External Financing of Budget on Sustainable Economic Growth in Nigeria

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Abstract

The papers attempt to validate/invalidate economic growth sustainability vis-à-vis external financing of budget in Nigeria. The external financing channels - multilateral, Paris Club, London Club, promissory notes, bilateral, Euro bond, diaspora debts, and others - were tracked in relation to economic growth sustainability. The data is accessed from Emission Database for Global Atmospheric Research [EDGAR], the World Bank Development Indicator (WDI), and the Central Bank of Nigeria (CBN) statistical bulletin, for forty years (1981 to 2020). The study analysis follows plotting the visual trend of the series to ascertain its movement over time. Likewise, descriptive inference – skewness (*sk*), Kurtosis (*k*) & Jacque-Bera (*JB*) statistics were inferred for series normality. Also, Augmented Dickey-Fuller (*ADF*) unit root test, cointegration, vector autoregression (*VAR*), and the impulse response function (*IRF*) technique formed the basis of the estimation tools. Finding validates that there is no significant long-run relationship between external financing of the budget and sustainable economic growth in Nigeria. As a result, a reduction, and or a stop to further contracting external financing for budget purposes, and ensuring a funding-project-tied, is strongly recommended.

Keywords: external, finance, budget, sustainability, economic growth

1. Introduction

Borrowings represent a form of debt finance. This generally impacts general savings, investments, and, ultimately, hinders progressive accumulation of further wealth if not optimized. In the words of Ring, Abdullah, Osman, Hamdan, Hwang, Mohamad, Khairul, Hassan, and Khalid (2021), Adofu and Abula (2010), debt is described as contractual obligations due for repayment in the future. Misiri, Morina, and Shabani (2021) says debt represents a vital source of organization's resources that is not provided by its owners. Other descriptions of debts are as expressed in Karahan, (2021); Kur, Chukwu, and Ogbonna (2021); Faraji and Makame 2013; Suleiman and Azeez 2012; Ajisafe, Nassar, Fatokun, Soile and Gidado (2006); Benedict (2003).

Public financing of the budget can be internally or externally done. Both should be contracted such that future economic gain is not jeopardised. The latter is the concern of this study. According to the International Monetary Fund – (IMF) external debt statistics guide 2003, external finance is described as 'an amount at any time, or disbursed funds and outstanding contractual liabilities of residents of a country to repay the principal to non-residents.' With this, this study asks: why external financing? Are there practical implications in external financing procurement for a developing nation like Nigeria? What are the economic growth sustainability implications of financing budget with external funds? The reasons for these questions and more stem from the fact that, when savings ability is low, a nation's capacity to create investment is weakened. Thus, the need for borrowing suffice. The resultant effect is to augment the shortfalls through available financing options such as in external finance (Kur, et al 2021).

Available options for any country to raise external finances are often from privately wealthy individuals or corporate

organizations such as the Paris Club, London Club, and Diaspora funding. Others may be through inter or intra-multilateral cooperation among countries such as – the World Bank, International Monetary Fund (IMF), African Development Bank (ADB), International Bond market (Eurobond market, Asian bond market, etc), promissory notes among others. Any of these options has practical implications for economic growth sustainability (Bakare, 2011; Agwu, Ohaegbu, and Nnodim, 2021; Zouhaier, 2014, Ogunbiyi and Okunlola, 2015). Likewise, most of these options vary in proportion to the tenets of borrowings. In the words of Benedict (2003), the inability to meet the contractual obligations inherent in borrowing due to internal inefficiency depletes the basic positive assumptions in borrowing, especially among emerging economies including Nigeria (Faraji and Makame, 2013).

For instance, Agwu, *et al.* (2021), Babajide, *et al.* (2020), and Ogunbiyi and Okunlola (2015) gave a depth analysis of Nigerian external finance procurement, pointing out the first external finances of U.S $28.0 million from the World Bank in 1958. At the time, this amount represents 0.2 percent of the gross domestic product. However, within three decades, this amount rose to U.S. $160.4 million and US 5 billion in 1960-1970, and 1978, making it a 61.8 percent rise. There was a further rise also in the early and mid-1980 due to the power of the state government to sort external financing. Thus, this saw a surge in external financing stock to US $19,550 million in 1985 (Ekpe, 2020; Debt Management Office – DMO, 2012).

Going forward 1990, external finance increased to $298,614.4 billion, and $716,815.6 billion in 1995. There was a decline in 2004/2005 to $26,950,072 billion due largely to interest, surcharges, and penalties rather than increased borrowing. (Omodero, Egbide, Madugba and Ehikioya, 2020). Specifically, Omodero, *et al.* (2020) explains that between 1992/2000 and 2003, principal arrears was $10.31 billion, and interest arrears was $4.45 billion and $5.18 billion respectively. This include the new arrears of $3.78 billion in addition to the principal arrears of $1.22 billion, interest arrears of US $2.4 billion, and late interest of US $.2 billion (Okonkwo, Anachedo, Okoye, and Ezeaku, 2022; Omodero *et al*., 2020; Efutade, Adegboyo and Efuntade, 2020).

Owing to the adverse impact the external finance stock was having on economic growth sustainability, the then Obasanjo administration in 2009 led a team of experts headed by Dr. Okonjo-Iweala, to negotiate the country out of its debt woes. And, as at the expiration of his tenure, Nigeria had recorded a zero external finance balance.

Ironically, as of the second quarter of 2021, in the life of the present administration, external finance stock had risen to 46.1 percent, and economic growth recorded less than 3 percent growth (Central Bank of Nigeria – CBN, 2020, 2021). Specifically, these comprise of 2 percent commercial, 48.2 percent multilateral, and 11.6 percent bilateral finance obligations (CBN, 2021). Without equivocation, it is in the interest of this study to x-ray the overall implication of external finance on economic growth sustainability in Nigeria. This will be achieved under the following outline: following the introduction is the literature review. The study methodology, data result, analysis, conclusion, and recommendation are next in that order.

2. Literature Review

2.1 Conceptual Review

The concept of debt has long received considerable attention in the literature. According to Adofu, and Abula, (2010), and Ring, *et al.* (2021), debt is seen as any contractual obligations owed or accumulated by one person from another, with a promise to pay back at a future date. Similarly, Babajide, Okunlola, Nwuba, and Lawal, (2020) observed that debt occurs only for a need of expansion of government benefits to its citizens hence, the need to borrow purposefully. Debt may be internal or external. When any contractual obligation is owned among parties within the same national boundary then, such debt is tagged internal debt. Likewise, any portion of a country's debt that is borrowed or owned among parties outside the country is tagged as external debt. External debt, usually, could be among government–to–government, or international financial institutions or banks such as International Monetary Fund (IMF), and the World Bank (WB) among others. Also, external debt may be publicly guaranteed debt, privately non-governmental credits, and deposits by Central Banks and IMF loans (Babajide, *et al.*, 2020).

Likewise, Zouhaier (2014) observes that sustainable economic growth has been seen as an optional concept in determining or measuring the extent to which a society is growing and sustaining that growth. Unlike total monetary measures of goods and services which are gross domestic product measures, sustainable economic growth is used to ascertain the combined position leading to growth that is sustainable across the vital nominated economic units.

Also, Sustainable growth has been described as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Scerri, James, Padgham, Hickmott, Deng, and Cahill, 2013). That is, sustainable goals, such as the current United Nations (UN) level Sustainable Development Goals (SDGs) address global challenges including poverty, inequality, climate change, environmental degradation,

peace, and justice. Accordingly, the desired outcome is a state of society where living conditions and resources are used to continue to meet human needs without undermining the integrity and stability of the natural system. Ever since its introduction as a measure to determine how the economy is transformed, its adoption has been unprecedented. Particularly, as its focus is now more on economic, social, and environmental development for future generations.

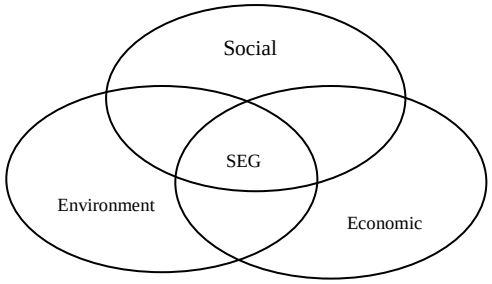

Figure 1. Sustainable Economic Growth (SEG) Framework

Source: Authors' compilation (2022)

External financing constitutes one of the major ways through which government source additional funding for executing its budgetary items. Theories such as the Ricardian Equivalence Hypothesis of 1819, the Optimal Theory by Fischer (1930), the Big Push by Rosenstein in 1943, the Life Cycle Theory of Modigliani and Bremberg (1950), the Traditional Economics theory of 1959, the Bequest Theory by Yaari 1965, the Dual – Gap thesis affirms this assertion.

Borrowing is good, however, the lack of a country's ability to meet its obligation when due could lead to slow growth (Jan, Ullah, Nazia, Ahmed and Shah, 2022, Were, 2001, Suleiman and Azeez, 2011). Soludo (2003) also corroborates this statement. He went further to say that external financing occurs as a result of macroeconomic need, and in other to provide extra source of financing of government budget. As such, the need to service debt (repayment) becomes a huge burden, which could lead to crowding effect (Jan, et al, 2022). By implication, external debt burden is the reflection of the difficulties and strains arising from the servicing of external debt as a result of the inability to generate enough resources to meet commitments in debt servicing.

In Sultana, Uddin, Rahman, and Faruk (2020), it is expressed that external burden is measured in terms of the proportion of current resources (income) devoted to financing past consumption. Thus, when a disproportionately large share of current resources is deployed to service external debt, the burden increases, and the inverse scenario becomes the option (Ndubuaku, Uche, Onwuka, and Ifeanyi, 2021; Sultana, *et al.*, 2020).

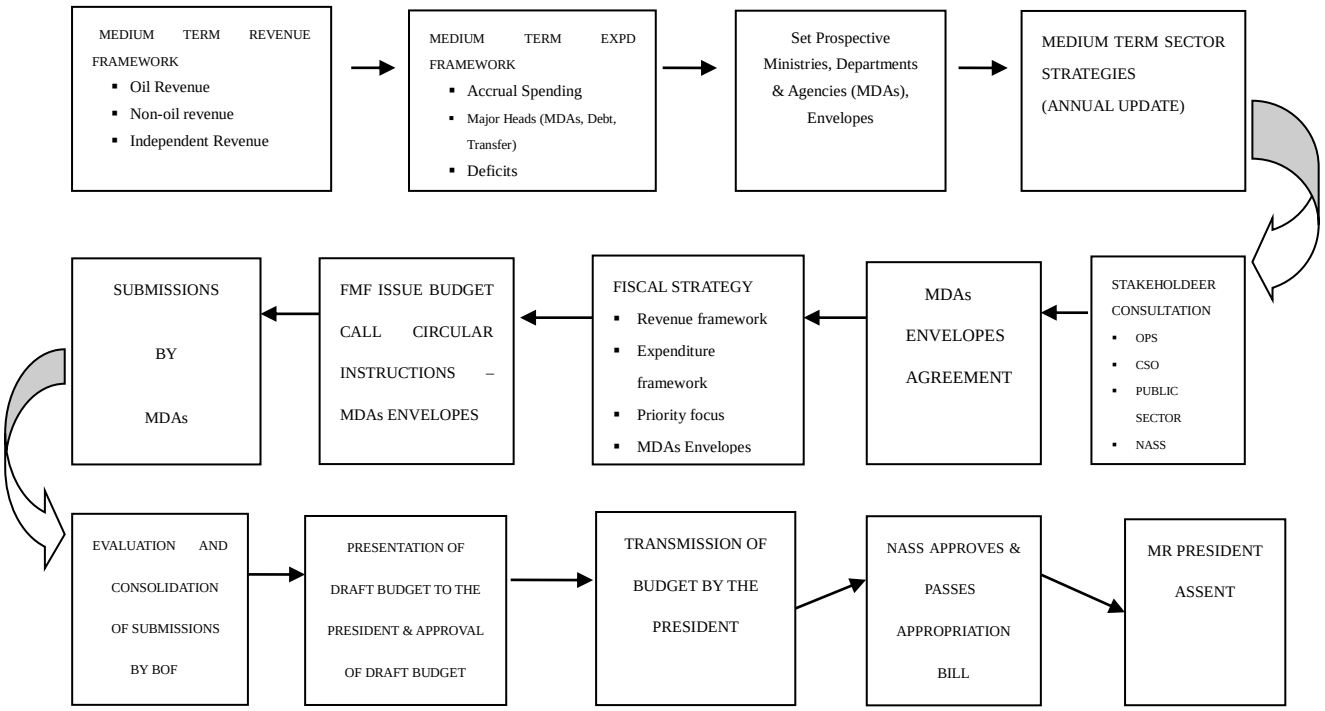

Figure 2. Budgetary Cycle in Nigeria

Source: Ogunbiyi and Okunlola, F.A. (2015)

The budgetary circle depicts the typical process which the passing of the budget goes through. From the proposed medium-term framework spending, up to the president's assent. The need for external financing is however incorporated into the process. Thus, this shows a fourteen-route process.

Table 1. List of Nigeria's External Finance Creditors/Source

Years	Multilateral	Paris Club	London	Promissory Notes	Bilateral	Euro Bond	Diaspora Bond	Others
1981	0.18	1.98	0.00	0.00				0.18
1982	0.53	5.47	1.98	0.00				0.83
1983	0.57	6.00	2.76	0.55				0.70
1984	1.27	6.36	5.44	1.16				0.58
1985	1.29	7.73	6.16	1.27				0.84
1986	4.67	21.73	8.44	4.15				2.46
1987	8.78	63.21	6.77	20.63				1.40
1988	9.99	75.45	14.99	25.74				7.79
1989	21.47	121.23	42.84	35.07				19.78
1990	34.61	154.55	53.43	40.95				15.08
1991	39.46	173.05	58.24	43.56				14.14
1992	89.27	324.73	41.89	64.14				24.23
1993	81.46	400.38	45.32	69.67				36.32
1994	97.06	404.21	45.37	70.07				32.11
1995	97.04	476.73	44.99	69.26				28.85

1996	102.63	420.00	44.95	47.08				2.66
1997	96.20	417.57	44.95	35.48				1.74
1998	93.21	458.26	44.95	35.15				1.45
1999	361.19	1,885.66	187.63	136.52				6.36
2000	379.04	2,320.27	223.83	158.49				15.75
2001	313.50	2,475.51	228.95	144.75				13.58
2002	375.70	3,220.82	182.96	146.34				7.06
2003	413.88	3,737.28	196.16	123.99				7.02
2004	384.25	4,196.84	196.16	106.56				6.46
2005	330.65	2,028.58	189.77	85.53				60.54
2006	332.22			64.83				54.41
2007	374.30							64.59
2008	464.56							58.70
2009	524.20							66.23
2010	635.45				24.60			29.79
2011	723.12				71.80	79.10		22.83
2012	828.72				110.60	78.70		8.88
2013	986.84				161.30	235.90		3.29
2014	1,142.30				237.20	252.00		
2015	1,489.41				326.60	295.50		
2016	2,436.41				585.00	457.50		
2017	3,133.88				725.83	1,836.00	91.80	
2018	3,381.40				949.10	3,336.60	92.10	
2019	4,127.28				1,254.26	3,543.08	97.80	
2020	6,832.72				1,546.63	4,140.84	114.30	71.13

Source: Central of Bank of Nigeria Statistical Bulletin of 2020

2.2 Theoretical Review

One of the key proponents of public debt-growth nexus is Keynes. Most of his postulations center on the dynamics of interest rates, public spending, and the debt-growth nexus. As a follow-up to the economic woes of 1930's in the United States of America, Maynard Keynes postulated that over-spending (deficit), can in turn revitalize the economy solely on the reason that interest rate is kept low, and borrowing is in tandem with appropriate threshold (Lim, 2019, Leao 2013). In order words, the public finance-growth relationship may overlook existing primary budget deficit dynamics as well as the upward pressure of increasing debt. This postulation affirmed that public finance (internal or external) can serve as a tool for inducing productive spending of government in order to achieve desired economic growth in the long run (Lim, 2019). This study is anchored on these assumptions.

However, in a bid to keep to the contractual external financing obligations, there would be a need for government to surge its revenue through increased taxation. By implication, the effect of this deficit financing becomes a reality. Thus, an increase in the debt-to-economic growth ratio leads to higher taxation, lower future income, and intergenerational inequity. Among the proponent of this view include Reinhart and Rogoff (2010) and Boskin (2020).

2.3 Empirical Review

Literature is agog with varying summation as to the impact of external financing of budget on economic growth sustainability. Some authors, such as: Manasseh, Abada, Okiche, Okanya, Nwakoby, Offu, Ogbuagu, Okafor,

Obidike, Nwoye (2022), Omodero, et al (2020), Ogbuabor, Malaolu and Mba (2013), Marco, Lucas and Andrea (2006), Adetiloye and Adeyemo (2012), Iyoha (1996), Borensztein (1990), oppose the use of external financing of budget as a reliable mechanism to sustain economic growth. In fact, Marco, *et al*. (2006) criticized the fundamentals used by the International Monetary Funding (IMF) in supporting the need for external financing especially for developing countries.

Also, Manasseh, Abada, Okiche, Okanya, Nwakoby, Offu, Ogbuagu, Okafor, Obidike & Nwoye, (2022), Cohen (1993) argued that the results on the correlation between less developing countries (LDCs) external financing of budget does not have much power to explain the slowdown of investments in these countries during the 1980s. In actual fact, it was claimed that actual flows of net transfers perform better. This claim is also supported by Iyoha (1996) whose study focused on Sub-Saharan Africa study – (SSA).

Conversely, Ndubuaku *et al.* (2021), Faraji and Makame (2013), Ugwuegbe and Uruakpa (2013), Ugwuegbe and Uruakpa (2013), Sulaiman and Azeez (2012), Ajisafe, *et al.* (2006) and Iyoha (1996), are among authors with supporting views of significant impact of external financing on economic growth sustainability. For instance, Faraji and Makame (2013) study claimed a significant impact between external financing of the budget and gross domestic product. Likewise, Ajisafe, *et al.* (2006) study concluded that a bi-directional causality relationship exists between external financing of budget & foreign direct investment in Nigeria.

Babajide *et al.* (2020) summation of the subject matter is neutral. Accordingly, the study believed that the expansion of government activities should be predicated on social needs. With this, an external financing option may suffice for expansion purposes, but, the fund-straining establishment should be completely cut off from benefiting from the government's need to spend.

3. Methodology

The study adopts a single linear regression methodology. This is because the data gathered is secondary and time series. Essentially, time series data allows for data to be gathered over time and subjected same to certain empirical investigations using fitted tools of econometric analysis. For this study, time series data gathered are; total external finance (Multilateral, Paris, London, Promissory notes, bilateral, Eurobond, diaspora bond, and others), which is the independent variable, and sustainable economic growth (economic, social & environmental indicator) – which is the dependent variable of the study. Data span thirty-nine years (1981-2020). Data is sourced from Emission Database for Global Atmospheric Research [EDGAR], the World Bank Development Indicator, and the Central Bank of Nigeria. The estimation path is en route a descriptive statistical analysis of visual trend, skewness, kurtosis, and Jacque-Bera for variable normality distribution test. This is then followed by testing for the stationarity status of the variables using the Augmented Dickey-Fuller (ADF) test. Based on the ADF outcome, the cointegration test is also conducted. Thereafter, the Vector autoregression (VAR), and impulse response function (IRF) are estimated to ascertain the dynamic relationship subsisting between the variables. All this is done with the e-view10 software-aided tool.

3.1 Model Specification

The model specified is anchored on Babajide, et al (2020), Ogunbiyi and Okunlola (2015) with minor modifications.

Generally, a simple linear model is specified as:

$$\Psi = \acute{\alpha} + \beta_1\lambda_1 + \mu \quad (1)$$

Where: Ψ = is the dependent variable, $\acute{\alpha}$ = represents the constant, β = coefficient of the parameter λ_1, and μ = is the error term.

Thus, we derived;

$$SEG = f(TEfin) \quad (2)$$

Where *SEG* = sustainable economic growth, *TExdbt* = total external finance

When transformed, it becomes;

$$SEG = \acute{\alpha} + \beta TExdbt + \mu \quad (3)$$

4. Result and Discussions

4.1 Visual Trend – Sustainable Economic Growth

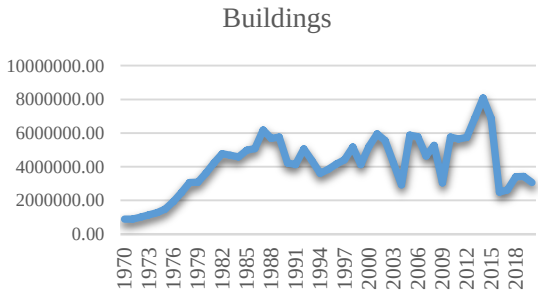

Figure 3. Building C02

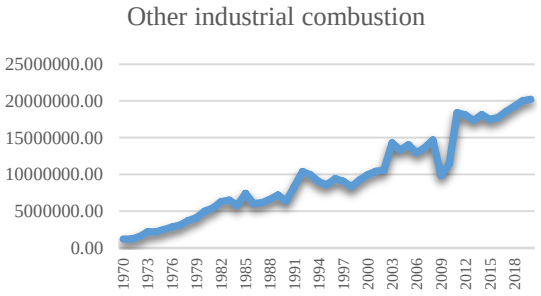

Figure 4. Other Institutional Combustion

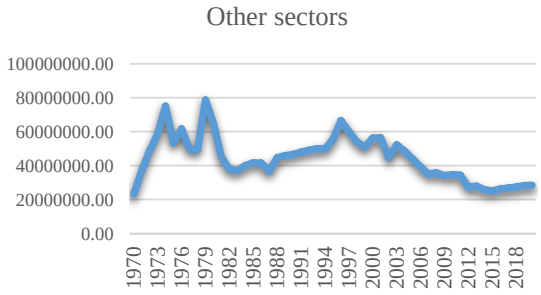

Figure 5. Other Sector C02

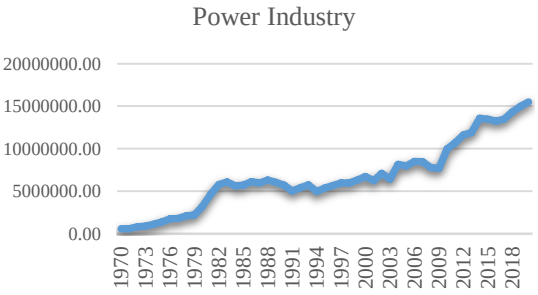

Figure 6. Power Industry C02

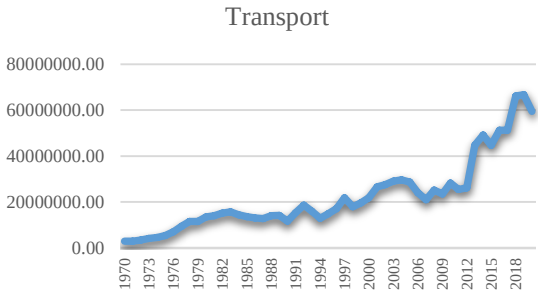

Figure 7. Transport CO2

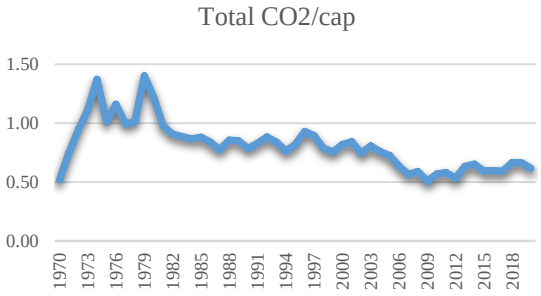

Figure 8. Total Sustainable Growth

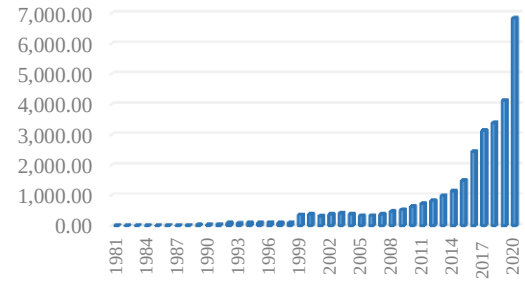

Figure 9. Multilateral Debt

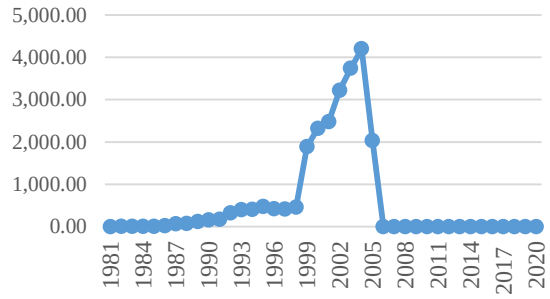

Figure 10. Paris Club Debt

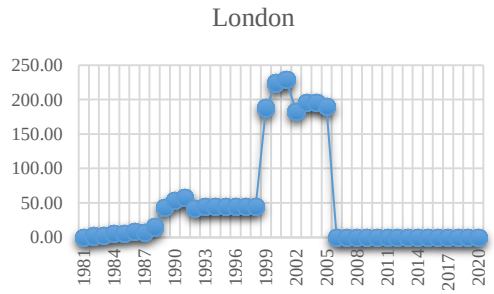

Figure 11. London Debt

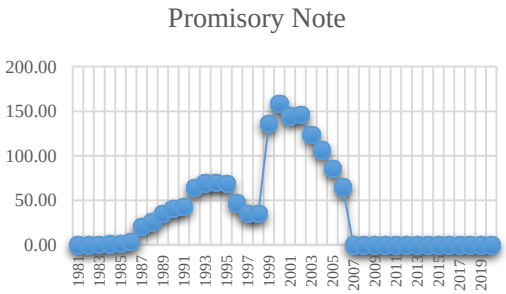

Figure 12. Promissory Note Debt

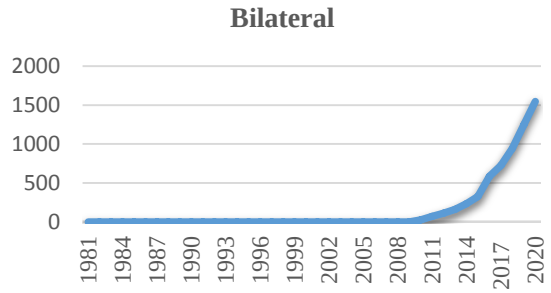

Figure 13. Bilateral Debt

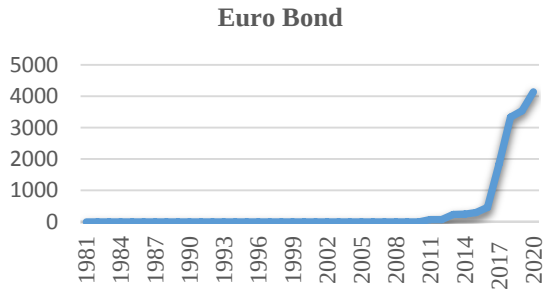

Figure 14. Euro Bond

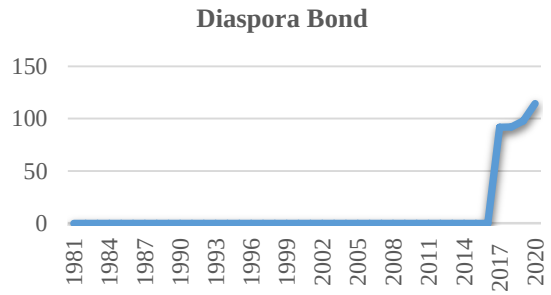

Figure 15. Diaspora Bond Debt

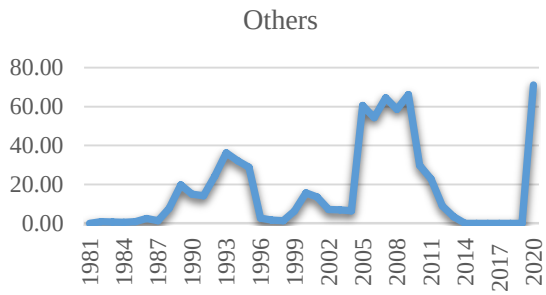

Figure 16. Others

Source: EDGAR (2022), and CBN (2021)

Figures 2 to 7 are shown the contributing sector to sustainable economic growth in Nigeria. It depicts the trend in time for the period in review. Also shown is the overall contributing factor in Figure 7. Further, Figures 8 through 15 show the trend in time in the country's external debt per creditor.

4.2 Descriptive Estimates

Table 2. Descriptive Table

Series	Skewness	Kurtosis	Jacque-Bera
SEG	-0.367356	1.763088	3.3824 (0.1842)
TEfin	1.763088	5.585427	31.067 (0.2540)

Source: Authors' computation

The descriptive statistic result is presented in Table 2. Three measures - skewness, kurtosis, and Jaque-Bera statistics are checked. First, the outcome of the skewness shows that SEG has a long-left tail judging by the negative outcome. Conversely, the TEfin outcome indicates that the skewness is positive and it is a long right-tailed series. Similarly, the kurtosis outcome for SEG indicates that it is flat hence, it is platykurtic. This is so because it is < 3, and evolves around the flat region of normality distribution. Inversely, the TEfin outcome shows that it is peak having demonstrated a value > 3 at = 5.58 thus, it is leptokurtic. On the whole, the Jaque-Bera statistics, which are used to ascertain the overall relationship between skewness and kurtosis indicate that SEG and the TEfin are normally distributed judging by the value of 3.382 and 31.06 and the corresponding probabilities of 0.1842 and 0.2540 respectively.

4.3 Augmented Dickey-Fuller Estimates

Table 3. ADF Stationary Result

Variables	**Level**					**First Difference**				
	1 %	5%	10%	CV	Rmrk	1%	5%	10%	CV	Rmrk
D(SEG)	-2.6307	-1.9503	-1.6112	-1.6666	NS	-2.6307	-1.9503	-1.6112	-6.2117	S
D(TExDbt)	-2.6289	-1.9501	-1.6113	-0.1484	NS	-2.6289	-1.9501	-1.6113	-2.6728	S

Source: Authors' computation (2022)

The study proceeded to ascertain the level of stationarity status of the variables. Thus, Table 3, D(SEG) is non-stationary [NS] at level, but it became stationary at first difference. This denotes the acceptance of the null hypothesis at level but not at first difference hence, sustainable economic growth is integrated into order one. Likewise, total external debt D(TEfin) followed a similar stationarity pattern as that of sustainable economic growth. Specifically, this variable did not also become stationary at order but at first difference. In order words, the variable is also integrated into order one. By implication, this result propels the estimation of cointegration estimation to ascertain the extent of the short-run or long-run cointegration relationship subsisting between the variables.

4.4 Cointegration Estimates

Table 4. Cointegration Result

Hypothesized		**Trace**	**0.05**	
No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.****
None	0.157237	6.336087	15.49471	0.6558
At most 1	0.000176	0.006505	3.841466	0.9352
The trace test indicates no cointegration at the 0.05 level				
*** denotes rejection of the hypothesis at the 0.05 level**				
****MacKinnon-Haug-Michelis (1999) p-values**				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.157237	6.329582	14.26460	0.5713
At most 1	0.000176	0.006505	3.841466	0.9352
The max-eigenvalue test indicates no cointegration at the 0.05 level				
*** Denotes rejection of the hypothesis at the 0.05 level**				
****MacKinnon-Haug-Michelis (1999) p-values**				

Source: Authors' computation

Having examined the level of stationarity status existing between the series, the study proceeded to ascertain the presence or otherwise of a cointegrating relationship among the variables. In achieving this, the two forms of the Johansen cointegration examination of Trace statistics and Maximum – Eigen statistics were performed. Basically, the former is often compared with the latter to arrive at a concluding decision of the presence or otherwise of a cointegration equation.

From the result, the trace statistic showed that the hypothesized - of no significant cointegrating relationship, when compared with the probability value of *none and at most 1*, indicate that it is = 0.6558 and 0.9352 respectively, hence, the null hypothesis is not rejected. By implication, the Trace statistics indicate no cointegration relationship, denoting the acceptance of the null at 0.05 percent as well. Similarly, the Max-Eigen statistic of no cointegration relationship between the series is also indicated in the result. Thus, since the probability at = 0.5713 at *none and 0.9352 at most 1*, indicate that the null hypothesis is not rejected at its 0.05 percent level of significance. Summarily, the result indicates that no long-run cointegration relationship exists between external debt and economic growth sustainability in Nigeria.

This result demonstrates a clear validation of the external financing bogey to sustaining economic growth in Nigeria. In fact, it is a further pointer to the recent outcry of the depressed economic situation shown in high inflation, a spike in prices of all consumables, the poor value of the currency, depletion of the country's external reserve, and unstable oil price as corroborated in Ogbonna & Ichoku (2022), coupled with the incidence of covid 19 pandemic, insecurity, yet, mounting external and internal debt profile, among others. However, to further give room for forecasting and analysis of the dynamic impact of random disturbances subsisting between external financing and sustainable economic growth, the study performed the vector autoregressive model (Xue, 2010, Gujarati, 2009).

4.5 VAR Process

The vector autoregressive model is performed as a result of the absence of cointegration between the variables. Specifically, the VAR treats every variable as endogenous using the lag functionality. This allows for the intertwining relationship existing in the series to be examined based on equal treatment bypassing the need for structural modeling.

Based on the study, this var model is specified as:

$$SEG_t = \acute{\alpha}_1 + \Sigma^k i=1 \acute{\alpha}_{1i} SEG_{t-1} + \Sigma^k i=1 \quad \lambda_{1i} TEfin_{t-1} + \mu_{1t} \tag{4}$$

$$TExfin_t = \acute{\alpha}2 + \Sigma^k i=1 \acute{\alpha}_{2i} SEG_{t-1} + \Sigma^k i=1 \quad \lambda_{2i} TExfin_{t-1} + \mu_{2t} \tag{5}$$

Where $\acute{\alpha}_{1,}$ and λ_{1i} are model parametres.

4.6 Lag Selection Criteria

Table 5. Lag Selection Result

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-313.4200	NA	87029.66	17.04973	17.13681	17.08043
1	-247.0042	122.0615	2983.529	13.67590	13.93713	13.76800
2	-233.6141	23.16126*	1800.649*	13.16833*	13.60371*	13.32182*
*** Indicates lag order selected by the criterion**						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						

Source: Authors computation (2022)

To initiate a vector autoregressive model, it is essential that the lag criteria are determined (Xue, 2010). This is

automatically selected in the var environment base on sequential modified LR test statistic, final prediction error [FPE], Akaike information criterion [AIC], Schwarz information criterion [SC], and Hannan-Quinn information criterion options. After this, the result is selected based on common lag selection by the system. The result shows that lag-2 is the lag the system selected based on LR*, FPE*, AIC*, SC*, and HQ* outcome.

4.7 Vector Autoregressive Estimates

Table 6. VAR Result

Variable	**SEG**	**TEfin**
SEG(-1)	0.651020	-1513.878
	(0.16783)	(2072.80)
	[3.87913]	[-0.73035]
SEG(-2)	0.266426	-5.451557
	(0.17320)	(2139.11)
	[1.53830]	[-0.00255]
TEfin(-1)	3.69E-05	1.589801
	(1.2E-05)	(0.14855)
	[3.06618]	[10.7018]
TEfin(-2)	-4.31E-05	-0.692184
	(1.3E-05)	(0.16658)
	[-3.19633]	[-4.15526]
C	0.046303	1267.794
	(0.05341)	(659.681)
	[0.86691]	[1.92183]

Source: Authors' compilation 2022

The outcome of the VAR estimates of the series is as shown in Table 6. Simply, it is expressed in its ordinary least square assumption of a ceteris paribus influence or impact on either of the series (Bo, 2011). Recall also that, the reason for this is based on the endogeneity form to which var is often formulated. The result in (()), represents the standard errors of the series while, that in ([]), represents the t-statistics of the series.

In order words, from the result, and based on the lag-2 selection, SEG shows that it falls below the 2 standard measurements of ([]), hence, it is concluded that SEG does not influence itself all things being equal. Similarly, the same result is also recorded for SEG and TEfin, as the outcome falls below the standard measurement (of 2), of a significant relationship thus, it is also concluded that SEG does not influence TEfin. This outcome also confirmed that of the absence of a long-run cointegration relationship between external debt and sustainable economic growth.

Conversely, the relationship between TEfin negatively influences SEG but is greater than 2, thus, it is statistically significant. As such, it is concluded that TEfin influences SEG all things being equal at a relatively minimal value of 4.3 percent level. What this also means is that total external financing past outcome is associated with a relative but minimal 1.3 percent increase in SEG ceteris paribus. Going forward, the outcome of the relationship between TEfin and TEfin is statistically significant in explaining itself all things being equal at 0.69 percent. The implication also is that TEfin's past outcome is associated with a 0.16 percent increase in itself ceteris paribus.

Summarily, the VAR result further expressed little, minimal, or no contribution of total external debt to sustainable economic growth in Nigeria. This, thus, challenge the basic neutrality assumptions that say that external debt creates a positive influence on a nation's growth aspiration. This result, thus, validates the bogey associated with external borrowings expressed in the study's caption.

4.8 Diagnostic Test – Serial Correlation Test

Table 7. VAR Serial Correlation LM Test Result

Lags	LM-Stat	Prob
1	5.993685	0.1996

Source: Author's computation 2022

To further diagnose the appropriateness or otherwise of the model used, the study performed the var serial correlation LM (SC-LM) test. The SC-LM assumes the 0.05 percent significance criteria to either accept or reject the presence of an SC in the model. Thus, whenever the probability is </> 0.05, the model is either accepted or rejected. An acceptance of the presence of a SC suggests the model is unfit whereas, a rejection is otherwise. Based on the result, it is evident the null hypothesis of no serial correlation is not rejected based on the probability outcome of 0.1996, which is greater than the 0.05 percent level of significance. In order words, the study concludes that the model is fit and it is serial correlation free.

4.9 Heteroskedasticity

Table 8. Heteroskedasticity Test Result

Joint test:		
Chi-sq	**Df**	**Prob.**
30.40350	24	0.1717

Source: Authors' computation 2022

Again, the study also checked the presence or otherwise of heteroskedasticity in the model. As diagnosed, it is evident that the model is also heteroskedasticity free. This is judged by the probability value of = 0.1717, which is more than 0.05 percent level of significance thus, the null hypothesis of no heteroskedasticity in the study is not rejected hence, the errors are homoscedastic.

4.10 Impulse Response Function – IRF

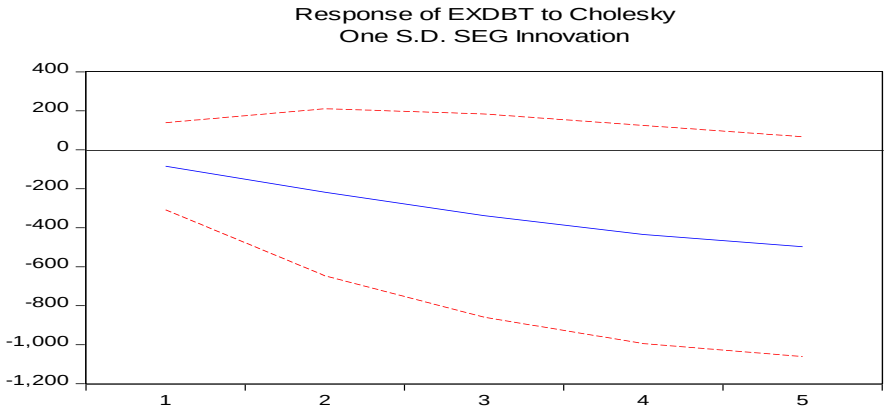

Figure 17. Impulse Response Function Estimates

Source: Authors' compilation 2022.

The impulse response function [IRF] is used to ascertain the responses of the variables to a certain degree of shocks

in the system. In essence, it tells of how the variables react with each other over the period being estimated. Thus, as shown in the table, the blue line represents the IRF, while the red line is the 95 percent confidence interval. As a criterion, when the blue line falls within the ambit of the red line, it is assumed that the variables are significant otherwise it is not. Conversely, the location to which either the blue line or the red line falls with the table is also explained in relation to the kind of shock being exhibited by the variables. Accordingly, the upper part of the table reflects the possible noticeable positive standard deviation shocks in the series while the bottom tells of the obvious negative standard deviation innovation responses between the variables. The result of the IRF shows a somewhat steady negative decline of economic growth sustainability to a one standard deviation shock of total external financing sources of budget in Nigeria. Although, a sharp decline started around early period 1 and this continued through periods 2 to 5. The implication of this is that further shocks on external financing of the budget will have an asymmetric impact on sustainable economic growth in Nigeria.

5. Conclusion

The conclusion of the study stems from the fact that external financing of the budget in Nigeria has no significant impact on sustaining economic growth. The outcome of the study points out that both the long-run cointegration relationship and that of the impulse response function depict an insignificant outcome. Particularly, the outcome rarely suggests an improvement in economic growth prior to the country's initial exiting from all external obligations, and even after it plunged itself back into it. This brings us to the conclusion that, based on the long-run cointegration relationship, external financing is statistically insignificant. Likewise, judging by the impulse response function outcome, it shows that the ability of the country to withstand external financing shock is negative. In all, the study submits that the implication of external financing of the budget is negatively skewed on sustainable economic growth.

6. Recommendation

In spite of the theoretical submission for and against the use of external financing options to aid budget and budgeting, this study claims, based on its empirical findings, align with the latter. In essence, a reduction, or an outright discontinuation of sourcing external financing to aid budget and budgeting is put forward as a suggested recommendation. Similarly, for the reason of necessity, the study also recommends deliberate external financing of the budget that is tied to a project (project-tied).

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