EXTERNAL DEBT AND ITS IMPACT ON PRIVATE SECTOR GROWTH IN NIGERIA (1995-2019): A VECTOR ERROR CORRECTION APPROACH

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ABSTRACT

The study examined external debt and its impact on private sector growth in Nigeria; for the period 1995-2019. Secondary data were used and collected from Central Bank of Nigeria Statistical Bulletin, 2019. The study used private sector growth and employs as the dependent variable; whereas, external debt service payments, external debt stock and exchange rate are use as independent variables to measure external debt in Nigeria. Hypotheses were formulated and tested using time series econometric techniques. The study reveals a significant impact of external debt service payments on private sector growth in Nigeria. External debt stock has a significant impact on private sector growth in Nigeria. Exchange rate has a significant impact on private sector growth in Nigeria. The coefficient of determination indicates that about 65% of the variations in private sector growth can be explain by changes in external debt variables (EDSP, EDS, EXR) in Nigeria. The study concludes that external debt has significantly impacted on private sector growth in Nigeria. The study recommends that Government and policy makers should be consistency on the reasons for the borrowed funds and the actual use of the funds. This will help to reduce the problem of debt service payments. The authorities should be aware of the nature and structure of the facility before borrowing. This would help reduce the challenges of debt service payments. Nigeria should use her accumulated external foreign reserves instead of incurring more external debts, as this will ensure increase in private sector growth and reduce capital flights through repayments of debts to external sources.

KEYWORDS: Impact, External Debt, Private Sector, Growth. Nigeria

INTRODUCTION

External debt crisis is one of the serious problem facing the private sector economies today, which Nigeria is also inclusive (Abulewa & Mureeen, 2018). This problem could be traced from the era of colonization and as a result of incorporation of Nigeria into the third world capitalist system. The challenges from the external debt has created doubt as to whether development is indeed possible in these emerging economies of the world. Though, there is nothing wrong in a country going into borrowing, what matters is the proper management of the debt. The reason is because, for a country to grow, it needs capital and where this is not available; it poses a serious challenge to private sector growth and development. The work of Adepeju and Odual (2017) posits that a country finds itself in debt when there exists a gap between domestic savings and investment and export earning which increase in absolute term over time.

The study carried out by Akinwunmi and Adekoya (2018) earmarked that the debt crisis experienced by Nigerian private sector has created quite a number of problems which has

slowed down the pace of growth and development in the economy. However, but what can be done about this situation we find ourselves into? Nigeria's position gets worse as the gap widens and debt cumulate side by side with perpetual accumulation of interest rates. That notwithstanding, Nigeria has maintained a constant flow of net import and this is why the country is compelled to continue to borrow increasing amount of capital to develop her economy (Sulaiman & Azeez, 2018).Thus, the work of Adewalu and Okpuye (2018) posits that African countries have acquired a large sum of external finance overtime to bridge the gap between domestic savings and investment. This process was influenced by the believe of the traditional concept of bridging the savings investment gap in order to accelerate the process of private sector growth. This conventional wisdom was that the gap between savings and investment can be bridged either by reducing domestic savings or augmenting domestic savings with borrowed foreign capital (Odubuasi, Uzoka & Anichebe, 2018). In the former case, private sector would either exacerbate, stagnate or decline and income would be depressed, while in the latter, economic growth would accelerate if the loan were optimally deployed to finance viable projects (Ajayi. & Khan, 2018).

Theoretical Framework

This study is predicated on debt overhang theory. This is one of the theories connecting external debt and private sector growth. A study by Abulewa and Mureeen (2018) sees debt overhang as a situation in which the expected repayment on foreign debt falls short of the contractual value of the debt and showed that there is a limit at which accumulated debt stimulates investment and growth. The same way, Adepeju and Odual (2017) argued that the debt overhang crisis is a situation in which the debtor country benefits very little from the returns on any additional investment because of the debt service obligation. In line with these, Desta (2015) found that a negative relationship existed between external debt and economic growth which justified the existence of debt overhang hypothesis. A study conducted by Elbadawi and John (2014) posit that external debt affect economic growth through direct and indirect channels. Through direct way debt accumulation expressed as a ratio of debt to GDP stimulates debt initially, while past debt accumulation impacts negatively on growth. These two channels produce a debt-laffer curve, which shows that there is a limit at which debt accumulation stimulates growth. When this limit is reached, further debt accumulation impacts negatively on growth.

EMPIRICAL REVIEW

Akinwunmi and Adekoya (2018) examined the growth catalytic role external debt portfolio plays on private sector growth in Nigeria. The study specifically analysed the impact of external debt stock, capital investments, debt service payments, exchange rate and export on economic growth in Nigeria. Time series data set from 1985 to 2015 was collated and analysed using the ordinary Least Square Regression technique. The results revealed that there is significant nexus between capital investments, exports, debt service payments and economic growth. The results further showed exchange rates and external debt stock was insignificant. The study concludes that capital investments, exports, and debt service payments and positive stimulants to growth, whereas the external debt stock and exchange ineffectual stimulants to economic growth in Nigeria.

Adepeju and Odual (2017) investigated the effect of the external debt burden on private sector growth and development of Nigeria. The focal area of the study was the effect of

national output on debt service payment, external reserves, and interest rate. Regression analysis was used for econometric analysis and results 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 and economic depression.

Abulewa and Mureeen (2018) scrutinized the impact of external debt on private sector growth of Nigeria. The study specifically set out to ascertain the impact of gross domestic product, external debt services, external debt stock, external reserve, and exchange rate from 1985 to 2015. Analysis was done using the 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.

Mbueri, Agu and Chigozie (2016) investigated the impact of external debt on private sector growth in Nigeria. Specifically set out to determine the effect of external debt stock, external debt payments and exchange rate on real gross domestic product from 1980-2012. The estimating techniques employed in the study include Augmented Dickey Fuller (ADF) test, Johansen Co-integration, Vector Error Correction Mechanism and Granger Causality Test. The results show an insignificant long run relationship and a bi-directional relationship between external debt and economic growth in Nigeria.

Odubuasi, Uzoka and Anichebe (2018) empirically set out to ascertain the effect of external debt on the economic growth of Nigeria. It statistically used external debt stock, external debt service cost and government capital expenditure as indices for independent variable and gross domestic product as the dependent variable. Secondary data were collected for the period 1981 to 2017. The study employed the Augmented Dickey fuller (ADF) to test for the stationarity of the data, Granger Causality was used to obtain the cause effect relationship among the variables and Error Correction Mechanism (ECM) for the short and long run relationships. The results indicate 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.

METHODOLOGY

The study adopted *ex-post-facto* research design to source requisite information. An *ex-post-Facto* research design is a systematic empirical inquiry that requires the use of variables which the researcher does not have the capacity to change its state or direction in the course of the exercise (Kerlinger, 1973 & Onwumere, 2009). Data for this study was be collected from the Central Bank of Nigeria Statistical Bulletin, 2019, Online Edition available in: <u>www2020Statistical%20Bulletin Section%2nal.xlsx</u>, Data collected and used for the variables form the basis of the study that covers 25-years (1995-2019). The study employed private sector Growth and used as the dependent variable; whereas, external debt stock, debt service payment and exchange rate were used as explanatory variables to measure external debt as indicated on appendix 1.

Model Specification

Multivariate linear regression models are used to test each of the null hypotheses proposed for this study. Based on the formulated hypotheses, a model is adapted from the work of

(Chiwendu, 2018). The model is stated as:GDP = f(EDS, EDSP, EXR).Where: GDP = Gross Domestic Product as proxy for Economic Growth. EDS =External Debt Stock, EDSP = External Debt Service Payments, EXR=Exchange Rate. The above model is modified in this study by introducing private sector growth and was employed as dependent variable. Hence, the modified model is stated as:PSG = f(EDS, EDSP, EXR).The econometric model can be written as:LnPSG = a_0 +Lna₁EDS + Lna₂EDSP+Lna₃EXR+ μ .

 a_0 = Constant parameter, a_1-a_3 = Elasticity Co-efficient of each variable. μ = Stochastic error term, Ln = The natural log of the variables. Log transformation is necessary to reduce the problem of heteroskedasticity because it compresses the scale in which the variables are measured, thereby reducing a tenfold difference between two values to a twofold difference (Gujarati, 2004).

DATA PRESENTATION AND ANALYSIS

Data for this study consist of 25-year annual observation period of (1995-2019). The study employed private sector output as proxy for private sector Growth and used as the dependent variable; whereas, external debt stock, debt service payment and exchange rate were used as explanatory variables to measure external debt as indicated on appendix 1. The descriptive statistics is used to describe the basic characteristics of the data series used in the analyses. The summary results of the descriptive statistics are presented on table 1. Table 1: **Summary Descriptive Statistics**

	PSG	EDSP	EDS	EXR
Mean	25416.05	24993.26	2134.905	56.6.2127
Median	6895.200	155.4200	648.8100	32.1.3800
Maximum	113711.6	464047.5	18913.44	26.81.080
Minimum	134.5900	1.610000	17.30000	54.60000
Std. Dev.	35297.23	99907.10	3732.687	66.90957
Skewness	1.314451	3.802413	3.331590	1.723646
Kurtosis	3.208986	15.77215	14.42995	5.812217
Jarque-Bera	9.562850	303.8218	240.6823	27.21454
Probability	0.008384	0.000000	0.000000	0.000001
Sum	837689.8	756677.6	54637.87	25376.02
Sum Sq. Dev.	3.254650	3.197911	4.378808	4.027862
Observations	25	25	25	25
Source: Author'sE-V	views computation,	9.1		

The total number of observations is 25 for all the variab

The total number of observations is 25 for all the variables. This is indicative that all the series have no missing value in the considered time period. The average growth rates (or mean values) for the variables are: private sector growth (25416.05),external debt service payments (EDSP) (24993.26), external debt stock (EDS) (2134.905) and exchange rate (EXR) (56.2127). The Jarque-Bera statistics specifies that none of the variables departed from normality, thus, the variables are considered to have a normal distribution. All the variables are positively skewed.

Unit Root Test

The Augmented Dickey-Fuller (ADF) unit root test statistics was used to test for stationarity; and to establish the order of integration of each. The null hypotheses of

non- stationarity of oil and gas sector, construction sector and service sectors are tested against the alternative hypotheses. The results were presented on table 2.

Variables	Level	1 st Differ.	Decision	Remarks
PSO	-4.645387*	3.758793	1(1)	Stationary
EDS	-0.49566	-3.846592*	1(1)	Stationary
EDSP	-1.465832	3.85769**	1(1)	Stationary
EXR	-2.467593	-4.09576*	1(1)	Stationary

Source: E-views Econometrics 9.1, * (**) indicate statistical significance at the 1 percent and 5 percent level, respectively. The critical values at the 1 percent and 5 percent significance levels and the critical values of ADF are from Mackinnon.

Test for Co-integration

The results of the test are presented on table 3 and the null hypotheses of no cointegration among the variables (that is, r=0) is tested against the alternative hypotheses of co-integration among the variables (that is r=1). The null hypotheses of no co-integration is rejected at the 5 percent significance level. However, the null hypothesis that rd" 1 could not be rejected against the alternative r=2 and r=3, suggesting the presence of a unique co-integrating relationship among variables. Thus, a long-run relationship exists among the variables as indicated by the likelihood ratio as indicated on table 3.

 Table 3: Multivariate Johansen's Co-Integration Test Result.
 Lags interval: 1 to

 2
 2

Null hypothes.	Alternative hypotheses	Eigen value	Likelihood ratio	Critical values	5% Critical	Hypothesi No.
r=0	r=1	0.8465	64.5463	56.64	64.57	None **
rd <u><</u> 1	r=2	0.6453	54.5374	46.84	56.02	At most 1
rd <u><</u> 2	r=3	0.4266	46.7564	32.04	46.84	At most 2
rd <u><</u> 3	r=4	0.2850	36.4376	23.74	42.04	At most 3

Source: E-views Econometrics 9.1

Note: * (**) denotes rejection of hypothesis at 5% (1%) significance level.

Vector Error Correction Model

The Error Correction coefficient contains information about whether the past values affect the current values of the variable under study. ECM is related to the speed of

adjustment of the system towards long-run equilibrium and the short-run dynamics are captured through the individual coefficients of the difference terms Ibenta (2012).

Table 4: Vector Error Correction Estimates Results						
Dependent Variable: PSG						
Method: Least Squares, Tin	Method: Least Squares, Time: 06:35					
Sample: 1995-2019						
Included observations: 25						
Date: 12/02/2020	Coefficient	Std. Error	t-Statistic	Prob.		
(ECM-1)	-0.724585	-0.007845	21.03086	0.000341		
D(PSO)(-1)	5.376565	0.002704	7.047694	0.000083		
D(PSO)(-2)	6.465647	0.036457	9.560952	0.000040		
LN(EDSP)(-1)	7.758900	0.253789	4.598404	0.000064		
LN(EDS)(-2)	6.375653	0.374653	3.088678	0.000054		
LN(EXR)(-3)	8.253778	0.003756	2.376875	0.000080		
С	7.546578	0.058799	3.758059	0.000001		
R-squared	0.653265	Mean depende	ent var	23.76876		
Adjusted R-squared 0.591233		S.D. dependent var		125.3676		
S.E. of regression	12.37865	Akaike info c	riterion	1532.759		
Sum squared resid	378.3220	Schwarz criterion		10.46039		
Log likelihood	-123.1673	F-statistic 8.97586		8.975867		
Durbin-Watson stat	1.979687	Prob(F-statistic) 0.000000				

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Source: Author's computation with the use of E-view 9.1

The results on table 3 show that the error-correction coefficient is statistically significant and has a negative sign, which confirms a necessary condition for the variables to be cointegrated. This also implies that the speed with which external debt stock, external debt service payments, exchange rate, adjust from short-run disequilibrium to changes in private sector growth in Nigeria in order to attain long-run equilibrium is 72% within one year. Hence, from table 4 the coefficient of determination ($R^2 = 0.653265$) indicates that about 65% of the variations in private sector growth can be explained by changes in external debt variables (EDSP, EDS, EXR) in Nigeria. This implies that a significant portion of private sector growth is explained by external debt variables. The p-value of (0.00000) indicates that there is a significant impact of external debt on private sector private sector output in Nigeria; this is because, the F-probability is statistiscally zero. This means that external debt has a significant impact on private sector growth in Nigeria; because, the influence of the explanatory variables on the dependent variable is statistically significant and this is also confirmed by the F-probability which is statistically zero.

CONCLUSION AND RECOMMENDATIONS

The study conclude that external debt has a significant impact on private sector growth in Nigeria using time series data of 25-years, 1994-2018. This is consistent with work of Adewalu and Okpuye (2018) which revealed a positive significant effect of external debt on the private sector economy. The study recommends that Government and policy makers

should be consistency on the reasons for the borrowed funds and the actual use of the funds. This will help to reduce the problem of debt service payments. The authorities should a where of the nature and structure of the facility before borrowing. This would help reduce the cost debt service payments challenges. Nigeria should use her accumulated external foreign reserves instead of incurring more external debts, as this will ensure increase in private sector growth and reduce capital flights through repayments of debts to external sources.

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Appendix:1 Impact of External Debt on Private Sector Growth in Nigeria 1995-2019

Years	External Debt	External Debt	Exchange	Private Sector
	Stock(N '	Service	Rate(%)	Growth(N'
	Billion)	Payments(N ²		Billion)
		Billion)		

1995	716.87	51.06	65.752	20,353.20
1996	617.32	53.05	83.695	21,177.92
1997	595.93	68.54	92.693	21,789.10
1998	633.02	64.39	102.105	22,332.87
1999	2,577.37	30.84	111.943	22,449.41
2000	3,097.38	131.05	120.970	23,688.28
2001	3,176.29	155.42	129.356	25,267.54
2002	3,932.88	163.81	133.500	28,957.71
2003	4,478.33	363.51	131.661	31,709.45
2004	4,890.27	382.50	128.651	35,020.55
2005	2,695.07	393.96	134.054	37,474.95
2006	451.46	249.33	132.372	39,995.50
2007	438.89	213.73	132.601	42,922.41
2008	523.25	381.20	128.270	46,012.52
2009	590.44	251.79	146.680	49,856.10
2010	689.84	415.66	150.20	54,612.26
2011	896.85	527.18	156.00	57,511.04
2012	1,026.90	679.30	171.200	59,929.89
2013	1,373.58	828.10	180.111	63,218.72
2014	1,631.52	941.70	44.527	67,152.79
2015	2,111.53	1,060.60	46.628	69,023.93
2016	11,406.28	353,093.54	32.23	67,931.24
2017	18,913.44	464,047.50	36.12	68,490.98
2018	18,987.24	476,353.63	36.2	69,810.02
2019	18,997.82	489,354.45	36.12	72,748.23

Sources: Central Bank of Nigeria Statistical Bulletin, 2019.