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RESEARCH ARTICLE

External Debt Profile and Behaviour of Some Selected Macroeconomic Aggregates in Nigeria: An Autoregressive Distributed Lag (ARDL) Approach

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ABSTRACT

This study focused on external debt profile and behaviour of some selected macroeconomic aggregates in Nigeria. The study covered from 1986-2021 and used annual time series data extracted from Central Bank of Nigeria (CBN) statistical bulletin (2021 edition). Research design adopted was ex-post facto design, while analytical techniques employed were descriptive statistics and Autoregressive Distributed Lag (ARDL) regression mechanism. The choice of the ARDL was premised on the data behaviour from diagnostic inspection: stationarity (unit root) test and Jarque-Bera test of normality. Finding revealed that the incessant rise in Nigeria's debt profile had significantly dealt with the macroeconomic performance of the country. Particularly, the result uncovered that gross domestic product responds negatively but significantly to external debt burden in Nigeria, exchange rate responds positively and significantly to external debt burden in Nigeria; while the response of inflation rate to external debt situation was positive but statistically insignificant for the period of study. Based on these findings, the researcher advised that federal Government of Nigeria should approach external borrowing with caution, ensuring optimal utilization and as well, considering the macroeconomic effects so as to save the country's economy from slumping. There is also the need for the country to broaden her capital investment horizon and curtail the use of borrowed funds in financing budget deficit. However, the federal Government of Nigeria should ensure that loans are utilized for purposes which they were acquired so as to enhance economic performance of the country.

Keywords: *External Debt Profile; Macroeconomic Aggregates; Autoregressive Distributed Lag (ARDL); Gross Domestic Product*

Introduction

No country has all that they need to survive. Countries borrow either to boost their economic growth through increasing the level of consumption and investments, or to reduce the poverty rate in the country. The level of borrowing should always be moderated so that it does not constitute a burden on the economy. With respect to Nigeria, the debt profile has risen so high that it raises concern to researchers and policy makers. As observed by Paul (2017), Nigeria's external debt has increased so much due to excessive borrowing from international agencies and countries at non-concessional interest rate. The country over-dependence in oil proceeds is not a factor to be left out. Succinctly put, the inability to diversify her revenue sources coupled with corruption and mismanagement compels Nigeria to have inadequate fund for growth and developmental projects such as roads, electricity pipe borne water and so on. Despite the government continuous effort on managing external debt, by embarking on several measures such as debt rescheduling, debt conversion, debt equity, debt forgiveness or cancellation, Nigeria had borrowed large amount, often at highly concessional interest rates with the hope to put them on a faster route for development through higher investment, faster growth and poverty improvement (Ajayi & Oke, 2012). The rising debt profile due to high rates, low savings, weak exchange rates and persistent budget deficits (Abdullahi et al., 2015) is the major public concern.

Economic theory suggests that reasonable levels of borrowing by a developing country are likely to enhance its growth (Pattilo et al., 2002); however, on the contrary, high debt burden may not be favourable to a country's economic growth. Nigeria's high debt burden had begun to tell gravely on the economy and the welfare of the people. The debt burden had continued to pile up without translating to economic growth. Despite the debt relief of 2005, Nigeria's external debt had continued to increase unabated (Sunday et al., 2016; CBN, 2021).

The nation's high rising debt position was one of the key campaign issues in the 2015 general election, yet in just about a year of the new administration, the nation's indebtedness has risen by about ₦4 trillion. External debt in Nigeria averaged USD8486.04m from 2008 through 2018, reaching an all high of USD22083.44m in the second quarter of 2018 and record low of USD3627.5m in the first quarter of 2019 (CBN, 2021). Causes of the rising debt includes and not limited to: adverse exchange rate movements, inefficient trade and exchange rate policies, adverse interest rate movements, poor lending and inefficient loan utilization, poor debt management practices, accumulation of arrears and penalties, high inflation, huge fiscal deficit (Osuji & Ozurumba, 2013; Afolabi et al., 2017). Against these backdrops, this study is positioned to ascertain the behaviour of some selected macroeconomic aggregates with respect to the rising debt profile in Nigeria.

Statement of the Problem

Nigeria like most highly indebted poor countries has low economic growth and low per capita income, with domestic savings insufficient to meet developmental and other national goals. Debt arises as a result of borrowing. It takes place at all levels of the human endeavour ranging from the individual, community, local government, state government, federal government and even the world at large. It can also take place at the private sector level; from the private business (sole proprietorship), partnership business down to corporate business. The debt problem of Nigeria has reached a frightening dimension threatening to cripple socio-economic and political development of the country. This, if not urgently addressed, will lead to deficit in domestic savings to finance productive activities in Nigeria.

Objectives of the Study

The broad objective of this study is to ascertain the behaviour of some selected macroeconomic aggregates with respect to the rising debt profile in Nigeria. The specific objectives were to:

i) Investigate the response of real GDP to external debt in Nigeria.

ii) Ascertain the behaviour of exchange rate to external debt in Nigeria

iii) Examine the response of inflation rate to external debt situation in Nigeria.

Literature Review

Conceptual Issues

External Debt

One of the financing instruments in any economy is external debt. External debts are short-term debts like trade debts which mature between one and two years, or whose payment would be settled within a fiscal year in which the transaction is conducted (CBN, 2013). The debt is incurred by a nation that is payable in currencies other than that of the debtor country. It consists of a combination of financial, technical vis-a-vis managerial requirements emanating from outside the country, aimed at supporting economic growth and development and is repayable at determined future date in foreign currency (Paul, 2017; Udoffia & Akpanah, 2016). Developing countries depend on external debt to finance its projects because of its low savings and low income. Also, debts are incurred to meet the much-needed obligations; therefore, nations utilize the borrowing option in a bid to meet these obligations. In the opinion of Matthew and Mordecai (2016), external debts affect the economy either by bringing economic prosperity to a nation or cause severe damages as a result of economic fall. Borrowing is expected to be an economic stimulant but when its accumulation gets to a very substantial level, a reasonable proportion of government expenditure and foreign exchange earnings will be used to service and repay the debt with heavy opportunity costs even for future generations.

Gross Domestic Product (GDP)

Gross Domestic Product (GDP) measures the overall income generated from various factors of production, over a period of time in a certain locality (Broni-Bediako et al., 2018). GDP estimates the monetary value of total number of finished goods and services manufactured in a country at a given duration of time. It is the largest quantifiable measure of the over-all economic occurrences in a nation as it presents the total market value of goods and services produced by a country's economy during a specified period of time (Bondarenko, 2020). GDP can be of nominal, real, actual or potential form. Each of the form of GDP has different outlooks. For instance, (i) the nominal GDP calculates the GDP with inflation present, (ii) the Real GDP presents the GDP as adjusted for inflation, (iii) the actual GDP estimates that country's economy at the current moment in time, while (iv) the potential GDP estimates the country's economy under ideal conditions, like a steady currency, low inflation, and full employment. In this study, our utmost concern is the Real GDP, since it is seen as the most accurate representation of a country's economy and economic growth by presenting the prices of goods and services at a constant price level which is usually set by a predetermined base year or by using the price levels of the previous year.

Exchange Rate

Exchange rate is the price of one country's currency expressed in terms of some other currency. It determines the relative prices of domestic and foreign goods, as well as the strength of external sector participation in the international trade (Barbosa et al., 2018). According to Osundina et al. (2016) exchange rate is solely determined by market forces instead of the prevailing system whereby monetary authorities intervene periodically in the foreign exchange market in order to attain some strategic objectives. Exchange rate plays an important role in the broad allocation of production resources and spending in the domestic economy between foreign and domestic goods and as well as influences export growth, consumption, resource allocation, employment and private investments (Ani et al., 2019).

Exchange rate is an important macroeconomic variable used as a parameter for determining international competitiveness and it is being regarded as an indicator of the competitiveness of the currency of any economy (Ewubare & Merenini, 2019). Exchange rate fluctuation is the rate of change in price over a given period. It is expressed as a percentage and computed as the annualized standard deviation of the percentage change in the daily price. It determines the relative prices of domestic and foreign goods, as well as the strength of external sector participation in the international trade.

Inflation Rate

Inflation is the escalation in the rate of prices over a period of time. It is the creation of money that visibly raises the prices of goods and lowers the purchasing power of naira (Oleka, 2006). Inflation according to Muhammad and Naeem (2015) demoralizes investors and also causes a negative effect on the market. It is the pervasive and continuous rise in the aggregate level of prices measured by an index of the cost of various goods and services, occasioned by wars, religious unrest, political instability, poor harvests, environmental upheavals kidnapping and other social malaise.

Theoretical Framework

The ***Theoretical back-up*** of this study is the Keynesian Theory. The Keynesian Economic Theory was propounded by British Economist John Maynard Keynes in 1936. The theory is focused on the role of money, the principles of effective demand and on the function of savings as well as the savings transition to investments and multiplication effect. It explains the positive impact of external debt on economic growth. According to the theory, government's tendency to finance its budget by external debt crowds in private investment because of inelasticity of private investment to interest rates, thereby encouraging economic growth. Keynes believes that government should borrow money to spend on such things as public works; and that deficit spending, in turn, would create jobs and increase purchasing power in the economy (Igberi et al., 2016).

The theory also argue that government can reverse economic downturns by borrowing money from the private sector and returning the money to private sector through various spending. This theory conceptualizes the economy as being inherently unstable and as a system which requires active government intervention to achieve stability. In relation to this study, the Keynesian theory sees external loans as a substantial supportive agent for enhanced economic growth; therefore, gives its full support to positive turn up of macroeconomic aggregates through external borrowing.

Empirical Studies

External Debt and Gross Domestic Product

Udoka and Ogege (2012) examined the extent of external debt crisis and its consequences on economic development using data on the Nigerian economy for the period 1970 to 2010. They employed the error correction modeling framework with co-integration techniques to test the relationship between per-capita GDP and other macroeconomic variables (foreign reserve, debt stock, investment, debt service payment). The test revealed that politics instability may reduce the rate of development and other independent variables were responsible for the underdevelopment of the country.

Ali and Mustafa (2012) employed cointegration analysis and Error Correction Method (ECM) investigated external debt accumulation and its impact on economic growth in Pakistan for the period 1970-2010. The finding revealed that external debt exerts significant negative impact on economic growth. This confirmed the existence of debt overhang in Pakistan in both long and short run. Labour force affect GNP negatively in long run and short run as well, but in the short run, the impact is insignificant. However, human capital and capital contribute positively and significantly to GNP in long run and short run as well, yet the positive impact of capital exceed the impact human capital in long run and vice versa in short run.

Alejandro and Ileana (2017) employed the Two-Stage Least Squares (2-SLS) regression technique to examine the impact of government debt on gross domestic product in 16 Latin American economies including Bolivia, Argentina, Chile, Brazil, Costa Rica, Colombia, Dominican Republic, Mexico, Honduras, Panama, Nicaragua, Peru, Paraguay,

Venezuela and Uruguay for the period of 1960- 2015. Finding revealed that debt impacts positively on GDP growth in the countries.

Senadza et al. (2017) employed System Generalized Method of Moment (GMM) estimation technique to examine the effect of external debt on economic growth in Sub-Saharan Africa (SSA). The finding showed that external debt negatively affects economic growth in SSA. The study equally revealed that categorization of countries based on per capita income does not affect the external debt-growth nexus, neither does there exist a non-linear relationship between external debt and economic growth.

Obayori et al. (2019) employed the Generalized Method of Moments (GMM) considering the Kwiatkowski, Phillips, Schemidt and Shin, (KPSS) unit root test to empirically examine the relationship between external debt and economic growth in Nigeria for 1980-2016 period. Finding revealed a positive and significant relationship between external debt and economic growth in Nigeria.

Festus and Saibu (2019) empirically examined the effect of external debt on economic growth in Nigeria using time series data on external debt stock, real gross domestic product, trade openness, and gross fixed capital formation as a percentage of GDP as well as data on inflation and exchange rates for 1981-2016 period. The study employed Autoregressive Distributed Lag (ARDL) Mechanism and found that external debt contributes negatively to growth in Nigeria based on data.

External Debt and Exchange Rate

Ajayi and Oke (2012) investigated the effect of the external debt and development of Nigeria. The data sourced from CBN was analyzed using OLS. The finding showed 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.

Halima (2015) beamed searchlight on some developing nations by estimating the effect of external public debt on economic growth in four East African countries including Kenya, Tanzania, Uganda, and Rwanda using panel data for the period 1981 to 2014. The data was analyzed using the fixed effect and random effect model estimation techniques from which it was found that external debt had a negative effect on economic growth in East African Countries while Domestic debt had no significant effect on economic growth. Moreover, the study revealed a positive and significant relationship between external debt and inflation rate, a positive but insignificant relationship between external debt and exchange rate, and between external debt and interest rate in the East African countries.

Jimo (2019) empirically investigated the interaction between external public debt servicing, public debt receipt, and exchange rate fluctuations in Nigeria from 1981-2013. The study employed Ordinary Least Square (OLS) multiple regression and co-integration test techniques and found that external debt receipts and external debt servicing have positive short and long-run relationships with the naira exchange rate fluctuations in Nigeria

Using Cointegration and error-correction modeling, Kumar et al. (2019) examined the impact of external debt and the volatility of exchange rate on domestic consumption in Pakistan by using the yearly data (1980–2014). The finding showed that income, interest rate, exchange rate, volatility of exchange rate, and external debt have long-term relationship with domestic consumption. However, income, interest rate and exchange rate have positive impact whereas exchange rate volatility and external debt have negative impact on domestic consumption in the short run as well as in long run. Moreover, the coefficient of error correction model showed that adjustment toward equilibrium from short run to long run takes more than half a year.

External Debt and Inflation Rate

Faraglia et al. (2012) examined the impact of government debt maturity on inflation using dynamic stochastic general equilibrium (DSGE) model. The result showed that the persistence and volatility of inflation depends on the sign, size

and maturity structure of government debt and remains significantly incomplete even with long bonds and inflation which plays a minor role in achieving debt sustainability.

Using the ordinary least square method, Hassan et al. (2015) examined the effect of government debt on economic growth in Nigeria between 1986 and 2013. The finding revealed that the impact of government debt on economic growth over the period under review is insignificant with external debt which has been enormous over the years contributing minimally to real gross domestic product. Also, if the course of consistent borrowing is not curbed, the economy will slump further: resorting to surplus budgeting, and igniting; increases in unemployment, decreases in total investment, falling reserves, increased exchange rate, higher inflation and consequently increased poverty.

Morley (2017) examined the impact of inflation on trade policies in Venezuela from 1985-2016.Trade policies was proxied by trade openness, trade tariff and trade volume ratio of exportation to GDP. Ordinary least square regression was the adopted methodology. Result reveals that inflation negatively and significantly impacted on by trade policies. This study concludes that management of inflation will improve the trade policies of Venezuela. it was recommended that inflation if well managed will improves the level of importation in the country.

Methodology

Research Design and Data Sources

Ex-post facto research design was adopted. Meanwhile, the data source is secondary. Particularly, it is annual time series data of external debt, exchange rate, interest rate, real Gross Domestic Product, inflation rate, and unemployment rate. The data were extracted from the Central Bank of Nigeria (CBN) statistical bulletin (2021 edition). Other sources of materials used in the study are Journal articles, Newspapers, Internet Materials, Books and other published and unpublished documents.

Model Specification

The fundamental model for the study is the Autoregressive Distributed Lag (ARDL) model for data series which are integrated of orders zero and one (i.e., I(0) and I(1)). The models are hereby stated thus:

For Hypothesis One

$$LRGDP_t = \beta_O + \alpha_1 LRGDP_{t-1} + \alpha_2 \sum LRGDP_{t-i} + \beta_1 LTEXD_{t-1} + \beta_2 \sum LTEXD_{t-i} + \mu_t \ldots\ldots\ldots\ldots (3.1)$$

For Hypothesis Two

$$EXR_t = \beta_O + \alpha_1 EXR_{t-1} + \alpha_2 \sum EXR_{t-i} + \beta_1 LTEXD_{t-1} + \beta_2 \sum LTEXD_{t-i} + \mu_t \ldots\ldots\ldots\ldots (3.2)$$

For Hypothesis Three

$$INFR_t = \beta_O + \alpha_1 INFR_{t-1} + \alpha_2 \sum INFR_{t-i} + \beta_1 LTEXD_{t-1} + \beta_2 \sum LTEXD_{t-i} + \mu_t \ldots\ldots\ldots\ldots (3.3)$$

Where:

LEXTD = Total external debt stock, the independent variable;

LRGDP = Real Gross Domestic Product, the dependent variable;

EXR = Exchange rate, the dependent variable;

INFR = Inflation rate, the dependent variable;

β_0 = Constant term;

$\alpha_i's$ = Coefficients of the dependent variable;

$\beta_i's$ = Coefficients of LEXTD in the model.

ε_t = Random error associated with the model

L = Log transformation operator

t = time

Electronically, the researcher made use Eviews 10.0 econometric package to facilitate the estimation process.

Description of Model Variables

(a) Independent Variable

External Debt (EXTD): This is debt incurred by a nation that is payable in currencies other than that of the debtor country. It includes short-term debts, such as trade debts which mature between one and two years, or whose payment would be settled within a fiscal year in which the transaction is conducted.

(b) Dependent Variables

i. **Real Gross Domestic Product (RGDP)**: This is the monetary value of all the finished goods and services produced within a country's borders in a specific time period. It includes all of private and public consumption, government outlays, investments and exports less imports that occur within a defined territory.

ii. **Exchange rate (EXR)**: This is the price of one country's currency expressed in terms of some other currency. It can also be referred to as an indicator of competitiveness of the currency of any economy. Exchange rate is determined by market forces.

iii. **Inflation Rate**: Inflation is the rate of increase in the general price level. It is the term used to describe an across-the-board rise in wages and prices (the cost of labor, goods, and services) in an economy. An inflated economy is one having more spendable money than it needs to buy all the goods and services available (at their old prices), leading to a broad general increase in prices.

Results

Table 1: Data Description and Normality Test

Parameters	EXTD	RGDP	EXR	INFR
Mean	2631.597	42252.57	123.0894	19.44444
Std. Dev.	3622.141	51145.75	109.2162	17.69209
Skewness	2.182985	1.105707	0.854806	1.732149
Kurtosis	7.481612	3.010387	3.004773	4.658961
Jarque-Bera	58.71981	7.335687	4.384190	22.13027
Probability	0.000000	0.025531	0.111683	0.000016
Observations	36	36	36	36

Source: *Author's EViews 10.0 result*

In the descriptive statistics result presented in table 1, external debt stock stood at average value of ₦2631.6 billion with a standard deviation of ₦3622.1 billion; real GDP stood at average value of ₦42252.6 billion with a standard deviation of ₦51145.8 billion; exchange rate stood at average of ₦123.1 per US dollar with a standard deviation of ₦109.2 per US dollar; while inflation rate stood at average of 19.4% with a standard deviation of 17.7%. All the data series from the study variables are positively skewed (Sk>0). That is to say, they are much clustered on the positive

tail of the normal curve. The kurtosis estimates are substantially high in series of EXTD and INFR, and slightly above normal in series of EXR. The high (significant) kurtosis estimate is confirmed by the Jarque-Bera test results with p-values less than 0.05. This indicates non-normality of the data spreads.

Table 2: Result of Augmented Dickey-Fuller (ADF) Unit Root Test

Variable	ADF-Stat	Critical Values @5%	p-value	Order of Integration	Inference
LEXTD	-4.205	-3.548	0.0112	I(1)	Stationary
LRGDP	-3.992	-2.948	0.0040	I(0)	Stationary
EXR	-4.455	-3.548	0.0061	I(1)	Stationary
INFR	-4.616	-3.548	0.0041	I(0)	Stationary

Source: *Author's Extract from E-views 10 Result*

From the stationarity test result in table 2 above, based on ADF stat. value higher than the critical value in absolute term, the series of Gross Domestic Product (LGDP) and inflation rate (LINFR) are stationary at level form (i.e., integrated of order zero (I(0))), while the External debt stock (LEXTD) and exchange rate (LEXR) are stationary at first differencing (i.e., integrated of order one (I(1))). For which course, the researcher employed Autoregressive Distributed Lag (ARDL) in the further analysis. The reason is because, the ARDL model is applicable when the study variables are stationary at first differencing (i.e., I(1)), or when there is a mixture of I(1) and I(0) variables.

Hypothesis One: *Real GDP do not respond significantly to external debt burden in Nigeria.*

Level of significance (α) = 0.05

Decision Rule: Reject Ho if p-value ≤ 0.05, otherwise do not reject.

Table 3: ARDL estimate of effect of LEXTD on LRGDP

Dependent variable = LRGDP @lag 2

Variable	Lag interval	Coefficient	t-stat.	Prob.
Constant	-	0.120	1.022	0.3171
LEXTD	1	-0.020	-2.132	0.0435

R-squared = 0.997; Durbin-Watson stat. = 2.000

Source: Author's extract from Eviews 10 Result

The ARDL (2, 1) result in table 3 above shows that external debt (LEXTD) has a long-run negative and significant effect on real GDP growth in Nigeria (p=0.0435>0.05). This implies that external borrowing is stunting rather than promoting the growth of Nigerian GDP. The R-squared estimate is 0.997, indicating that the model is a good one as about 99.7% of the total variations in real Gross Domestic Product can be explained by external debt profile in Nigeria. The unexplained 0.3% can be attributed to other macroeconomic shocks not included in the model. More so, the Durbin-Watson statistic value of 2.00, following the rule of thumb shows that the model is free from autocorrelation problem.

Hypothesis Two: *Exchange rate does not respond significantly to external debt burden in Nigeria.*

Level of significance (α) = 0.05

Decision Rule: Reject Ho if p-value ≤ 0.05, otherwise do not reject.

Table 4: ARDL estimate of effect of LEXTD on EXR

Dependent variable = EXR @lag 3

Variable	Lag interval	Coefficient	t-stat.	Prob.
Constant	-	0.407	1.171	0.2589
LEXTD	4	0.270	3.376	0.0038

R-squared = 0.986; Durbin-Watson stat. = 2.548

Source: Author's extract from Eviews 10 Result

The ARDL (3, 4) result in table 4 above shows that in the long-run, external debt responds positively and significantly to exchange rate behaviour in Nigeria. The R-squared estimate of 0.986 indicates that about 98.6% of the total variations in exchange rate volatility can be explained by external debt profile in Nigeria. The implication is that the

model is a good one. Only 1.4% are unexplained which can be attributed to other macroeconomic shocks not present in the model. Furthermore, the Durbin-Watson statistic value of 2.548 is slightly above 2 (benchmark), following the rule of thumb. This indicates that there is no first order serial correlation problem in the model.

Hypothesis Three: *Inflation rate does not respond significantly to external debt situation in Nigeria.*

Level of significance (α) = 0.05

Decision Rule: Reject Ho if p-value ≤ 0.05, otherwise do not reject.

Table 5: ARDL estimate of effect of LEXTD on INFR

Dependent variable = INFR @lag 3

Variable	Lag interval	Coefficient	t-stat.	Prob.
Constant	-	-0.038	-0.033	0.9738
LEXTD	0	0.335	1.904	0.0707

R-squared = 0.665; F-stat. = 5.203; Prob.(F-stat.) = 0.0011; Durbin-Watson stat. = 1.925

Source: Author's extract from Eviews 10 Result

As shown in the ARDL (3, 0) result in table 5 above indicates that external debt (LEXTD) has long-run positive but insignificant effect on inflation rate (INFR) in Nigeria (p=0.0707>0.05). In other words, external borrowing has been a positive contributor to high rate of inflation in Nigeria. The explanatory power of the model (R-squared estimate) is 0.665, indicating that the model is a good one as about 66.5% of the total variations in inflation rate can be explained by external debt situation in Nigeria. The unexplained 33.5% can be attributed to other macroeconomic shocks not included in the model. The Durbin-Watson statistic value of 1.925 is approximately 2, which indicates that the model is free from autocorrelation problem.

Discussion of Findings

Objective One: To investigate the response of real GDP to external debt in Nigeria. Finding revealed that external debt responds negatively and significantly to Real GDP growth in Nigeria. This finding obeys the work of Paul (2017) in Nigeria. The significant effect of external debt on real GDP as shown in this study agrees with the finding of Ali and Mustafa (2012) in Pakistan, which discovered a negative relationship between external debt stock and economic growth. The outcome of this study equally submits to the work of Senadza et al. (2017) in Sub-Saharan Africa, Festus and Saibu (2019) in Nigeria, amongst other studies. Meanwhile, our discovery disagrees with the findings of Alejandro and Ileana (2017) in Latin America, Obayori et al. (2019) in Nigeria, among others.

Objective Two: to determine the response of exchange rate to external debt burden in Nigeria. From the result, exchange rate responded positively and significantly to external debt burden in Nigeria. The implication is that external borrowing encourages naira devaluation in Nigeria. This finding is in line with the findings of Ajayi and Oke (2012) in Nigeria. The outcome of positive relationship between external borrowing and exchange rate in Nigeria also aligns with the earlier finding of Halima (2015) in East African countries, Jimo (2019) in Nigeria. On the other hand, this finding did not support the work of Halima of insignificant relationship between external debt and exchange rate in Nigeria.

Objective Three: To examine the response of inflation rate to external debt situation in Nigeria. From the empirical finding, inflation rate responded positively to external debt situation in Nigeria. This finding agrees with the work of Faraglia et al. (2012) that the persistence and volatility of inflation depends on the sign, size and maturity structure of government debt. The finding of this study equally nods in support to the finding of Halima (2015) in East African countries that inflation rate responds positively and significantly to external debt situation.

Conclusion and Recommendation

It is an established fact by economists that human wants are insatiable and the resources available for their satisfaction are limited in supply. Having empirically examined the behaviour of some selected macroeconomic aggregates with respect to external debt profile in Nigeria, the conclusion was drawn that external borrowing is not

doing good to the macroeconomic growth of Nigeria. with evidence as provided by Autoregressive Distributed Lag (ARDL) econometric estimation, Nigeria's external borrowing had been substantially to the poor GDP growth, naira devaluation, rising inflation rate in the country. It was therefore recommended that although no nation can have all the finances needed to pilot affairs of their people, federal government of Nigeria should approach external borrowing with caution, ensuring optimal utilization and as well, considering the macroeconomic effects so as to save the country's economy from slumping. The Debt Management Office (DMO) should set mechanism in motion to ensure that loans are utilized for purposes which they were acquired; while the country (Nigeria) should work towards expanding her capital investment horizon to reduce the heavy dependence on using borrowed funds to finance budget deficit. This will go a long way in bringing inflation to a single digit for healthy economic growth and performance.

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Appendix A

Raw Data

Annualized time series data of EXTD, RGDP, EXR and INFR

Years	EXTD(₦', B)	RGDP(₦', B)	EXR(₦/US$1.00)
1986	41.45	196.17	2.02
1987	100.79	242.26	4.02
1988	133.96	312.50	4.54
1989	240.39	410.77	7.39

	1990	298.61	489.77	8.04
	1991	328.45	584.25	9.91
	1992	544.26	897.12	17.30
	1993	633.14	1244.80	22.05
	1994	648.81	1751.28	21.89
	1995	716.87	3069.43	21.89

1996	617.32	4045.32	21.89
1997	595.93	4374.50	21.89
1998	633.02	4756.71	21.89
1999	2,577.37	5426.47	92.69
2000	3,097.38	6990.62	102.11
2001	3,176	8150.	1111.

	.29	02	94
2002	3,932.88	113833.66	120.97
2003	4,478.33	134418.01	129.36
2004	4,890.27	179388.38	133.50
2005	2,695.07	228844.90	132.15
2006	4511.46	300063.	128.65

		96	
2007	438.89	34318.67	125.83
2008	523.25	39542.43	118.57
2009	590.44	43012.51	148.88
2010	689.84	54612.26	150.30
2011	896.85	62980.40	153.86

	2012	*1,026.90*	*717133.94*	*157.50*
	2013	*1,387.33*	*800922.56*	*157.31*
	2014	*1,631.50*	*890433.62*	*158.55*
	2015	*2,111.51*	*941446.96*	*193.28*
	2016	*3,478.92*	*1014889.49*	*253.49*

2017	5,787.51	113711.63	305.79
2018	7,759.23	127736.83	306.08
2019	9,022.42	144210.49	306.92
2020	12,705.62	152324.07	358.81
2021	15,855.	173527.	399.96

2	*6*
3	*6*

Source: CBN statistical Bulletin, 2021