External Debt and Economic Growth Relationship in Nigeria: A Reconsideration

BASHIR OLAYINKA KOLAWOLE
ASSOCIATE PROFESSOR OF ECONOMICS
LAGOS STATE UNIVERSITY
e-mail: kolawolebashir@gmail.com
https://orcid.org/0000-0001-6405-0646

SUMMARY

This paper examines the relationship between external debt and economic growth over the period 1981-2021 in Nigeria using the ARDL econometric technique. As economic growth is elusive amid a high and increasing stock of external debt, the country is on the verge of losing access to international financing. Thus, the problem provokes raging discussion on whether, or not, external debt is growth-enhancing in Nigeria. As such, in an attempt to contribute to the discussion and proffer a solution to the problem, this paper builds on an earlier study. Consequent upon preliminary diagnostics, a one-way causality is established to run in a specific pairwise relationship as each of external debt and domestic investment Granger causes economic growth. Moreover, following the affirmation of the long-run relationship among the variables, estimation results reveal an inverse relationship between real interest rate and economic growth in the short-run. The results further establish that external debt impacts negatively, as against openness to trade and domestic investment averagely impacting positively, on economic growth in both the short-run and long-run. In essence, if it becomes pertinent for the country to borrow for growth-enhancing investments, the government is advised to borrow at a zero rate of real interest.

Keywords: ARDL, domestic investment, Economic growth, external debt, real interest rate
Journal of Economic Literature (JEL) codes: F41, H50
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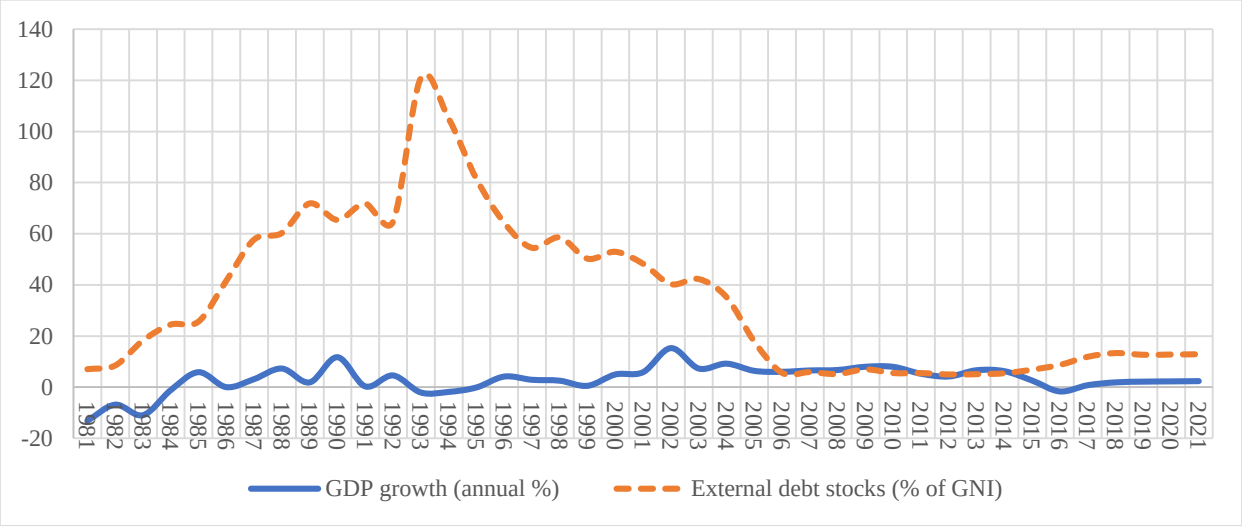
INTRODUCTION

The necessity of external debt for the growth of an economy cannot be overemphasised. This is important given the 2-gap analysis in which, as foreign aid, external debt is sought to fill both the investment-savings and import-export gaps. Imperatively, external borrowing is a potent instrument at the disposal of a government willing to bridge the fiscal gap as well as build economically efficient and growth-enhancing infrastructure. In the Keynesian view, an accelerating debt stands the chance of stimulating aggregate demand and hence, a high rate of economic growth. However, in the neoclassical perspective, declining growth results as external debt rises. In this regard, the debt overhang theory emphasises the detrimental pass-through impact of high indebtedness on economic growth.

In Nigeria, as presented in Figure 1, economic growth fluctuates between -1.58% in 2016 and -1.92% in 2020 as the debt portfolio rises from NGN32.9 billion in 2020 to NGN39.5 billion and NGN46.2 billion respectively in 2021 and 2022 and debt stock is expected to reach NGN77 trillion in 2023.[i] Although the debt-to-GDP ratio is expected to decrease to 45% in 2027 and not surpass the 70% threshold, however, the increasing debt stock might limit the country's access to international financing.[ii] Among the debts owed to foreign sources, Nigeria's indebtedness to the World Bank has risen from USD6.29 billion in 2015 to USD13.93 billion in 2022 as the International Monetary Fund [IMF] expects a significant drop in the country's access to external loans.[iii] Meanwhile, as it stands, real GDP growth reaches 3.98 and 3.52% respectively in the fourth quarters of 2021 and 2022 while 3.75% is targeted for 2023.[iv] Thus, with the spate of indebtedness and increasing costs of borrowing, is external debt growth-enhancing in Nigeria?



Source: Author's representation using data from World Bank (2022).

Figure 1. External debt and economic growth relationship in Nigeria, 1981-2021.

The issue of whether, or not, external debt boosts economic growth in Nigeria has provoked several studies over the years. However, because there is no convergence in findings, the issue has continued to generate more debates and as it stands, discussion still rages on how external debt impacts economic growth in the country. Incidentally, part of the discussion includes Sami and Mbah (2018) and Kolawole (2020) who affirm the negative impact of external debt on economic growth; and Adegboyega (2018), Akanbi et al. (2022) who find external debt impacting positively on economic growth. Nonetheless, Ibi and Aganyi (2015) assert a no-relationship while Adeniyi et al. (2018) conclude that methodology influences the effect of external debt on economic growth. As such, for the fact that the country needs policy sensitization that could proffer a solution to the problem of elusive economic growth amid high and increasing external debt, this paper contributes to the discussion by building on Kolawole (2020). Therefore, by objective, the paper examines whether, or not, external debt is economic growth-enhancing in Nigeria.

Imperatively, Nigeria's recourse to external borrowing predates independence when, among other loans, the country sought USD28 million for the construction of the Nigerian Railways. Although agriculture served as the engine of growth in the period, and economic activities were threatened by political unrest and civil war, yet, by 1969, economic growth climbed to 24.2% while external debt hovered below 7.0% of gross national income (GNI).[v] Moreover, in the 1970s, the country experienced a structural change in the economy which, in effect, led to oil replacing agriculture as the catalyst for growth. As such, an average 6.9% growth recorded in the 1970s resulted from oil-generated income. Nonetheless, in current US dollars, total external debt climbed to 1.77 billion in 1973 from 836 million in 1970. Also, while external debt decreased between 1975 and 1976, the effect of raising syndicated loans from the international capital market in 1977 and 1978 caused an increase in the debt from 3.7% or USD1.33 billion in 1976 to 8.8% or USD3.14 billion in 1977 and upward to about 14% or USD5.09 billion in 1978. In the same period, however, economic growth slowed from 25.0% in 1970 to 9.0% in 1976 and further to -5.7% in 1978 as total external debt averaged USD2.4 billion in the decade.

The stock of Nigeria's external debt assumed an upward trajectory from the early part of the 1980s.[vi] Specifically, due to the activities of the civilian regime in power, the debt stock rose from USD6.24 billion in 1979 to USD17.57 billion in 1983. That is, as a percentage of GNI, external debt increased from 13.2% in 1979 to 18.2% in 1983. Also, following the military incursion to power in the later part of 1983, the country's indebtedness to foreign creditors increased in a geometric version. For example, as an annual percentage change, external debt moved from 1.17% in 1984 to 30.65% in 1987; that is, a monetary rise from USD17.7 billion to USD29.02 billion, respectively. However, consequent on the debt-buy-back agreement with the London Club, the annual percentage change decreased to -13.45% in 1992 from 0.20% in 1991 as debt stock dropped to USD29.01 billion from USD33.52 billion, respectively.[vii] Nonetheless, by the year 2004, while the government was relentlessly campaigning for debt

relief, the stock reached USD44.5 billion and became unsustainable. By the end of the second quarter of 2005, the country agreed on a USD18 billion debt relief package with the Paris Club.[viii] In effect, the country's external debt stock decreased to USD12.9 billion in 2006 with annual percentage change dropping to -55.46 from -34.70% in 2005. It is unfortunate, however, that after 17 years of debt relief, Nigeria's external debt rose to USD41.8 billion in May, 2023.[ix]

After the introductory aspect, the paper is structured into four sections as follows. Section two reviews relevant literature and section three provides the methodology. While empirical results are presented and discussed in section four, section five concludes with recommendations.

REVIEW OF LITERATURE

Using the theoretical postulations of debt overhang along the neo-classical and endogenous views, Akanbi et al. (2022) employ the auto-regressive distributed lag (ARDL) technique to investigate the relationship between external debt service and economic growth for the period 1981-2020 in Nigeria. The study finds insignificant negative and positive effects respectively from external debt service and external debt stock on economic growth in the country. It is, therefore, suggested that to offset the cost of debt service, a methodology should be developed for comparing the return on external debt to the cost. For Indonesia, Suidarma and Yasa (2021) use an error correction mechanism (ECM), among other techniques, to examine the contribution of external debt to economic growth during the period 2011-2020. As preliminary finding reveals that economic growth increases over the period considered, the regression results show that external debt is significant and exerts a positive impact in the long-run.

In the attempt to provide an understanding of how the misapplication of external debt could be short-lived, Ehikioya et al. (2020) use the general method of moments (GMM) technique to examine the dynamic relationship between external debt and economic growth in a panel of 43 African countries from 2001 to 2018. As a long-run relationship is established, the result however shows that beyond a certain capacity, external debt has a deteriorating impact on economic growth in the continent. While buttressing the need for proper application and efficient use of external debt in economic activities, the study suggests putting in place a monitoring mechanism.

By using the linear and polynomial relationship as a basis, and employing the ordinary least squares (OLS) and ARDL techniques, Kolawole (2020) examines the relationship between foreign debt and economic growth in Nigeria. While considering the period from 1970 to 2017, the study in the process confirms the presence of structural breaks using the Bai and Peron (2003) methodology. Preliminary findings show that foreign debt Granger-causes growth. However, the linear analysis reveals that foreign debt is significant and impacts economic growth negatively in the short-run. On the contrary, the polynomial analysis reports insignificant effects in both short- and long-run. The government is, therefore, advised to take caution in securing additional foreign loans for the country.

Considering the origin and metamorphosis of external debt unsustainability in Nigeria, Adegboyega (2018) examines the impact of external debt on economic growth between 1981 and 2016. The study finds external debt impacts positively on gross national income in the country. As a recommendation, the study suggests the use of self-liquidating investment as a panacea to long-term external debt problems. However, in review, it is observed that the recommendation is at variance with the results. Based on the consensus in the literature, Adeniyi et al. (2018) investigate the relationship between external debt and economic growth during the period 1981-2015 in Nigeria. The threshold analysis shows that the effect of external debt is sensitive to the measure adopted. However, the existence of the association of debt Laffer curve with debt overhang is confirmed thereby pointing to an excessive accumulation of external debt. Thus, for the reason to enjoy the growth benefits, the study suggests a maximum ceiling of 6.81% as a share of external debt stock in gross national income (GNI).

Being concerned by the rising external debt required to finance the annual budget of Oman, Sami and Mbah (2018) adopts the ARDL technique to investigate the relationship between external borrowing and economic growth over the period 1990-2015 in the country. The result reveals, via the ECM, that external debt impacts economic growth significantly but negatively in the period considered. To affect growth positively, the study recommends the productive use of external debt in the country. While considering emerging economies, Shkolnyk and Koilo (2018) use various econometric techniques to examine the relationship between external debt and economic growth over the period 2006-2016. Findings reveal that a high stock of external debt impedes growth as the marginal impact of debt is negative in the economies considered. Specifically, the results show how ineffective is the implementation of debt management strategy in Ukraine. Thus, the study suggests an improved debt management model for the country.

Moreover, Ewubare et al. (2017) examine the effect of public borrowing on the growth of the Nigerian economy over the period 1980-2015. The ARDL result reveals that external debt is significant and positively stimulates economic growth. As such, the study suggests prudent utilization of borrowed funds. In review, it is

observed that a 'no structural break' outcome is reported in the analyses. However, the study fails to account for the non-stationarity of GDPR. In addition, the short- and long-run output could not show the estimates of the immediate past value of GDPR which, undoubtedly, is fundamental to the use of ARDL as a dynamic technique. Similarly, by employing OLS and the Johansen cointegration approach, Ndubuisi (2017) analyses how external debt impacts economic growth during the period 1985-2015 in Nigeria. While a unidirectional causality is established, a long-run relationship is also found as external debt propels the growth index positively and significantly in the country. The study recommends that external debt should be used for infrastructural development along with a proper debt management initiative, among others.

In a panel of WAMZ countries, Jarju et al. (2016) analyse and investigate the relationship between external debt and economic growth over the period 1980-2014. The results reveal a non-linear Laffer curve shape relationship between external debt and economic growth thereby confirming the accumulation of external debt beyond a specific threshold. Also, the results confirm the effect of rising external debt stock such that debt service limits the use of scarce revenue from being channelled to growth-propelling productive public investments. However, in Nigeria, Mbah et al. (2016) use the Granger-causality and ARDL approaches to investigate the impact of external debt on economic growth over the period 1970-2013. Following the affirmation of a long-run relationship, the result establishes a unidirectional causality running from external debt to growth while the former impacts negatively on the latter. Thus, it is recommended that government should embark on prudent borrowing and encourage export-oriented growth. In review, it is observed that all the series, except GDPGR, are non-stationary. As such, a structural break test, if conducted, would have revealed the cause of non-stationarity in the series. Nonetheless, Ugwuegbe et al. (2016) use the OLS and Johansen cointegration methodology to examine the effect of external borrowing on the growth of the Nigerian economy over the period 1980-2013. The findings reveal that external debt is positively significant in driving economic growth in the country.

METHODOLOGY

Analysis of the relationship between external debt and economic growth in Nigeria follows a multivariate structure. It utilises the econometric technique of regression analysis. The dependent variable is the growth rate of real GDP measured as an annual percentage. The independent variables comprise the external debt of the federal government, openness to foreign trade, real interest rate, real exchange rate, and domestic investment. To achieve uniform units of measurement and ease the interpretation of estimates, data for real exchange rates are transformed to natural logarithms to be at par with other variables in percentage of GDP. Moreover, all data are collated from the CBN (2022) and World Bank (2022). In essence, the analysis commences with summary statistics and preliminary tests using the approaches of Dickey and Fuller (1979), Phillips and Perron (1988), Kwiatkowski et al. (1992), and Granger (1988). Nonetheless, due to the increasing spate of external borrowing coupled with humongous size of the country's debt since 2020, and to ascertain the extent to which the rate of economic growth has been affected, the study covers the period 1981-2021.

Meanwhile, following the neo-classical framework, the debt overhang hypothesis underpins the study, theoretically. Thus, in line with Krugman (1988) as well as the empirical works of Afonso and Alves (2014) and Kolawole (2020), amongst others, the basic functional relationship is modified and expressed as,

$$grt_t = f(Xd_t, Opn_t, Rir_t, LRer_t, Inv_t) \quad (1)$$

where, at time *t*, grt is economic growth, *Xd* is external debt, *Opn* is openness measured as the average of the sum of imports and exports, *Rir* is real interest rate, *Rer* is real exchange rate, and *Inv* is domestic investment measured in terms of gross fixed capital formation in the country.

The linear transformation of equation (1) becomes,

$$grt_t = \beta_0 + \beta_1 Xd_t + \beta_2 Opn_t + \beta_3 Rir_t + \beta_4 LRer_t + \beta_5 Inv_t + \varepsilon_t \quad (2)$$

where, β_0 is the intercept, or slope, of the regression line, $\beta_{1\ldots\ldots5}$ are the coefficients of estimation, as ε is the error term. Invariably, equation (2) expresses specifically that the rate of economic growth is averagely affected by external debt and each of the other independent variables. As such, by a priori expectation, domestic investment will impact positively on growth as against negative effects from external debt and other variables.

Table 1

Summary Statistics

	GRT	XD	OPN	RIR	RER	INV
Mean	3.111320	34.58932	16.19863	0.520538	4.785806	35.43719
Median	3.200125	24.46118	17.09131	4.342493	4.610741	30.03794
Maximum	15.32916	120.8353	26.63898	18.18000	6.285635	89.38613
Minimum	-13.12788	4.950816	4.567923	-65.85715	3.906734	14.16873
Std. Dev.	5.331757	30.33651	6.048878	14.26849	0.596201	19.03453
Skewness	-0.865217	0.892963	-0.401256	-2.726142	1.029560	1.103356
Kurtosis	4.837053	3.101889	2.372736	12.92906	3.169791	3.917927
Jarque-Bera	10.88066	5.466517	1.772372	219.2024	7.292535	9.758289
Probability	0.004338	0.065007	0.412225	0.000000	0.026088	0.007604
Sum	127.5641	1418.162	664.1439	21.34207	196.2180	1452.925
Sum Sq. Dev.	1137.105	36812.16	1463.557	8143.591	14.21822	14492.53
Observations	41	41	41	41	41	41

Source: Author's computation.

The summary statistics, as presented in Table 1, indicate that, in the period considered, the country's rate of economic growth and stock of external debt averaged 3.1 and 34.5%, respectively. Similarly, the level of domestic investment is an average of 35.4% while openness to trade, real interest rate, and real exchange rate respectively averaged 16.1, 0.5, and 4.7%. Furthermore, economic growth slows to the minimum rate of -13.1%, real interest rate slides deeply to -65.8, as external debt is minimum at 4.9%. Also, the country achieved a minimum of 14.1% in domestic investment with openness being at 4.5% and the real exchange rate fluctuating to 3.9% minimum. Imperatively, given the statistics, it is apparent that domestic investment is potent enough to cushion the effect of external debt on economic growth in the country. This follows from the fact that even as the real interest rate and real exchange rate climb to 18.1 and 6.2%, respectively, and external debt reaches a maximum at 120.8%, domestic investment is at its highest at 89.3% thereby making the country achieve maximum economic growth of 15.3%.

Table 2

Results of unit-root tests

	ADF			PP			KPSS		
Variable	Level	1st Diff	Dec	Level	1st Diff	Dec	Level	1st Diff	Dec
Grt	-3.18	-	I(0)	-4.27	-	I(0)	0.33	-	I(0)
Xd	-1.34	-5.99	I(1)	-1.34	-5.92	I(1)	0.36	0.25	I(1)
Opn	-2.37	-7.75	I(1)	-2.28	-8.28	I(1)	0.33	0.13	I(1)
Rir	-7.32	-	I(0)	-7.23	-	I(0)	0.63	-	I(0)
LRer	-2.96	-	I(0)	-2.46	-4.65	I(1)	0.24	-	I(0)
Inv	-3.76	-	I(0)	-3.67	-	I(0)	0.73	-	I(0)

Source: Author's computation.

The results of the unit-root tests in Table 2 show that the variables integrate in mixed orders, that is, I(0) and I(1). Thus, given this type of result, the most appropriate technique available for analysing the cointegrating relationship among the variables is the ARDL.[x] Imperatively, among other techniques which include that of Engle and Granger (1987), Johansen (1988) and Johansen and Joselius (1990), the ARDL technique is important as it estimates both the short- and long-run estimates simultaneously. In addition, as it produces unbiased estimates, ARDL assumes that all the variables in the model are endogenous. In essence, the process commences with a general vector auto-regressive (VAR) model of order *p*, in which equation (2) is transformed into a long-run specification as follows,

$$grt_t = \beta_0 + \beta_1 grt_{t-i} + \beta_2 Xd_{t-1} + \beta_3 Opn_{t-1} + \beta_4 Rir_{t-1} + \beta_5 lnRer_{t-1} + \beta_6 Inv_{t-1} + \sum_{i=0}^{p} \beta_{1i} \Delta(grt_{t-i}) + \sum_{i=0}^{p} \beta_{2i} \Delta(Xd_{t-i}) + \sum_{i=0}^{p} \beta_{3i} \Delta(Opn_{t-i}) + \sum_{i=0}^{p} \beta_{4i} \Delta(Rir_{t-i}) + \sum_{i=0}^{p} \beta_{5i} \Delta(lnRer_{t-i}) + \sum_{i=0}^{p} \beta_{6i} \Delta(Inv_{t-i}) + u_t \quad (3)$$

where, in equation (3), Δ is the first difference operator, *i* ranges from 1 to 6, β_0 is the drift component, and u is white noise error term.

Moreover, as the procedure follows the bound testing approach, it is based on the joint Wald-test (F-statistic) with null hypothesis of no cointegration among the variables. It states that,

$$H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$$

$$H_1: \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq \beta_6 \neq 0$$

Furthermore, the short-run parameters can be estimated through the following error correction version of equation (3),

$$\Delta(grt_t) = \sum_{i=0}^{p} \beta_{1i} \Delta(grt_{t-i}) + \sum_{i=0}^{p} \beta_{2i} \Delta(Xd_{t-i}) + \sum_{i=0}^{p} \beta_{3i} \Delta(Opn_{t-i}) + \sum_{i=0}^{p} \beta_{4i} \Delta(Rir_{t-i}) + \sum_{i=0}^{p} \beta_{5i} \Delta(lnRer_{t-i}) + \sum_{i=0}^{p} \beta_{6i} \Delta(Inv_{t-i}) + \gamma ECT_{t-1} + u_t \quad (4)$$

where, γ is the speed of adjustment parameter and *ECT* is the residual from the estimation of equation (3).

Meanwhile, very imperative in the estimation of cointegrating relationship is the lag length. In this regard, and following the Akaike Information criterion (AIC), a lag length of 3 is preferably selected as presented in Table 3.

Table 3

Lag order selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-688.156	NA	2.96e+08	36.53455	36.79312	36.62654
1	-558.72	211.1864	2224595.	31.61682	33.42679*	32.26079*
2	-523.193	46.74606	2641586.	31.64172	35.00308	32.83766
3	-470.177	53.01521*	1640629.*	30.74618*	35.65894	32.49410

Source: Author's computation

Consequent on the lag selection, the causal relation between economic growth and each of the independent variables is conducted and the result is as presented in Table 4. Interestingly, a one-way causality is reported to run between certain variables. Specifically, each of external debt and openness Granger-causes economic growth as economic growth Granger-causes each of openness and real exchange rate.

Table 4

Extract of pairwise Granger-causality between growth and external debt

Null Hypothesis:	F-Statistic	Prob	Decision
XD does not Granger Cause GRT	8.92194	0.0002	Reject
GRT does not Granger Cause XD	0.83237	0.4863	Cannot reject
OPN does not Granger Cause GRT	1.33992	0.2794	Cannot reject
GRT does not Granger Cause OPN	9.14665	0.0007	Reject
RIR does not Granger Cause GRT	0.02731	0.9938	Cannot reject
GRT does not Granger Cause RIR	0.85505	0.4747	Cannot reject
LRER does not Granger Cause GRT	0.19604	0.8983	Cannot reject
GRT does not Granger Cause LRER	4.88865	0.0067	Reject
INV does not Granger Cause GRT	3.45602	0.0282	Reject
GRT does not Granger Cause INV	2.30588	0.0961	Cannot reject

Note: Statistical decision is based on 5% level of significance
Source: Author's computation.

The Wald-test result in Table 5 shows that the F-statistic is significant given a probability figure of 0.0000. By implication, it means that there is cointegration, or a long-run relationship, among the variables in the model.

Table 5

Result of Wald test

Null Hypothesis: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$			
Test Statistic	Value	Degree of freedom	Probability
F-statistic	8.893377	(5, 35)	0.0000
Chi-square	44.46688	5	0.0000

Note: Statistical decisions are based on 5% level of significance.
Source: Author's computation

RESULTS AND DISCUSSION

Following the confirmation of cointegrating relationship among the variable, a long-run estimation is conducted and the result is as presented in Table 6. Essentially, as required, the immediate past value of economic growth is positively significant. By this, it means that economic growth in a year past is positively influencing economic growth in the current year. Numerically, it implies that a 10-percentage point increase in growth in the preceding

year leads to 2.9% increase in economic growth in the current year. Technically, the dynamism of the ARDL technique is confirmed by the significance of the lagged value of the dependent variable.

Moreover, as expected, external debt is significant and negatively impactful on economic growth in the long-run. However, as reported in Table 6, it is the stock of external debt in the past three years that affects economic growth in the current year. In numbers, it implies that a 10-percentage point increase in the stock of accumulated external debt of three years ago causes economic growth to slow by about 0.5% in the current year. A very instructive implication of the result is that despite the debt forgiveness by the London and Paris Clubs in 2005, the country's stock of external debt has, once again, become more humongous and unbearable. While external debt is left and not serviced for three years, and given the rate of interest at which the debt is issued, the stock is compounded thereby causing a negative effect on the current spate of economic growth. As the result supports Pattillo et al. (2004) and Ehikioya et al. (2020), it speaks to the fact that the country's external debt needs to be kept sustainable given the fact that external financing delays economic reform and countries with high level of external debt grow slowly with low productivity (Moss, 2006; Vamvakidis, 2007; Kolawole, 2021). Even then, IMF asserts that when additional debt slows economic growth and contributes negatively to growth, it makes the country worse-off.

Still on the long-run estimation, openness to trade is also significant, but positively impacting on economic growth in the country. In effect, a 10-percentage point depth in openness of trade brings about an approximately 4.5% improvement in the rate of economic growth. Regarding the positive effect of openness, there is no doubt that the export component overwhelms the import. In addition, Table 6 shows that domestic investment exerts positive and significant impact on economic growth in the period considered. Specifically, domestic investment in the past three years propels current year's economic growth. That is, numerically, a 10-percentage point addition to domestic investment in the last three years leads to 0.6% increase in economic growth this year. This speaks to the importance of investment in domestic fixed capital stock for improved economic growth. Intuitively, it implies that in the long-run, the evolution of output is determined by the amount of capital and capital accumulation which basically depends on the level of output which also determines saving and investment. The interactions between capital and output imply that the economy converges in the long-run to a steady-state level of capital which, in turn, associates with a steady-state level of output or economic growth

Table 6

Long-run relationship between economic growth and external debt.

riable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.14946	7.3338	-0.29309	0.771
GRT(-1)	0.29635	0.0271	32.67627	0.000
XD(-3)	-0.04722	0.0777	-5.32704	0.000
OPN(-1)	0.44785	0.1693	2.64944	0.013
OPN(-2)	-0.25195	0.1861	-1.35442	0.186
OPN(-3)	0.17357	0.1601	1.08392	0.287
RIR(-2)	-0.06082	0.0835	-0.72834	0.472
LRER(-1)	-1.98797	1.9446	-1.02227	0.315
LRER(-2)	1.66543	1.9155	0.86944	0.392
INV(-3)	0.06592	0.1052	2.46811	0.039

Note: Statistical decisions are based on 5% level of significance.

Source: Author's computation.

Regarding the short-run estimation, Table 7 presents the results. As a dynamic analysis, the immediate past value of economic growth is significant and positive. Such that, a 2% improved economic growth is achieved in the current year from a 10-percentage point increase in the preceding year's figure. Moreover, as in the long-run analysis, external debt is significant and negatively impactful on economic growth. As the result corroborates Mbah et al. (2016), Sami and Mbah (2018), Shkolnyk and Koilo (2018), and Kolawole (2020), it implies that a 10-percentage point addition to the stock of Nigeria's external debt causes economic growth to fall by 0.1% in the current year. In the same vein, real interest rate also significantly impacts negatively on economic growth in the short-run. It shows that as the preceding year's real interest rate rises by 10-percentage

point, economic growth slows by 0.5% in the current year. Intuitively, the effect of real interest rate in the short-run stems from the decrease in nominal money growth which leads to a decrease in the real money stock. Thus, the decrease in real money leads to a decrease in output and to an increase in both the nominal and the real interest rates (Blanchard, 2006). On the contrary, however, openness to trade is, as in the long-run, significantly positive in its effect on economic growth. Numerically, an approximately 3.5% improvement in economic growth is obtained from 10-percentage point openness to trade in the current year. This implies that the increased amount of foreign income generated in the country also leads to increased volume of exports. Similarly, domestic investment is significant and positively impact economic growth in the short-run. That is, as the immediate past year's domestic investment level rises by 10-percentage point, the current year's economic growth rises by 2%.

Table 7

Short-run relationship between economic growth and external debt.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.0916	0.6282	-0.14582	0.885
Δ*(GRT(-1))*	0.2071	0.2042	4.77355	0.001
Δ*(XDBT(-1))*	-0.0125	0.1621	-5.99246	0.000
Δ*(OPN(-1))*	0.3491	0.1478	2.36105	0.025
Δ*(RIR(-1))*	-0.0512	0.7452	-2.49755	0.017
Δ*(LRER(-1))*	-1.4143	1.8174	-0.77823	0.442
Δ*(INV(-1))*	0.2023	0.0877	2.96294	0.005
ECM(-1)	-0.5993	0.2032	-2.94787	0.006

Note: Statistical decisions are based on 5% level of significance.

Source: Author's computation.

CONCLUSION AND RECOMMENDATIONS

Analysis of the relationship between macroeconomic aggregates regarding economic growth and external debt speaks to the imperative of public finance management. Apparently, external debt gives the borrowing country command over more goods than it is currently producing. This makes it possible for the debtor country to finance itself without displacing household and firms' spending. Also, it avails the country the opportunity of industrialization which is necessary for accelerating the pace of economic growth, and development. However, the payment of interest on the amount borrowed and the repayment of the principal requires the transfer of resources abroad. Such a transfer, no doubt, is not a reallocation of purchasing power among the residents of the country as is the case with domestic debt. It is pertinent to note that Nigeria is currently using about 96% of its revenue to services its debt. And as part of the debt owed to external sources, the country's indebted to the World Bank Group has climbed to USD7.64 billion over the past seven years as economic growth remains elusive.

Also, it is imperative that openness in goods market allows people and firms to choose between domestic goods and foreign goods. This choice depends primarily on the real exchange rate which is the relative price of domestic goods in terms of foreign goods. As such, imports are the part of domestic demand that falls on foreign goods. Thus, the more expensive domestic goods are relative to foreign goods, the higher is the domestic demand for foreign goods. By extension, an increase in real exchange rate leads to an increase in imports. Equivalently, however, exports are the part of foreign demand that falls on domestic goods. The higher the price of domestic goods in terms of foreign goods, the lower the foreign demand for domestic goods. Therefore, exports rise when real exchange rate falls. Although the exchange rate of the CBN hovers around NGN460 per United States dollar recently, however, the rate is currently close to NGN1,000 even as openness to trade appears beneficial to economic growth in Nigeria.

Thus, while domestic investment is growth-enhancing and openness is necessary for output expansion, the role of real interest rate is paramount for borrowing and debt servicing. As such, following the findings so far, it is instructive that external debt is not economic growth-enhancing in Nigeria.

Nonetheless, the above findings bear some implications for policies in the country. For example, as external debt impacts negatively on economic growth in both short-run and long-run, it implies that the bulk of the country's debt sourced externally has not been helpful in propelling economic growth. The situation is instructive given the fact that it is actually external debt

owed since the past one and three years that slows the growth of the country's economy. A basic explanation to this is that the country defaults in meeting its external debt obligation due partly to high and increasing rate of real interest coupled with rising value of the United States dollar. It is an obvious fact that debt repayment depends on the real interest rate. As such, as debt service includes interest rate and principal, the amount to be repaid becomes humongous to the extent that it currently eats up about 96% of the country's fiscal revenue. Thus, in order to nib the external debt problem in the bud, the country should borrow at zero rate of real interest in the future. A zero real interest rate on external debt would necessitate less financial burden and ease re-payment plan as financial resources would be available for allocation to growth-enhancing investments in the country.

Moreover, for the fact that openness to trade impacts positively on economic growth, it implies that the government should focus more on opening the economy and engage in trades that would guarantee positive net-exports for the country. If net-exports is positive, it means that trade is favourable and it can lead to the creation of more jobs and eventual improvement in the growth of the economy. Similarly, domestic investment in the form of addition to stock of capital formation should be encouraged and boosted. If more domestic investment is initiated and achieved, it would drive economic growth both in the short-run and long-run in the country.

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[i] [i]See National Bureau of Statistics [NBS] (2021) which reports that growth rate rises to 2.27% in 2019 before becoming negative in 2020; and Debt Management Office [DMO] (2023) which shows that NGN77 trillion is projected as outstanding debt stock following a proposed borrowing of NGN10.57 trillion in the budget.

[ii] See The World Bank (2022), as Nigeria's debt servicing could surge and exert fiscal and liquidity pressures.

[iii] IMF's warning is also predicated on the global economic environment where interest rates and other costs of borrowing are increasing (DMO, 2023; The Punch, 2023)

[iv] According to the Federal Ministry of Finance, Budget and National Planning [FMFBP] (2021) the rate is expected to be lower than 27.19 and 24.32% projected for 2021 and 2022, respectively.

[v] See Ajayi (2000) and World Bank (2021). According to Ajayi (2000), agriculture was the mainstay of the Nigerian economy at independence; and that agriculture contributed about 64% of GDP shortly after independence.

[vi] The major factors that caused the increase in the size of the country's external debt include decline in the earnings from oil, rapid growth in public expenditure on capital projects, inappropriate monetary policy, dependence on imports, debt servicing (addition of interest and principal), among others (Fajana, 1993).

[vii] Nigeria was one of the 17 most indebted countries globally and the largest debtor in sub-Saharan Africa (Fajana, 1993). As Nigeria embraced debt rescheduling, Chevillard (2001) affirms that the London Club took a cue from the Paris Club by granting a consolidation of 21 months on outstanding debt stock.

[viii] According to the DMO (2005), the debt was to be reduced to USD24.84 billion from a total of USD30.84 billion owed to the Paris Club; under the Naples Terms, an amount up to USD16.64 billion was allowed to be written off from the outstanding; the estimated balance of USD8.2 billion was to qualify for a buyback while the country was expected to save USD2.0 billion and pay USD6.2 billion to exit the Paris Club debts completely. The deal was, however, completed in April 2006.

[ix] See Olayinka (2023) who reports that between 2015 and 2023, the figure increased by 1,890%.

[x] As implied in Pesaran and Shin (1999), Pesaran, Shin and Smith (2001), and Harris and Sollis (2003), ARDL also performs relatively more efficient in handling small and long time-series data set, among other advantages.