

Effect of Public Debt on Economic Growth in Nigeria (1986-2016)

¹D. B. Ewubare and ²B. I. Akosa

Department of Agricultural and Applied Economics Rivers State University Nkpolu-Oroworukwo, Port Harcourt

Corresponding Author: Akosa, Bridget Ifeoma researchsolutions177@gmail.com

Abstract

This study examined the impact of public debt on economic growth in Nigeria within the period 1986 – 2016. Adopting the, Error Correction Model (ECM) to analyze the data collected. The study specifically determined the effect of external debt stock on economic growth, the effect of domestic debt stock on economic growth, the relationship between external debt service payment and economic growth and the relationship between domestic debt service payment and economic growth in Nigeria. The ECM result indicated that the changes in economic growth are explained by external debt stock, domestic debt stock, external debt service and domestic debt service was 81%. The coefficient of the ECM was natively signed (-0.690162) signed, modified the short run deviation to long run equilibrium at a speed of 69%. The overall model was significant at 5% level given the F-value of 4.004310 with the probability value of 0.006868, while the Durbin-Watson statistics of 2.81 revealed lower level of serial autocorrelation. Also, the ECM result indicated that both domestic and external debt stock were positive and significant related with economic growth. Similarly, both domestic and external debt service payment were positively significant at 5% level. It was established that public debt have positive significant impact on economic growth but cannot be used in predicting changes in each other. It was recommended that public debt should be contracted when necessary and solely for economic reasons.

Keywords: *Economic Growth, Public Debt, external debt stock, domestic debt stock, service payment*

Introduction

In recent times, Nigeria economy has been characterized by high levels of public debt along with persistent low economic growth. As such, an understanding of the dynamics between public debt and growth is critical in addressing the obstacles to economic growth and to improve debt sustainability in Nigeria (Omet, Akham & Fadwa, 2002). Traditionally, the main drivers of economic growth are the level and quality of a country's physical and human capital, technological advancement and the quality of the labor force as well as the country's level of openness to international trade (Omnet et al, 2002).

Basically, Nigeria began to experience public debt problem from the early 1980s when foreign exchange earnings plummeted as a result of the collapse of prices in the international oil market and external loans begin to be acquired indiscriminately debt stock and difficulty servicing, has

imposed several problem on the Nigeria economy. The Nigerian economy has recently been enmeshed in debt. The country is highly indebted both to local creditors and external sector. These debts attract high service cost. (Nzotta, 2004). According to Aminu (2017) the Nigerian economy Shrank from \$568 billion in 2014 to about \$405 billion in 2016. And throughout 2016 the economy was recession, so the country is in need of growth but with high levels of debt as it is today, there is need to identify the nexus between public debt and economic growth in Nigeria.

Objectives of the Study

The broad objective of the study is to examine the impact of public debt on economic growth in Nigeria. The Specific objectives are to:

- ii. determine the effect of external debt stock on economic growth in Nigeria.
- iii. ascertain the impact of domestic debt stock on economic growth in Nigeria
- iv. examine the relationship between external debt service payment and economic growth in Nigeria and
- v. examine the relationship between domestic debt service payment and economic growth in Nigeria,

Theoretical Framework

The theoretical framework upon which the work hinges are the profligacy theory, dependency theory, neoclassical theory and Keynesian theory as they provided the salient points and conditions that may lead an economy to accumulation of debts.

The profligacy theory

The profligacy theory states that the debt crises arouse from weak institution and policies that have wasted resources through unbridled official corruption and damaged living standard and development.

The Dependency Theory

This theory is based on the assumption that resources flow from a “periphery” of poor and underdeveloped state to a “core” of wealthy states thereby enriching the latter at the expense of the former. Dependency theory state that the poverty of the countries in the periphery is not because they are not integrated or fully integrated into the world system as is often argued by free market economists, but because of how they are integrated into the world system. From this standpoint, a common school of thought is the bourgeoisie scholars. To them, the state of underdevelopment and constant dependency of less developed countries on developed countries are as a result of their domestic mishaps.

Neoclassical Growth Theory

According to the neoclassical growth theory, debt has a direct effect on economic growth. This is because the amount borrowed, if used optimally is anticipated to increase investment. As long as

countries use the borrowed funds for productive investment and do not suffer from macroeconomic instability, policies that distort economic incentives or sizable adverse shocks, growth should increase and allow for timely debt repayment.

On the other hand, the indirect effect of debt is its effect on investment. The transmission mechanism through which debt affect growth is its reduction on the resources available for investment by debt servicing.

The Keynesian theory

Keynes view fiscal policy as the best policy that brings about growth in any economy since it acts in the interest of the general public. According to Keynes when the government embarks on public borrowing to finance its expenditure, unemployed funds are withdrawn from the private pockets such that the consumption level of private individual remains unaffected. This funds when injected back into the economy by the government leads to a multiple increase in aggregate demand causing an increase in output and employment. Hence public borrowing can be used to influenced macroeconomic performance of an economy on the other hand, the increase effect of public borrowing is its effect on investment.

II Methodology

Research Design

Quasi Experimental research design was adopted for this study

Data Collection Methods and Sources

Secondary data was used for the study. These were obtained majorly from Central Bank of Nigeria Statistics Bulletin and Debt Management Office Publications.

Data Analysis Techniques

The ordinary least square, Co-integration test and error correction model were the techniques used for the data in this study.

Model Specification

The mathematical and functional specification of the model are presented in the equations as follows:

$$\text{RGDP} = f(\text{EDS}, \text{DDS}, \text{ESP}, \text{DSP}) \quad (1)$$

$$\text{RGDP} = a_0 + a_1\text{EDS} + a_2\text{DDS} + a_3 \text{ESP} + a_4 \text{DSP} + U_t \quad (2)$$

Where;

$$\text{RGDP} = \text{Real Gross Domestic Product (Proxy for Economic Growth)}$$

EDS	=	External debt stock
DDS	=	Domestic debt stock
ESP	=	External debt service payment
DSP	=	Domestic debt service payment
U	=	Error Term
t	=	Time/period
ao	=	Intercept
$a_1, a_2, a_3, a_4,$	=	Coefficients

On the apriori, the study expect $a_1 > 0$, $a_2 > 0$, $a_3 < 0$ and $a_4 < 0$

III. Results and Discussion

Table .1: Data on RGDP, EDS, DDS, ESP,DSP

Year	RGDP	EDS(₦'M)	DDS(₦'M)	ESP(₦'M)	DSP(₦'M)
1986	15,237.99	41.45	28.44	0	1.34
1987	15,263.93	100.79	36.79	0	3.74
1988	16,215.37	133.96	47.03	0	0.97
1989	17,294.68	240.39	47.05	0	2.06
1990	19,305.63	298.61	84.09	0.80	0.16
1991	19,199.06	328.45	116.20	0.10	0.35
1992	19,620.19	544.26	77.96	1.68	0.99
1993	19,927.99	633.14	273.84	2.21	0.22
1994	19,979.12	648.81	407.58	3.96	0.98
1995	20,353.20	716.87	477.73	1.64	2.72
1996	21,177.92	617.32	419.98	2.60	0.13
1997	21,789.10	595.93	501.75	0.19	0.18
1998	22,332.87	633.02	560.83	0.25	4.15
1999	22,449.41	2,577.37	794.81	0.30	4.48
2000	23,688.28	3,097.38	898.25	0.16	3.83
2001	25,267.54	3,176.29	1,016.97	1.41	19.23
2002	28,957.71	3,932.88	1,166.00	15.88	32.45
2003	31,709.45	4,478.33	1,329.68	14.68	71.03
2004	35,020.55	4,890.27	1,370.33	0.00	4.40
2005	37,474.95	2,695.07	1,525.91	0.00	22.56
2006	39,995.50	451.46	1,753.26	0.00	26.95
2007	42,922.41	438.89	2,169.64	5.90	25.74

2008	46,012.52	523.25	2,320.31	38.26	60.20
2009	49,856.10	590.44	3,228.03	7.98	162.27
2010	54,612.26	689.84	4,551.82	7.60	88.10
2011	57,511.04	896.85	5,622.84	41.30	170.40
2012	59,929.89	1,026.90	6,537.54	10.40	223.40
2013	63,218.72	1,373.58	7,118.98	31.48	412.37
2014	67,152.79	1,631.52	7,904.02	24.35	261.94
2015	69,023.93	829689	8,836.80	30.13	408.14
		17			
2016	62,101.28	34788	10,606.20	32.50	467.10

Source: CBN Statistical Bulletin, 2014 – 2017 issues.

Table 2: Unit Root Test (Augmented Dickey Fuller)

Coefficients	Critical Values at 5%	ADF Values	Probability	Comments
RGDP	-2.971853	-1.374872	0.5800	I(0)
DDS	-2.971853	-4.005501	0.0047	I(1)
DSP	-2.971853	-10.97812	0.0016	I(1)
EDS	-2.971853	-5.026667	0.0003	I(1)
ESP	-2.971853	-4.985411	0.0007	I(1)

Source: Estimated by the Author from using E-views 9

Augmented Dickey Fuller Test was adopted to test for Unit Root Test for stationarity as presented in table 2. At 5% level of significance, external debt stock, domestic debt stock, external debt service payment and domestic debt service payment were stationary and integrated at first difference because their ADF value were greater than their critical value at 5% level. However, real gross domestic product was not stationary. At this point, OLS cannot be used for analysis.

Table 3: Co-integration Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.909799	160.6660	69.81889	0.0000
At most 1 *	0.759184	90.90015	47.85613	0.0000
At most 2 *	0.644667	49.61217	29.79707	0.0001
At most 3 *	0.427825	19.60589	15.49471	0.0113
At most 4	0.111087	3.414907	3.841466	0.0646

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

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

Co-integration test was employed to established whether long run relationship exist among the variables. As depicted in table 3, long run relationship is proving to exist amongst the variables as four equations trace statistic were greater than their critical values at 5% level. This justified the need to construct error model.

Table 4: Error Correction Model (ECM)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.006732	0.013760	0.489266	0.6293
D(RGDP(-2))	0.186396	0.216431	0.861225	0.3980
D(DDS)	0.535916	0.201033	2.665809	0.0138
D(DDS(-1))	0.231404	0.186240	1.242499	0.2266
D(DDS(-2))	-0.176173	0.261812	-0.672897	0.5077
D(DSP)	1.845343	0.641211	3.268211	0.0138
D(DSP(-1))	0.871433	0.086471	0.832422	0.6163
D(DSP(-2))	-217.2114	0.211931	-3.874537	0.0000
D(EDS)	48.45322	0.432292	-2.863324	0.0008
D(EDS(-1))	3.911671	0.462213	0.112912	0.4113
D(EDS(-2))	-873.2341	0.756631	-4.874537	0.0000
D(ESP)	78.45122	0.187131	-2.001435	0.0108
D(ESP(-1))	0.743321	0.754412	0.834122	0.3873
D(ESP(-2))	-25.15531	0.098111	-2.224543	0.0000
ECM(-1)	-0.690162	0.203716	-3.387871	0.0025
R-squared	0.810907	Mean dependent var		0.027665
Adjusted R-squared	0.683318	S.D. dependent var		0.078171
S.E. of regression	0.061387	Akaike info criterion		-2.542282
Sum squared resid	0.086672	Schwarz criterion		-2.215336
Log likelihood	45.13423	Hannan-Quinn criter.		-2.437689
F-statistic	4.004310	Durbin-Watson stat		2.814940
Prob(F-statistic)	0.006868			

Source: Estimated by Author from E-view 9

As presented in table 4, the variation in the dependent variable (Real Gross Domestic Product) explained by the independent variables (External Debt Stock, Domestic Debt Stock, External Debt Service Payment and Domestic Debt Service Payment) is 81%. The coefficient of ECM was negative (-0.690162) meaning that the short run deviation was adjusted to long run equilibrium position at a speed of 69%. The independent variables (external debt stock, domestic debt stock, external debt service payment and domestic debt service payment) were overall significant in explaining the dependent variable (Real Gross Domestic Product) as indicated by the F-statistics

value of 4.004310 with probability value of 0.006868. The Durbin-Watson value of 2.81 which not too far from 2.00 revealed lesser level of serial autocorrelation.

The independent variables (Domestic Debt Stock and External Debt Stock) were both positive and significant at 5% level with economic growth. This means that increase in both external and domestic debt lead to increase in economic growth. This conform to the apriori expectation. The study therefore reject the null and concluded that there is significant relationship between external debt stock, domestic debt stock and economic growth in Nigeria for the period under study. In the same vain, both domestic debt service payment and external debt service payment were positively significant at 5% level with economic growth. The study therefore reject the null hypothesis that there is significant no significant relationship between external debt service payment and economic growth in Nigeria for the period of the study. Generally, the result of the study is in agreement with Adejuwon and James (2016) who posited that both domestic and external debt if properly utilized would be expected to stimulate economic growth by bringing in the much needed capital for infrastructural development.

IV. Conclusion

Based on the findings, it is concluded that public debt have positive impact on economic growth in Nigeria. This conclusion is in agreement with Adejuwon and James (2016) who opined that both external and domestic debt stock if properly utilized would be expected to stimulate economic growth by bringing in the much needed capital for infrastructural development.

Based on the findings of this study, it was concluded that public debt should be expanded and contracted when necessary and solely for economic reasons since it has the ability to impact positively on the economy.

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