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AN APPRAISAL OF PUBLIC DEBT ON ECONOMIC GROWTH OF NIGERIA

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ABSTRACT

This study investigated an appraisal of public debt on economic growth in Nigeria following the continued borrowings of federal government of Nigeria. Three objectives namely; domestic debt, foreign debt and debt service cost effect on Nigeria economic growth were formulated. Secondary data of the study were collected from CBN statistical bulletin from 1981 to 2020, which warranted the use of ex-post facto research design. Descriptive statistics, correlation analysis, Augmented Dickey Fuller (ADF) unit root test, Johansen cointegration test and Vector Error Correction Model (VECM) were deployed in analysing the time series data of the study wherefrom the results indicate that domestic debt and external debt has short run and long run positive statistical significant effect on Nigerian economic growth at 5% and 1% levels respectively. Whereas debt service cost has negative statistical significant effect on Nigerian economic growth at 5% level. The study recommends among other things that government should have a viable economic plan on ground before it could proceed to borrowing and never to engage the borrowed fund on any recurrent expenditure.

KEYWORDS: *Domestic Debt, Foreign Debt, Debt Service Costs, Debt Overhang.*

INTRODUCTION

Every government is thriving to attain a sustainable economic growth and development that will help it reduce unemployment as well ensure economic stability. But many developing nations are faced with scarcity of capital that should facilitate the needed economic growth and development, thereby resort to borrowing funds to supplement the domestic savings (Safadari & Mehrizi, 2011). Public debt being an indispensable component of public finance should be utilised especially in capital expenditures to increase the economic developments of a nation. Some researchers believe the notion of great important for governments to consider borrowing as the best alternative to argument capital formation especially during recession (Ezeabasili, Isu & Mojekwu, 2011).

Meanwhile, Hassan and Akhter (2012) opine that public debt is the amount of money owed by the government to institutions, government agencies and other bodies' resident in or outside a country. Saifuddin (2016) classified public debt into domestic public debt and external debt, which indicates that a nation can either borrow money within its territory or outside its territorial boundaries respectively. Soludo (2003) asserts that countries indulge in borrowing for categorical reasons that involve firstly, macro-economic reasons which include higher investments, higher consumptions on education and health. Secondly, to finance transitory balance of payments deficits, to lower nominal interest rates abroad, lack of domestic long term credit or to circumvent hard budget constraints. However, some developing economies which Nigeria is not an exception have accumulated high volume of debt from which they finance many unprofitable, unrealistic and low efficiency projects that can have negative effects on the economic growth. More so, some developing economies including Nigeria use the borrowed fund to run their flamboyant and lousy life style in government and thereby making the loan borrowed unproductive. On the other hand, public debt is known to enhance significant impact on economic growth, but that can be availed when the borrowed fund is judiciously utilised (Saifuddin, 2016).

Debt is a component that arguments revenue for the purpose of carrying out government expenditure in any fiscal year. But most developing nations like Nigeria have anchored on debt financing as if that is the only source of financing even in their period of economy boom. Nigeria's ratio of debt to GDP has continued to rise alarmingly that it is doubtful if the corresponding economic growth is rising in the right proportion. Around 1981 the percentage of debt to GDP was 9%, it rose from 15% in 1982 to all high 79% in 1992. By 1993, the ratio started falling until 1998 when the percentage was 26. Reckless spending by government officials is among the factors that propel them to contract the loans. After 2005 that Nigeria enjoyed Paris Debt Relief, the proportion of debt to GDP fall drastically to 8% and later rose to 10% by 2010. It continued to rise from 11% in 2014 to 16% in 2018 (CBN Bulletin, 2018). The high dependence on public debt and accumulation of overbearing debt profile could portend an obstacle to the nation's dream of economic growth (Isibor, Babajide & Okafor, 2018). Sequel to the continued rise in debt profile of Nigeria, the poverty level, rate of unemployment and general economic hardship continue to thrive and dominate the lives of the citizenry, casting doubt on the minds of many to believe that relative improvement is made with the level of government acquired debt. Hence it becomes imperative to investigate the effect of rising debt profile of Nigeria on its economic growth. To this end, the study's main objective is to ascertain the effect of public debt on economic growth in Nigeria, whereas the specific objectives include investigating;

- The effect of domestic debt on Nigeria economic growth.
- The effect of foreign debt on Nigeria economic growth.
- The effect of debt service cost on Nigeria economic growth.

This study will be beneficial to Administrators and policy maker in Nigerian as they as it will give them a consolidated view on how the debt components react with the GDP of Nigeria.

LITERATURE REVIEW

Conceptual Review

Domestic Debt

Domestic debt is the total debts that the government of a country owes to the lenders within the country. In other words domestic debts are the debts of a nation other than foreign debts. Pertinently, James, Magaji, Ayo and Musa (2016) differently conceive domestic debt as the debts that originate from within a country. On extended level Asogwa (2010) opines that domestic debt is debt instrument issued by the federal, state and local governments but is dominated in local currency. It also includes debt owed to holders of government securities such as treasury bills and treasury bonds which represent government borrowing through issuance of securities, government bonds and bills (Babu, Kiprop, Kalio & Gisore, 2015). Domestic debt in Nigeria is usually acquired through debt instruments such as treasury bills, treasury certificates, treasury bonds, development stocks, FGN bonds, Promissory notes. Furthermore, the Federal government of Nigeria introduced additional debt instruments in 2017 fiscal year that includes FGN Sukuk, FGN Green Bond and FGN Savings Bond. Babu, Kiprop, Kalio, and Gisore (2015) noted that Nigerian government borrow from domestic sources when it has urgent need to pay off maturing loans or to measure up with immediate foreign debt services charge obligation.

Foreign Debt

Foreign debt is defined by the World Bank (2004) as debt owed by the government to non-residents repayable in terms of foreign currency, food or service. It is a source of financing capital formation of an economy. Ayadi and Ayadi (2008) opined that the amount of capital available in most developing countries treasury is grossly inadequate to meet their economic growth needs mainly due to their low productivity, low savings and high consumption pattern. The reported financial inadequacies lead countries to source for supplementary financing outside their boundaries. In which case, foreign debt is seem one fundamental source of aid to nation building (Sulaiman & Azeez, 2012). But the rate at which they borrow depends on the links among foreign and domestic savings, investment and economic growth so that the borrowing countries can increase their capacity output with the aid of foreign savings (Ijirshar, Fefa & Godoo, 2016). It is required that the borrowing nation should be able to invest the borrowed fund wisely especially in financing development projects like railway construction, electricity generation plants, road. Nonetheless, research had shown that an increased level of foreign debt impacts negatively on the trade ability and economic prosperity of most nations (Asley, 2002), as it leaves behind series of burden of debt services on the available capital formation of the nation.

Debt Service Costs

Debt service costs is referred to as the cost of borrowing money which is due as the passage of time, the rate of interest and the amount outstanding during the reporting fiscal year. It could also

be seen as the average annual principal and interest payments on all outstanding. Over accumulation of debt increases debt service cost and generates debt overhang problems to the economy (Odubuasi & Onuora, 2019). Debt overhang is a phenomenon where substantial resources are used for debt servicing such that it stifles the economic growth as it becomes burden on domestic production (Udeh, Ugwu & Onwuka, 2016). Nakatami and Herera (2007) maintain that debt accumulates because of principle and piled up servicing requirements thereby becomes a self-perpetuating mechanism of poverty aggravation and amounts to constraint to developing countries. This is impediment is the major reason some economists advice against nations borrowing beyond their ability to repay.

Economic Growth

Economic Growth is describes as the increase of the country's national output or gross domestic product. Abbas (2005) perceives economic growth as the representation of increase in the economic capacity to produce goods and services relative to their output in the previous years. Differently, Fadare (2010) posits it's an all-important goal of economic policy with a robust study occasioned to clarify how this aforesaid goal can be attained. Economic growth has attracted the concern of scholars. Khorravi and Karimi (2010) affirmed that classical studies determined that economic growth is grossly dependent on labour and capital as factors of production. A growth is caused in the economy whenever a unit of production is successfully inputted into the economic system. Hence, Matiti (2013) believes that economic growth describes the amount of goods and services created, with less concern about how the products or services are produced. Economic growth can be estimated in nominal terms e.g. inflation or adjusted inflation by the percentage rate of increased in national output (GDP). Notwithstanding, economic growth estimates growth in monetary terms and considers no other areas of development (Ayres and Warr, 2006).

Domestic Debt and Economic Growth

Domestic debt is a total liability of government to its citizenry or a debt instrument denominated in its local currency. Saifuddin (2016) says that public debts are debts owed by government to residents within the country. In Nigeria domestic debts includes Nigerian treasury bills, Federal government development stocks, Treasury bonds and federal government bonds (Onogbosele & Ben, 2016). Anyanwu and Erhijakpor (2004) found that domestic debt has a negative and significant effect on economic growth after they analysed data gathered from 1970 to 2003. Onogbosele and Ben (2016) found a positive and significant association between public debt and economic growth in Nigeria. They used time series data gathered from central bank of Nigeria statistical bulletin from 1985 to 2014 with the use of multiple vector regression models. James, Magaji, Ayo and Musa (2016) found that domestic debt has negative and insignificant effect on the economic growth of Nigeria. They used time series data from 1970 to 2013, after conducting stationary test they used multiple regression analysis of ordinary least square method. Babu, Kiprop, Kalio and Gisore (2015) asserted that public debt has positive significant effect on economic growth in Kenya. Our apriori is that domestic debt will have positive significant effect on economic growth.

External Debt and Economic Growth

Odubuasi and Onuorah (2019) sampled South Africa and Nigeria using data from 2002 to 2017, with multiple regression of ordinary least square found that external debt has positive effect on

economic growth of Nigeria and South Africa. Sami and Mbah (2018) used time series data from 1990 to 2015 from Central Bank of Oman which was analysed with autoregressive distributed lag cointegration and found that public debt has negative and significant effect on economic growth of Oman. Mbah, Agu and Umunna (2016) found in their study that external debt has negative but is significant in determining what happens to economic growth in Nigeria. We therefore expect foreign debt to have significant positive effect on economic growth.

Debt Service Cost and Economic Growth

Debt service costs are the charges which a country has to pay on the loan received from both domestic and foreign sources. It is the interest on the loan collected. Many scholars had investigated how this service charges react with economic growth; Olusegun, Oladipo and Omotaya (2021) on their study the impact of debt service in stimulating economic growth in Nigeria found a positive significant long run relationship between the two. Odubuasi and Onuorah (2019) had an investigation into how external debt affect economies of Sub-Sahara Africa and report that debt services costs inversely affects the economies of that African region. Hence we expect that debt service will have significant negative effect on the economic growth.

THEORITICAL REVIEW

Overhang Debt Theory: Debt Overhang Theory is emphasising on the point that a nation that is so heavily indebted may have all its revenues channelled into paying off existing debt without having any for new investments. Debt overhang theory was propounded by Myers in 1977 where he referred to firms that used overweighed high risky debt financing that prevents them from taking investments, but will be pinned down to paying the debt at the detriment of other profitable investments and returns to shareholders. Similarly, a nation experiences debt overhang when its debt profile is greater than its future capacity to repay in that case, a tendency of crowding out private investment abounds. That's why Monogbo (2016) opines that the heavy burden of debt incurred by the managers of the economy at present, will affect next generation's debt service duty. Furthermore, accumulated public debt would act as tax on the output of future generation and smoother their incentive to save and invest (Krugman, 1988). Hence this research was will focus on ways and means on which debt burden of the country can be reduced so as to give room for increased investement.

EMPIRICAL REVIEW

Yusuf and Mohd (2021) investigated the effect of government debt on Nigeria economic growth from 1980 to 2018. They gathered time series data of independent variable: external debt stock, domestic debt stock; and control variables: debt service payment, foreign reserve position, interest rate, gross fixed capital formation and foreign direct investment; and dependent variable: real GDP, all from CBN statistical bulletin, Debt Management Office, World Bank and IMF statistical database, which then were tested using Augmented Dickey Fuller (ADF) and Philip-Perron unit root test, Autoregressive Distributive Lag Bound test. The results show that external debt portends stunted growth to RGDP on the long run while improves RGDP position on the short run. Domestic debt stock has positive significant long run effect on RGDP but has inverse short run effect on RGDP. Moreover, the debt service payment indicates short run and long run impediment to RGDP.

Rahman, Ismail and Ridzuan (2019) conducted an investigation through a systematic review on how public debt affects economic growth. They applied meta-analysis (Prisma) technique on

thirty three 33 selected articles published on Scopus from 2017 to 2019. They found out that no mutual consensus exist on the relationship between public debt and economic. Hence relationship can be positive, negative and or non-linear in nature. They however stated that no common threshold can be applied across all nations on the proportion of debt to GDP.

Hilton (2021) examined the effect of public debt on economic growth from the perspective of developing economy, Ghana. The study used time series data generated from the World Bank Development Index and the IMF fiscal Affairs Department Database that span from 1978 to 2018. Data were analysed with dynamic multivariate autoregressive-distributive lag (ARDL) to establish the co-integration among the variables, also used Error Correction Model (ECM) to estimate the granger causality in the long run. In which case, they found that public debt has no causal relationship with GDP in the short-run with unidirectional granger causality from public debt to GDP in the long run. More so, investment spending shows negative bi directional causal relationship with GDP in the short run although with a positive ni directional causal relationship in the long run. Similarly, there is a short run causal relationship between government consumption expenditure and GDP. Although a long run granger causality exists between government consumption expenditure and GDP. In the same vein, public debt has a positive short run impact on the inflation rate.

Eke and Akujuobi (2021) found that a significant short run relationship between public debt and economic growth in Nigeria. They specified that external debt has negative statistical significant effect on Nigeria economic growth where domestic debt has positive statistical significant effect on economic growth. The findings emanated from the title 'public debt and economic growth in Nigeria: an empirical investigation. The study span from 1981 to 2018 and engaged time series data generated from CBN statistical bulletin, where the exogenous variables include domestic debt, external debt and inflation rate, but the endogenous variable is the GDP. These data generated were analysed with the help of Philip-Peron unit test for stationarity of the time series data, vector autoregressive model (VAR) and vector error correction model (VECM) for estimation of the variables.

Ajayi and Edewusi (2020) conducted an empirical investigation on the effect of public debt on economic growth of Nigeria form 1982 to 2018, using data from CBN statistical bulletin. They measured public debt with external and domestic debt. They run unit root test using Augmented Dicker Fuller (ADF), pattern of data distribution using descriptive statistics, estimated the model with Johansen Co-integration test, Vector Error Correction Model (VECM). The result disclosed that external debts have short-run and long-run negative effect on Nigeria economic. While the domestic debt has short-run and long-run positive effect on Nigeria economic growth.

Panizza and Presbitero (2012) had carried a survey on the relationship between public debt and economic growth in advanced economies of OECD. They came out with a finding that no common relationships exist between public debt and economic growth and that no threshold for debt to GDP ratios can be attributed across nations.

Odubuasi and Onuora (2019) sampled two nations from sub-Sahara Africa, namely Nigeria and South Africa as they investigate the effect of external debt on economic growth from 2002 to 2017. They collected data from CBN statistical bulletin and Central Intelligence Agency (CIA factbook) which were used to measure external debt, external reserve and external debt service costs. Data were analysed with descriptive statistics and OLS regression estimation. Their results indicate that external debt and external reserve have positive effect on economic growth of both

Nigeria and South Africa nations. Whereas external debt service cost has negative effect on GDP of the both Nigeria and South Africa.

Odubuasi, Uzoka and Anichebe (2018) had an empirical investigation over the effect of debt on Nigeria economic growth that span from 1981 to 2017. The independent variables of the study are external debt stock, external debt service cost and government capital expenditure while the dependent variable is the GDP. Their time series data were collected from CBN statistical bulletin which stationarity was tested with Augmented Dickey Fuller (ADF) test, where the long term and short term relationships were established with error Correction Model (ECM). The results show that external debt stock and government capital expenditure have positive and significant effect on economic growth in Nigeria, whereas external debt service cost is not significant in explaining economic growth.

Olusegun, Olufemi and Olubunmi (2020) investigated the impact of external debt on the economic growth of Nigeria covering 1981 to 2018 fiscal years. They sourced data from CBN statistical bulletin, Debt Management Office and World Bank Data base. The independent variables of the study include external debt stock, domestic debt stock, foreign direct investment and government expenditure. While they proxy gross domestic product growth rate for dependent variable. The stationary of the data gathered were tested using Augmented Dickey Fuller (ADF), Autoregressive Distributive Lag (ARDL) bound test method of co-integration was used for estimation the long run relationship among the variables while Auto Regressive Distributive Lag Error Correction Model (ARDLECM) technique was used to estimation the short run relationship among the variables. They found that external debt and foreign direct investment positively affect economic growth but domestic debt and government expenditure obstruct economic growth in Nigeria. The error correction model coefficient is -0.969 which indicate that about 96.9 percent shift away from equilibrium in economic growth is corrected by the external debt, domestic debt, foreign direct investment and government expenditure within one year period.

Ehikioya, Omankhanlen, Osuma and Inua (2020) investigated the dynamics that exists on the relationships between public debt and economic growth, as to know whether they are blessing or curse on African nations. They sampled forty three African nations from 2001 to 2018 wherein they sourced data from World Development Indicator issued by the World Bank, World Economic Outlook database issued by International Monetary Fund. The data generated were analysed with system Generalised Method of Moments (SysGMM), Augmented Dickey Fuller (ADF), Philip-Perron (PP) unit root test, optimum lag length was selected by means of the Akaike Information Criterion (AIC). They found a support for long run equilibrium relationships between external debt and economic growth in Africa but then, a short run could converge to equilibrium at long run where the external debt would start having deteriorating effect on economic growth for the countries studied.

This study is targeted to use most current data of 2020 against those of 2018 as contained in the literature reviewed (Ehikioya, Omankhanlen, Osuma & Inua, 2020; Olusegun, Olufemi & Olubunmi, 2020; Eke & Akujuobi, 2021; Hilton, 2021; Yusuf & Mohd, 2021), secondly to consolidate on the findings available in literature using more robust data from 1981 to 2020.

METHODOLOGY

This study used quasi experimental research design because our intention to establish the cause and effect relationships between the variables. Secondary data were employed which were collected from the Central Bank of Nigeria CBN statistical bulletin from 1981 to 2020. The macroeconomic variables upon which the data were collected included, Debt Service Payment, External Debts Stock, Domestic Stock, Gross Domestic Product, Exchange Rate, Foreign Reserve. All the data are in million US dollars and are annual nominal extracts. The study used Johansen technique of co-integration by Johansen (1991, 1995), where Vector Error Correction Model (VECM) was used for the long run analyses of the effect of public debt components on economic growth in Nigeria. We chose Johansen cointegration because, it has the capacity to detect multiple cointegrating vectors, it is more appropriate than Engle-Granger for multivariate analysis, and is the most used as well as suitable for variables that has property of integrating at first level, that is the variables that maintain stationary at first levels 1(1). Augmented Dickey Fuller (ADF) unit root was used to check for stationarity properties of the data, to guard against spurious regression, and descriptive statistics was used to establish the pattern of distribution of the data series.

Model Specification

The model of this study as presented in equation 1 was adapted from Eke and Akujuobi (2021) with slight modification to accommodate some variables of this current study thus;

GDP = f (DODBT, EXDBT, INFL) ----------equ (1)

The model is modified as;

GDP = f (DODBT, EXDBT, DBTSC, EXR, FRESERV)----------equ (2)

The stochastic linear function expressing the relationship is specified as;

$GDP_t = \beta_0 + \beta_1 DODBT_t + \beta_2 EXDBT_t + \beta_3 DBTSC_t + \beta_4 EXR_t + \beta_5 FRSERV_t + U_t$---*equ (3)*

Where;

The explained variable is; GDP = Gross Domestic Product; the explanatory variables are: DODBT = Domestic debt; EXDBT = External Debt; DBTSC = Debt service costs; The control variables are: EXR = Exchange rate; FRESERV = Foreign reserve; β_0 = Constant; β_1- β_5 = The Coefficients to be estimated; t = Time.

The study's hypotheses were tested at 5% error margin. Alternate hypothesis was accepted when the p-statistics was less than or equal to critical level of 0.05, and null hypothesis was accepted on the other hand, when the P-statistics was higher than the critical level of 0.05.

DATA ANALYSIS AND INTEPPRETATION

Data analysis

The study applied several statistical techniques in analysing the data, and they include;

Descriptive Statistics

The test diagnosed the distribution pattern of the series using mean, median, maximum, standard deviation and Jarque-Bera statistics.

TABLE 4.2 DESCRIPTIVE STATISTICS

	GDP (N, Billion)	FRESERV (US Dollars million)	EXR %	EXDBT (N, Billion)	DODBT (N, Billion)	DBTSC (N, Billion)
Mean	33708.94	18422.26	109.1241	1973.402	3203.633	469.0367
Median	7570.318	8345.105	111.7500	640.9787	957.6140	143.2321
Maximum	152324.1	53000.36	410.2500	12705.62	16023.89	3265.473
Minimum	137.9294	224.4000	0.636900	2.331200	11.19260	1.007078
Std. Dev.	45365.39	17500.72	115.7729	2779.720	4571.071	757.3605
Skewness	1.266140	0.554259	1.134681	2.157122	1.489318	2.179436
Kurtosis	3.352215	1.701332	3.515161	7.658503	3.948481	7.199347
Jarque-Bera	10.89417	4.858922	9.025664	67.19059	16.28649	61.05714
Probability	0.004309	0.008084	0.000967	0.000000	0.000291	0.000000
Sum	1348358.	736890.5	4364.965	78936.10	128145.3	18761.47
Sum Sq. Dev.	8.03E+10	1.19E+10	522730.8	3.01E+08	8.15E+08	22370204
Observations	40	40	40	40	40	40

Source: Researcher's computation 2022

Table 4.2 above provides some insight into the nature of the time series data used for the study. The result indicates that there are wide ranges of variability on the variables over the period of time considered. This is made clear by the minimum and maximum values of the variables in the table above. The result shows that between 1981 and 2020, the real GDP growth for Nigeria economy ranges from N137.9294billion to N152324.1billion with an average value of N33708.94billion and a standard deviation of N45365.39billion. The result reveals that the total public external debt is an average of N1973.40billion with a standard deviation of N2779.720billion, wherein the maximum external debt value is N12705.62billion, the minimum is N2.331200billion. the average value of debt services cost for the period under review is N469.0367billion, the minimum is N1.007078billion, with maximum value of N3265.473billion, the standard deviation of N757.3605billion shows that there existed a wide variation over the years It is observed that within the period under study, the Jarque-Bera (JB) which test for normality or existence of outlier shows that all the variables are normally distributed at 1% level of significance.

Correlation Analysis

The correlation tests the degree and direction of associations among the variables, and to know if the exogenous variables are highly correlated among themselves.

TABLE 4.3: CORRELATION MATRIX

	GDP	DBTSC	DODBT	EXDBT	EXR	FRESERV
GDP	1.000000					
DBTSC	0.646744	1.000000				
DODBT	0.591575	0.466236	1.000000			
EXDBT	0.432957	0.580262	0.371716	1.000000		
EXR	0.6642016	0.429699	0.644535	0.345574	1.000000	
FRESERV	0.554360	0.693021	0.678885	0.365962	0.530785	1.000000

Source: Researcher's computation 2022

The result of correlation as shown above indicated that positive relationship exist among the variable and there is no high collinearity as no correlation coefficient is greater than 0.8. The implication of the result is that if foreign debts, domestic debts and foreign reserve are well managed, their increases could ensure the increase of economic growth in Nigeria.

Unit Root Test

The study used the Augmented Dickey Fuller (ADF) to test for the stationarity of the data. The summary of the result is presented below.

TABLE 4.4: STATIONARITY TEST

Variables	Order of integration	ADF @ level	1% (CV)	5% (CV)	10% (CV)
GDP	1 (1)	-6.89770	-4.81720	-3.73042	-3.37799
EXDBT	1 (1)	-5.67859	-4.65255	-3.67081	-3.86909
DBTSC	1 (1)	-6.82186	-4.68355	-3.56081	-3.86909
DODBT	1 (1)	-6.34564	-4.35467	-3.43564	-3.78658
FRESERV	1 (1)	-5.66387	-4.52620	-3.53048	-3.39799
EXR	1 (1)	-6.95764	-4.45630	-3.45457	-3.76578

Source: Researcher's computation 2022

The stationarity result presented in table 4.4 above shows that all the series were stationary at first difference, hence required the application of Johansen Cointegration as the most suitable Cointegration technique because of the property of all the variables being stationary at first difference. These results imply that the regression results that would be obtained from the model specified would have been spurious if there is no long-run relationship among the variables in the model. As such, cointegration properties (long run and short run relationship) were investigated.

Johansen Co-integration Tests

Co-integration tests: The hypothesis of co-integration is accepted if the number of co-integrating relationships is greater than or equal to one. The Johansen co-integration test result between GDP, EXDBT, DBTSC, DODBT, EXR and FRESERV is supported at lag 2 in the Final prediction error (FPE), Akaike information criterion (AIC) and HQ: Hannan-Quinn information criterion (HQ).

TABLE 4.5: JOHANSEN COINTEGRATION TEST RESULT

Series: GDP FRESERV EXR EXDBT DODBT DBTSC
Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.944915	267.2773	95.75366	0.0000
At most 1 *	0.847795	160.0192	69.81889	0.0000
At most 2 *	0.716810	90.36558	47.85613	0.0000
At most 3 *	0.521220	43.68501	29.79707	0.0007
At most 4 *	0.357466	16.43398	15.49471	0.0360
At most 5	0.001824	0.067537	3.841466	0.7949

Trace test indicates 5 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: Researcher's computation 2022

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.944915	107.2582	40.07757	0.0000
At most 1 *	0.847795	69.65358	33.87687	0.0000
At most 2 *	0.716810	46.68057	27.58434	0.0001
At most 3 *	0.521220	27.25103	21.13162	0.0061
At most 4 *	0.357466	16.36644	14.26460	0.0229
At most 5	0.001824	0.067537	3.841466	0.7949

Max-eigenvalue test indicates 5 cointegrating eqn(s) at the 0.05 level

* Denotes rejection of the hypothesis at the 0.05 level

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

Source: Researcher's computation 2022

From the result of Johansen cointegration result table above, the asterisks denote that the null hypothesis of no conintegration be rejected. Therefore the results imply that there are five (5) cointegrating vectors as indicated by either Trace test result or maximum Eigenvalue result test, since their statistic values are higher than critical value at 5% level and their probability value is also less than 0.05.

This result implies the rejection of the null hypothesis that there is no cointegration. This result therefore will lead to testing for long run equilibrium relationships between the exogenous and endogenous variables of the study VECM estimation techniques.

1 Cointegrating Equation(s):		Log likelihood	-1499.366		
Normalized cointegrating coefficients (standard error in parentheses)					
GDP	FRESERV	EXR	EXDBT	DODBT	DBTSC
1.000000	0.238535	-97.67867	5.524173	-5.740443	8.206811
	(0.07139)	(33.9396)	(0.90918)	(0.57279)	(3.77434)
Adjustment coefficients (standard error in parentheses)					
D(GDP)	0.096565				
	(0.09234)				
D(FRESERV)	-0.460000				
	(0.24964)				
D(EXR)	0.003734				
	(0.00084)				
D(EXDBT)	-0.026288				
	(0.03758)				
D(DODBT)	0.049970				
	(0.01187)				
D(DBTSC)	0.002801				
	(0.00330)				

Source: Researcher's computation 2022

The Johansen normalised cointegration coefficient indicates that in the long run, external debt has negative impact on gross Domestic Product, domestic debt has positive impact on Gross Domestic Product, Debt Service cost has negative impact on Gross Domestic Product, Foreign reserve has negative impact on Gross Domestic Product, and Exchange rate has positive impact on Gross Domestic Product in Nigeria on average, ceteris paribus. The coefficients are statistically significant at 5% level.

Vector Error Correction Mechanism

The vector error correction model (VECM) was used to capture the long-run behaviour of the variables.

TABLE 4.6- VECTOR ERROR CORRECTION MECHANISM RESULT

Variables	Coefficient	T-statistics	Probability -value
D (EXDBT(-1))	6.5626	3.5781	0.0046**
D (DODBT(-1))	3.3464	2.6782	0.0373*
D (DBTSC(-1))	-1.397	-0.788	0.0012*
EXR(-1))	0.5404	3.9256	0.4531
FRESERV(-1))	1.0945	4.5609	0.0028*
ECM (-1)	0.3848	3.2436	0.0016**
R-sq(adj)	0.58922		
F-statistics	45.9308		
F-stat Prob. Value	0.00000**		
D.waston	1.833		

Source: Researcher's summary (2022)

Note: ** 1%, * 5% significant level.

From the table 4.6 above, it is observed that the F-statistics is 45.9 with P-value =0.0000 which is lesser than critical value of 0.05 is an indication of the validity of our model at 1% significant level, and can be used for making inference on economic growth of Nigeria. The adjusted R^2 of 0.589 indicates that all the independent variables could explain 59% of the changes in Nigerian GDP, while 41% of the changes could be caused by factors outside our model, which is a proof of goodness of fit of the model. And the Durbin Watson of 1.833 shows the absent of autocorrelation in our model. However, the long-run Vector Error Correction Mechanisms (ECM) proved to be statistically significant in correcting the disequilibrium at lag one in the model. The result indicates that about 38% correction is made to the disequilibrium result from the co-integrating vector, at every one year to return to its equilibrium root. This also means that economic growth adjusts rapidly to changes in external debt stock.

Test of Hypothesis

Domestic debt has no significant effect on Nigeria economic growth

The result reveals that domestic debt with one year lag has coefficient 3.34, which means that it has positive effect on GDP. The p-value of 0.037 which is lower than the 0.05 critical shows that DODBT has significant effect on Nigeria GDP at 5% level. Therefore we reject the null hypotheses and conclude that domestic debt has positive and statistical significant effect on Nigeria GDP.

External debt has no significant effect on Nigeria economic growth

The regression coefficient of 6.57 with T-statistics of 3.56 for external debt with one year lag implies that external debt is positively impacting on Nigeria GDP. Since the P-value of 0.0046 is less than critical value 0.05, it shows that external debt is a significant determinant of the changes in Nigeria GDP at 1% level. Hence we reject null hypothesis and conclude that external debt has positive and statistical significant effect on Nigeria economic growth.

Debt service cost has no significant effect on Nigeria economic growth

The result reveals that debt service cost with one year lag have negative effect on economic growth, as indicated by its coefficient and t-statistics of -1.397 and -0.788 respectively. Its P-value of 0.0012 appears very smaller than the critical value at 0.05. Therefore, the study concludes that debt service cost has statistical significant inverse effect at 5% level on Nigeria economic growth

Discussion of Results

The result provides empirical evidence that domestic debt (DODBT) has positive statistical significant effect on economic growth in Nigeria. This is backed by statistical values of positive coefficient and t-statistics; 3.346 and 2.678 respectively and P-value of 0.0373. The outcome indicates that increase in domestic debt has the capacity to increase the economic growth of Nigerian nation and it's a determinant factor on economic way forward of Nigeria. The result provides also that domestic debt can cause about 3.3 unit changes in economic growth of Nigeria if every other variable is held constant. Nevertheless, it becomes obvious that the continued

increase in domestic debt of Nigeria is to boast economic growth. But just as in foreign debt increasing profile, the one unanswered question is if the debts are committed to appropriate capital economic projects that can ensure economic growth in Nigeria. The result corroborates with the findings of Yusuf and Mohd (2021); Eke and Akujuobi (2021) that domestic debt stock has positive significant long run effect on RGDP.

The result of our study indicates that external debt (EXDBT) has positive statistical significant effect on Nigerian economic growth with the indices P-value= 0.004, T-statistics= 3.57 and coefficient=6.56. It's an indication that if external debt is utilised judiciously for developmental purposes by governments, would ensure enhancement of economic growth of the nation. The result also indicates that external debt can explain the changes in economic growth to the extent of 6.56 units if other variables are held constant. This could be the reason that Nigerian government has consistently clued itself to foreign loans. Though, the question remains if there is equitable application of the loan to economic developmental projects in the nation. The result is in agreement with that of Odubuasi, Uzoka and Anichebe (2018) that external debt stock has positive and statistical significant effect on Nigeria economic growth, but disagrees with that of Ajayi and Edewusi (2020) whose result maintains that external debt has short-run and long-run negative effect on Nigeria economic

More so, debt service cost (DBTSC) has confirmed apriori expectation by having inverse and statistical significant effect on Nigeria economic growth at 5% level as supported by statistical values like, t-statistic= -0.788, coefficient= -1.397 and P-value=0.0012. This result pursues a conventional believe that resources that would have been used for economic activities got eroded in paying interest on the funds borrowed. By implication, the high accumulated loans of Nigeria would be a heavy burden on its economic growth which would confirm debt overhang theory. However, the study finding agrees with those of Yusuf and Mohd (2021) who found debt service cost to have both short and long run impediment to RGDP, Odubuasi and Onuora (2019) who also found that external debt service costs has negative effect on GDP of Nigeria and South Africa.

Furthermore, exchange rate shows positive but no significant effect on the economic growth of Nigeria. This is evidenced by some accompanying statistical values; P-value=0.453, coefficient= 0.54, and T-statistics =3.925, which means that increase in exchange rate will cause a corresponding increase in economic growth. Finally, the last control variable foreign reserve has positive and statistical significant effect on economic growth in Nigeria. This is provided in the result by some statistics via, P-value=0.0028, t-value =3.925 with a coefficient= 1.079. Therefore, the reduction in foreign reserve is expected to cause about 1.07 unit reduction in Nigeria GDP cateris paribus. The result concurs with that of Odubuasi and Onuora (2018) that found foreign reserve to have positive statistical significant effect on GDP of Nigeria and South Africa.

SUMMARY OF FINDINGS

The empirical findings of the study were summarised as follows;

1. Domestic debt has positive and statistical significant effect on Nigeria economic growth at 5% level.
2. External debt has positive statistical significant effect on Nigeria economy at 1% level.
3. Debt service cost has inverse and significant effect on Nigeria economy at 5% level.

CONCLUSION

This study empirically x-rayed the effect of external debts, domestic debt and debt service costs on the economic growth of Nigeria using exchange rate and foreign direct investment as control variables. Debts (foreign and domestic) as an instrument of supplement deficit financing in developing economies specifically Nigeria has statistically significant impact on determining the economic growth of Nigeria. Empirical data for the study were collected from CBN statistical bulletin and estimation done using Johansen cointegration, VAR and VECM. The study confirmed the reason behind the continued borrowing of loans by the Nigerian government both from local and foreign sources.

RECOMMENDATIONS

Sequel to the statistical findings made, the study therefrom made the following recommendations for policy formulation;

1. Government borrowing should always be channelled through viable capital economic project that will fill the gap in real sector of the economy which will in turn impact positively on economic growth.
2. Foreign debt offers lower service costs on loans and broader moratorium therefore developing nations could grip external debts firmly in making up their deficit financing and should ensure every bit of the loan is invested in capital viable economic projects that will enhance economic growth.
3. Debt service cost is an obligation on loans and must be honoured hence, a borrowing nation should know when they have borrowed above their repaying capacity and seize further borrowing in order not to mortgage their future generations
4. There should be concrete repayment plan supported by viable revenue source before government should embark on borrowing.

Suggestion for Further Study.

Our study used service cost, foreign debt and domestic debt as the determinant of economic growth. We however recommend other researcher to ascertain the debt to GDP ratio and debt service cost revenue ratio that could be a threshold for declination of economic growth in Nigeria.

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