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Does Internal Security Expenditure Impact on Economic Growth in Nigeria?

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Abstract: Any resource channeled into security has a trade-off effect, as it denies other sectors of the economy the needed resources that could be employed to enhance economic growth and welfare of the citizenry. This study examined the possible impacts of internal security expenditure on economic growth in Nigeria. Employing Autoregressive Distributed Lag (ARDL) estimating technique, the study estimated both the short-run and the long-run interactions between the chosen variables. The estimated result found internal security to be positively and significantly related to economic growth in the short-run but exhibits a negative and significant relationship with economic growth in the long-run. The result also revealed a negative and significant relationship between foreign direct investment and economic growth. Finally, the test for structural breaks found evidence for five breakpoints which interestingly corresponded with the periods of some structural and government policy changes in Nigeria. It is therefore recommended that resources to be channeled on security should be considered cautiously as not to adversely affect economic growth. Secondly, government should employ robust policies that would encourage foreign investments into the economy.

Keywords: economic growth; government expenditure; national security; time series models

JEL Classification: M21

1. Introduction

Economic growth intricately thrives and substantially hinges on the enduring national peace and security. Countries require certain degree of security to counteract

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both internal and external threats. Security of lives and properties are considered the priority in the constitutional provision of the Nigeria state. To guarantee this, the National Security Agency (NSA) was established as the top security apparatus in Nigeria. The NSA consists of the National Intelligence Agency (NIA), National Drug Law Enforcement Agency (NDLEA), Nigeria Police Force (NPF), Defence Intelligence Agency (DIA), Ministry of Internal Affairs (MIA), Nigeria Immigration Service (NIS), State Security Service (SSS) and Nigeria Immigration Service (NIS) (Adebakin & Raimi, 2012). Considering the importance of security in the country, these various agencies are heavily funded to effectively perform their functions. In view of this, there is a constitutional provision for appropriation of budget with respect to defence and national security.

However, any resources channelled into security is an opportunity cost, as it denies other sectors of the economy the needed resources that could be employed to enhance economic growth and welfare of the citizenry. This is particularly true for developing countries which often times have insufficient funds for investment into diversified ventures at the same time. As most developing nations depend on advanced countries for the importation of military hardware, it therefore depletes their foreign reserves and could further increase their debt burdens. Also, national crises lead to the destruction of infrastructural facilities, loss of lives and properties which results to the decline of Foreign Direct Investment (FDI). Furthermore, huge internal security expenditure crowds out investment, leading to high operational costs and in turn impacts negatively on economic growth (Enders & Sandler, 2008; Frey et al, 2007). National insecurity could negatively impact on the sales, purchase and price of stocks, as a result of uncertainty arising from the investors' perception of the stock market performance (Jackson et al., 2007). McKenna (2005) opined that increased internal security expenditure in developing countries may deplete foreign reserve and seigniorage, thereby resulting to increase in inflation. All these have serious consequences on the economic growth of the developing economies.

The relationship between internal security spending and economic growth has attracted attention over the years. A number of country specific and cross country studies have been done on the relationship, trying to establish the direction of causality and the potential channels through which security spending affects economic growth (Deger & Sen, 1990b; Dunne *et al.*, 2008; Kollias *et al.*, 2004). From 1960 when Nigeria got her independence, she has been experiencing relative peace and sustained economic growth, championing several peace keeping operations and leadership in the African Sub-region, especially within the Economic Community of West Africa State [ECOWAS] (Watts, 2015). The discovery and exploration of crude oil however started to challenge the peaceful coexistence in Nigeria, as the elites struggle to control the crude oil deposits and revenues that accrue from the proceeds of crude oil in Nigeria. In this light, Fasanya and Akinbowale (2019) observed that only one percent of population in Nigeria benefits

from eighty percent of the resources from crude oil sales. Consequently, the communities hosting the oil blocks and oil rigs were neglected and the natural resources such as land and water through which most of the people in the communities earn a living were polluted and desecrated (Ojide et al, 2020). This however threatened the age-long peace and security in the country, as the host communities formed militant organizations such as Niger Delta People's Volunteer Force (NDPVF) and Movement for the Emancipation of the Niger Delta (MEND) to fight for the rights of their communities (Akhemonkhan et al., 2012; Ojide et al., 2020; Suberu, 2001).

Historical data shows that internal security spending increased tremendously from 1999 immediately the democratic governance started. Though there have been pockets of armed struggles such as political crises and agitation for resource control, the major pressure to increase internal security spending results from the terrorist attacks by the Boko Haram insurgents that later transformed into trans-border terrorism. Increased security spending was also informed by rising sectarian and ethno-religious crises, rampant kidnappings for ransom, hostage taking of oil company workers, crude oil pipelines and oil installations vandalism, ritual killings among others (Peterside, 2014). This security spending has trade-off impact on the limited available resources of the country.

The effect of national security spending on economic growth, especially in Nigeria is not clear and therefore its impact on gross domestic product (GDP) is imperative. Furthermore, most studies on defence-growth relationship focus more on external defence, however, the security challenges in Nigeria are more of internal insecurity. Therefore, this study focuses on internal security and its impact on economic growth in Nigeria. The study seeks to answer some questions such as: does internal security spending have a crowding-out impact on the resources meant for investment and capital formation hence impeding economic growth? The objective of this study is to investigate the relationship between internal security spending and economic growth in Nigeria. The subsequent sections are structured as follows: section two has the relevant literature reviews. Section three presents the methodology and data. Section four has result and discussion of findings. Finally, section five deals with the conclusion and recommendations.

2. Literature Review

There are several theories which relate threat to national security and its consequential effect on the growth of the economy. However, this study is anchored on the social conflict theory and Neomalthusians theory. The social conflict theory explains the rivalry among the different social classes, state actors and non-state actors in the protection of their personal and selfish interests. Consequently, this

induces the purchase of dangerous weapons, arms and ammunitions for self defence resulting to social conflicts which pose threats to national security and sustainable growth of the economy (Marx and Engel, 1848). The continuous struggles amongst these different actors over limited economic resources and political power is the justification for the presence of social conflicts in modern society. On the other hand, the theory postulates that the different social structures exist as a result of conflicts of ideological interest and different means of state resources control. These structures and inequitable power and resources distribution in the society thereafter influence the individuals and resources (Knapp, 1994). The aftermath of the two versions of social conflict theory is threat to national security induced by fight among competing social actors or groups in their pursuit for economic and political domination. If this unequal relation and exploitation is unchecked, it usually leads to armed struggle and war.

Thomas Malthus theory of population postulates the relationship between population growth and growth of food supply needed for basic subsistence. According to Malthus, population is growing exponentially while food supply is growing arithmetically in Europe. This suggests devastating consequences for the citizens. He warned against famine, disease, pestilence, congestion, contagious disease, infanticide and war. This theory was restructured in modern times as Neomalthusian theory to conform to the model of threat to national security usually prompted by conflicting interest among the different social classes, state and non-state actors over the control and ownership of natural resources. The theory postulates the limitation of natural resources in relation to the human population (Gleditsch and Theisen, 2006). The limited resources naturally induce fierce competition among these different actors leading to social conflicts that threaten the national security following the rise in grievances among these various interest groups (Homer-Dixon, 1999). To dominate in the ownership and control of these limited resources, these actors employ both legal and illegal ways to achieve their aim. The Neomalthusian theory explains the rationale for Niger-Delta protest for control of oil resources and also the violent campaign for the institution of shariah states by Boko Haram in Northern Nigeria.

Quite a good number of scholarly studies have been carried out generally on the effect of government expenditure on economic growth and specifically on internal security expenditure of the government on the growth of the economy. Among them are: Adebakin & Raimi (2012) who investigated the link between internal security and sustainable economic development in Nigeria. The study disaggregated government expenditure viz. Expenditure on security, education, health, agriculture and construction. Employing the descriptive and linear multiple regression method of analysis, the study observed that budgetary spending on internal security rose over and above other sub-sectors in the period examined concluding that internal security spending adversely affected sustainable economic development in Nigeria. The

study used only government expenditure aggregates without considering other macroeconomic indicators. However, the inclusion of other macroeconomic variables as determinants of growth may have yielded a more robust outcome.

In another related study, Peterside (2014) used the exploratory technique to examine the challenges and prospects of military and internal security in Nigeria based on existing secondary data. The study concluded that considering the high level of national threats, terrorism and insurgency in the country, it is imperative for the military involvement in internal security. Since this is an exploratory study, it is hard to provide irrefutable evidence for the results of the study.

Also Egbefo & Salihu (2014) theoretically reviewed internal security crisis in Nigeria. The study noted that internal insecurity is inevitable, as this is the reality of societal existence. Therefore, it is a way of understanding social behaviour. It was however suggested the need to employ mechanisms for management and control of internal security crisis in Nigeria. This is achievable by a good understanding of the causes, types, effects and subsequently, solutions which the study tends to achieve.

Dunne & Tian (2013) studied the relationship between military expenditure and economic growth by comprehensively reviewing about 170 empirical studies. This study was an extension of an earlier study conducted by Dunne and Uye (2010) on this subject matter. They were quick to conclude that there is increasing strong support for a negative relationship between military expenditure and economic growth in latest studies (i.e. after the end of the cold war). This study based most of their findings on the result of the previous study. Therefore, one cannot easily ascertain the final conclusion from the study.

Oriakhi & Osemwengie empirically investigated the effect of national security on foreign direct investment using Nigeria as a case study. The study period spanned from 1980 to 2009 and employed the least square method of analysis. The findings of the study showed a negative relationship between national security and FDI in Nigeria. Nevertheless, the use of OLS technique which is a short run analysis may be subjected to spurious regression and the outcome thereof not appropriate for policy decision.

Bandyopadhyay et al. (2011) employed a system-GMM estimating technique of dynamic panel to investigate the impact of terrorism on the GDP and FDI of 78 developing countries for the period 1984 to 2008. The study found evidence for a negative and significant relationship between domestic terrorism and FDI as a ratio of GDP. The implication is that the limited resources of developing nations can be reduced and displaced given the increasing wave of terrorism and insecurity.

Examining the relationship between defence spending, debt service obligation and economic growth in Nigeria, Edame & Nwankwo (2013) used a time series data covering the period 1970 to 2003. The study used cointegration and error correction

mechanism as the appropriate analytical technique and concluded that there is a long run relationship among the variables. It was also found that defence and debt are positively and significantly related to the growth of Nigeria economy.

Adeyeye et al. (2016) determined the impact of national security expenditure on FDI in Nigeria using annual time series data covering the period 1985 to 2015. Co-integration and Error Correction Mechanism (ECM) were used for the analysis which the findings showed that expenditure on internal security is negatively and significantly related to FDI. However, the impact of defence expenditure on FDI is positive and significant.

Olabode (2012) analysed the impact of defence spending on poverty reduction in Nigeria. The study was conducted using time series data which covered the period 1990 to 2010. Contrary to the convention of using monetary measure of poverty, human development poverty index was constructed employing principal component analysis. The result of the Dynamic Ordinary Least Square (DOLS) method employed revealed that military participation rate, military expenditure per soldier and population impacted positively and significantly on the poverty indicator. Also military expenditure, output per capita and secondary school enrolment were negatively related to poverty level. The findings support the trade-off between capital intensiveness of the military and the well-being of Nigeria citizens which suggests the vulnerability of the majority poor in Nigeria. Though the study used substantial economic variables in the analysis, it employed considerably few years in the study which may affect the degree of freedom and thus the outcome. Employing a minimum of thirty years in any annual time series study yields a more appropriate degree of freedom and may yield a better result for policy recommendation.

Aminu & Abu Bakar (2016) investigated the interaction among defence expenditure, arms importation and economic growth in Nigeria using the autoregressive distributed lag (ARDL) technique. A quarterly time series data which spanned from the first quarter of 1984 to the last quarter of 2014 was used. The result of the analysis indicated that defence-arms interaction has a negative impact on the economy of Nigeria. Though the study used both long-run and short-run estimating technique (ARDL), the model was not normal, as the probability value of the normality test was significant as opposed to being insignificant. Secondly, the lag length criterion that forms the basis of ARDL was not reported, hence the result may not be appropriate for a good policy recommendation.

3. Methodology and Data

This study employed quarterly time series data spanning from the first quarter of 1999 to the fourth quarter of 2019 and Autoregressive distributed lag (ARDL) Model. The rationale behind the choice of date was because, that was when the proliferation of militancy and insurgency gained ground in Nigeria. Table 1 below shows the variables of interest and their sources.

Table 1. Variables, Labels and Sources of Data.

| Variables | Labels | Sources of data |
|---|---------------|--|
| Gross Domestic Product Growth Rate | GDPGR | World Bank Data Base and International Monetary Fund (IMF) data base |
| Internal Security Expenditure as a percentage of GDP) | INTESEC | Central Bank of Nigeria (CBN) statistical Bulletin |
| Non-Defense Government Expenditure as a percentage of GDP | GEX | Central Bank of Nigeria (CBN) statistical Bulletin |
| Share of gross capital formation as a percentage of GDP | GCAP | Penn World Table |
| Population Growth Rate | POPGR | Penn World Table |
| Inflation Rate (Proxy by Consumer Price Index) | INFR | World bank data base and IMF (World Economic Outlook) |
| Foreign Direct Investment as a percentage of GDP | FDI | Central Bank of Nigeria (CBN) statistical Bulletin |
| Structural dummy variables | | |
| DX1 Dummy Variable 1 [1 = 2002 - 2005 ; 0 = Otherwise] | | |
| DX2 Dummy Variable 2 [1 = 2006 - 2008 ; 0 = Otherwise] | | |
| DX3 Dummy Variable 3 [1 = 2009 - 2012 ; 0 = Otherwise] | | |
| DX4 Dummy Variable 4 [1 = 2013 - 2015 ; 0 = Otherwise] | | |
| DX5 Dummy Variable 5 [1 = 2016 - 2019 ; 0 = Otherwise] | | |

Source: Authors' 2020

The time series data employed in this study is subject to unit root problems, hence the need to subject the variables to unit root test. Table 2 below shows the unit root result, showcasing that the variables have a mixed series.

Table 2. Unit Root Result

| Augmented Dickey-Fuller (ADF) | | | Dickey-Fuller (DF) | | Philips-Perron (PP) | | |
|-------------------------------|-----------------------|---------------|-----------------------|---------------|-----------------------|-----------------------|--------------------------|
| Variab les | Order of Integr ation | P- Value | Order of Integra tion | Prob. Value | Order of Integra tion | Integra tion P- Value | Most Consist ent results |
| GDPGR | I(1) | 0.0000 *** | I(0) | 0.0080 *** | I(0) | 0.0000* ** | I(0) |
| INTSEC | I(0) | 0.0080 *** | I(1) | 0.0000 *** | I(0) | 0.0080* ** | I(0) |
| GEX | I(1) | 0.0000 *** | I(1) | 0.0000 *** | I(0) | 0.0000* ** | I(1) |
| INFR | I(0) | 0.0211 | I(0) | 0.0223 ** | I(0) | 0.0132* * | I(0) |
| POPGR | I(1) | 0.0889 * | I(1) | 0.0000 *** | I(1) | 0.0000* ** | I(1) |
| GCAP | I(1) | 0.0000 *** | I(1) | 0.0000 *** | I(1) | 0.0000* ** | I(1) |
| FDI | I(1) | 0.0000 *** | I(1) | 0.0000 *** | I(1) | 0.0000* ** | I(1) |

Note: i. *** indicates statistical significance at 1 per cent level, ** at 5 per cent level, and * at 10 per cent level

Source: Authors' Computation, 2020

The study went on to determine the cointegration nature of the variables. However, the determination of the lag length is necessary as to ascertain the number of lags which the variable would enter into the model. Table 3 below shows the result of the lag length criterion. The result shows that four out the five criterions selected two (2) as the most appropriate lag length to be used.

Table 3. Lag Length Result

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|----------|------------------|------------------|-----------------|------------------|------------------|------------------|
| 0 | -955.6838 | NA | 170.6549 | 25.00477 | 25.21785 | 25.09000 |
| 1 | -473.6025 | 863.9899 | 0.002234* | 13.75591 | 15.46049 | 14.43773 |
| 2 | -462.3157 | 18.17600* | 0.006131 | 14.73547* | 17.93157* | 16.01389* |
| 3 | -439.6962 | 32.31367 | 0.013168 | 15.42068 | 20.10829 | 17.29568 |
| 4 | -315.7058 | 154.5854 | 0.002200 | 13.47288 | 19.65200 | 15.94447 |
| 5 | -171.3917 | 153.6851 | 0.000244 | 10.99719 | 18.66782 | 14.06537 |

Table 4 below showcases the ARDL cointegration Bound test result. The F-statistic value of 7.13 is above the upper Bound of 3.61 at 5% significance level, depicting that there is long-run cointegration among the chosen variables.

Table 4. ARDL Cointegration Bound Test Result

| Test Statistic | Value | k |
|------------------------------|-----------------|-----------------|
| F-statistic | 7.128397 | 6 |
| Critical Value Bounds | | |
| Significance | I0 Bound | I1 Bound |
| 10% | 2.12 | 3.23 |
| 5% | 2.45 | 3.61 |
| 1% | 3.15 | 4.43 |

Considering the unit root and the cointegration results, the model suggests the use of an ARDL estimating technique.

Theoretical Framework

In literature, there are two major approaches in determining the security-growth relationship viz: Feder-Ram model as used by Feder (1983); Huang and Mintz (1990) and Ram (1986, 1995) and augmented Solow model as used by Augier et al., (2017); Dunne et al., (2005) and Keller et al., (2009). However, in this study we employed the Feder-Ram model. The theoretical foundations of Feder-Ram model is based on the three-sector model of total output where:

$$Z = Z(L_Z, K_Z) \quad (1)$$

$$P = P(L_P, K_P) \quad (2)$$

$$F = F(L_F, K_F, Z, P) \quad (3)$$

$$Y = Z + P + F \quad (4)$$

Where Z, P and F stand for internal security expenditure, other government expenditure and civilian sector respectively. Y, L and K stand for total output, labour and capital respectively. Capital and labour are allotted amongst the three sectors, therefore L_Z , L_P and L_F stand for labour allotted to internal security expenditure, other government expenditure and civilian sectors respectively. Similarly, K_Z , K_P and K_F stand for capital allotted to internal security expenditure, other government expenditure and civilian sectors respectively.

In line with conventional practice, $Z_L = \delta_Z / \delta_L$; $Z_K = \delta_Z / \delta_K$

Therefore, for P and F, relative output can be expressed as:

$$Z_L / F_L = Z_K / F_K = (1 + \delta_Z)$$

$$P_L / F_L = P_K / F_K = (1 + \delta_P) \quad (5)$$

If the output of internal security sector exceeds the output in the civilian sector, $\delta_z > 0$; if output is equal between the internal security sector and the civilian sectors then $\delta_z = 0$; and if output is greater in the civilian sector, then the $\delta_z < 0$. Similarly, the output of other government expenditure sector in relation to the civilian sector is expressed as δ_p . If we assume that prime (') represents the differentiation with respect to time and representing

$L^\wedge + \dot{L}/L, \hat{Z} = \dot{Z}/Z$ and $P^\wedge = \dot{P}$. Therefore differentiate equation 4 using equation 5 gives:

$$\hat{Y} = \frac{F_L L}{Y} L^\wedge + F_K \frac{I}{Y} + \left[\frac{\delta_Z}{(1+\delta_Z)} + F_Z \right] \frac{Z}{Y} \hat{Z} + \left[\frac{\delta_P}{(1+\delta_P)} + F_P \right] \frac{P}{Y} P^\wedge \tag{6}$$

$$\hat{Y} = \alpha_0 + \alpha_1 L^\wedge + \alpha_2 \frac{I}{Y} + \alpha_3 \frac{Z}{Y} \hat{Z} + \alpha_4 F + \alpha_5 \frac{P}{Y} P^\wedge + \alpha_6 \hat{Z} + \mu \tag{7}$$

Where \hat{Y} = total estimated output, L^\wedge =labour, I/Y = ratio of investment to output, Z = internal security expenditure, P = other government expenditure, F = inflation rate. In line with Adeyeye et al. (2016) and Oriakhi & Osemwengie (2012), FDI is also included in the model. Therefore, equation (7) will be re-specified thus:

$$GDPGR_t = \alpha_0 + \alpha_1 INTESEC_t + \alpha_2 GEX_t + \alpha_3 POPGR_t + \alpha_4 GCAP_t + \alpha_5 INFR_t + \alpha_6 FDI_t + \mu_t \tag{8}$$

Where $\alpha_0 \dots \alpha_6$ are parameter estimates.

The cumulative sum (cusum) square test shows that the variables have structural breaks. This conforms to Bai and Perron (2003) who argued that time series data usually possess outliers that could distort the results and leads to inappropriate policy recommendations. This has informed the need to dictate and correct the structural effects in the variables. The study therefore, includes the notation for structural breaks and dummy variables to account for the structural effect in the ARDL model in equation (8) specified below:

$$\begin{aligned} \Delta GDPGR_t = & \alpha_0 + \sum_{t-i}^p \alpha_1 \Delta INTESEC_{t-i} + \sum_{t-i}^p \alpha_2 \Delta GDPGR_{t-i} + \\ & \sum_{t-i}^p \alpha_3 \Delta GEX_{t-i} + \sum_{t-i}^p \alpha_4 \Delta POPGR_{t-i} + \sum_{t-i}^p \alpha_5 \Delta GCAP_{t-i} + \sum_{t-i}^p \alpha_6 \Delta INFR_{t-i} + \\ & \sum_{t-i}^p \alpha_7 \Delta FDI_{t-i} + \lambda_1 INTESEC_{t-i} + \lambda_2 GEX_{t-i} + \lambda_3 POPGR_{t-i} + \lambda_4 GCAP_{t-i} + \\ & \lambda_5 INFR_{t-i} + \sum_{t-i}^p \alpha_6 \Delta FDI_{t-i} + \sum_{j=1}^{n-s} \lambda_j D_{jt} + \varepsilon_{it} \end{aligned} \tag{9}$$

Where $\alpha_1, \dots, \alpha_7$ = unknown parameter estimates, showing short-run dynamics in the model. $\lambda_1, \dots, \lambda_5$ = long-run parameter estimates, showing long run relationship among the variables. $t - i$ = the selected lag length. Δ = first difference operator, $\sum_{j=1}^{n-s} \lambda_j D_{jt}$ = structural break notation meant to correct the structural rigidity in the model. μ_{it} = the stochastic error term.

4. Results and Discussion

Table 5 below shows the short- and long-run results. The result shows that internal security (INTSEC) denotes a positive and significant relationship with economic growth (GDPGR) in the short-run. It shows that 1% increase in INTESEC results to 32.57% increase in GDP at 5% level of significance. However, in the long-run INTESEC is negatively and significantly related to GDPGR. This shows that 1% increase in INTESEC decreased GDPGR by 15.42% at 1% level of significance. This positive relation observed in the short-run result corroborates the studies of Khidmat et al., (2018) in South-East Asia and Sheikh & Chaudhry (2016) in Pakistan and India who found positive nexus between military expenditure and economic growth. Nevertheless, it negates the studies of Adebakin & Raimi (2012); Bandyopadhyay et al. (2011); Dunne & Tian (2013) and Oriakhi & Osemwengie (2012). These studies found evidence for negative relationship between internal security and economic growth in the various countries examined. The implication of the short-run positive relationship observed, is that increase in government expenditure through internal security expenditure may temporarily induce aggregate demands which may in turn leads to increase in investment, income and employment. However, in the long-run the increased expenditure in internal security may crowd out investment leading to high operational costs which affects economic growth negatively. Also, this may not be unconnected to the depletion of foreign reserve and seigniorage as a result of importation of military hard wares which negatively affects the economy in the long run.

The result also shows that other government expenditure (GEX) is significant and negatively signed in both short-run and long-run with respect to economic growth (GDPGR). A 1% increase in other government expenditure decreases GDPGR by 2.42% at 1% level of significance in the short-run, while in the long-run, a 1% increase in other government expenditure retards GDPGR by 1.9% at 1% significant level. This study conforms to the studies of Edame & Nwankwo, (2013) and Mbah et al., (2016). But it is not in line with the studies of Connolly & Li, (2016) and DeRouen & Heo (2000) who found positive relationship between GEX and GDPGR. The study can infer that increased government expenditure may portend high inflation which may negatively affect economy growth.

Table 5. Ardl Short Run and Long Run Estimates
Dependent Variable: GDPGR

| Short-Run Estimates | | Long-Run Estimates | |
|-----------------------|--------------------|--------------------|--------------------|
| <i>Variables</i> | <i>Coefficient</i> | <i>Variables</i> | <i>Coefficient</i> |
| D(GDPGR(-1)) | -0.1049 | GEX | -1.903*** |
| | [-0.688] | | [-0.555] |
| D(GEX) | -2.420*** | INFR | 0.218* |
| | [-3.495] | | [0.257] |
| D(GEX(-1)) | -0.472 | INTESEC | -15.418*** |
| | [-0.635] | | [0,243] |
| D(INFR) | 0.102 | POPGR | 30.236*** |
| | [0.572] | | [0.502] |
| D(INTESEC) | 32.572** | FDI | -1.357*** |
| | [2.644] | | [-0.233] |
| D(INTESEC(-1)) | 8.832 | GCAP | -1.834 |
| | [0.690] | | [-0.924] |
| D(POPGR) | 18.074* | DX1 | 19.964 |
| | [1.112] | | [0.907] |
| D(POPGR(-1)) | -0.035 | DX2 | -30.451 |
| | [-0.002] | | [-1.462] |
| D(FDI) | -3.197*** | DX3 | 12.221 |
| | [-3.419] | | [0.961] |
| D(FDI(-1)) | -0.626 | DX4 | 4.636 |
| | [-0.615] | | [0.305] |
| D(GCAP) | -0.998** | DX5 | -5.353 |
| | [-2.326] | | [-0.297] |
| D(GCAP(-1)) | -0.107 | | |
| | [-0.243] | | |
| DX1(D1) | -10.802** | | |
| | [-2.488] | | |
| DX2(D2) | -19.334*** | | |
| | [-4.020] | | |
| DX3(D3) | 3.083 | | |
| | [0.954] | | |
| DX4(D4) | -8.370** | | |
| | [-2.493] | | |
| DX5(D5) | -8.180** | | |
| | [-2.373] | | |
| CointEq(-1) | -0.159* | | |
| | [-1.767] | | |

Note: i. *** indicates statistical significance at 1 per cent level, ** at 5 per cent level, and * at 10 per cent level

ii. Numbers in parentheses are t-ratios

Source: Authors' Computation, 2020

Another finding from the result shows that gross capital formation (GCAP) has a negative and significant relationship with the GDPGR in the short-run. However, in the long-run it has a negative relation but non-significant in relation to GDPGR. It depicts that a 1% increase in GCAP reduces GDPGR by approximately 1% in the short-run. This result agrees with the studies of Connolly & Li, (2016) who also found a negative Capital formation-growth relationship. However, it contradicts the studies of Aminu & Abu Bakar (2016) and Sami & Mbah, (2018). The economic implication here may not be unconnected to the fact that majority of the investments in capital may be channelled to unproductive ventures that may not yield adequate returns on investment (ROI) as expected. This may affect sustainable economic growth in the economy.

The result also revealed a negative and significant relationship between FDI and GDPGR in both short-run and long-run at 1% significance level. This result is contrary to the study of Oriakhi & Osemwengie (2012) but it is in tandem with the study of Adeyeye et al, (2016) who also established a negative relationship between the two variables. The implication is that increased expenditure in internal security arising from high insecurity in the country discourages foreign investors (FDI) which adversely affects economic growth.

Inflation was found to be positively and significantly related to economic growth in the long-run at 10% level of significant. This supports the work of Okoli et al. (2016) who also found evidence for a positive and significant inflation-growth relationship in Nigeria. Contrarily, Agu & Nyatanga (2020) established a positive inflation-growth relationship. The study can infer that within the study period, inflation has been encouraging productivity growth in Nigeria. This may be connected to the inflation targeting policy of the federal government which was geared towards curtailing the effects of high inflation in Nigeria over the years.

Finally, the study employed Bai & Perron (2003) test for structural breaks and found evidence for five breakpoints in 2002Q1, 2005Q1, 2008Q1, 2012Q1 and 2015Q1 (see table 1, lower sector). Remarkably, these breakpoints corresponded with the periods of some structural and government policy changes in Nigeria. For instance, in 2005, the Central Bank of Nigeria implemented the bank consolidation policy. This policy was meant to strengthen the capital base of the commercial banks in Nigeria. This policy no doubt, encouraged investors to have confidence in the financial institution, thereby encouraging investment. Secondly, in 2008, the economy experienced global financial crisis which affected most economies of the world, Nigeria inclusive. This probably suggests the sharp break in 2008Q1. Also

the 2015 election which resulted in a change in administration may likely be the rationale behind the 2015Q1 structural break. This is evidence in the high capital flight observed within the period which negatively impacted on the economic growth of Nigeria (Bredino et al., 2018).

Diagnostic Tests

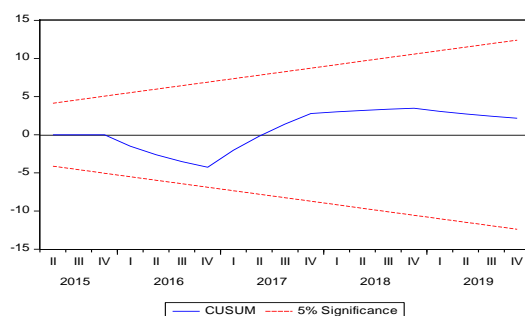


Figure 1. Stability Test (Cusum Test)

Source: Authors' 2020

From the cumulative sum (cusum) test in figure 1 above, it could be observed that the model is stable, as the red line is within the two blue lines which shows 5% boundary of the model.

Table 6. Breusch-Godfrey Serial Correlation LM Test

| | | | | |
|---------------|----------|---------------------|-------|--|
| F-statistic | 7.381018 | Prob. F(2,44) | 0.531 | |
| Obs*R-squared | 20.59981 | Prob. Chi-Square(2) | 0.342 | |

The result in table 6 above shows that the F-statistics (Prob) value that is, 0.531 is not significant at 5% level of significance. Therefore, the null hypothesis of no serial correlation is accepted.

Table 7. Heteroskedasticity Test: Breusch-Pagan-Godfrey

| | | | | |
|---------------------|----------|----------------------|--------|--|
| F-statistic | 1.295695 | Prob. F(35,46) | 0.2034 | |
| Obs*R-squared | 40.70797 | Prob. Chi-Square(35) | 0.2336 | |
| Scaled explained SS | 89.08500 | Prob. Chi-Square(35) | 0.0000 | |

The Heteroskedasticity result in table 7 above shows that there is no Heteroskedasticity problem in the variables, as the probability value of 0.203 is non-significant. Therefore, the study accepts the null hypothesis of no Heteroskedasticity problem in the model.

5. Conclusion and Recommendations

Using an ARDL estimating technique on Nigeria quarterly time series data from 1999Q1 to 2019Q4, this study aims at determining the impacts of internal security expenditure on economic growth in Nigeria. The estimated result found internal security to be positively and significantly related to economic growth in the short-run but exhibits a negative and significant relationship with economic growth in the long-run. Other government expenditure has significant and negative relationship both in the short-run and long-run with respect to economic growth. The result also shows that gross capital formation has a negative and significant relationship with economic growth in both short-run and long-run but has a non-significant effect in the long-run. The result also revealed a negative and significant relationship between foreign direct investment and economic growth. Inflation was found to be positively and significantly related to economic growth in the long-run. Finally, the study employed Bai & Perron (2003) test for structural breaks and found evidence for five breakpoints in 2002Q1, 2005Q1, 2008Q1, 2012Q1 and 2015Q1. Interestingly, these break points years corresponded with the periods of some structural and government policy changes in Nigeria. The study therefore recommended for a cautious assessment of the resources to be channeled on security, as not to adversely affect economic growth. Secondly, government should employ robust policies that would encourage foreign investments into the economy.

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