Asymmetric relationship between Budget Deficit and Economic Growth in Nigeria

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Abstract
This study examines asymmetry in the nexus between budget deficit and economic growth in Nigeria from 1981 to 2018 using a nonlinear ARDL model advanced by Shin et al. (2014). The findings suggest the presence of asymmetries in the nexus between the indicated variables in the short and long run. The findings further show that budget deficit affect economic growth both in the short and long run negatively which makes this work a landmark since previous studies were unable to capture this aspect of non-linearity. Therefore, there is need for the government to ensure proper monitoring of the budget implementation as well as ensuring fiscal discipline among all tiers of government and parastatals in the country so as to ensure that the desired outcome is achieved both in the short and long run.

Keywords: Asymmetries, Budget Deficit, Economic Growth, NARDL.
JEL Classification: H2, E6

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1. Introduction

Over the years, the Nigerian economy has been encountered with a series of budget deficit which has transformed into an institutionalized and striking feature of her economy like most of other developing economies. Meanwhile, Fischer (1993) opined that huge fiscal deficit is detrimental to economic growth as well as serving as an indicator of macroeconomic instability while on the contrary, Keynes in his general theory of employment, income and money (1936) suggested that budget deficit is highly effective in contributing to economic growth during the period of economic recession.

According to International Monetary Fund (IMF) (2016) both domestic and global economic development has been faced with a myriad of challenges during the 2015/2016 financial year. Among these problems are the impacts of the hike in price of commodities, financial crisis, asset market volatility, increasing uncertainty in the global geopolitical environment among others. Deficit financing emanated considering the fact that there is a need for economic expansion. Since independent (1960), over 85% of Nigerian budget are on deficit (Akinmulegun, 2014). Inadequacy of fund on the side of the government to execute capital project is what constitutes deficit. This projected that government needed to source for fund in financing its deficit either through domestic debt, external debt or implementation of monetary instrument to increase the flow of fund in the economy. However, financing the state of an economic through prolong borrowing from foreign country has a repel effect on the performance of such economy by scraping out sole investors due to high interest rate.

As affirmed by Alley, Asekomeh, Mobolaji and Adeniran (2014), Nigeria gained US$390 billion in oil-related fiscal revenue over the period 1971-2005. The Oil industry being the mainstay of the Nigerian economy, contributing the lion share to gross domestic product and accounting for the bulk of federal government revenue and foreign exchange earnings since early 1970. The Oil and gas constitute about 90% of Nigeria‘s foreign exchange earnings and 83% of its GDP (Odularu, 2007).

However, recently in Nigeria, enormous fiscal deficit emanates such that deficit-GDP ratio rose from 1.3% in 2010 to 5.8% in 2015. This became a pointer to government dissaving in Nigeria which culminated in unbearable excess demand with decline in monetary liquidity and hyper-inflation rate as consequences. Consequently, government’s borrowing serves as foremost avenue of financing fiscal deficit. For instance, capital expenditure allocation of N2.42 trillion in 2018 budget representing 30.8% would mostly be debt financed (CBN,2018).

In 2016 budget, oil revenue represented an infinitesimal value of 18.6% of the total revenue which was purposely meant to discourage over reliance on oil proceeds. Unfortunately, in the 2017 budget, oil revenue was estimated at 40.0% of total revenue while Non-oil stood at 27.8%. Therefore, the percentage of fiscal deficit to GDP and debt to GDP stood at 2.96% and 12.6% in 2013(CBN, 2018).

Empirically, all the study examined was unable to capture the asymmetric relationship between budget deficit and economic growth but rather the symmetric relationship between the variable.

Similarly, none of the study in the country has been able to capture the non-linearity using the non-linear ARDL estimation techniques. Consequently, this study aim to assess the asymmetric relationship between budget deficit and economic growth.

Therefore, the rest of the paper is presented in sections. Section 2 review relevant literature while section 3 examines the methodology. Section 4 presents the empirical results. Finally, Section 5 provides a conclusion and proffers policy recommendations.

2. Literature Review

A number of research studies have been conducted to investigate the nexus between budget deficit and economic growth in Nigeria and the world at large. The findings of majority of the empirical studies on budget deficit have provided contrary results which may arise due to three main issues: Time span, Characteristic of each country and the methodology adopted in examining the relationship between budget deficit and economic growth.

In Nigeria, Akinmulegun (2014) examined the impact of deficit financing on economic growth in Nigeria. The study used time series data covering 1970 to 2010 by employing VAR technique. The researcher observed that deficit financing has negative impact on economic growth. Similar studies like Monogbe, Dornubari and Emah (2015); Monogbe and Okah (2017) corroborated the findings of Akinmulegun (2014) while on the contrary Eze and Festus (2016) noted a positive relationship.

Magehena (2015) examined the effect of budget deficit on economic development in East African countries: Tanzania, Kenya, Uganda, Rwanda and Burundi. Time series data were used covering the period 2004 to 2013. The study employed Ordinary Least Square (OLS) techniques as well as Analysis of Variance(ANOVA). Economic development was proxy by GDP growth rate was used as the major dependent variable while budget deficit rate and interest rate were taken as the regressors. The study found that there exists a positive relationship between budget deficit and economic development among the selected countries. Consequently, the researcher concluded that the impact of budget deficit on economic development depends on how the funds for financing the deficit is being utilized. therefore, it was suggested that the tax base should be broaden and efficiently managed by the selected countries so as to finance their expenditure adequately as well as increasing the multiplier in order to further generate more output and economic growth.

Moreso, Ebney and Abu (2016) examined fiscal deficit and economic growth in Bangladesh using a secondary data from 1990 to 2014. The study employed Ordinary Least Square (OLS) by regressing the independent variables (budget deficit, total investment, real interest rate, and real exchange rate and inflation rate) on the dependent variable (RGDP). Consequently, the study showed that budget deficits adversely affects growth in the country which supports the neoclassical approach. Therefore, by re-establishing of the rule of law, closing tax loopholes, restructuring tax policies, political stability and harmonization of fiscal policy with monetary policy will no doubt attract additional domestic and foreign investment. In a similar study, Mohammed and Mahfuzul (2017) supported the finding of Ebney and Abu (2016) that budget deficit affects economic growth negatively in the country.

Doa and Doan (2013) investigate the long run relationship between budget deficit and other macroeconomic variables in Vietnam using the data covering 2003Q1 to 2012Q4. The study used budget deficit as the dependent variable and GDP, consumer price index (CPI), exchange rate and money supply as the major independent variables. The researcher noted that budget deficit is significantly related with exchange rate and money supply but insignificant with CPI. it was recommended that monetary policies by the state Bank of Vietnam (SBV) on the money supply is a key factor that affects budget deficit in Vietnam both in the short and long run among others. On the contrary, Khein (2014) established that budget deficit does not have any effect on economic growth in Vietnam.

Also, Oltjana and Madalena (2016) examined the effect of budget deficit on economic growth in Albania. The study adopted secondary data from 1993 to 2014. Granger Causality test was used to analyze the dependent variable (GDP) and the independent variables (FDI and budget deficit) used in the model. The result revealed that there is an inverse relationship between budget deficit and economic growth in the long run. So, the government should endeavor to implement domestic borrowing so as to balance the budget deficit.

Furthermore, zuze (2016) conducted a study on the relationship between fiscal deficit and economic growth in Zimbabwe using annual data for the period 1980 to 2015. The study adopted Vector Autoregressive (VAR) model, Variance decomposition as well as Impulse response techniques to analyze the model. As a result of the finding, budget deficit affect economic growth negatively in the country and so the government should ensure that adequate policy must be put in place to avoid the adverse effect of budget deficit on growth of the country. In a related study, Michael (2016) corroborated the finding of Zuze (2016) that in Zimbabwe, budget deficit affects economic growth negatively. Meanwhile, the study of Oltjana and Madalena (2016) supported the finding of Zuze (2016) that there is an inverse relationship between budget deficit and economic growth in Albania.

Natalia (2018) assessed the relationship between budget deficit and economic growth in Namibia by employing data from 1993Q4 to 2015Q4 with the aid of econometric technique of OLS and Toda Yamamoto. Consequently, it was established that budget deficit has negative impact on economic growth in the country both in the short run and long run. Contextually, the contribution of this empirical paper is as follows: Based on the knowledge of the researcher, this is the first study to explore the non-linearity and asymmetry of economic growth reaction to budget deficit in the case of Nigeria. Also, this paper also aims at exploring other macroeconomic variable (Oil revenue which serves as the major of revenue for the country) that affects economic growth in the country aside budget deficit that previous studies did not put into consideration which to the best knowledge of the researcher is one of the lacuna in the existing literature. Therefore, this study aims at investigating the asymmetries in the nexus between budget deficit and economic growth in Nigeria

3. Methodology

3.1 Introduction

This section presents the research methodology adopted for this work. It consists of Sections on model specification, data requirement and data sources as well as methods of estimation

3.2 Model Specification

This study seeks to examine the asymmetries in the nexus between budget deficit and economic growth in Nigeria. This study will therefore adopted the previous studies of Natalia (2018); Oluwafadekemi and Adeyemi (2018) and Osoro (2016) with little modification as follows:

$$Rgdp_t = \beta_0 + \beta_1 EXc_t + \beta_2 Rev_t + \beta_3 Inf_t + \beta_4 Topen_t + \beta_5 Bd_t + \varepsilon_t \quad (1)$$

Where:

Rgdp= Real Gross Domestic Product
Rev = Oil Revenue
Inf= Inflation rate
Topen= Trade Openness
Exc= Exchange rate
Bd=Budget Deficit

$\beta = (\beta_0, \beta_1, \beta_2, \beta_3, \beta_4 \; and \; \beta_5)$ is a cointegrating vector or a vector of long run parameters to be estimated.

ε_t = Stochastic error term

Gross Domestic Product: This implies the market value of all officially recognized final goods and services produced within a country in a given period. However, the real GDP is employed as it captures the effect of inflation.

Inflation rate: is defined as a generalized increase in the level of price sustained over a long period in an economy. It is a rise in the general level of prices of goods and services in an economy over a period of time.

Exchange rate: An exchange rate (also known as foreign exchange rate) between two currencies is the rate at which one currency will be exchanged for another. It is regarded as the value of one country's currency in terms of another currency. Exchange rates are determined in the foreign exchange market, which is open to a wide range of different types of buyers and sellers where currency trading is continuous.

Oil Revenue: This is the total amount of income derived from the sales of crude oil/refined petroleum products annually in the country both internally and internationally in local currency unit (Naira). This serves as the mainstay of the Nigerian economy as it contributed about 83% to the GDP.

Budget Deficit: This is the different between total government expenditure and total revenue over the years as obtained from CBN statistical bulletin 2018 issues. Hence, It is noteworthy that the difference between the total government expenditure and total revenue could be surplus or deficit. For the scope of this study, the deficit side is then employed.

Trade Openness: This is the extent/degree of openness of the economy of the country with the rest of the world, they earn more foreign earnings and by that it improves economic growth and development in the country.

Therefore, in other to achieve the stated objective, equation (1) shall be re-specify using a non-linear Auto regressive distributed lag (NARDL) approach so as to capture the asymmetric relationship between budget deficit and economic growth.

3.3 The NARDL Model

In order to study the potential asymmetric impacts in both the short and long run, recently, a new approach has been developed by Shin, Yu and Greenwood-Nimmo (2014). Therefore, they were able to extend the linear ARDL to NARDL by means of decomposing xt into its positive and negative partial sums as thus:

$$x_t = x_0 + x_t^+ + x_t^- \quad (2)$$

Where $$x_t^+ = \sum_{i=1}^{t} \boldsymbol{\Delta}\, x_i^+ = \sum_{i=1}^{t} \max(\boldsymbol{\Delta x_i}, 0) \quad (3)$$

and $$x_t^- = \sum_{i=1}^{t} \boldsymbol{\Delta}\, x_i^- = \sum_{i=1}^{t} \max(\boldsymbol{\Delta x_i}, 0) \quad (4)$$

Therefore, following Shin Yu and Greenwood-Nimmo (2014), the non-linear asymmetric co-integration regression can be expressed as thus:

$$y_t = \beta^+ x_t^+ + \beta^- x_t^- + \mu_t \quad (5)$$

where $\beta^+$is the long run coefficient associated with the positive change in x_t and β^- is the long run coefficient associated with the negative change in x_t.

Hence, the NARDL model of equation (1) as specified by Ndoricimpa (2017) is as shown below:

$$\text{Rgdp}_t = \alpha_0 + \alpha_1 Rev_t + \alpha_2 \text{Inf}_t + \alpha_3 Topen_t + \alpha_4 Exc_4 + \alpha_5 Bd_t^+ + \alpha_6 Bd_t^- + e_t \quad (6)$$

where: Bd_t^+ and Bd_t^- are partial sums of positive and negative changes in Bd. Hence,

$$Bd_t^+ = \sum_{i=1}^{t} \Delta Bd_i^+ = \sum_{i=1}^{t} (max \Delta Bd_i, 0) \quad (7)$$

and $$Bd_t^- = \sum_{i=1}^{t} \Delta Bd_i^- = \sum_{i=1}^{t} (min \Delta Bd_i, 0) \quad (8)$$

Based on the above formulation, the long run relation between economic growth and budget deficit increases is α_5, which is expected to be positive. Meanwhile,α_6 captures the long run relationship between economic growth and budget deficit reduction since they are expected to move in the same direction, α_6 is expected to be positive. It is further assume that increase in budget deficit will result in higher long run changes in economic growth as compared to economic growth impact of budget deficit reduction of similar magnitude, i.e. $\alpha_5 > \alpha_6$. Therefore, the long run relation as depicted by (5) shows asymmetric long run budget deficit passes through to economic growth. Therefore, equation (6) can further be estimated in short run form as follows:

$$\Delta \text{Rgdp}_t = \alpha + \beta_0 \text{Rgdp}_{t-1} + \beta_1 Exc_{t-1} + \beta_2 Inf_{t-1} + \beta_3 Rev_{t-1} + \beta_4 Topen_{t-1} + \beta_5 Bd_{t-1}^+ + \beta_6 Bd_{t-1}^- + \sum_{i=1}^{a} \varphi_i \boldsymbol{\Delta} (\text{Rgdp})_{t-i} + \sum_{i=0}^{b} \pi_i \boldsymbol{\Delta}\, Exc_{t-i} + \sum_{i=0}^{c} \gamma_i \boldsymbol{\Delta}\, Inf_{t-i} + \sum_{i=0}^{d} \lambda_i \boldsymbol{\Delta}\, Topen_{t-i} + \sum_{i=0}^{e} \rho_i \Delta\, (Rev)_{t-i} + \sum_{i=0}^{f} (\theta_i^+ \boldsymbol{\Delta}\, Bd_{t-i}^+ + \theta_i^- \boldsymbol{\Delta} Bd_{t-i}^-) + u_t \quad (9)$$

where the other variables are as defined above, a,b,c,d,e and f are the lag orders while $\alpha_5 = {}^{\beta_5}/_{\beta_0}$, $\alpha_6 = {}^{\beta_6}/_{\beta_0}$ are the aforementioned long run impacts of Budget deficit increase and budget deficit reduction on economic growth. Also, $\sum_{i=0}^{f} \theta_{\mathbf{i}}^{+}$ measures the short run influences of budget deficit increases on economic growth while $\sum_{i=0}^{f} \theta_{\mathbf{i}}^{-}$ *the* short run impact of budget deficit reduction on economic growth. Consequently, in addition to the asymmetric long run relation, the asymmetric short run impact of budget deficit changes on economic growth are also capture.

Hence, in other to estimate the above model, data is required on the following variables: budget deficit (Bd), Exchange rate (Exc), Inflation rate (Inf), Trade Openness (Topen), Oil Revenue (Rev) and Economic growth (Rgdp). Needed data covers 1981 to 2018 and this is

Obtained from the Central Bank of Nigeria (CBN) statistical bulletin. The study period is chosen based on data availability.

4. Empirical Results and Interpretation

4.1 NARDL Bounds Test

In view of the fact that all the variables are stationary at level as well as after first differencing, we perform the co-integration test for non-linear specifications. The results of the bounds test are presented in Table 1 From the table, we can see that there is evidence of co-integration since the F-statistics from both the linear and non-linear specification since the F-statistics (8.23612) is greater than both the upper and lower bound (2.63 and 3.62) respectively, It then necessitates estimating both the short and long run model.

Table 1 Bounds test for non-linear co-integration

Model Specification	F-Statistics	Lower bound	Upper Bound	Conclusion
Non-Linear	8.23612	2.63	3.62	Co-integration

Note: the critical values are selected from 5% significance level. The optimal lag order is based on SIC.
Source: Authors computation.

4.2 Asymmetric relationship between Budget deficit and Economic growth.

From Table 2, to investigate the appropriateness of an asymmetric model, we employed the Wald test for both the long run (Wd^{LR})and short run ((Wd^{SR}) symmetries.with respect to long run time horizon, the results are reported in lower panel of table 5 and suggest the rejection of the null hypothesis of long run symmetry between the positive and negative components of each one of the examined variables. Specifically, for the budget deficit components, the Wald test is found to be 12.65(p-value=0.0000) while the negative component is also found to be 42.13(p-value=0.0000). these findings however further buttress the fact that a linear specification of the model for the behaviour of deficit budgeting in Nigeria as was done by majority of the empirical studies consulted in the course of this work (Natalia, 2018; Peter and John; 2018 among others) would resulted to misspecification problem.

Before examining the magnitude of these long run asymmetric effects, we proceed with the analysis of the short run dynamics. The null hypothesis of symmetry in the short run impacts against the alternative of asymmetry are tested using the Wald Statistics. The results from the lower panel of table 3 suggests the acceptance of null hypothesis which implies that there exist symmetry in the short run for positive component of budget deficit($Wd_{Bd^+}^{SR}$) while the negative component suggests the rejection of the null hypothesis of a weak form summative symmetric adjustment for the variable ($Wd_{Bd^-}^{SR}$). Concisely, $Wd_{Bd^+}^{SR}$ components

of the Wald test is found to be 1.50 (p-value=0.221) while $Wd_{Bd^-}^{SR}$ is found to be 16.53 (p-value=0.000).

Therefore, from Table 3, the results from the estimated real GDP equation show that the coefficient of the positive budget deficit shock(Bd^+) is statistically insignificant but the coefficient of the negative budget deficit shock (Bd^-) is statistically significant at 1% level. This implies that in the long run, the impact of negative budget deficit shocks on economic growth is different from that of the positive budget deficit shock. The estimated long run coefficient for the negative budget deficit shock is negative (Bd^-)and equal to -0.041. This shows that in the long run, surge in budget deficit leads to a further reduction in economic growth; deficit financing causes a reduction in economic growth. Specifically, a 1% decrease in budget deficit leads to 0.041% reduction in economic growth. It implies that any reduction in the deficit spending by the government will automatically have a drastic effect on the economic growth of the country likewise a positive budget deficit does not have a significant impact on the economic growth as a result of certain factors such as corruption, Bureaucracy, inconsistency in government policy and above all fiscal indiscipline. Invariably, in the long run, both the positive and negative deficit financing will not have a significant impact on the economic growth of Nigeria. Hence, the deterioration in the welfare of the citizens, high rate of unemployment and other social vices. This is however in line with the classical view on deficit financing that in the long run, budget deficit tends to distort the economy. This view therefore contradicts the previous studies (Oluwafadekemi and Adeyemi (2018); Peter and John (2018) and others) that suggested that the relationship between budget deficit and economic growth in Nigeria is symmetry.

Similarly, in the short run, the positive budget deficit($Bd^+(-1)$) is not statistically significant while on the other hand, the negative budget deficit (Bd^- (-1)) is negative and significant at 5% this implies that a 1% reduction in deficit financing in the short run, will lead to a reduction in economic growth by 0.004. So, in the short run, budget deficit is asymmetric and any reduction or increment in it will automatically affect the economic growth of the country drastically

Table 2 Nonlinear ARDL results

Independent variable	Coefficient	p-value
Rgdp (-1)	0.912	0.0000**
$Bd^+(-1)$	-0.001	0.2316
Bd^-(-1)	-0.004	0.0004**
Inf	12.092	0.2070
Exc	5.318	0.5458
$Exc(_{-1})$	-31.853	0.0137**
$Exc(_{-2})$	36.356	0.0005**
Rev	0.301	0.0014**
Topen	--9514.016	0.0413**
ΔBd^+	-0.001	0.1474
ΔBd^-	-0.003	0.0056**
ΔInf	19.043	0.0309**
ΔExc	4.984	0.4789

Table 2 Nonlinear ARDL results (continued)

Independent variable	Coefficient	p-value
$\Delta\text{Exc}(_{-1})$	--37.765	0.0000**
$\Delta(\text{Rev})$	0.263	0.0187**
ΔTopen	-9501.090	0.0016**
Constant	1200.242	0.1232
R^2	0.998	
J-B	0.992	0.609
LM	0.222	0.895
ARCH	8.1699	0.612
Wd_{Bd+}^{LR}	12.65	0.0000**
Wd_{Bd-}^{LR}	42.13	0.0000**
Wd_{Bd+}^{SR}	1.50	0.2201
Wd_{Bd-}^{SR}	16.53	0.0000**

Wd_{Bd+}^{LR} and Wd_{Bd-}^{LR} refers to the Wald testfor the null of lngrun symmetry defined by $-\hat{\theta_1^+}/\hat{\rho} = -\hat{\theta_1^-}/\hat{\rho}$ and $-\hat{\theta_2^+}/\hat{\rho} = -\hat{\theta_2^-}/\hat{\rho}$ respectively.

Wd_{Bd+}^{SR} and Wd_{Bd-}^{SR} refers to the Wald test for the null of the additive short-run symmetry condition defined by $\sum_{i=0}^{p} \pi^{+}_1 = \sum_{i=0}^{p} \pi^{-}_1$ and $\sum_{i=0}^{p} \pi^{+}_2 = \sum_{i=0}^{p} \pi^{-}_2$ respectively.

Note: J-B is the Jarque-Bera test for error normally, LM ( ) is the LM test for error autocorrelation and ARCH is the ARCH test for autoregressive conditional heteroskedasticity ** denote significant at 5%.

Source: Authors computation.

More so, the coefficient of inflation rate is about 137. It indicates that a percentage increase in rate of inflation will lead to 137 increases in economic growth which is statistically insignificant. This result is in conformity with the theory that as the rate of inflation increases up to certain stage, the general price level tends to rise as well which will lead to higher output by the firm and hence economic growth is achieved. This result is in line with the findings of Mweigka (2016).

Similarly, the coefficient of Exc, Rev and Topen are about 111.906, 3.428 and -108399.560 respectively. It implies that a unit increase in the rate of exchange and Oil Revenue will lead to increase in economic growth with about 111.906 and 3.428 respectively which are not statistically significant. Also, a unit increase in trade openness will on the average reduces economic growth by 108399.560 which is not significant as well. So, with the increase in exchange rate, the rate of export tends to increase and thereby leading increase in domestic output. This finding conforms to the studies of Eze and Festus (2016) and Mweigka (2016). In the same vein, as the revenue generated from oil increases, it tends to have a positive impact on the economic growth since its remains the mainstay of the Nigerian economy and the insignificancy of this variable may be due to corruption that is being perpetuated by those people that are in charge of our oil sector.

On the contrary, trade openness has negative and insignificant impact on the economic growth of the Nigerian economy as a result for the fact that the country is import dependent i.e. what accounted for our trade openness is import rather than export which would have contributed significantly to economic growth of the country. This finding however contradicts the previous studies of Oluwafadekemi and Adeyemi (2018) that there exists a positive relationship between trade openness and economic growth.

Table 3 Long run Model

Independent variable	Coefficient	p-value
Bd^+	-0.013	0.4560
Bd^-	-0.041	0.0644*
Inf	137.771	0.3235
Exc	111.906	0.2862
Rev	3.428	0.1766
Topen	-108399.560	0.2681
Constant	0.003	0.8405

Note: *, ** and ***denote significant at 1%, 5% and 10%, respectively.

Source: Authors computation.

5. Conclusion

This paper investigated the nexus between budget deficit and economic growth in Nigeria using annual data. The analysis contributes to literature by employing a non-linear methodology and specifically asymmetric Autoregressive Distributive Lag Technique which allows the exploration of possible asymmetric effects in both the long and short run time horizons. The results indicated the presence of asymmetric both in the short and long run effects from budget deficit and economic growth in Nigeria.

Generally, it is therefore concluded that the imposition of a linear symmetric in modeling budget deficit in the country could be misleading as far as Nigerian economy is concerned. Hence, the use of NARDL model for budget deficit contributes to the understanding of the nonlinear dynamics between budget deficit and economic growth, thereby leading to more effective and efficient forecasting and policymaking

Consequently, the study therefore recommend that the government should as a matter of urgency ensure proper monitoring of the budget implementation as well as ensuring fiscal discipline among all tiers of government and parastatals in the country so as to ensure that the desired outcome is achieved both in the short and long run. From a policy perspective, inculcating fiscal discipline in all government dealings through judicious utilization of the available funds will go a long way in ensuring inclusive growth and development in the country.

5.1 Contribution

The major contribution of the study is the existence of asymmetric relationship between budget deficit and economic growth in Nigeria during the study period. Hence, understanding the nonlinear dynamics between budget deficit and economic growth is imperative for effective and efficient policy making and economic forecasting.

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