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External Debt and Selected Macroeconomic Variables: Evidence from an Emerging Economy in Africa – Nigeria

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A B S T R A C T
This study was aimed at ascertaining the effect of external debt on selected macroeconomic variables from 1986 to 2020. In specific term, effect of external debt burn on capital expenditure, external reserve, and exports was investigated. The study followed the framework of quantitative and descriptive research design through the Auto-Regressive Distributive Lag (ARDL) method using data that were carefully sourced from the Central Bank of Nigeria. Result of the analysis showed that there is an insignificant positive relationship between capital expenditure and external debt. Furthermore, an insignificant negative relationship existed between external reserve, exports, and external debt. The findings in overall discloses that external debt has not significantly affected the selected macroeconomic variables: capital expenditure, external reserve, and exports. This is an evidence that the level of Nigeria's external debt is really not accelerating the pace of development in Nigeria. To this end, loans contracted should be invested in capital projects which will be capable of improving the infrastructural development of the country. External finance should be used only for projects of highest priority such as mineral resources, education, and agricultural projects among others, and not for political reason (s). Government should promote exportation of domestic products because an appreciation in the exchange rate against the US Dollar and other currencies of the world will make our goods more attractive in the foreign market and will increase foreign exchange earnings which increases the external reserve.

Keywords*:* *External debt; capital expenditure; external reserve; exports.*

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INTRODUCTION
The nexus between external debt and economic growth has been a topic of debate in the domain of public finance. External debt is needed for sustainability and infrastructural transformation in developing countries owing to the lack of financial resource which is attributable to the developing nature of the financial system. Soludo as cited in Ajayi and Oke[1], stated that countries borrow for two broad categories, macro-economic reasons (higher investment higher consumption i.e. education and health or to finance transitory balance of payment deficit to lower nominal interest rates abroad lack of domestic long term credit or to circumvent hand budget constraint. There is an economic logic that borrowing by emerging economies help to vehemently increase productive investment with respect to interest rate and maturity of the debt. In affirmation, Ademola, Tajudeen and Adewumi[2] posit that external borrowing has become a strong economic tool to developing countries to supplement the domestic savings and allow such countries to carry out productive activities. Thus that economy indulges in debt to boost economic growth and reduce poverty and do not suffer from macro-economic instability polices that distort economic incentive or sizeable adverse shocks [1]. Borrowing does not arise only for the purpose of investments in productive economic activities and infrastructure, countries that has witness war, natural disasters, economic depression, budgetary deficit, and increasing recurrent expenditure, may resort to external borrowing to salvage these situations.

Though external debt is not a sin, but it poses some challenges such as inflation, inequality in distribution, and crowding out on private investments to developing countries if not properly utilized. When fund borrowed are used by the government for consumption, there will be high demand for goods and services. This will resulting in inflation by increasing the general level of prices. If the government resorts to pay the principal and interest of debt borrowed by relying on the tax revenue from the middle-to-low income groups, economically, there will be transfer of resources from the middle-to-low income groups to the high income group. This scenario gives rise to income inequality at advantage of the high income group, whereas at the deterioration of the middle-to-low income groups. If the government spends large fraction of revenue generated to servicing debt, crowding out effect on private investments is bound to occur. This is because, private investors are willing to invest in countries with high debt profile.

Nigeria's external debt increased so much due to excess borrowing from international agencies and countries at non-concessional interest rate as a result of the decline in oil earnings from the late 70's and the emergence of high trade arrears due to inability of the country to either easily produce or foot the bills of importation of the needed goods and services [3]. Despite the rising profile of Nigeria's external debt, the level growth and development in the economy is not encouraging at all. The country still lack basic infrastructures such as power supply, road network, and water supply among others thus the quest for this study. Additionally, previous empirical studies in Nigeria has relied on the nexus between external debt and growth of the economy with conflicting and mixed results [4,5,6,7,8,9,10,11]. This study takes a new dimension by three macroeconomic variables: capital expenditure, external reserves, and exports which were not abound in existing researches. Consequently, it is the aim of this study to examine the effect of external debt on selected macroeconomic variables in Nigeria from 1986 to 2020.

EMPIRICAL LITERATURE

The concept of external debt as well as the underlying theoretical foundations have been well discussed in literature. This current study went straight to review recent extant studies in the Nigeria environment. Manasseh, Abada, Okiche, Okanya, Nwakoby, Offu, Ogbuagu, Okafor, Obidike and Nwonye[4] determined the impact of external debt on economic growth. Also, the interactions of governance, external debt and external debt volatility were further investigated with emphasize on the interactive effect of governance as proxied by quality governance measures such as; government effectiveness, political stability, voice and accountability, regulatory quality and corruption control on economic growth. The study utilized annual time series data, focusing on thirty selected Sub-Saharan African (SSA) countries for the period 1997 to 2020. The Dynamic System Generalised Method of Moments estimation technique was adopted while controlling for conventional sources of economic growth. Empirical findings from the study reveal that external debt and external debt volatility have a negative and significant impact on economic growth in SSA. Furthermore, the interaction of governance indicators, external debt and its volatility, had a positive impact on economic growth in SSA.

Ojukwu[5] evaluated the association between external debt and sustainable development in Nigeria to ascertain empirically the extent of relationship between external borrowings and achieving Sustainable Development Goals (SDG) 2 – Zero Hunger and SDG 3 – Good Health and Well Being. Secondary data for the period 2003 to 2019 were extracted from publications of Debt Management Office (DMO) of Nigeria, National Bureau of Statistics, International Monetary Fund (IMF) and the World Bank. The study formulated two hypotheses and tested them using Spearman's Rank Correlation tool. The results revealed that there is no significant relationship between external debts and sustainable development in Nigeria. The paper argues that the accumulated external debts in Nigeria are not properly utilized for sustainable developmental projects that reduce the high poverty index and low life expectancy of its populace.

Ajuh and Oyeanu[6] explored the impact of external debt on economic growth in Nigeria from 1985 to 2018 using vector autoregressive (VAR) approach. The empirical results revealed that both external debt stock and external debt service exerted a negative and significant impact on economic growth. These outcomes entailed that when external debt stock changed by one-unit, economic growth declined by 0.495 unit. On the other hand, when external debt services changed by one-unit, economic growth declined by 0.017 unit.

Ogbonna, Ihemeje, Obioma, Hanson and Amadi[7] studied the impact of External debt management on economic growth of Nigeria. Using annual time series data collected over the period of 33 years (1986 – 2018). The data for the study were collected from the CBN statistical bulletin annual report. The variables on which data are collected include: Real Gross Domestic Product, External Debt, External Debt service, Balance of Payment and Exchange Rate. Data were analysed using the Ordinary least squares (OLS) multiple regression analysis. It proceeded with Descriptive statistics; Augmented Dickey Fuller (ADF) unit root test, Co-integration test and Auto-Regressive Distributed Lag (ARDL). The study revealed that impact of external debt management on economic growth of Nigeria over the period under review was statistically significant with external debt, external debt service payment and balance of payment but statistically insignificant with exchange rate.

Igudia[12] examined the impact of external debt stock and debt servicing on human capital development (HCD) in Nigeria from 1960-2019. To achieve the objective, this paper collect data from the archives of the Central Bank of Nigeria (CBN), the National Bureau of Statistics (NBS) and the debt management office (DMO) for various years. The Ordinary Least Squares (OLS) regression technique was used to test eight hypotheses. Results revealed that external debt servicing has an inverse relationship with HCD whereas external debt stock has a significantly positive impact on HCD. All other variables in the model contributed to the increase in public spending on education and health.

Idehi and Uzonwanne[8] critically analysed the impact of external debt on economic growth in Nigeria in the period, 1985 to 2019 by examining the causality between external debt stock and economic growth in Nigeria and identify the impact of external debt servicing on economic growth in Nigeria. The study employed the Harrod Domar theory of

economic growth and the Two-Gap model as theoretical framework to explain the impact of external debt on economic growth in Nigeria. The study made use of secondary data sourced from World Development Indicator 2019. Ordinary least square (OLS) technique was adopted for the regression analysis. The data were analysed with the aid of e-view software (9th edition). The result showed that external debt has negative and insignificant impact on economic growth in Nigeria.

Ohiomu[9] modelled external debt and economic growth nexus for policy analysis on public finance and public debt management. The work uses the methodology of group unit root test, auto-regressive distributed lag (ARDL) bounds testing, and co-integrating long-run tests for robust policy recommendations. The results showed that the debt overhang variable (D_Y) and crowding-out effect variable (DS_X) depress the level of investment. This adversely affects economic growth in Nigeria.

Didia and Ayokunle[10] disaggregated total public and publicly guaranteed debt into external debt and domestic debt, and examines whether the two kinds of debt have differential impact on economic growth in Nigeria. Utilizing data from the Central Bank of Nigeria, and the World Bank, our empirical analysis using the Vector Error Correction Model (VECM) and covering 1980 – 2016, revealed that domestic debt has a statistically significant positive relationship with economic growth in the long run while external debt exhibiting a negative relationship with economic growth was not statistically significant. The lesson here is that domestic debt appears to be more beneficial in terms of economic growth in Nigeria than external debt as interest paid on domestic loans remains in the country and could be put into further productive economic use.

Okosu[11] looked at the analysis of the impact of external debt on Nigeria Economic Growth from 1980 to 2017 with secondary data sourced from Central Bank of Nigeria and Debt Management Office statistical/annual bulletins of various years. The Autoregressive Distributed Lag (ARDL) Method was employed in the estimation of the multivariate regression model. In the data analysis, External Debt (EXDT), External debt service (EXDS), and Exchange Rate (EXCHR) were used as independent variables against the dependent variable of Real Gross Domestic Product (RGDP) which is used as proxy for economic growth. The result of the study showed that external debt has an insignificant and positive linear relationship with the level of economic growth in Nigeria, an increase in external debt by a unit will increase the level of economic growth by 0.091 units. This is an indication that external debt has the potentials of increasing the level of economic progress in Nigeria. External debt service has no significant but positive impact on the level of economic growth in Nigeria. This is not surprising since incomes from investment of external debts in self-liquidating projects are used in servicing the debts. Exchange rate has no significant and positive effect on the level of economic growth in Nigeria.

George-Anokwuru and Inimino[13] examined the impact of external debt on economic growth in Nigeria from 1980 to 2017. Secondary data on real gross domestic product, external debt, external debt service and exchange rate were sourced from CBN statistical bulletin. The Augmented Dickey-Fuller unit root test and Autoregressive Distributed Lag techniques were used as the main analytical tools. The result of the unit root test revealed that the variables were stationary at order zero and one, which satisfied the requirement to employ the ARDL Bounds testing approach. The ARDL Bounds test revealed the existence of long run relationship among the variables. Furthermore, the result revealed that external debt and external debt service have negative and significant relationship with economic growth in Nigeria both in the long run and short run. However, exchange rate has positive and significant relationship with economic growth in Nigeria during the period of study both in the long run and short run.

Fatukasi, Kolawole, Falade and Ayeomoni[14] ascertained the determinants of external debt in Nigeria from 1981-2018. The study relied on time series data which were collected from Central Bank of Nigeria (CBN) Statistical Bulletin and Word Bank Development Indicator using Fully Modified Ordinary Least Squares for the period of study. The unit root problem was tested for by using Augmented Dickey-Fuller and Phillip Perron, as well as, Johansen Co-integration for the study. Findings from the Fully Modified Ordinary Least Square estimation showed that a positive relationship existed between insecurity level, real exchange rate, and external debt. By implication, insecurity level and real exchange rate are the major determinants of external debt in Nigeria for period of study. However, findings also revealed an inverse nexus between debt service, trade openness and external debt. By implication, a well-managed with effective and efficient used of external debt is capable of debt servicing and also to reduce import to export ratio in the country. The study therefore, concluded that the insecurity level and exchange rate are the major determinants of external debt in Nigeria.

Obayori, Krokeyi and Kakain[15] examined the impact of external debt on economic growth in Nigeria within the period of 1980 to 2016. Thus, secondary data on gross domestic product and external debt were sourced from CBN statistical bulletin and debt management office fact book. The econometric method of Generalized Method of Moments (GMM) test was used. Priori the GMM test is the Kwiatkowski, Phillips, Schemidt and Shin, (KPSS) unit root test to

ascertain the stationarity of the variables. Based on the empirical results; the KPSS stationarity test for each of the series showed that all the variables were stationary at order one as their respective LM statistics was less than the critical value at 5%. The GMM test shows that external debt and economic growth has positive and significant relationship with R2 of 54 percent. Therefore, to achieve long-term solution to the problem of external debts burden, government should stimulate domestic production to liberate the Nigerian economy from the shackles of wants and excessive dependence on external economics, which build up debt.

Shobande and Adedokun[16] assessed the impact of external debt on economic growth in Nigeria using Extended Hausman Rodrick Valesco growth diagnostic framework and Three Gap Model. Annual time series data sourced from the Central Bank of Nigeria statistical bulletin from 1981-2018 was regressed using the Augmented Dickey Fuller test (ADF) to check the stationary properties of the series, and the Engel-Granger Co-integration test to estimate the long-run relationship of the variables. The results show that external debt had negative impact on the Nigerian economy.

Festus and Saibu [17] analysed the effect of external debt on economic growth in Nigeria. 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 were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin and World Bank indicators. The study set out to test for both the long run and short run relationship as well as presenting further evidences on the relationship between external debt and economic growth. The Autoregressive Distributed Lag (ARDL) Model was employed as a technique of estimation in the study and the results led a finding that the external debt contribute negatively to growth in Nigeria

Grace, Oluwayemisi and Femi [18] empirically assessed 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. The coefficient of multiple determinations (R2) showed that approximately 77% of variations in economic growth are explained by the explanatory variables (EXTD, EXTDS and EXR) while the remaining 23% is accounted by factors not specified in the model. However, The Durbin Watson correlation test indicated that there is positive autocorrelation in the model which implied there is about 23% missing variables in the model. The conclusion that may be drawn from the study is that external debt has negative effect on economic growth in Nigeria.

Egungwu[19] looked into the impact of an increase in external debt stock and its servicing on human capital development. Four hypotheses were formulated and tested at 5% level of significance. The ex-post facto research design was adopted and time series data spanning 30 years (1986-2015) were processed using the models earlier formulated. Ordinary Least Square (OLS) regression technique was used to test the hypotheses. The study found that both external debt stock and external debt servicing had a significant negative effect on human capital development; external debt stock borrowed from Paris club and multilateral creditors had insignificant negative effect; those borrowed from London club had insignificant positive effect while those borrowed from bilateral creditors had a significant positive effect. On debt servicing, all the creditors showed insignificant positive effect except London club that had a significant positive effect.

Jibir, Abdullahi, Abdu, Buba and Ibrahim [20] analysed the relationship between debt variables and economic growth within Solow (1956) growth framework. The study adopted econometric technique of Autoregressive Distributive Lag (ARDL) model and applied on time-series data for Nigeria spanning between 1981 and 2016. The results show that external debt is negatively related with economic growth in both short and long runs. The evidence suggests that increase in external debt will lead to decline in economic growth. Based on the findings, the study suggests that debt service obligation should not be allowed to rise more than foreign exchange earnings and that the loan contracted should be invested in profitable and productive ventures, which will generate a reasonable amount of money for debt repayment.

Kharusi and Ada [21] studied the relationship between government external borrowing and economic growth, prompted by continuous increases in Oman's external debt to finance its annual budget. Time series data for the period 1990~2015 were collected from the World Bank and the Central Bank of Oman. The study employed the Autoregressive Distributed Lag co-integration approach explain the error correction mechanism to ascertain the short-run dynamic nature of external debt and economic growth. Consistent with some existing empirical evidence, the study reveals a negative and significant influence of external debt on economic growth in Oman. Further, gross fixed capital was found to be positively significant in determining growth performance in Oman.

Charles and Abimbola[22] determined the effect of external debt on economic growth in Nigeria. Gross domestic product was used as a proxy for economic growth which is the dependent variable while external debt stock, external

debt service payments, domestic debt, external reserve and exchange rate were the independent variables. External debt stock and external debt service payments were used to capture the external debt burden in Nigeria. The paper adopted the ARDL bound testing to co-integration as an appropriate technique. The result shows that domestic debt lag 1, D(LDDS (-1)), has a negative but significant effect on economic growth. The result of the conditional error correction regression suggests that external debts stock lag 1, that is, LEDS (-1) has a significant direct relationship with economic growth at 1 percent significance level. It could also be observed that external debt service payment and exchange rate indicate a significant negative effect on economic growth while external reserve reveals a significant positive impact on economic growth in the long run.

Ayomitunde and Felix [23] looked into the contributions of external debt to economic growth in Nigeria emanating from the fourth republic to 2016, and also the direction of causality between these economic variables employing bivariate regression analysis and VAR modelling. The results show positive relationship between stocks of external debt and economic growth in Nigeria in the last 17 years, though statistically not significant at 5 percent level of significance. Also, there runs unidirectional causality between the two economic variables in the country starting from external debt to economic growth.

Ademola, Tajudeen and Adewumi[2] examined the impact of external debt on economic growth in Nigeria for the period 1999-2015. The data for this study was obtained mainly from secondary sources mainly from Central Bank of Nigeria (CBN) Statistical Bulletins and Debt Management Office. Time series data on Gross Domestic Product (GDP) as a proxy for Economic Growth, External Debt Stock (EXDS), External Debt Service Payment (EDSP), and Exchange Rate (EXGR) were used for the analysis. The techniques of Estimation employed in the study include Augmented Dickey Fuller (ADF) test, Johansen Co-integration, Vector Error Correction Mechanism and Granger Causality Test. Results show that external debt has an inverse effect on economic growth in Nigeria.

Ochalibe, Awoderu and Onyia[24] investigated the impact of external debt on economic development and the policy implications for poverty reduction. It utilized secondary data from Nigeria statistical bulletins, IMF's International Financial Statistics, World Bank's International Debt Statistics and national accounts data. Based on the findings of the study, the Null hypotheses $H0_1$ and $H0_2$ were rejected at 5 % level of significance. This implied existence of a relationship between external debt and economic development on the one hand and the existence of long run relationship between external debt and economic development on the other. This study concluded that the resultant effects of external debt on economic development in Nigeria are negative and significant. The implication is that debt is a burden and should be traded with caution. External borrowings if elected should be channelled towards productive investments that will generate returns that are sufficient enough to offset the debt when due. Given the rural poor direct access to productive assets like land, water rights, inputs, policies related to debt should take cognizance of this and implemented accordingly. This will lead to output growth and enhance income distribution which will in turn reduce poverty.

Onakoya and Ogunade[25] evaluated the impact of external debt in bridging the gap resource required for economic growth in Nigeria. After preliminary evaluation of the data which indicated the non-normality of all the variables, the research deployed the Autoregressive Bounds testing method Distributed Lag (ARDL) method using the Ordinary Least Squares technique. Evidence of long run association was reported. The follow-up error correction mechanism found out that 45 present of disequilibrium errors are corrected after short run shock. External debt is negatively related to economic growth. On the average, one per cent increase in export will decrease the real GDP by 0.25 per cent in the long run. Although statistically significant at 1 per cent it did not fill savings and/or external finance gap. Furthermore, the pairwise granger causality test showed that external debt does not cause economic growth at 5% level of significance.

Ndubuisi[3] study set out to analyse the impact of external debt on economic growth of Nigeria. Data for the study are collected from secondary sources. The variables on which data are collected include; Gross Domestic Product, External debt services, external debt stock, external reserve, and exchange rate. The scope of the study covers the period from 1985 to 2015. Data are analysed using the ordinary least square regression, ADF unit root test, Johansen cointegration and error correction test. Findings reveal that debt service payment has negative and insignificant impact on Nigeria's economic growth while external debt stock has positive and significant effect on Nigeria's growth index. The control variables: external reserve and exchange rate have positive and significant effect on growth. The ADF unit root test shows that all the variables are not stationary at levels but at first difference. Johansen cointegration test shows long-run relationship between external debt and growth index (GDP). It also showed that the variables have at least one common stochastic trend driving the relationship between them. The causality test indicates unidirectional causality between external debt and GDP.

METHODOLOGY

This study followed the framework of quantitative and descriptive research design through the Auto-Regressive Distributive Lag (ARDL) method to evaluate the effect of external debt on selected macroeconomic variables in Nigeria

from 1986 to 2020. It was chosen because the alternative econometric techniques such as Two Stage Least Squares (2SLS) give limited information. External debt profile is the dependent variable, whereas capital expenditure, external reserve, and exports are the dependent variables. The data were carefully sourced from the Central Bank of Nigeria (CBN) statistical bulletin. To examine the effect of effect of external debt on capital expenditure, external reserve, and exports of Nigeria, we estimated the followings models:

$$CEXP_t = \beta_0 + \beta_1 EXDEBT_t + \varepsilon_t \quad 1$$

$$ERES_t = \beta_0 + \beta_1 EXDEBT_t + \varepsilon_t \quad 2$$

$$EXPT_t = \beta_0 + \beta_1 EXDEBT_t + \varepsilon_t \quad 3$$

Where:
$CEXP$ = Capital Expenditure
$ERES$ = External Reserve
$EXPT$ = Exports
$EXDEBT$ = External Debt
β_0= constant term
ε=random error/disturbance term
t= time trend

RESULTS OF DATA ANALYSIS AND FINDINGS

Descriptive Analysis of Data

The descriptive analysis of the data are presented in Table 1. The mean Values of the CEXP, ERES, EXPT, and EXDEBT are 572.8297, 20.61457, 6446.164 and 2253.778 while their median are 438.7000, 10.28000, 3087.890 and 716.8700 respectively. The series depicts the maximum values of 2289.000, 58.47000, 23516.82 and 12705.62 for CEXP, ERES, EXPT, and EXDEBT respectively. The minimum values are 6.370000 for CEXP, 1.470000 for ERES, 8.920000 for EXPT, and 41.44500 for EXDEBT. All the data are positively skewed towards normality as evidenced by the positive sign of the skewness. The Jarque-Bera suggests that all the data are normally distributed as the p-values are significant at 5% level of significance.

Table 1: Descriptive Analysis of Data

	CEXP	ERES	EXPT	EXDEBT
Mean	572.8297	20.61457	6446.164	2253.778
Median	438.7000	10.28000	3087.890	716.8700
Maximum	2289.000	58.47000	23516.82	12705.62
Minimum	6.370000	1.470000	8.920000	41.44500
Std. Dev.	554.6912	17.49595	6894.639	2866.314
Skewness	1.161181	0.453850	0.861133	2.010127
Kurtosis	4.070010	1.693796	2.684794	6.908427
Jarque-Bera	9.535003	11.68971	15.47059	45.84743
Probability	0.008502	0.007048	0.006960	0.000000
Sum	20049.04	721.5100	225615.7	78882.22
Sum Sq. Dev.	10461199	10407.68	1.62E+09	2.79E+08
Observations	35	35	35	35

Source: Data Output using E-views 10.0

Unit Root Analysis of Data

The unit root test is utilized to ascertain stationarity in a time series. A time series has stationarity defect if a shift in time does not cause a change in the shape of the distribution; unit root are one cause for non-stationarity in time series data. The assessment of the stationarity of the data were carried with Augmented Dickey-Fuller (ADF). The unit root test was performed at first difference as shown in Table 2, and it revealed that all the variables are stationary at first difference thus the result from the regression output would be reliable in statistical term.

Table 2: Result of ADF Test

Variables	Intercept	Trend & Intercept	None	Inference
CEXP	-6.100412 (0.00)*	-6.702255 (0.00)*	-5.432630 (0.00)*	Stationary
ERES	-3.961272 (0.00)*	-3.892735 (0.02)**	-3.989468 (0.00)*	Stationary
EXPT	-5.864821 (0.00)*	0.261930 (0.99)	-0.989913 (0.28)	Stationary
EXDEBT	-1.675864 (0.43)	-2.186996 (0.48)	-5.626374 (0.00)*	Stationary

Source: Data Output using E-views 10.0
P-values are in parentheses where (*) & (**) denote significance at 1% and 5% respectively.

Analysis of ARDL Output

Capital Expenditure and External Debt

The result in Table 3 indicates that external debt has an insignificant positive relationship with capital expenditure. The coefficient of the constant 34.11454 means that if external debt is kept constant, capital expenditure would be ₦34.11454 billion. The external debt coefficient of 0.077312 suggests that a percentage increase in external debt would result to 7.73% increase in capital expenditure. In other words, the higher the external debt the higher the capital expenditure. The coefficient of the Adjusted R-squared in Table 4.5 indicates that only 86.92% of changes in capital expenditure was attributed to external debt. It would be infer from this result that the external debt over the years has to a high extent influenced capital expenditure in Nigeria. F-statistic of 23.16894 and p-value of 0.0000 entails that changes in capital expenditure was statistically explained by variation in external deb. Durbin Watson (d*) statistic of 2.02 shows no autocorrelation problem in the model estimated.

Table 3: Capital Expenditure and External Debt

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CEXP(-1)	0.986472	0.219336	4.497543	0.0002
CEXP(-2)	-0.180277	0.310353	-0.580877	0.5675
CEXP(-3)	-0.904872	0.298898	-3.027360	0.0064
CEXP(-4)	1.040047	0.255859	4.064923	0.0006
EXDEBT	0.077312	0.050510	1.530639	0.1408
EXDEBT(-1)	-0.117604	0.105647	-1.113177	0.2782
EXDEBT(-2)	0.128144	0.119502	1.072313	0.2957
EXDEBT(-3)	-0.190687	0.111750	-1.706374	0.1027
EXDEBT(-4)	0.156519	0.066046	2.369857	0.0275
C	34.11454	65.15482	0.523592	0.6060
R-squared	0.908505	Mean dependent var		645.5087
Adjusted R-squared	0.869293	S.D. dependent var		548.5845
S.E. of regression	198.3323	Akaike info criterion		13.67346
Sum squared resid	826049.8	Schwarz criterion		14.13604
Log likelihood	-201.9387	Hannan-Quinn criter.		13.82425
F-statistic	23.16894	Durbin-Watson stat		2.025819
Prob(F-statistic)	0.000000			

Source: Data Output using E-views 10.0

External Reserve and External Debt

The result in Table 4 reveals that external debt has an insignificant negative relationship with external reserve. The coefficient of the constant -0.299778 suggests that if external debt is held constant, external reserve would be down by 29.98%. The external debt coefficient of -0.001367 indicates that a unit increase in external debt would result to 0.136% decrease in external reserve. The coefficient of the Adjusted R-squared in Table 4.6 reveals that only 93.51% of changes in external reserve was explained by external debt. This implies that the trend in external debt has adequately influenced depletion in external reserve in Nigeria during the period covered by this study. F-statistic of 48.99805discloses that external debt statistically explained that changes in external reserve as the p-value is significant at 5% level of significance. Durbin Watson (d*) statistic of 2.410894 indicates no problem of autocorrelation in the model.

Table 4: External Reserve and External Debt

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ERES(-1)	0.824900	0.180113	4.579891	0.0002
ERES(-2)	-0.268074	0.252249	-1.062738	0.3000
ERES(-3)	-0.193730	0.261371	-0.741208	0.4668
ERES(-4)	0.529620	0.172544	3.069477	0.0058
EXDEBT	-0.001367	0.001031	-1.325685	0.1992
EXDEBT(-1)	0.002638	0.002174	1.213370	0.2385
EXDEBT(-2)	-0.003214	0.002575	-1.248165	0.2257
EXDEBT(-3)	0.001689	0.002643	0.638886	0.5298
EXDEBT(-4)	0.004098	0.001895	2.162856	0.0422
C	-0.299778	1.505660	-0.199100	0.8441
R-squared	0.954544	Mean dependent var		22.74677

Adjusted R-squared	0.935062	S.D. dependent var	17.47614
S.E. of regression	4.453418	Akaike info criterion	6.080918
Sum squared resid	416.4916	Schwarz criterion	6.543494
Log likelihood	-84.25422	Hannan-Quinn criter.	6.231706
F-statistic	48.99805	Durbin-Watson stat	2.410894
Prob(F-statistic)	0.000000		

Source: Data Output using E-views 10.0

Export and External Debt

The result in Table 5 indicates that external debthas insignificant negative relationship with exports. The coefficient of the constant 910.7894 means that if external debtis kept constant, exports would be 910.7894 million. The external debt coefficient of -0.083155 suggests that a percentage increase in external debt would result to 8.83% decrease in exports in Nigeria. The coefficient of the Adjusted R-squared in Table 4.7 indicates that only 89.94% of changes in exports was attributed to external debt. It would be infer from this result that the trend in external debt has helped in the reduction of exports in Nigeria. F-statistic of 54.68497 and p-value of 0.0000 entails that changes in exports was statistically explained by external debt. Durbin Watson (d*) statistic of 2.410894 shows no autocorrelation problem.

Table 5: Exports and External Debt

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXPT(-1)	1.359899	0.229469	5.926297	0.0000
EXPT(-2)	-0.783915	0.387124	-2.024971	0.0537
EXPT(-3)	-0.240605	0.403877	-0.595737	0.5567
EXPT(-4)	0.691524	0.252176	2.742232	0.0111
EXDEBT	-0.083155	0.169607	-0.490282	0.6282
C	910.7894	586.0952	1.553996	0.1328
R-squared	0.916227	Mean dependent var		7273.784
Adjusted R-squared	0.899472	S.D. dependent var		6905.144
S.E. of regression	2189.353	Akaike info criterion		18.39259
Sum squared resid	1.20E+08	Schwarz criterion		18.67013
Log likelihood	-279.0851	Hannan-Quinn criter.		18.48306
F-statistic	54.68497	Durbin-Watson stat		2.341817
Prob(F-statistic)	0.000000			

Source: Data Output using E-views 10.0

Discussion of Findings

The preliminary result in Table 3 shows that there is an insignificant positive relationship between capital expenditure and external debt in Nigeria. This implies that fund borrowed and channelled to infrastructural development are not product. In Table 4, it was found that external debt has insignificant negative relationship with external reserve. This suggest that the rising debt of Nigeria has resulted in depletion of the external reserve. This could be confirmed in the Central Bank of Nigeria report that external reserve of has depreciated from 42,847.31 million US Dollar as of December 2013 to 36,476.89 million US Dollar in December 2020. Finally, Table 5 provides evidence of negative insignificant relationship between exports and external debt. This is an indication that the level of exports in Nigeria has been drastically reduced owing to the increasing external debt profile. This affirms the research work of Fatukasi, Kolawole, Falade and Ayeomoni[14], Monogbe[26] that external debt reduces the value of Nigeria exports owing to frequent deterioration in exchange rate of Naira against the US Dollar.

The findings in overall discloses that external debt has not significantly affected the selected macroeconomic variables: capital expenditure, external reserve, and exports. This is an evidence that the level of Nigeria's external debt is really not accelerating the pace of development in Nigeria. No wonder while citizens of the country have not felt the impact of the fund borrowed abroad over the years. Even the debt relief granted to Nigeria by the Paris club did not reflect in the degree of infrastructural development. The country still lack adequate power supply, road network, and water supply among others. The insignificant effect of external debt on economic development indices is in line with the work of Onakoya and Ogunade[25] and Adedoyi, Babalola, Otekunri and Adeoti[26] that external debt has not contributed significantly to the economic development of Nigeria.

CONCLUSION AND RECOMMENDATIONS

This study was aimed at ascertaining the effect of external debt on selected macroeconomic variables from 1986 to 2020. In specific term, effect of external debt burn on capital expenditure, external reserve, and exports was investigated. The study followed the framework of quantitative and descriptive research design through the Auto-Regressive Distributive Lag (ARDL) method using data that were carefully sourced from the Central Bank of Nigeria. Result of the

analysis showed that there is an insignificant positive relationship between capital expenditure and external debt. Furthermore, an insignificant negative relationship existed between external reserve, exports, and external debt.The findings in overall discloses that external debt has not significantly affected the selected macroeconomic variables: capital expenditure, external reserve, and exports. This is an evidence that the level of Nigeria's external debt is really not accelerating the pace of development in Nigeria.

To this end, loans contracted should be invested in capital projects which will be capable of improving the infrastructural development of the country. External finance should be used only for projects of highest priority such as mineral resources, education, and agricultural projects among others, and not for political reason (s). Government should promote exportation of domestic products because an appreciation in the exchange rate against the US Dollar and other currencies of the world will make our goods more attractive in the foreign market and will increase foreign exchange earnings which increases the external reserve. Nigeria should diversify its economy from a mono-economy dependent on oil to encourage other productive sectors and avoid loans that are tied to market driven interest rate but rather should opt for fixed interest rate.

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