

National Debt and Economic Development in Nigeria

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¹Doctoral Candidate, Department of Finance and Banking, University of Port Harcourt. anibon2002@gmail.com ²Professor, Department of Finance and Banking, University of Port Harcourt. patjickconsults@gmail.com ³Associate Professor, Department of Finance and Banking, University of Port Harcourt. torbiralezasi@yahoo.com Abstract: The study examined the nexus between national debt and economic development in Nigeria using time series data. The study proxies national debt using external debt stock, domestic debt stock, domestic debt servicing cost, external debt servicing cost while misery index is used as a measure of economic development in Nigeria. Data for the study is sourced from the World bank data base and Central Bank of Nigeria statistical bulletin. The study employed unit root test, co-integration test, vector error correction model and granger causality test. Findings shows that external debt stock significantly promote economic development in Nigeria while domestic servicing debt cost and external servicing debt stock does not significantly contribute to economic development in Nigeria. As such, since result provided us with an evidence to assert that external debt has contributed to economic development in Nigeria, we recommended that external borrowing should be monitored to avoid diversion and should also be invested on productive capital investment across the nation which is capable of yielding profitable investment returns. By doing this, it significant effect will be more felt by all and sundry.

1.0 Introduction

Maintaining a sustainable level of economic growth is a policy which every nation strives to achieve. A growing economy is characterized by increase in the output of industries, reduction in the levels of unemployment and inflation and an increase in the level of savings. Increased industrial output for any country leads to job creation, increase in disposable incomes, and increase in the general level of savings and eventually reduce the level of poverty. Egbetunde (2017) stated that an enhanced economic growth of more than 5% will likely affect positively the country's economic situation and reduce the level of poverty.

Balancing economic growth level alongside development has been a center point of discussion in the finance and economic literature over the years. Economic development as the core dependent variable in this study represents a process of targeted activities and

policies that works to improve the economic wellbeing and quality of life of a community by building local wealth, diversifying the economy, creating and retaining jobs, and building the local tax base (Ivaldi, Bonatti, & Soliani, 2016). The measures of economic development has grown in recent years based on increasing understanding of the key role of various economic indicators which should be considered to ensure a rounded perception of an economy. Many scholars have considered capturing it from several perspectives. Prominent among the measures are; Per capita gross domestic product as introduced by Todaro (1977), Human Development Index as developed by Ul Haq (2003), Human Poverty Index as advanced by the World Bank (1997) and other crucial indicators, down to the recently acclaimed Misery Index. Economic development, therefore, is usually considered to be the most important economic statistic and is frequently used for domestic and international comparisons as observed by Jelilov and Bahago (2017).

For this study, misery index otherwise called economic discomfort index as propounded by Okun (1983) and tested by Hanson (2015) is used as a measure of economic development. This index is a composite statistic which takes addition of unemployment rate, inflation rate, lending (interest) rates, while adjusting the annual per capita gross domestic product growth rate (Cohen, Ferretti, & McIntosh, 2014). It is used to measure economic well-being and shows the condition of a country. An increasing index indicates declining economic wealth, which has an adverse effect on the living standard of the populace as explained by Wang, Shah, Ali, Abbas, & Ullah (2019).

The Nigerian economy is one which is characterized by a growing population, poor infrastructure, a -3.62% growth rate at Q3 of 2020 (CBN, 2020) which is below the expected margin for growth, 7.96% unemployment rate (NBS, 2020), 15.97% inflation rate (CBN, 2021), and 11.5% interest rates (NBS, 2020) which is considered very high for industrial development. The growing population and poverty level, low human capital development, dwindling infrastructure and retrenchment of workers in some sectors of the economy alongside the resources gap in the public budget and the need to create an active economy propel the decision of government to seek for additional public debt while the private investors seek for credits from Deposit Money banks. Loan to finance infrastructure and other economic activities seem not to have yielded the expected improvement in the economy and this left many of the informed Nigerians wondering about the growing debt profile in the public and private sector and their effect on the economic condition of the country.

The public debt is decomposed into domestic and external debt stocks and servicing. Domestic debt in Nigeria includes debt owed to creditors within the country. This is made up of claims by the Central Bank, Commercial Banks, Merchant Banks, and Non-Interest Banks on the private sector, State and Local Governments, non-financial public enterprises and other private sectors (Abdu, 2019). Public external debt according to Babu, et al (2018), is debt owed to external creditors. Among them are multilateral creditors such as International Development Association (IDA), Africa Development Bank (ADB), World Bank (WB), International Monetary Fund (IMF) and other International Financial Institutions. Other bilateral creditors which are essentially other countries, for example, Japan, Italy, Germany, as well as commercial creditors, essentially private institutions, for example, Standard Bank, UK.

The Nigeria's public debt, like that of many developing economies, has changed significantly in the past decades and that has been worrisome. As at July 2005, Nigeria external debt was N705Billion of which 534billion or 85% was owed to the Paris Club of fifteen Creditor nations. In July 2006, it was N1.5 trillion as reported by Debt Management Office, apart from external debts, Nigeria's domestic debt as at 31st December, 2013 was N1.329 trillion. Nigeria's Total Debt Stock (Foreign & Domestic), as at June 2020 stood at N31.01 trillion (\$85.9 billion), that is 8.31% increase when compared with N28.63 trillion (\$79.3 billion) recorded in March 2020 (DMO, 2020 Report). The breakdown shows that total external debt stood at N11.36 trillion (\$31.47 billion), accounting for 36.65% of the total debt stock, while domestic debt represented 63.35% of the total debt. Domestic debts stood at N19.65 trillion (\$54.42 billion) as at June 2020. The report also reveals that N921.9 billion was used to service domestic debts between January and June 2020, while N288.6 billion was used on foreign debts, making a total of N1.21 trillion. Compared to N1.06 trillion spent in the same period of 2019. This implies that debt service increased by 14.6%. Nigeria's public debt grew by \$22.09 billion in the last 5 years, indicating an increase of 34.6%.

Interestingly, with this raising debt profile, the economic wellbeing of the citizens has not improved which would have made the essence of debt much more relevant to the standard of living of the citizens. Within this period, the misery index which is the measure of economic wellbeing has also been on the increase which indicates downward trend in economic wellbeing as the higher the index, the lower the economic development of the country.

Scholars have reported that quite a number of financial misallocations had made government borrowed fund to derail from its target thereby triggering debt servicing cost. Prominent among these misallocations include Injecting of borrowed funds on investment that is misplaced and not capable of generating a decent rate of returns to help pay the debt interest payment Osuka & Achinihu (2017), Onuorah & Ogbonna (2017) and Monogbe, Dornubari & Emah (2017). An example of such investment prominent in Nigeria is injecting of fund in white elephant project which at the end of the day will be abandoned due to change in government regime and political differences. Such uncompleted project remains redundant and unable to contribute to economic development of the nation and this also contribute to accumulated national debt stock.

The insubstantial contribution of these quantum of debt on economic development constitute the worries of this study and in an attempt to address this issues, we decomposed national debt into external debt, domestic debt, external debt servicing cost domestic debt servicing cost while misery index is used as a measure of economic development between the periods 1980 to 2020.

2.0 Theoretical and Empirical Review

Overhang Debt Theory:

The theory explained that economic performance of a country will be spontaneously affected due to the inability of a country to service her debt for a long period of time, which may likely become a burden on the future generation and hence block other avenue of borrowing externally. In this case, the country is only left with the option of combating with internal borrowing which brings about high level of competition between private investors and the government hence crowd out private investor due to high governmental demand for loan resulting to skyrocket interest rate, (Claessens, 1996).

Debt overhang occurs when the lump sum of a country's debt exceeds her capacity to repay in the future. This theory argues that inability of a country to service or repay her debt promptly has a ripple effect on the present generation as well as the future generation. The present generation may experience low level of money flow in the economy which will bring about low level of investment, high level of unemployment, low level of output which will downsize economic development and finally debars opportunity of further borrowing from abroad. Hence, the inability of the present generation to service the borrowed fund may be transfer to the future generation as a debt burden.

Crowding Out Theory

In economics, crowding out is a phenomenon that occurs when increased government involvement in a sector of the market economy substantially affects the remainder side of the market. The theory argues that rising public sector spending drives down or even eliminates private sector spending.

The crowding out effect occurs when public sector spending reduces private sector expenditure. An example of a country experiencing the crowing out effect is Malaysia. The country's government focused on making investments in a number of companies which reduces private sector involvement in the economy.

One of the most common forms of crowding out takes place when a large government, such as that of the U.S., increases its borrowing and sets in motion a chain of events that results in the curtailing of private sector spending. The sheer scale of this type of borrowing can lead to substantial rises in the real interest rate, which has the effect of absorbing the economy's lending capacity and of discouraging businesses from making capital investments.

Companies often fund such projects in part or entirely through financing, and are now discouraged from doing so because the opportunity cost of borrowing money has risen, making traditionally profitable projects funded through loans cost-prohibitive.

The crowding out effect has been discussed for over a hundred years in various forms. During much of this time, people thought of capital as being finite and confined to individual countries, which was largely the case due to lower volumes of international trade compared to the present day. In that context, increased taxation for public works projects and public spending could be directly linked to a reduction in the capacity for private spending within a given country, as less money was available.

Review of Related Literature

Given the new directives of the Nigeria government, the central bank aimed at reducing the external debt stock due to its cost of servicing. In this line of taught, Akpansung & Gidigbi (2020) investigated the extent to which domestic debt stock influence economic performance in Nigeria using an historical data between the periods 1981 to 2018. The study utilized the stationarity test of unit root alongside the Johnson co-integration test. The study conducted a single model equation where domestic public debt to gross domestic product was used as proxy for domestic debt while gross domestic product per capita was a measure of economic performance. Findings show that domestic debt significantly promote economic performance in Nigeria in the short and long run. Hence they recommended judicious use of domestic debt as it has the capacity to boost economic performance with little cost of debt servicing.

In another related study, Abdulkadir & Abdulazeez (2020) using an explorative technique analyzed the importance of public debt management and it effect on debt profile in Nigeria. The study was a historical study where a time series data was considered on a platform of descriptive design. The study employed the auto regressive distributed lag considering the mixed nature of stationarity identified from the study result. The study analyzed the Nigeria debt management strategy over the years and how its management strategy has effect on her debt profile. Debt management strategy was measured with debt refinancing, debt forgiveness and debt conversion. Findings provided us with an evidence to assert that debt refinancing has left the country in a downward state of economy while debt conversion positively affect debt profile in Nigeria. The study concluded that whenever public debt is not directed toward boosting economic performance, the debt profile will keep increasing in a worsen manner.

In a similar study carried out in Portugal, Jorge (2020) investigated the contribution of public and private sector debt on economic bliss of the country. The study covered a period of twenty years while time series data were employed. The genesis of the study was anchored on the fact that amidst the founding member of euro area, Portugal has the highest net external debt while little or no level of development could be attached to the quantum of debt profile, hence the debt profile management need to be investigated. The study decomposed external debt into private and public debt while economic growth was proxied with private and public investment using the vector error correction estimate. Finding reveal that international debt (public and private) jointly promote public investment while private investment was damaged by private debt. The damage was caused through the increase in the cost of borrowing which almost crowd out private investors from the business.

Ehikioya, Omankhanlen, Osuma & Inua (2020) empirically checked whether the inflows of foreign borrowing into the African region was a blessing or a curse against development. The study lasted between the periods 2001 to 2018 where 43 African countries were

surveyed alongside their debt profile and its corresponding feasible development. The study employed the generalized movement method and co-integration test. Result shows that the development height witnessed in the African nation is a product of external inflows. Although, it was further reported in the study that misapplication of borrowed fund in the short run will transmit into economic fallout and thus deteriorate national growth level of the African region in the future. Therefore, borrowed fund should be handled with utmost care and must be effectively utilize toward achieving the desired level of development in the region.

Ajayi & Edewusi (2020) empirically analyzed the extent to which public debt has contributed to economic output in Nigeria. An historical data that covers thirty-five years periods was used. The data set was subjected to stationarity test, descriptive analyses, long run test and error correct model. Public debt was measured with local and international borrowing. It was reported from the result of the study that in the long run, international loan negatively influences economic output in Nigeria. The study emphasis that international loans have a way of putting out local investors off operation due to high level of imported technology thereby resulting into unhealthy competition. However, local debt seems to have positively contributed to the witness growth in the nation. Therefore, the study arrived at a conclusion that both in the long run and short run, international loans inflict negative impact on the Nigerian economy. Hence, it should be avoided completely.

Eze, Nweke & Atuma (2019) investigated the nexus between national debt and economic bliss in Nigeria. The study was an empirical study which covers the period of thirty-seven years. National debt was proxied with international debt, domestic borrowing, government spending, cost of funds, total national savings debt and public investment while national output was as a measure of economic bliss. The study subjected its data set to stationarity test and mixed level of stationarity was identified. This led to the adoption of auto regressive distributed lag. From the result an inverse and insignificant nexus was identified between economic output and local borrowing thereby reflecting that the present level of development achieved in the Nigerian context is not a product of domestic borrowing. Although, external debt was seen to have contributed to economic spillover, but in a negative manner. The study thus recommended that in a quest to finance government deficit, external borrowing should not be considered as an option.

Festus & Saibu (2019) examined the implication of foreign debt on the Nigeria's economy using an historical data within the scope of 1981 to 2016. The study utilized the regressive distributed lag. The study proxied international loan with external debt, trade openness, rate of exchange price index and local investment. A negative relationship was identified between international borrowing and output growth in Nigeria. The study thus recommended accountability in governance and stable economic policy as a way out.

Fagge & Ibrahim (2019) investigated the extent to which public debt have been managed in Nigeria after the exit of the nation from Paris club loans. The study employed the mixed research method where historical data and primary data set generated from questionnaire distributed to respondent were used. The study lasted for thirty-five years and Outcome from the result shows that the Nigerian government have not been able to manage her debt profile since the exit from Paris club and as a result, her debt stock is on the increase while

the servicing cost is also raising on yearly basis. On the whole, they concluded that Nigerian economy has not benefited from the inflows of international debt over the years due to personal and political interest of the leaders.

Using multivariate VAR approach and annual time series data spanning 1981-2016, Akpansung (2018) analysed the dynamic interactions and impacts of domestic debts on private sector credit, prime lending rate, and real output in Nigeria. The results provide evidence that government domestic debt exerted insignificant positive impacts on both private sector credit and prime lending rate, and a statistically significant negative impact on real output in Nigeria during the period covered by the study.

Nwannebuike, Ike & Onuka (2018) investigated how external borrowing has helped transform the Nigerian economy into the desired level. The study objective was to identify if external borrowing have really contributed to the Nigeria's growth agenda. An historical data between the periods 1980 to 2015 was used. The study proxied international borrowing with external loan, cost of servicing such loans and rate of exchange. Report shows that international debt stock and its corresponding servicing cost negatively affect national output in Nigeria while rate of exchange is active in boosting economic output in Nigeria. The structural analytical method that contain VECM was employed in the study.

Mwakima (2017) examined the impact of public domestic debt on private credit in Kenya over the period of 2008 to 2016. The study employed the ordinary least square regression technique of data analysis and found that domestic borrowing has negative effect on private sector credit in Kenya.

Ahmed (2016) estimated bank supply side equation in Pakistan using 3SLS from 1990-2013. The study found that government borrowing leads to crowding credit away from possible productive use by the private sector. The empirical study of Choudhary, Khan, Pasha & Rehman (2016) analyzed the pressure fiscal expansion exerts on the economy via credit markets in Pakistan from 1975-2008. The study revealed that government borrowing leads to crowding out of private credit and rise in interest rate spreads.

3. Methodology

In other to achieve the objective of this study, the ex-post facto causal comparative research design will be used for this study. The rationale behind this choice of design is that it will enable us to identify which of these debt profile has influenced or contributed to economic development in Nigeria over time and this will help guide our discussion and recommendation. This data is sourced from the World Bank data base, Debt Management Office alongside the Central Bank of Nigeria Statistical Bulletin between the periods 1981 to 2020.

Operational Measures of Variables

Misery Index: This is an economic development metrics used to measure the social economic well-being of the citizens over a period. It will be conceptualized as the composite statistics of unemployment rate plus inflation rate less gross domestic product per capital. As introduced by Hansen (2015), the decision rule state that the higher the

index, the lower the economic development pace perceived in the economy and the lower the index the higher the economic development pace perceived in the nation. Therefore, the lower the index the better for the economy. On this basis, we expect an inverse relationship between misery index and all other explanatory variables.

External Debt Stock: This is the total volume of fund borrowed outside the shore of Nigeria expressed in billions of naira. It comprises debt borrowed from multilateral and bilateral institute across the world. This will be captured in Billions of Naira as reported from the Nigeria bureau of statistics report and central bank of Nigeria statistical bulletin 2020 issues. However, the value will further be converted to rate to ensure uniformity of measurement since the dependent variable is in rate. On apriori, we expect an inverse tie between external debt and misery index such that increase in external debt, will bring about decrease in misery index and the lower the index the better for the economy.

Domestic Debt Stock: This is the aggregated volume of locally borrowed debt by the Federal government from the domestic banks. Government borrow funds through issuing of bills such as treasury bills, commercial paper, bonds and so on. This will be conceptualized as the total sum of locally borrowed fund and reported in the Central bank of Nigeria statistical bulletin 2020 in Billions of Naira. Since the dependent variable is in rate, the value will also be converted into rate to ensure uniformity of measurement. On apriori, we expect an inverse relationship between domestic debt and misery index.

External Debt Servicing Cost: This is the total amount of money paid as an interest on the borrowed external funds over the period of the policy. This funds are paid in the currency at which it was borrowed, but for the purpose of this study, we will be conceptualizing them in Billions as reported in the World Bank Data Base. The value will be converted into rate to ensure uniformity of measure while on apriori, we expect a direct relationship between servicing cost and misery index such that increase in external debt servicing cost will bring about a corresponding increase in misery index. This therefore implies that increase in external debt servicing cost will bring about decrease in economic development.

Domestic Debt Servicing Cost: These are the interest paid by the government to the lenders of domestic loans. The interest rate paid in the currency at which it was borrowed. This will be captured in Billion as reported in the Nigeria Bureau of statistic and further converted to rate to ensure uniformity of measure. A direct relationship is expected between the series such that increase in the servicing cost will bring about corresponding increase in misery index thus suggest low level of economic development.

Model Specification

We formulate our model in the following manna

 $MXI_t = f(EXDS_t, DMSD_t, EXSC_t, DMSC_t,)...(1)$

We transform the above model into an econometrics model by introducing coefficient and error term accordingly

$MXI_{t} = \beta_{0} + \beta_{1}EXDS_{t} + \beta_{2}DMSD_{t} + \beta_{3}EXSC_{t} + \beta_{4}DMSC_{t} + \mu_{t}$ (2)

Since the causal comparative research design is proposed in this study, we sort to introduce the grange causality model accordingly,

 $\Delta MXI_{t} = \sum_{i=1}^{n} b_{t} \Delta EXDS_{t-i} + \sum_{i=1}^{n} c_{t} \Delta MXI_{t-i} + \sum_{i=1}^{n} d_{t} \Delta DMSD_{t-i} + \sum_{i=1}^{n} e_{t} \Delta EXSC_{t-i} + \sum_{i=1}^{n} f_{t} \Delta DMSC_{t-i} + y_{t}$ (3)

Where

MXI = Misery index

EXDS = External debt stock

DMSD = Domestic debt stock

EXSC = External servicing debt cost

DMSC = Domestic debt servicing cost

 β_0 = Constant

 μ_t = Error term

Qt = Error term

 β_1 . β_4 = Coefficient of the explanatory variables

 Δ = Change

t - i = Lag value of the explanatory metric

b_t = Coefficient of the causal explanatory variables

 $y_t = \text{Error term}$

Apriori Expectation

On apriori, we expect a negative relationship between misery index and external debt stock, domestic debt stock such that increase in these loans will bring about decrease in the index and the lower the index, the better the level of economic development perceive in the nation. This can be written mathematically as

 $\mathbf{B}_1, \mathbf{B}_2 < 0, \mathbf{B}_3, \mathbf{B}_4 > 0$ (1)

4.0 Result and Discussion

Table 1: Presentation of data set for analysis where Misery Index (MXI), External Debt Stock (EXDS), Domestic Debt Stock (DMSD), External Debt Servicing Cost (EXSC), Domestic Debt Servicing Cost (DMSC).

YEARS	MXI%	EXSC %	DMSD %	EXDS %	DMSC %
1981	15.4	0.17	0.1	0.81	0.06
1982	26.7	0.29	0.34	1.64	0.25
1983	17.07	0.32	0.48	0.82	0.11
1984	32.38	0.67	0.16	0.33	0.14
1985	20.87	0.27	0.09	0.15	0.06
1986	16.4	0.05	0.02	0.03	0.13
1987	5.35	0.07	0.29	0.2	0.2
1988	3.58	1.26	0.28	0.1	0.1
1989	51.65	0.56	0	0	0.12
1990	53.57	0.71	0.79	0.15	0.12
1991	15.03	-0.18	0.38	0.11	0.04
1992	34.56	-0.19	0.53	0.19	0.97
1993	65.08	-0.37	0.54	0.18	0.02
1994	63.2	0.26	0.49	0.21	0.03
1995	13.98	-0.13	0.17	0.11	0.01
1996	11.05	0.22	-0.12	-0.08	0.04
1997	30.6	-0.36	0.19	0.13	0.09
1998	27.59	-0.03	0.12	0.1	0.11
1999	17.61	-0.11	0.42	0.37	-0.17
2000	22.43	0.91	0.13	0.04	0.21
2001	36.43	0.49	0.13	0.04	0
2002	19.11	-0.37	0.15	0.05	0.01
2003	47.05	0.18	0.14	0.04	0.1
2004	17.3	0.08	0.03	0.01	-0.08
2005	17.67	4.08	0.11	0.03	0
2006	14.16	-0.26	0.15	0.08	0.03
2007	25.5	-0.85	0.24	0.92	0.05
2008	33.08	-0.36	0.07	0.34	0.01
2009	46.13	0.38	0.39	1.73	0.04
2010	29.34	0.67	0.41	2.24	0.08
2011	36.42	-0.57	0.24	1.55	0.1
2012	35.51	1.61	0.16	1.02	0.03
2013	33.91	-0.63	0.09	0.57	-0.11
2014	33.26	8.24	0.11	0.57	0.05
2015	42.28	-0.56	0.12	0.57	0.05
2016	54.23	1.05	0.25	1.05	0.03
2017	54.38	0.72	0.14	0.44	0.03
2018	55.6	0.62	0.01	0.03	0.52
2019	56.07	0.87	0.12	0.19	0.59
2020	59.06	0.68	0.12	0.19	0.66

Source: Extraction from CBN Bulletin 2020 issues

Variabl	ADF T- statistics	Mackinnon's test critical values @		Probability Level	Order of Integrati		
e	At Level	1%	5%	10%		on	Decision
		-	-		0.0000		
MXI	-6.642632	3.626784	2.945842	-2.611531		i(1)	Stationary
		-	-		0.0000		
EXDS	-6.253294	3.661661	2.960411	-2.619160		i(1)	Stationary
		-	-		0.0000		
DMSD	-9.547501	3.615588	2.941145	-2.609066		i(1)	Stationary
		-	-		0.0000		
EXSC	-7.077293	3.615588	2.941145	-2.609066		i(1)	Stationary
		-	-		0.0000		
DMSC	-10.34515	3.615588	2.941145	-2.609066		i(1)	Stationary

Table 4.2: Presentation of Unit Root Test (1st Difference)

Source: Researcher Computation

From the result presented in table 4.2 above, we found absent of unit root as all variable exhibited a significant P-val alongside ADF t-statistics coefficient which is greater than the critical value at all level. Having justified the absent of unit root, we thus conclude that all-time series became stationary at 1st differencing in the order of i(1) integration. The uniformity order of stationarity i(1) thus meet the condition for co-integration, hence, we proceed to test if there exist a long run relationship among the study variable using Johansen co-integration test.

Table 4.3: Presentation of Johansen co-integration Test Result for the Public DebtVariables

Date: 09/29/21 Time: 13:07 Sample (adjusted): 1983 2020 Included observations: 38 after adjustments Trend assumption: Linear deterministic trend Series: MXI EXDS DMSD EXSC DMSC Lags interval (in first differences): 1 to 1

	8		,	
Hypothesize d		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.596491	71.72942	69.81889	0.0349
At most 1*	0.423771	47.85612	37.24233	0.0362
At most 2*	0.269485	29.79703	18.29487	0.0410
At most 3	0.098158	4.362614	15.49471	0.8722
At most 4	0.011424	0.436606	3.841466	0.5088

Unrestricted Cointegration Rank Test (Trace)

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

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

Result of the Johnsen co-integration test provided us with evidence of three co-integrating equation thus suggesting the existence of long run relationship among the study variables. To this end, we can thus conclude that long run relationship exists between the study variable. Having justified the existence of long run relationship, we proceed to vector error correction model as the existence of co-integration is the condition for VECM.

Table 4.4: Presentation of Vector Error Correction Model Result for Public Debt.

Dependent Variable: D(MXI) Method: Least Squares (Gauss-Newton / Marquardt steps) Date: 09/29/21 Time: 13:31 Sample (adjusted): 1983 2020 Included observations: 38 after adjustments

	Coefficien			
	t	Std. Error	t-Statistic	Prob.
С	1.141622	2.270382	0.502832	0.6186
MXI(-1)	-0.528901	0.160578	-3.293736	0.0025
EXDS(-1)	-3.161250	1.111121	-2.845099	0.0078
DMSD(-1)	-20.70415	11.98852	-1.726998	0.0941
EXSC(-1)	0.102732	0.081788	1.256068	0.7444
DMSC(-1)	0.001661	0.158975	0.010449	0.0998
ECM(-1)	-0.701454	0.149816	-4.682117	0.0001
R-squared	0.687752	Mean depe	endent var	0.851480
Adjusted R-				
squared	0.588607	S.D. depen	dent var	17.81318
S.E. of regression	13.92842	Akaike inf	o criterion	8.270562
Sum squared resid	6014.028	Schwarz c	riterion	8.572223
Log likelihood	-150.1407	Hannan-Q	uinn criter.	8.377891
F-statistic	4.919585	Durbin-Wa	atson stat	1.934761
Prob(F-statistic)	0.001224			

Source: Authors Computation

Global Utility

Starting with the global statistics, the adjusted R² exhibited an average coefficient of 58.86% thus suggesting that change in public debt jointly accounted for variation in economic development in Nigeria to the tune of 59% approximately while the other 41% percent are captured in the error term. The F-statistics which seem to predict the global fitness of significance of the model exhibited a coefficient of 4.9195 alongside a significant

corresponding P-val of 0.00122 which is less than the alpha level of 0.05. This thus justify the overall significance of our study model and shows that the model is of good fit.

The Durbin Watson exhibited a high coefficient of 1.93476 pointing to an absence of auto correlation thus suggesting that the result is free from spurious observation at this level.

Relative Statistic.

The speed at which the short run distortion is corrected in the long run amounted to 70.1%. This is identified from the ECM negative coefficient of -0.7014 alongside a significant P-value of 0.0001 thus suggesting that the short run-long run disequilibrium is corrected to the tune of 70.1%. ECM speaks about the speed of Adjustments in the long run to correct distortion in the short run.

Of the four proxies of national debt identified in this study, only external debt significantly con tribute to economic development in Nigeria. That is, external debt inflows over the years have been the reasons behind the level of development witnessed in the county. However, domestic debt stock, external debt servicing cost and domestic debt servicing cost does not significantly contribute to economic development in Nigeria as they exhibited a P-val higher that 0.05 level of significant respectively.

Table 4.5: Presentation of the Block Granger Causality Test

The researcher presents VECM Granger Causality/Block Exogeneity Wald Tests in table 4.9 in order to see the nature of causality relationship.

VEC Granger Causality/Block Exogeneity Wald Tests Date: 09/29/21 Time: 16:18 Sample: 1981 2020 Included observations: 38

			0.0
Excluded	Chi-sq	df	Prob.
D(EXDS)	8.094587	1	0.0044
D(DMSD) D(EXSC)	2.982523 0.108243	1	0.0842 0.7422
D(DMSC)	4.604587	1	0.0319
All	15.00043	4	0.0047

Dependent variable: D(MXI)

Source: Authors computation.

From the block granger causality test presented in table 4.9 above, two causal relation prevail. (i) causal relationship exists between external debt stock and misery index, (ii)

causal relationship exist between domestic debt servicing cost and misery index while causal relationship does not exist between domestic debt stock, external debt servicing cost and misery index. In all, the result suggest that only external debt stock and domestic debt servicing cost are the metric of public debt that causes/predict economic development in Nigeria.

Discussion of Findings

External Debt Stock and Misery Index in Nigeria.

From the result presented in table 4.8, external debt stock exhibited the expected negative coefficient of -3.1612 with a significant P-vale of 00078. This implies that increase in external debt stock will bring about a corresponding increase money supply which will improve productivity of goods and services in terms of improved infrastructure in economic which will guarantee improvement of economic wellbeing which will lead to the development of the citizens in Nigeria to the tune of 3.1612 percent. This result is in line with our a priori expectation and support the Keynesian debt theory which submitted that increase in government spending through external borrowing will further contribute to economic growth over time. The result from this study support that of Ndubuisi (2018), Alawneh (2017), Botelho (2017), Lucky & Godday (2017), Elom-Obed, Odo, Elom, & Anoke (2017), Ezike & Mojekum (2017) whose study submitted that external debt has contributed to economic growth in Nigeria over the years. Finally, report of the ganger causality test also provided us with evidence of causal relationship between external debt stock and economic development in Nigeria. This implies that over time, external debt stock has contributed to the level of economic development in Nigeria.

Domestic Debt Stock and Misery Index in Nigeria.

Domestic debt stock has a negative coefficient of -20.7041 as expected, but with an insignificant P-val of 0.0941 which suggest the existence of negative and insignificant relationship among the study series. By implication, the result implies that increase in domestic debt stock will bring about a corresponding increase in economic development to the tune of 20.7041 percent. The insignificant contribution of domestic debt to economic development could be traced to fund diversion and misappropriation of public fund. The result from this study support that of Elom-Obed, Odo, Elom, & Anoke (2017) whose study submitted that domestic loan does not have the capacity to boost economic growth due the limit amount that can be made available for government project when compared to external borrowing.

External Debt Servicing Cost and Misery Index in Nigeria.

Result from this study provided us with an evidence to asset that external debt servicing cost contribute to economic underdevelopment in Nigeria. This is identified from its insignificant P-value of 0.7444 alongside a positive coefficient of 0.1027. This implies that increase in the external debt servicing cost will bring about continues economic underdevelopment to the tune of 10 percent accordingly. The result from this study is inline with our aprioi expectation and also in support of debt overhanging theory which posit that delay in repayment of interest and principal sum of the national debt as and

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when due leads to debt overhanging and this will further bring about a ripple effect on the future generation. The result from this study is also in support with the study of Ndubuisi (2018), Nwannebuike, Ike & Onuka (2018), Abula & Ben (2016), Ezike & Mojekum (2017) whose study shows that increase in the external debt servicing cost will deepens underdevelopment of the economy and further passes the ripple effect on the future generation.

Domestic Debt Servicing Cost and Misery Index in Nigeria.

The result here suggested that domestic debt servicing cost has accounted for increase in economic underdevelopment in Nigeria over the years to the tune of 0.0016. This is identified from its positive coefficient of 0.0016 alongside an insignificant P-val of 0.0998. The result further supports our apriori expectation that increased in domestic debt servicing cost will deepens economic underdevelopment. To avoid further deepening of economic underdevelopment, debt servicing cost should be paid as and when due as this will help the nation to access more loans and further help in enhancing more level of development.

5. Conclusion and Recommendations

The study investigated the nexus between national debt and economic development in Nigeria between the periods 1981 to 2020. The study proxied national debt using external debt, domestic debt, external debt servicing cost and domestic debt servicing cost. The study employed time series data sourced from the central bank of Nigeria statistical bulletin alongside World bank data base. The study employed Unit Root Test, Johansen Co-Integration Test, Error Correction Model Test and Block Granger Causality Test. From the result, we found that

- Under the public debt, misery index exhibited a high coefficient of 52% which is higher than the threshold level of 24% thereby indicating poor level of development pace in Nigeria. This further justify that its component such as unemployment rate, inflation rate and interest rate deepens overs the years.
- External debt stock significantly contributed to economic development in Nigeria given the result of vector error correction model. The granger causality test result also provided us with an evidence of causal relationship between external debt stock and economic development.
- Domestic debt stock does not significantly contribute to economic development in Nigeria as reported within the context of the study.
- External debt servicing cost does not significantly promote economic development in Nigeria
- Domestic debt servicing cost does not significantly contribute to economic development in Nigeria.

Recommendations

In the light of the above, the following recommendation is presented

- i. Since result provided us with an evidence to assert that external debt has contributed to economic development in Nigeria, we recommended that external borrowing should be monitored to avoid diversion and should also be invested on productive capital investment across the nation which is capable of yielding profitable investment returns. By doing this, it significant effect will be more felt by all and sundry.
- ii. We found that domestic borrowing contributed to economic development as expected but in an insignificantly manner. As such we recommended that locally borrowed loans should be used for the productive ventures that will boast the productive capacity of the economy.

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