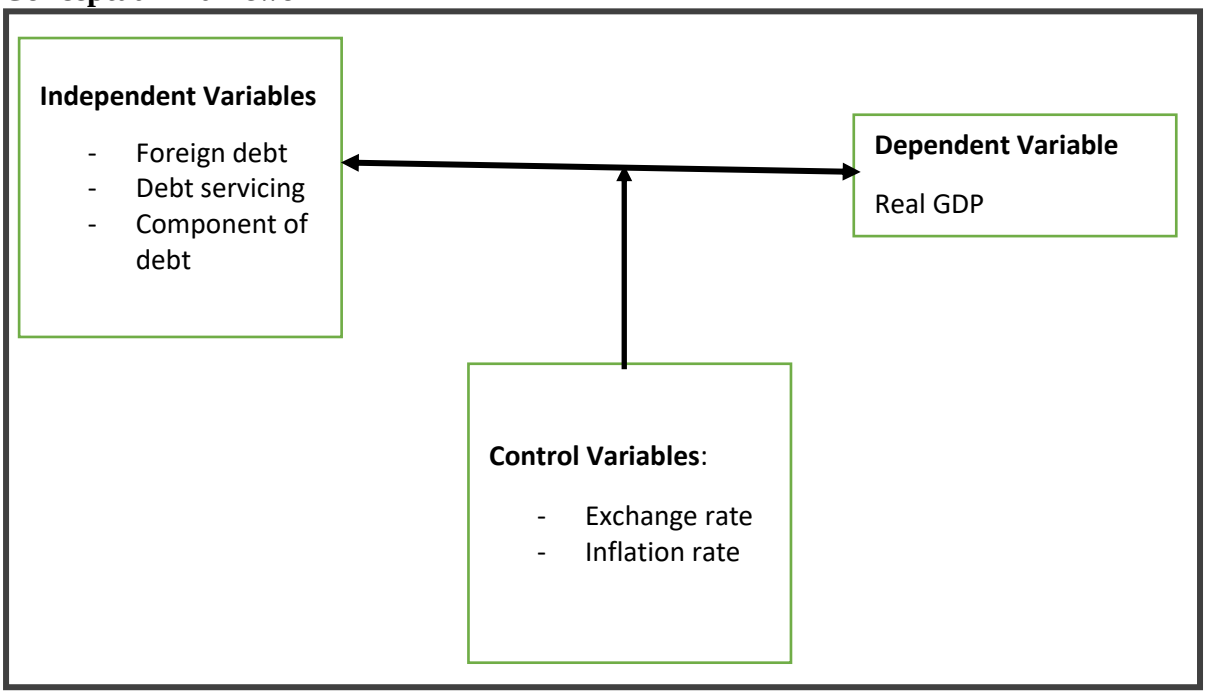
Foreign debt refers to sources of deficit financing by any government across the globe. It has many sources to the economies which includes: the Paris Club of Creditors, London Club of Creditors, Multilateral Creditors, Promissory Notes Creditors, Bilateral and Private Sector Creditors (George *etal*, 2020). According to Central Bank of Nigeria (2021) outlined the sources of foreign debt available for Nigerian economy as: Multilateral club of creditors, Paris Club, London Creditors, Promissory notes, Bilateral, Euro Bond, Diaspora Bond and others. Among these sources of external debt, the most common sources used by Nigeria government are Multilateral, Paris Club, London credits, promissory notes and Bilateral. As of 1986 to 2021 within the scope of this work, Nigeria external obligations of these various sources were ₦4.67 billion, ₦21.73 billion, ₦8.44billion and ₦4.15 billion for multilateral, Paris club, London creditors and promissory Notes respectively (CBN, 2022). Apart from that, the trend of the foreign debt is on the increase every year. In the current year, the major sources of foreign debt available to Nigeria government were multilateral, Bilateral, Euro Bond, Diaspora Bond and others. The amount obtained as external debt from these sources were ₦7,704.86billion, ₦1,844.43 billion, ₦ 5,933.98 billion, ₦123.90billion, ₦ 248.06 billion for multilateral, Bilateral, Euro Bond, Diaspora Bond and other sources respectively (CBN, 2022). This study analysed the effect of this individual sources on economic growth in Nigeria.

Economic growth is the fundamental concept in economics. It is the real gross domestic product of any economy. Economic growth has been the soul aim of economic activities and it is one of the most important macroeconomic goals of governments all over the world (Adarkwa, Donkor & Kyei, 2017).

Finally, real gross domestic product is the best way to measure economic growth in any economy. This is because it takes into account the country's entire economic output or productivity. It includes all goods and services that businesses in the country produce for

marketing. These goods and services may be sold domestically or internationally by any of the economic agents in Nigeria.

Conceptual Framework



Source: Authour's Design, 2023.

Figure 2: Conceptual representation of the foreign debt and economic growth.

This study proceed to review theories of external debt and economic growth that are applicable to the Nigerian economy in the subsequent section as:

Debt overhang theory states that when debt stock exceeds government revenue to repay her financial obligations (Owusu & Erickson, 2016; Saxena & Shanker, 2018). In such circumstance, the indebted economy is left with a low proportion of any increases in domestic product and exports because part of the proceeds is used to service external debt (Upreti, 2015). This may result to an increase in taxes towards generating adequate revenue to settle both foreign and domestic creditors, implies discouraging investments due to a sudden increase in taxes on the real sector of the economy.

Keynesian Theory of public expenditure: his is an economic theory named after John Maynard Keynes (Keynes, 1936). This theory is based on the concept that active government intervention is required in economic management for the economy to grow and stabilize. The Keynesian economists view capital accumulation as a catalyst to economic growth. During depression, a combination of monetary policy and fiscal policy may be applied by government. Monetary policy requires Central Bank of Nigeria to reduce interest rate to commercial banks and the commercial banks were expected to do the same to their customers. Fiscal policy entails government investment in infrastructure which creates business opportunities, employment and demand. The reduction of interest rate and provision of infrastructure allow more funds in the hands of investors. During fiscal deficit, external borrowing could be a source of fund. This means that Keynesian theory which viewed capital accumulation as a catalyst to economic growth is supportive of external loans.

This study underpinned its theoretical foundation on Keynesian theory of public expenditure which viewed capital accumulation as a catalyst to economic growth. This is so, since getting external loan amount to accumulation of capital targeted towards economic growth and development in Nigeria which has always been the reason why successive government in Nigeria have engaged in foreign borrowing.

Empirical review of related literature

Literatures are abound on effect of foreign debt on economic growth in both developed and developing economies without consensus among the results. Some of the studies reviewed pointed out the positive or negative effects of foreign debt on the economy which include:

Ademola, *et al* (2018) analysed the impact of external debt on economic growth in Nigeria. The study applied Johansen Co-integration and Vector Error Correction Mechanism for the period of 1990-2015 and revealed that external debt has an inverse effect on economic growth in Nigeria.

In addition, Al Kharusi and Ada (2018) examined the relationship between government external borrowing and economic growth in Oman for the period of 1990 to 2015. ARDL was used and the result revealed a negative and significant influence of external debt on economic growth in Oman. Within the study, gross fixed capital indicated positive and significant relationship on economic growth in Oman.

In addition, Adamu *etal* (2018) examined the debt growth-nexus and economic growth in Nigeria based on Solow (1956) growth framework. The study employed ARDL model and applied on time-series data for Nigeria spanning from 1981 and 2016. The finding of the study explored that external debt and economic growth are negatively related both in the short and long runs.

More or less, applying the panel smooth transition regression method to examine the non-linear impact of debt on the growth of 134 economies for 1970–2012 period; Karadam (2018) revealed an asymmetric long-run growth effect of public debt with the impact of public debt on growth turning from positive to negative after reaching some threshold levels in the country

Furthermore, Obayori *et al* (2019) examined the impact of external debt on economic growth in Nigeria covering a period of 1980 to 2016. They applied Generalized Method of Moments (GMM) and submitted that a positive and significant relationship exist between external debt and economic growth in Nigeria.

Moreover, Moh'd and Jaradat (2019) studied the effect of external debt on economic growth in Jordan economy for the period of 2010 to 2017. The study adopted descriptive statistics approach and pointed out that a negative and significant relationship was found between foreign debt and economic growth in the country.

In the same vein, Obisesan *etal* (2019) empirically examined the effect of external debt on economic growth in Nigeria under the period of 37 years (1981-2017). The study specifically examined the influence of external debt, external debt service payment and exchange rate on economic growth proxy as real gross domestic product. The study employed least square econometric technique to ascertain the relationship between external debt variables and economic growth in Nigeria. The study found that external debt and external debt service payment have negative effect on economic growth while exchange rate has positive effect on economic growth in Nigeria.

A study by Yusuf and Mohd (2021) assessed the effects of government debt on economic growth in Nigeria on time series data for a period of 1990-2022. ARDL was used and the findings revealed that external debt has negative long-run effect and positive short-term effect on economic growth.

In addition, Bironke (2021) examined the long-run effects of external and domestic debts on economic growth in Nigeria for 1981-2017. Dynamic OLS cointegration method was applied and the study revealed that none of external and domestic debts enhances growth in Nigeria in the long-run. While, domestic debt tends to have a positive long-run effect on growth and statistical insignificant in the model.

In the same perspective, Eke *etal* (2021), empirically investigated the effect of public debt on economic growth in Nigeria for the period 1981-2018. Employing a co-integration approach, the study revealed prominent among others that a significant short-run relationship exists between Nigeria's public debt and economic growth. Also, the study further showed that whereas both the domestic debt and the external debt variables were statistically significant, only the latter failed the apriori expectation test and thus, exerts a negative contribution to economic growth in Nigeria.

Research Gap

Some of the studies reviewed presented different findings and conclusions as whether effect of foreign debt on economic growth in Nigeria is positive or negative. For example, Aladejare (2021) supported positive effect between external debt and economic growth in both short-run and long-run period. In addition, Suleiman and Azeez (2012), Zaman and Arslan (2014); Odubuasi *et al* (2018), as well as Obayori *et al* (2019) corroborated that positive effects are found among foreign debt variables and economic growth in Nigeria.

On the other hand, George, *et al* (2020) examined the impact of external debt on economic growth in Nigeria and reported that negative impact existed between external debt and economic growth. In addition, Eke and Akujuobi (2021), Ochalibe *et al* (2017) and Nwannebuike *et al* (2016) analysed effect of external debt on economic growth in Nigeria and supported the view of negative effects between external debt and economic growth in Nigeria.

Therefore, whether the effects of foreign debt on economic growth in Nigeria is positive or negative remain an empirical equation to be solve. Hence, this study empirically examined the effect of foreign debt on economic growth in Nigeria.

3.0 METHOD

The *ex-post facto* research design is adopted to enable the researcher used secondary data. It is appropriate to examine the effect of foreign debt on economic growth in Nigeria within the period of 1986 to 2021. The method of data collection in this study was secondary sources because of its nature. The study sourced from the World Bank Development Indicator (World Bank Database, 2022) and Central Bank of Nigeria (CBN, 2022) Statistical Bulletin for various years. The data are on the following variables RGDP = Real Gross Domestic Product which was proxied for economic growth, FOD = foreign debt (MUL, BIL, PAR, PRN, ORT), EDS = External debt servicing and EXR = exchange rate for the period of 36 years. That is the proposed sample size for the analysis.

This research work adopts four basic techniques in carrying out its analysis. The first is normality test to ascertain the behaviour of the variables using descriptive statistics. The second

technique is unit root test for stationarity verification using Augmented Dickey-fuller (ADF) and Philips-Perron (PP) tests. The third method is cointegration test using Autoregressive Distributed Lag (ARDL) Bound test for long-run equilibrium check among the variables captured in the model. Fourthly, Autoregressive Distributed Lag Model (ARDL) is applied to estimate the effect of foreign debt on economic growth in Nigerian economy from 1986 to 2021.

This method use here depending on the behaviour of the variables and stationarity level that informed the selection of ARDL Model which was introduced by Pesaran *et al.* (2001) in order to incorporate I (0) and I (1) variables. Moreover, Error Correction estimate is conducted to check the point of convergence among variables included in the model.

Model Specification

The functional model showing the technical relationship between the economic growth proxied by Real Gross Domestic Product (RGDP) and Foreign debt indicators in Nigeria as stated in the previous studies (see Aladejare, 2021; George, *etal*, 2020) as well as Obayori *et al* (2019) had been modified and specified thus:

GDP=f (FOD)…….... (3.1)

Where: GDP = Real Gross Domestic Product, FOD = Foreign Debt Indicators

This model can be transformed into equation (3.2) as:

GDP = f (FOD, FDS, ERX, INF).……...……..… (3.2)

, FOD = foreign debt (MUL, BIL, PAR, LOC, ORT), EDS = External debt service and EXR =

Mathematical form of the equation (3.2) is given as:

Ln GDP = ∂_0+∂_1 Ln FOD+∂_2 Ln FDS + ∂_3 ERX+ INF…….…… (3.3)

Econometric form of the model in (3.2) is specified thus:

Ln GDP_t = ∂_0+∂_1 Ln FOD_t +∂_2 Ln FDS_t + $\partial_3$$ERX_t$ +INF+ μ_t …… (3.4)

Where:

GDP = Real Gross Domestic Product

FOD = Foreign debt (Multilateral Creditors, Bilateral Creditors, Paris Club Creditors, London Club Creditors, Promissory Notes, Euro Bond and Diaspora Bond)

FDS = Foreign Debt Servicing

EXC = Exchange Rate

Moreover, $\partial_0$is the intercept of the equation, ∂_1 – ∂_3 are the coefficients of the explanatory variables to be estimated, μt is the stochastic term.

In addition, the idea behind using natural log (Ln) is to achieve linearity. Moreover, the Ln of a variable represents a relative change (rate of return), whereas a change in the variable itself represents an absolute change.

Autoregressive Distributed Lag Estimates (ARDL)

Pre-conditions for estimating ARDL includes:

i. Dependent variable must be non-stationary in order for the model to behave better.
ii. None of the variables should be I(2) in normal conditions (ADF test) and (PP-test)

The model for this study is denoted as:

$$\Delta \text{LnGDP}_{t-i} = \partial_0 + \partial_1 \text{Ln}GDP_{t-i} + \partial_2 \text{Ln}FOD_{t-i} + \partial_3 \text{Ln}FDS_{t-i} + \partial_4 \text{Ln}EXR_{t-i} + \partial_5 \text{Ln}CPI_{t-i} + \sum_{m=0}^{p} \lambda \Delta \text{Ln}GDP_{t-i} + \sum_{m=0}^{q} \phi \Delta \text{Ln}FOD_{t-i} \sum_{n=0}^{q} \psi \Delta \text{Ln}FDS_{t-i} + \sum_{n=0}^{q} \delta \Delta \text{Ln}EXR_{t-i} + \sum_{n=0}^{q} \delta \Delta \text{Ln}CPI_{t-i} + \gamma trend + \theta \text{ECM}_{t-i} + \varepsilon_{ti} \quad (3.6)$$

$$\Delta \text{LnGDP}_{t-i} = \partial_0 + \partial_1 \text{Ln}GDP_{t-i} + \partial_2 \text{Ln}LFD_{t-i} + \partial_3 \text{Ln}LSD_{t-i} + \partial_4 \text{Ln}EXR_{t-i} + \partial_5 \text{Ln}CPI_{t-i} + \sum_{m=0}^{p} \lambda \Delta \text{Ln}GDP_{t-i} + \sum_{m=0}^{q} \phi \Delta \text{Ln}LFD_{t-i} + \sum_{n=0}^{q} \psi \Delta \text{Ln}LSD_{t-i} + \sum_{n=0}^{q} \delta \Delta \text{Ln}EXR_{t-i} \sum_{n=0}^{q} \delta \Delta \text{Ln}CPI_{t-i} + \gamma trend + \theta \text{ECM}_{t-i} + \varepsilon_{ti} \quad (3.7)$$

Where:

The null and alternative hypotheses are as follows:

H_0: $\partial_0 = \partial_1 = \partial_2 = \partial_3 = \partial_4 = \partial_5 = 0$ (No long run relationship exist)

Against the alternative hypothesis:

H_1: $\partial_0 \neq \partial_1 \neq \partial_2 \neq \partial_3 \neq \partial_4 \neq \partial_5 \neq 0$ (Long run relationship exist)

$\partial_1 - \partial_5$ are the long run multipliers (parameters), ∂_0 is the intercept (the drift component); λ, ϕ,ψ, and δ the short-run parameters, θ is the coefficient of speed of adjustment while ECM_{t-i} is the speed of adjustment and ε_t is the stochastic error term.

Appriori Expectation

The *appriori* expectation of the variables included in the model is specified thus: $\partial_1 > 0$, $\partial_2 < 0$, $\partial_3 >$ or < 0, $\partial_4 < 0$, and $\partial_5 > 0$.

4.0 RESULTS

This study presents the data used in this analysis in Appendix I based on request. The data involved were Real Gross Domestic Product (RGDP), foreign debt (FOD), foreign debt servicing (FDS), exchange rate (EXR), Inflation rate (INF), long-term foreign debt (LFD), and short-term foreign debt (SFD) for the study. It was necessary for this study to carry out its analysis from the descriptive statistics to ascertain the nature and behaviours of the variables included in the model.

Moreover, the study conducted the unit root test using Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) tests to verify the stationarity of data. Similarly, it conducted standard VAR to ascertain the optimal lag length to examine the effect of foreign debt and foreign debt servicing on economic growth in Nigeria.

Unit Root Test

This study adopts the ADF and PP unit root tests to ascertain the stationarity of the time series data involved in the analysis. The result is presented in Table 4.2 and 4.3 for interpretation and verification on each of the variable studied. Three test criteria was adopted for in-depth unit root analysis and they are test with constant, with constant and trend, and without constant and trend.

As a pre-condition in the process of conducting economic analysis, it is always crucial to first assess the stationarity state of the data being used. The purpose for such is based on the fact that a prior determination of the stationarity of economic time series is very essential in guiding any empirical conclusion. It is known fact that standard econometric procedures are based on the premise of stationarity in the time series, when in the real sense they can be non-

stationary. As a result, the usual statistical tests are likely to be inefficient, and the conclusions reached are likely to be misleading and incorrect.

Tables 4.2 and 4.3 captures the result of the unit root test conducted on the study variables as contained in Table 4.2 is the ADF unit root test, and in Table 4.3 is the PP unit root test. The ADF result in Table 4.2 reveals that with the exception of EDS, other variables were not stationary in level form. However, further test at the first difference level showed all the variables to be stationary. A further test for stationary using the PP approach and as shown in Table 4.3 reveals a similar stationarity result. Hence, this study concludes that with exception to EDS being level stationary, RGDP, FOD, LFD, SFD, EXR, and CPI are first difference stationary variables. This finding was confirmed by the ADF and PP tests which were adopted to re-enforce each other.

Table 4.2: ADF unit root test

	ADF Test at Level			**ADF Test at 1st Difference**		
	With Constant	With Constant & Trend	Without Constant & Trend	With Constant	With Constant & Trend	Without Constant & Trend
$logRGDP$	-0.599	-3.564**	2.765	-3.786***	-3.744**	-2.289**
$logFOD$	-1.602	-1.091	0.932	-4.457***	-4.527***	-4.497***
$logLFD$	-1.057	-1.189	0.984	-4.827***	-4.923***	-4.878***
$logSFD$	1.028	2.359	-0.659	-3.001*	-4.072**	1.544
$logEXR$	-2.556	-2.653	2.110	-5.932***	-6.063***	-4.975***
$logCPI$	-1.181	-3.092	0.790	-3.557**	-3.893**	-1.530
$logEDS$	-3.347**	-3.416*	0.423	-8.471***	-8.355***	-8.559***

Where *, **, *** indicates significance at 10%, 5%, and 1% respectively, and *l* is the logarithm operator.
Source: Author's estimated output.

Table 4.3: PP unit root test

	PP Test at Level			**PP Test at 1st Difference**		
	With Constant	With Constant & Trend	Without Constant & Trend	With Constant	With Constant & Trend	Without Constant & Trend
$logRGDP$	-0.502	-1.431	4.498	-3.680***	-3.636**	-2.051**
$logFOD$	-0.960	-1.091	0.817	-4.367***	-4.427***	-4.433***
$logLFD$	-1.409	-1.503	0.893	-4.825***	-4.902***	-4.876***
$logSFD$	0.406	-0.966	-1.247	-2.890*	-3.064	-2.799***
$logEXR$	-2.998**	-2.654	1.902	-5.941***	-6.176***	-4.974***
$logCPI$	-3.784***	-1.813	2.016	-2.840*	-3.503*	-1.257
$logEDS$	-3.341**	-3.416*	0.553	-16.713***	-18.544***	-13.461***

Where *, **, *** indicates significance at 10%, 5%, and 1% respectively, and *l* is the logarithm operator.
Source: Author's estimated output.

Optimal lag length

After the unit root testing, the study proceeded to select the most appropriate or optimal lag length for the estimation of the ARDL Bounds cointegration test, and long-run and short-run results. Thus, this study adopted the choice of two (2) lags as the optimum lag length. The AIC at 2 lags is still lower when compared to the SIC statistic at all lag lengths.

4.4 ARDL bounds cointegration test result

In this study, we presented the ARDL bounds test for cointegration on the effect of foreign debt and debt servicing, and foreign debt components on economic growth in Nigeria. The cointegration test was used to ascertain the long-run association between the study's regressors and it is presented in Table 4.5 below.

Table 4.5, showed the bounds test for cointegration in the two equations of this study. First, it was found that in the cointegration relationship between FOD, EDS, EXR, and CPI, although the computed F-statistic (4.593) exceeded the lower bounds values at 1% (4.4) and 2.5%(3.89), it falls short of the upper bounds at 1% (5.72) and 2.5% (5.07). Nevertheless, the value for the F-Statistics which is 4.593 is greater than the 5% and 10% critical values. That is, the critical values for the upper bound at 5% and 10% significance levels in Table 4.5 is 4.57 and 4.06, respectively. While the lower bounds at the same significance levels is 3.47 and 3.03, respectively.

Therefore, the null hypothesis of no long run relationships among foreign debt, foreign debt servicing, exchange rate, and inflation rate are significantly rejected at 5% level of statistically significance. In other words, there is the existence of long run relationship between foreign debt, foreign debt servicing, exchange rate, and inflation which affects economic growth in Nigeria.

Secondly, Table 4.5 also revealed that in the cointegration relationship between LFD, SFD, EXR, and CPI, the computed F-statistic (6.830) exceeded the lower and upper bounds values at 1%, 2.5%, 5%, and 10%. Therefore, the null hypothesis of no long run association between long-term foreign debt, short-term foreign debt, exchange rate, and inflation rate is significantly rejected at all the significance levels. Moreover, there is the existence of long run relationship between log-term foreign debt, short-term foreign debt, exchange rate, and inflation which affects economic growth in Nigeria.

Table 4.5: ARDL F-Bound Test Result for Long-run Equilibrium

Equation	Test statistic	Value of F-Statistic	K	Sign.	I(0)	I(1)
RGDP=f(FOD, EXR, CPI, EDS)	Sample size (n) = 34	4.593	4	10%	3.03	4.06
				5%	3.47	4.57
RGDP=f(LFD, SFD, EXR, CPI)	Sample size (n) = 22	6.830	4	2.5%	3.89	5.07
				1%	4.4	5.72

Source: Author's estimated output.

4.5 ARDL Long-run Results: Long-run estimated outcome for foreign debt and debt servicing effects on economic growth

In Table 4.6, the result reveals a significant negative effect of foreign debt on economic growth. Specifically, it was gathered from Table 4.6 that a unit rise in foreign debt will produce a significant 0.14 unit decline in economic growth. The significance of the relationship is based on the probability value which falls below the 1% significance level. Similarly, external debt servicing has a significant negative effect on economic growth. This based on the significance of the relationship determined by the probability value which falls below the 1% significance level. The result shows that a unit rise in foreign debt servicing will produce a 0.10 unit fall in economic growth.

However, the coefficient of exchange rate which is 0.138, expresses a significant positive effect on economic growth in Nigeria. That is, with a unit increase in the exchange rate, economic growth should also be expected to rise significantly by 0.138 units. Also, the significance of the relationship is based on the probability coefficient falling below the 10% significance level. In contrast, the coefficient of inflation rate of -0.356 reveals an inverse effect on economic growth, which is significant judging by its probability value which is significant at the 1% level. The outcome indicates that a unit rise in inflation will produce a significant decline of 0.36 unit in economic growth.

Table 4.6: ARDL long-run estimates for foreign debt and debt servicing effects on economic growth

Variables	Coefficient	Std. Error	t- statistics	Prob.
$logFOD$	-0.141	0.045	-3.165	0.0047***
$logEXR$	0.138	0.067	2.068	0.0512*
$logCPI$	-0.356	0.073	-4.897	0.0001***
$logEDS$	-0.100	0.034	-2.932	0.0080***

Note: *, and *** denotes significant at 10% and 1% level.
Source: Author's estimated result.

4.6.2 Long-run estimated outcome for effects of foreign debt components on economic growth

In Table 4.7, the result reveals a significant positive effect of long-term foreign debt on economic growth. Specifically, it was gathered from Table 4.7 that a unit rise in long-term foreign debt will produce a significant 0.42 unit increase in economic growth. The significance of the relationship is based on the probability value which falls below the 5% significance level. However, short-term external debt has a significant negative effect on economic growth. This based on the significance of the relationship determined by the probability value which falls below the 5% significance level. The result shows that a unit rise in short-term foreign debt will produce a 0.03 unit fall in economic growth.

Table 4.7: ARDL long-run estimates for foreign debt components' effect on economic growth

Variables	Coefficient	Std. Error	t- statistics	Prob.
$logLFD$	0.421	0.141	2.981	0.015**
$logSFD$	-0.030	0.010	-3.110	0.013**

$logCPI$	-0.052	0.068	-0.761	0.466
$logEXR$	-0.085	0.033	-2.568	0.030**

Note: ** denote significance at 5% level.
Source: Author's estimated result.

4.6 ARDL Short-run Results: Short-run estimated outcome for foreign debt and foreign debt servicing effects on economic growth

Table 4.8 demonstrates that unlike the long-run output, in the short-run, exchange rate and its lag significantly and adversely affected economic growth. The result showed that with a unit increase in exchange rate, economic growth will retrogress significantly by 0.03 unit. The significance of this output is based on the significance of the probability at the 10% level. Similarly, the coefficient of inflation which is -0.234, reveals a significant short-run negative effect on economic growth. Based on the coefficient, a unit increase in inflation rate will yield a 0.23 unit fall in economic growth in Nigeria. This outcome is significant at the 1% level. In contrast, external debt servicing shows a significant positive effect on economic growth, thus, contradicting the long-run result. The output suggest that a unit rise in foreign debt servicing will produce a 0.012 rise in economic growth, which is significant at the 10% level.

Furthermore, Table 4.8 shows the error correction mechanism (ECM) which represents the speed of adjustment in ARDL modelling from short-run to long-run convergence. The negative ECM value and its significance at the 1% level conforms to a priori expectations of its behaviour in ARDL estimation. Its coefficient of -0.352 revealed that about 35% of corrections takes place annually for long-run equilibrium restoration to be complete. In order words, when there is a state of short-term disequilibrium in the relationship between foreign debt, foreign debt servicing, exchange rate, and inflation rate, it takes an annual correction of 35% of the disequilibrium for the Nigerian economy to return to long-run growth path.

4.6.2 Short-run estimated outcome for the effects of foreign debt components on economic growth

Table 4.8: ARDL short-run estimated outcome for foreign debt and debt servicing effect on economic growth

Variables	Coefficient	Std. Error	t- statistics	Prob.
$\Delta logEXR$	-0.032	0.017	-1.926	0.068***
$\Delta logEXR_{t-1}$	-0.050	0.018	-2.732	0.013**
$\Delta logCPI$	-0.234	0.047	-4.992	0.000***
$\Delta logEDS_{t-1}$	-0.012	0.007	1.826	0.082*
$trend$	0.029	0.006	4.873	0.000***
$intercept$	5.419	1.014	5.345	0.000***
R^2	0.68		F- Statistic	6.777
$Adj.R^2$	0.58		Prob. (F-Stat)	0.000

Note: *, **, and *** are Significance at 10%, 5%, and 1%.
Source*:* Author's estimated result.

Table 4.8 also revealed the R^2 as 0.68 or 68% approximately, suggesting that the model is linear by 68%. In order words, the variables in the model are linearly related by 68%. Furthermore, the adjusted R^2 is 0.58 or 58% approximately, which means that all the variables included in the model can explain the variation in economic growth by 58% and leaving only 42% out to other factors not captured in this study. This shows that the model is fit and good for policy recommendations for the economy. In addition, the F-statistic value of 6.777 and its p-values of 0.000 reveals that all the variables taken jointly significant effects on economic growth in Nigeria.

Table 4.9 demonstrates that unlike the long-run output, in the short-run, exchange rate significantly and adversely affected economic growth. Its lag however has a significant positive effect on economic growth. The result showed that with a unit increase in exchange rate, economic growth will retrogress significantly by 0.03 unit at the 5% level of significance. In contrast, a unit increase in the lagged exchange rate will increase economic growth by 0.054 unit at the 1% level of significance. Similarly, the coefficient of lagged short-term external debt which is 0.007, reveals a significant short-run positive effect on economic growth. Based on the coefficient, a unit increase in short-term foreign borrowing will yield a 0.007 unit increase in economic growth in Nigeria. This outcome is significant at the 10% level. In contrast, lagged long-term external debt shows a significant adverse effect on economic growth, thus, contradicting the long-run result. The output suggest that a unit rise in long-term foreign debt will produce a 0.012 decline in economic growth, which is significant at the 5% level.

Furthermore, Table 4.9 shows the error correction mechanism (ECM) which represents the speed of adjustment in ARDL modelling from short-run to long-run convergence. The negative ECM value and its significance at the 1% level conforms to a priori expectations of its behaviour in ARDL estimation. Its coefficient of -0.768 revealed that about 77% of corrections takes place annually for long-run equilibrium restoration to be complete. In order words, when there is a state of short-term disequilibrium in the relationship between external debt components, exchange rate, and inflation rate, it takes an annual correction of 77% of the disequilibrium for the Nigerian economy to return to long-run growth path.

Table 4.9 also revealed the R^2 as 0.87 or 87% approximately, suggesting that the model is linear by 87%. In order words, the variables in the model are linearly related by 87%. Furthermore, the adjusted R^2 is 0.79 or 79% approximately, which means that all the variables included in the model can explain the variation in economic growth by 79% and leaving only 21% out to other factors not captured in this study. This shows that the model is fit and good for policy recommendations for the economy. In addition, the F-statistic value of 10.850 and its p-values of 0.000 reveals that all the variables taken jointly, significantly affects economic growth in Nigeria.

Table 4.9: ARDL short-run estimated outcome for foreign debt components' effect on economic growth

Variables	Coefficient	Std. Error	t- statistics	Prob.
$\Delta logEXR$	-0.033	0.013	-2.560	0.031**
$\Delta logEXR_{t-1}$	0.054	0.016	3.338	0.009***
$\Delta logLFD_{t-1}$	-0.103	0.035	-2.295	0.0162**

$\Delta logCPI$	-0.234	0.047	-4.992	0.000***
$\Delta logSFD_{t-1}$	0.007	0.004	1.957	0.082*
$trend$	0.048	0.007	7.286	0.000***
$intercept$	0.299	0.042	7.129	0.000***
R^2	0.87		F- Statistic	10.850
$Adj.R^2$	0.79		Prob. (F-Stat)	0.000

Note: *, **, and *** are Significance at 10%, 5%, and 1%.
Source*:* Author's estimated result.

DISCUSSION OF RESULTS

From the empirical evidences presented from Table 4.6 to 4.9, this study discusses the major findings of the research in-line with the study objective. However, the significant and positive value of the trend variable in Tables 4.8 and 4.9 which are 0.029 and 0.048 respectively, indicates that the Nigerian fiscal authorities have always favoured the use of external debt to augment revenue shortfall. Investment in infrastructures and projects that could enhance the well-being of the economy are often sourced through yearly foreign borrowings; a trend which has become even more frequent from 1999 to date. They often rely on this source for political reasons since raising taxes can make them unpopular to the citizens. In addition, the weak tax base and inefficiencies in tax collection are other factors that seems to favour the choice of foreign borrowing as alternative source of funding economic growth catalyst in the country.

The effect of foreign debt servicing payment on economic growth

The adverse effect of foreign debt servicing on economic growth agree with the study's a priori expectation. Also, this outcome agrees with the debt overhang theory and the crowding-out effect of public debt. That is, when public borrowing accumulates extravagantly, the responsibility of servicing such sovereign debt constitutes a crowding-out of scarce foreign exchange; that alternatively could have been put to productive ventures such as investment in infrastructure projects like roads, hospitals, power dams, schools, bridges, housing, etc.

Consequently, economic growth is being impeded as these investments are needed to propel further growth. Furthermore, the government may soon find themselves in a situation whereby they might need to keep borrowing to service the nation's debt due to the inability of the generated revenues from poor economic growth, to cover the cost of the nation's borrowing. Hence, external debt service keeps accumulating while economic growth keeps diminishing in the long-term. This finding aligns with studies such as Paul (2017) and Obisesan et al. (2019) who reported a negative effect of external debt servicing on economic growth in Nigeria.

The long-run effect of foreign debt on economic growth in Nigeria

Similarly, the significant negative effect of external debt on economic growth in Nigeria has serious economic implications. However, the finding contradicts studies such as Sualiman and Azeez (2012), Paul (2017), and Aguwamba and Adeghe (2017) who found a positive effect of external debt on economic growth for Nigeria. The finding aligns with Amassoma and Adeniran (2017), Ademola et al. (2018), and Adamu et al. (2018) who reported adverse foreign debt effect on economic growth for Nigeria.

As the level of foreign debt continue to rise, it hinders the country's potential to invest in her economic future-either through education, infrastructure, or health care. This is because as external debt keeps piling, so also is the cost of servicing them for which scarce revenues are used in servicing. Hence, long-term economic growth is stunted.

Also, increasing government borrowing can be detrimental to economic growth when there is sufficient uncertainty with regards to how the real debt costs will be distributed through the explicit or implicit transfers. That is, the sovereign debt can lead to different sectors of the economy changing their behaviour in manners that preserve themselves from being coerced to integrate the real cost of the long-term foreign debt. Such behavioural adjustments can undermine the growth of the economy. Furthermore, increase in external debt can result in the systematic creation of fictional wealth for the economy. When this happens, the fictional wealth distorts economic activity by inflating the prices of assets which can be adverse for growth, because asset with fixed, long-run cash flows are more likely to behave unfavourably.

Foreign debt component with the most effect on economic growth

The result for the components of foreign debt revealed divergent outcome. While long-term external debt exerted a significant positive effect, short-term foreign debt shows a negative significant effect on economic growth. However, the output contained in Table 4.7 reveals that the magnitude of the positive effect of long-term foreign debt (0.421) exceeds the negative effect of short-term external borrowing (-0.030). A similar short-run behaviour also showed that while long-term external debt had a negative effect on economic growth, short-term foreign debt had a positive effect on the later. However, the magnitude of effect from long-term debt (-0.103) out-weighs the short-term foreign debt effect (0.007). Thus, this finding indicates that long-term external debt has the most effect on economic growth in Nigeria.

This outcome is plausible given that long-term external debt are often used to for long-term investment or projects such as construction of power plants, dams, bridges, transportation, roads, housing units, etc., which have long term benefits to the economy.

However, the short-term effect of such funding is negative because of the conditions often attached to their sourcing by the creditors. For instance, part of the International Monetary Funds (IMF) conditions for granting loans to developing countries entails removing subsidies from consumption such as refined petroleum and electricity as in the case of Nigeria. The effects of adhering to this condition has significant effect on the economy since the two consumed goods affect general price level, which can result in fall in aggregate demand and lead the economy into recession.

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

This study examined the effect of foreign debt on economic growth in Nigeria for the period spanning from 1986 to 2021. Four theories were reviewed by this study and they are the consumption smoothening theory, debt overhang theory, dependency theory, and the Keynesian theory of public expenditure. Variables used in the study included real gross domestic product to proxy economic growth, total external debt, total foreign debt servicing, long-term external debt, short-term external debt, consumer price index to proxy inflation, and nominal exchange rate. The data were sourced from the World Bank development indicators and Central Bank of Nigeria Statistical Bulletins are subjected to unit root test by applying the Augmented Dickey Fuller (ADF) and Phillip-Perron (PP) test approaches.

Furthermore, the bounds cointegration and the study findings were derived using the Autoregressive Distributed Lag (ARDL) model. Residual diagnostic tests were conducted to ascertain the reliability of the study's estimates and these test included normality, serial correlation, and heteroscedasticity. A model stability test was also conducted through the cumulative sum and cumulative sum squared techniques; and their output ensured that the model is good fit and reliable for policy recommendations.

This study concludes that foreign debt and foreign debt servicing have detrimental effects on the Nigerian economy. This finding is in line with the debt overhang theory and the crowding-out effect of public debt. That is, when public borrowing accumulates excessively, the obligations of servicing such public debt constitutes a crowding-out of scarce foreign exchange; that alternatively could have been put to productive ventures such as investment in infrastructure projects like roads, hospitals, power plants, schools, bridges, housing.

Furthermore, this study concludes that long-term external debt have more effect on the Nigerian economy than short-term foreign borrowing. This is because long-term external debts have a more flexible and longer payment periods and are particularly demanded for investment in long-term projects or future income yielding assets which are beneficial to the economy in the long term. Hence, the usual preference by fiscal authorities for long-term foreign debt in Nigeria which agrees with the Keynesian theory of public spending. This is evident with the frequent borrowings for infrastructural development of the country for the sake of propelling the growth on the economy in the long-run.

Recommendations

This study recommends the following policy options based on the major findings and empirical reviewed as:

i. Government of Nigeria should formulate internally generated revenue policy for alternative sources of finance rather than depending on foreign debt to execute developmental projects and other infrastructures for improvement in economic growth.
ii. Government and policy makers should minimise the negative effect of foreign debt servicing on Nigerian economy through full implementation of diversification policy of Federal Government, Nigeria.
iii. Government should encourage and improve export base production in order to reduce the effect of exchange rate hike on economic growth in Nigeria.
iv. Government should make monetary policy that would ensure price stability in order to ameliorate the negative effect of inflation on economic growth in Nigeria.
v. Government should improve the standard of financial crime fighting agency (EFCC, ICPC and INTERPOLY) to minimise the high rate of corruption in Nigeria.

Contribution to the body of Knowledge

This study has established a link between foreign debt and economic growth in Nigerian economy. It also provided a framework and springboard to facilitate appropriate planning, development and utilization of all levels of scarce resources that can serve as catalyst for inclusive economic growth in Nigeria.

Furthermore, it has disaggregated the effect of foreign debt on economic growth into two components which are long-term foreign debt-economic growth nexus and short-term foreign debt-economic growth relationship. This approach enabled the study to understand which type of foreign debt has the most effect on economic growth in Nigeria. Such approach is rarely found in the literature, particularly for Nigeria, hence, this study extends the existing literature on the foreign debt-economic growth nexus in this front.

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