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INTERACTION BETWEEN DOMESTIC INVESTMENT, FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH IN NIGERIA

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Abstract

The most inclusive definitions of economic growth always include the best utilisation of native resources in addition to increasing GDP and integration into the global market. As a result, the impact of domestic investment in an economy is one of the most examined subjects in capital movement and economic development. Flowing this, the aim of this study was to evaluate the effects of domestic investment on the economic growth of Nigeria. The objectives were to assess the growth of the economy of Nigeria from 1981 to 2018, determine the relationship of domestic investment on the Nigerian economy, evaluate the relationship of foreign direct investment on the economy of Nigeria, and determine the association between capital inflow and the Nigerian economy. Using secondary time series data obtained for domestic investment, foreign direct investment, exchange rate, and interest rate – from Nigerian Central Bank Statistical Bulletin and World Development Indicators, Autoregressive Distributed Lags (ARDL) technique was employed in estimating the short term and long run dynamics. The results revealed that foreign direct investment and interest rate are the only significant determinants of real GDP in the short term, while the significant long run exponents are domestic investment, foreign direct investment and exchange rate. Furthermore, the Granger Causality test revealed that both domestic investment and foreign direct investment cause economic growth. Therefore, the study recommended, among others, that policy makers optimise local investment options and normalize exchange rate and trade operations.

Keyword: *Domestic investement, Foreign direct investment, Economic growth, Nigeria.*

Jel Classification: *F36, F43, G11.*

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Introduction

The notion of economic growth is one of the most discussed concepts in national development and economics. It has been explained that the reason for this is that economic growth is the likeliest platform for improving standards of living, optimizing resource utilization and sustainability, and ensuring overall development (Odishika, 2017). Considering the implications of these objectives, the factors that determine and contribute to economic growth have been the subject of research endeavours. In the meantime, nations are making efforts to attain a long-term increase in capacity to supply increasingly different economic goods to its citizens, this growing capacity based on advancing technology and the institutional and ideological adjustments that it demands (Kuznets, 1973). Nigeria is no different in this pursuit; the Nigerian Vision 2020 statement posits the country as having a "strong diversified, sustainable and competitive economy that effectively harnesses the talents and energies of its natural endowments to guarantee a high standard of living and quality of life to its citizens" (Federal Government of Nigeria, 2010). However, attaining this height requires processes and resources that have – so far – remained out of reach (Iya & Aminu, 2015). One of such processes and resources is capital inflow, in the form of investment. The most prevalent perspective regarding investment in an economy is that with capital inflow, developing economies can augment and improve their domestic capital by facilitating every avenue, project or venture which will stimulate or advance growth in the economy and eradicate poverty among the populace (Ikpesu, 2019). From all indication, domestic investment is the more popular of the two key forms (and source) of investment (Uremadu, 2006; Adegbite & Owulabi, 2007; Oyedokun & Ajose, 2018; Ikpesu, 2019). The reasons for this preference are numerous, including the fact that domestic investment allows the practicable use of a nation's native assets and capital – which are more manageable and easier to regulate than foreign capital and investment (Kalu & Mgbemena, 2015). A more utilitarian rationale is that domestic investment serves as a "prerequisite for the geometric acceleration of growth and development of every economy as it provides domestic resources that can be used to fund the investment effort of the economy" (Oyedokun & Ajose, 2018). On another level, persistent growth in the output of domestic firms can function as produce for export markets, thereby contributing to the total capital formation of the country of origin, and as well serve as foreign investors to other countries (Abdulmumuni & Tukur, 2012). With investments in certain sectors of the economy capable of rapidly resolving economic challenges on a national scale, these are the motives behind developing countries (especially in Africa) introducing various economic policies that will attract, as well as keep hold, of private investors (Ilegbinosa, Michael, Watson, 2015). However, domestic investment appears not to be sufficient to stimulate economic growth in Nigeria (Iya & Aminu, 2015). This is the likely justification for – or consequence of – the slow growth of capital accumulation in Nigeria and the reported decline by 24% between 1998 and 2013 (Oyedokun & Ajose, 2018). Contrary to the evolution of home investment, FDI has been growing steadily, except with the economic recession in the country in 2015 that saw a substantial reduction in FDI by about 28% within 2014 and 2016 (CBN, 2016). This has led to a number of debates and arguments. For example, it has been argued that although FDI is beneficial to recepient countries, its multiplier effect is higher (Uremadu, 2006; Adegbite & Owulabi, 2007). In other words, developing countries avoid relying on foreign direct investment and should depend on domestic investment as an alternative to foreign direct investment (FDI). With this in mind, it is imperative to note that considerable measures have been put in place by the Nigerian government in attempting to establish an "empowering, less expensive environment that advances investment hopes by infrastructural improvement, amiable market strategies, and forming of correlative investment to increase domestic resources required by local firms" (Gungor & Ringim, 2017). Regrettably, the volume of investment attributed to the government of Nigeria is only a fraction of the total investment into the economy (Gungor & Ringim, 2017; Ikpesu, 2019). Even more worryingly, while the whole of Africa's natural resource sector attracts the lion share of FDI (Pigato, 2000), a large proportion of Nigeria's aggregate investment is constituted by FDI, with lighting up and magnificent account in the country's oil extractive, telecommunication and manufacturing sectors (Gungor & Ringim, 2017). Regardless of the perceived risks, Nigerian governments since 1990 have taken measures necessary to woo foreign investors into the country in order to augment domestic

resources to finance planed growth (Iya & Aminu, 2015). This is primarily because foreign investment inflow, particularly FDI, is perceived to have a positive influence on economic advancement of a host country through diverse channels (Olokoyo, 2012). Also, it augments local investment, which is crucial to the attainment of sustained growth and development (Adigwe, Ezeagba, Francis, 2015). Drawing from these arguments, the question now stands as to what role domestic investments play in Nigerian economic growth, especially against foreign domestic investment. Therefore, this study evaluates the effects of domestic investment on the economic growth of Nigeria. Domestic investment, notwithstanding, is one of the best examples of maximum resource utilisation. In many instances, the question of whether an economy is too reliant on foreign income and capital almost overshadows that of whether the growth of an economy is balanced, i.e. on its way to attaining the long-term rise in capacity to supply increasingly diverse economic goods to its population, as Kuznets (1973) explained it. In other words, the focus of many studies, research and empirical investigations has been on the practicality of domestic investment as a reliable link to economic growth against foreign direct investment (Abdulmumuni & Tukur, 2012; Adigwe *et al.*, 2015; Chidoko & Sachirarwe, 2015; Ilegbinosa *et al.*, 2015; Iya & Aminu, 2015; Oyedokun & Ajose, 2018). However, other studies have factored in investment options as a basis for optimising economic growth for the benefit of the nation's population (e.g. Paulino, 2009; Akanbi, 2010; Hazem, Gassan, Samer, 2012; Bakari, 2017; Ikpesu, 2019). These recent literatures are partly deficient in that they do not take a holistic approach to estimating the contribution of investment (both domestic and foreign investment) to developing economies. A practical solution to this is to evaluate both domestic and foreign direct investment, measure their interaction, and relate these to economic growth. Including indices that "lubricate" these forms of investment, e.g. exchange rate and interest rates, will also go a long way in increasing the accuracy of investigation into investment and its impact on the economy. In essence, this study set out to ascertain which one of the domestic investment and foreign direct investment is superior in promoting economic growth in Nigeria in the face of dwindling economy – should Nigeria rely on the domestic business or source foreign resources to close up the saving-investment gap which characterised the emerging like Nigeria?

The rest of the study is segmented into literature review which follow after this section. The method of estimation takes the next section in addition to the model of the study. Result presentation is the next section as the paper concludes with policy guide and direction.

I. THEORETICAL REVIEW

The Solow growth model shows how a national saving, population growth and technical progress affect the level of a country's gross national product (GNP) and growth overtime. In other words, the model is a framework that analyses the proximate causes of economic advanement and cross-border income differences. In general, it is understood that the model is an expansion on the work of Harrod-Domar where Labour as an independent variable as well as Technology were added to the growth equation (Odishika, 2017). The Convergence hypothesis is the critical prediction of the neoclassical growth model. The model concludes that economies with similar production technologies – as well as comparable saving and population growth rates – should converge to similar steady-state levels of per capita income. Thus, poor countries starting with a relatively low standard of living and a lower capital/labour ratio will grow faster during the transition as they catch up with the rich countries, but ultimately both groups will arrive at the same level of per capita income. This implies that countries with identical population growth rates can converge to the same growth rates (Jhingan, 2007; Todaro & Smith, 2011). In the long run, the implication of the model is that, changes in total output is directly proportional to changes in population and technology growth. Technological changes solely determines output per person in the economy. This implies that improvement in technological solely determines the level of improvement in the standard of living in the long run and that economies with lesser population growth rates experience higher income per person. However, the peculiarity of the Solow model is that the main variable which gives rise to the long run growth in the economy is technological progress and

it is exogenously determined, i.e. determined outside the model, implying that national governments never really play a pivotal role in determining economic growth by way of policy development and implementation (Odishika, 2017). The Solow model is applied in this study because it acknowledges that national economies are not closed systems, but are influenced by exogenous variables such as foreign direct investment – which happens to be the secondary explanatory variable in this study.

I.I. Literature Review

Several empirical investigations have been done on the subject of economic advancement, domestic investment, and foreign direct investment, in foreign countries, and in Nigeria.

For example, Empirical findings from Qin *et al*. (2006) show a causal relationship from economic expansion to domestic investment. Tang *et al*. (2008) investigated the causal effect between FDI, domestic investment and economic expansion between 1988 and 2003 in Chin. Their results indicates that home investment and economic advancement are positively related, applying that when an economy experienced an advancement, domestic investment is spur automatically and vice versa. Villa (2008) examines the interaction between investment and government consumption and output growth rate through a multivariate time series analysis in Italy from 1950 to 2005. The findings show causality running from domestic investment to economic growth. Adams (2009) found the positive and significance connection between domestic investment and economic expansions in both of the methods adopted - the Ordinary Least Squares (OLS) and fixed effects estimation. Similarly, Ullah, Shah and Khan (2014) submit that domestic investment is a promoter of economic advancement in Pakistan which validate the result of Granger causality from home investment to economic advancement. In the same light, Mndeme (2015) found a long run association between local investment and economic expansion in Tanzanian. Similarly, Chidoko and Sachirarwe (2015) discovered a positive and significant influence of home investment on economic advancement in Zimbabwe. On the Nigerian front, Ayadi and Ayadi (2008) carried out a comparative study on the influence investment/capital flow on economic advancement in both Nigeria and South Africa. The finding indicate that inflow of capital promotes economic advancement in Nigeria and hurt economic growth in South Africa validating the studies (the same conclusion reported by Akinlo (2004), Rajan and Subramanian (2005), Sakyi (2011), Ajayi and Oke (2012), and Ali (2014)). Abdulmumini and Tukur (2012) examine the link between domestic investment and economic growth in Nigeria and found that domestic investment positively influence economic growth. Kalu and Mgbemena (2015) investigate the connection between domestic private investment and economic growth in Nigeria, under the Cob-Douglas framework. The study found the significance influence of investment on real gross domestic product (RGDP). Iya and Aminu (2015) investigated the influence of both foreign direct investment and domestic investment on economic growth in Nigeria and the findings of the OLS indicates that foreign direct investment (FDI), domestic investment (DIN) impacted positively on economic growth (RGDP) in the Nigeria. The work of Bakari (2017) which adopted a vector error correction model (VECM) method, submit that the impact of domestic investment is felt only in the short run in Algeria, where opposite hold for Malaysia. Oyedokun and Ajose (2018) investigate the influence of domestic investment on economic growth in Nigeria. The Co-integration test revealed that the existence of long run association between domestic investment, and economic growth in Nigeria for the period of 1980-2016 as validated by the Granger causality test in which home investment proved to granger cause economic growth.

The work of Ikpesu (2019) examine the capital led-growth hypothesis in Nigeria. The finding proved that both capital inflow and domestic investment demonstrate positive and significant effect on economic expansion. Similarly, some studies subscribed to the FDI-led growth hypothesis while others contend with it. For instance Joshua (2019) examine the relationship between FDI and economic growth in Nigeria using ARDL and found a positive but insignificant impact of FDI. This is supported by the work of Joshua, Adedoyin and Sarkodie (2020) for the South African Economy. Joshua, Rotimi and Sarkodie (2020) carried out a panel study on the relationship between FDI and economic growth covering income cluster as classified by the World Bank. The outcome shows that FDI is driver of economic growth in all the cluster. Similarly, Udi, Bekun and Adedoyi (2020) submit that the impact of FDI on economic advancement is positive and significant. Joshua and Alola (2020) assert that FDI inflow promotes economic expansion through it indirect effect in reducing CO_2. This assertion is

contended by Joshua, Bekun and Sarkodie (2020). The study found that FDI is not a driver of economic expansion in South Africa as indicate by a non-causal link between the variables which validates the work of Joshua, Salami and Alola (2020).

II. METHODOLOGY AND DATA

II.I. Model Specification

This work adopts the model specifications of Iya and Aminu (2015), as well as Gungor and Ringim (2017) and Ikpesu (2019). Thus, the Nigerian economic growth is a function of domestic investment, foreign direct investment, exchange rate, and interest rate.
The structural form of the model is expressed as:

$$\mathrm{GDP} = f(\mathrm{LDI}, \mathrm{FDI}, \mathrm{EXR}, \mathrm{INT}) \quad (1)$$

Where:
GDP: Real gross domestic product
DI: Log of Domestic investment,
FDI: Foreign direct investment,
EXR: Official exchange rate, and
INT: Real interest rate.

In mathematical form,

$$\mathrm{GDP} = f(\mathrm{LDI} + \mathrm{FDI} + \mathrm{EXR} + \mathrm{INT}) \quad (2)$$

Transforming the above equation in true regression form,

$$LGDP = \beta_0 + \sum_{l=i}^{P} \beta_1 LGDP + \sum_{l=i}^{Q} \beta_2 LDI + \sum_{l=i}^{R} \beta_3 FDI + \sum_{l=i}^{S} \beta_4 EXR + \sum_{l=i}^{T} \beta_5 INT \quad (3)$$

$$LGDP = \beta_0 + \sum_{l=i}^{P} \beta_1 LGDP + \sum_{l=i}^{Q} \beta_2 LDI + \sum_{l=i}^{R} \beta_3 FDI + \sum_{l=i}^{S} \beta_4 EXR + \sum_{l=i}^{T} \beta_5 INT + \varphi \quad (4)$$

$$\Delta LGDP = \beta_0 + \sum_{l=i}^{P} \beta_1 \Delta LGDP_{t-i} + \sum_{l=i}^{Q} \beta_2 \Delta LDI_{t-i} + \sum_{l=i}^{R} \beta_3 \Delta FDI_{t-i} + \sum_{l=i}^{S} \beta_4 \Delta EXR_{t-i} + \sum_{l=i}^{T} \beta_5 \Delta INT_{t-i} + \varphi_1 \Delta LGDP_{t-i} + \varphi_2 \Delta LDI_{t-i} + \varphi_3 \Delta FDI_{t-i} + \varphi_4 \Delta EXR_{t-i} + \varphi_5 \Delta INT_{t-i} \quad (5)$$

Where:
β_0: Intercept (or regression constant)
β_x: short-term coefficients
$\varphi_{x:}$ long-run coefficients

II.II. Sources of Data

All the data used in this study are from secondary sources. These were obtained as time series data spanning 1981 to 2018. These time series data were obtained from World Development Indicators (2019) and Central Bank of Nigeria Statistical Bulletin (2019).

II.III. ARDL Bound Testing to Cointegration

The ALDR method of analysis seems to be more advantageous over the any trsditional approach especially in achieving the cointegration Joshua et al. (2020). The methos is generally known for it flexibility to accommodate any order of integration as against the other method. However, ARDL method perform best with the mixed order of integration as achieved in this study through the unit root test. Thus, the specified equation of the method is as follows:

$$\Delta Z = \mu_0 + \mu_1 t + \varepsilon_1 \delta_{t-1} + \sum_{i-1}^{n} \sigma_1 v_{it-1} + \sum_{j-1}^{k} \phi_j \Delta Z_{t-j} + \sum_{i-1}^{n} \sum_{j-1}^{k} \omega_{ij} \Delta V_{it-j} + \Upsilon D_t + \varepsilon_t \qquad (3.4)$$

$$H_0 : \beta_1 = \beta_2 = \ldots. = \beta_{n+2} = 0$$
$$H_1 : \beta_1 \neq \beta_2 \neq \ldots. \neq \beta_{n+2} \neq 0$$

The reject of the H_0 implies that the series converged in the long run and vice versa.

III. PRESENTATION AND DISCUSSION OF FINDINGS

In Table 4.2, Augmented-Dickey Fuller (ADF) and Phillips-Perron (PP) techniques for testing the presence of unit roots were employed. The Table shows that the probability that foreign direct investment (FDI) and interest rate (INT) have unit roots at level, *I* (0), are less than the 5% mark. On the other hand, the probabilities that GDP (LGDP), domestic investment (LDI), and exchange rate (EXR) have unit roots are only less than 5% after first difference, *I* (1). In other words, FDI and interest rate achieved stationarity at zero order of integration, *I* (0), while LGDP, LDI and EXR achieved stationarity after first difference, *I* (1).

Table 1. ADF and PP Unit Root Results

	Level, I (0)		First difference, I (1)		
Series	*ADF*	*PP*	*ADF*	*PP*	*Decision*
LGDP	0.9497	0.9902	0.0177	0.0255	I (1)
LDI	0.9528	0.9338	0.0073	0.0082	I (1)
FDI	0.0220	0.0272	0.0000	0.0000	I (0)
EXR	0.9995	0.9991	0.0021	0.0024	I (1)
INT	0.0000	0.0000	0.0000	0.0001	I (0)

Source: Researcher's Computation

As earlier stated, stationarity is relevant in econometric analysis because it indicates the regression estimation model to be employed. Following the submissions of Gujarat (2007) and Wooldridge (2013), these results of stationarity show that the appropriate technique for further estimations is the auto-regressive distributed lag (ARDL). The ARDL technique was first used to determine the presence of a co-integrating (long-term) relationship among the variables. The results of this *F*-bounds test for *k* (4) degrees of freedom (presented in Table 4.3) shows that the *F*-statistic (7.09) is greater than both the 5% lower bounds (2.86) and its upper bounds (4.01). This means that there is a co-integrating (long run) relationship among the variables Joshua (2020) and Joshua and Bekun (2020).

Table 2. ARDL Bounds Test Results

Test Statistic	*Value*	*Signif.*	*I(0)*	*I(1)*
F-statistic	7.0871	10%	2.45	3.52
K	4	5%	2.86	4.01
		2.50%	3.25	4.49
		1%	3.74	5.06

Source: Researcher's Computation

Table 3. ARDL Short Run and Long Relationship

Variable	Coefficient[a]	Std. Error	t-Statistic	Prob.
Short run coefficients				
ΔLDI	0.0027	0.0369	0.0730	0.9438
ΔLDI$_{(-2)}$	-0.0875**	0.0335	-2.6128	0.0348
ΔLFDI	0.0071	0.0088	0.8138	0.4426
ΔLFDI$_{(-1)}$	0.0355**	0.0111	3.2020	0.0150
ΔINT	0.0007	0.0005	1.3666	0.2140
ΔINT$_{(-2)}$	0.0019**	0.0007	2.7658	0.0279
ΔLEXR	-0.0428*	0.0196	-2.1903	0.0646
ECM$_{(-1)}$	-0.1387***	0.0227	-6.1022	0.0005
	Long Term Coefficients and Significance			
LDI	0.3752***	0.0024	156.8302	0.0000
LFDI	-0.0893**	0.0390	-2.2926	0.0282
LEXR	-0.0767***	0.0193	-3.9785	0.0003
INT	0.0014	0.0020	0.6793	0.5016

Source: Researcher's Computation

From the Table 3 above, the changes in current domestic investment is shown to be positive but insignificant. This may be attributable to the fact that although domestic investment has been on a rising trend since 2008, the differential between that of the current year and the previous is greater than all those of previous years – which might imply a possible funnelling of funds into particular sectors (e.g. security) which do not immediately translate to any measurable economic growth. This makes even more sense by the fact that domestic investment of the previous two years is shown to be significant to economic growth. Recalling that the budget of the current year far exceeded that of the previous as a result of the unrest, terrorism and general insecurity in the country, the statistical significance of domestic variable of previous years – against the insignificance of the current year – is justified. This is the same situation with foreign direct investment and interest rate. In a similar vein, the domestic investment of previous years is shown to have a negative relationship with economic growth. Combining this with the previous assertion, it might imply that in an effort to compensate for the lack of significant contribution of domestic investment to economic, there was a bloating of this form of investment, which resulted in the positive relationship with economic growth of the current year (which was desired), but an insignificance (which was not anticipated). In the case of foreign direct investment, the funds expended in the current year are shown to have not significantly contributed to economic growth, with those of the previous year satisfactorily significant. While this might be attributed to the recent fluctuation in FDI, the underlying problem is still the domestic economy which has suffered bouts of insecurity – and is inadvertently affecting all sectors of the economy. This has wriggled the likelihood of balanced funding – whether domestic or foreign. To summarise the short run dynamics of economic growth relative to the activities of domestic investment, foreign direct investment, interest and exchange rates, Table 3 shows that short-term changes in real GDP are attributable to changes in the domestic investment and interest rate of two years ago, the foreign direct investment of the past year, and the exchange rate of the current year. In other words, 1% increase in real GDP follows the simultaneous 0.08% decrease in the domestic investment of two previous years, 0.007% increase in the foreign direct

investment of the past year, 0.19% increase in the interest rate of two previous years, and about 0.04% decrease in the exchange rate of the current year.

Aside the short-term coefficients, the coefficient of the error correction term (ECM) is also appropriately negative (-0.1387), as well as statistically significant (0.0005). This implies that movements in GDP are correctly adjusted in the long run towards equilibrium (which is why it is the speed of adjustment to equilibrium). The aforementioned ECM estimate represents the long run of the movement of GDP from 1981 to 2018 using domestic investment, foreign direct investment, official exchange rate, and real interest rate. According to Table 3, since the probabilities of their coefficients are less than 5% (i.e. 0.05), domestic investment (LDI), foreign direct investment (LFDI), and exchange rate (LEXR) are significant exponents of GDP in the long run. Consequently, interest rate is the only specified variable whose coefficient is not a significant long-run descriptor of GDP within the study period. However, while the effects of domestic investment (0.3752) and interest rate (0.0014) appear to be positive, those of foreign direct investment (-0.0893), exchange rate (-0.0767) are not. In other words, Nigeria's economic growth (GDP) will increase with more and more domestic investment and interest rate, but decreasing foreign direct investment and exchange rate. To be exact, Nigeria's real GDP will significantly increase in the long run with increase in domestic investment and simultaneous decrease in foreign direct investment and exchange rate. The coefficient significance from Table 3, Nigerian GDP is determined in the long run by both domestic investment and foreign direct investment, as well as exchange rate. Specifically, 1% increase/decrease in domestic investment will bring about 0.38% concurrent increase/decrease in GDP. Conversely, 1% increase/decrease in foreign direct investment will bring about 0.089% parallel decrease/increase in GDP. In a similar vein, 0.077% increase/decrease in GDP will respond to every 1% parallel decrease/increase in exchange rate. These dynamics of the relationship of Nigeria's economic growth with domestic investment, foreign direct investment, and exchange rate are dependent on the error correction term (ECT) which represents the speed of adjustment to equilibrium. In other words, fluctuations in GDP are *pulled back* to equilibrium at a speed of 13.87% – all things being equal.

III.I. Granger Causality

According to results presented in Table 5, there are several causality relationships existing among the specified variables. For example, real GDP is shown to be caused by domestic investment (0.0104 < 0.05), foreign direct investment (0.0000 < 0.05) at the 5% significance level. This can be understood to mean that Nigerian economic growth is caused by domestic investment, a viewpoint which is supported by the Harrod-Domar growth model, where economic growth responds significantly to savings and internal productivity – both of which translate to domestic investment. Similarly, the condition of foreign direct investment is also responsible for changes in Nigeria's economic growth. Both of these findings corroborate Oyedokun and Ajose's (2018) reports on the significant contributions of domestic and foreign direct investment to Nigeria's economic growth. Table 4 also shows that changes in foreign direct investment are precedent on Nigeria's economic situation and domestic investment. This makes sense, as it may be rationalised that foreign investors are more attracted to economies that are already growing, or that demonstrate the capacity for growth; as well as economies whose native firms, institutions and governments – who are supposed to be more knowledgeable about said economies – actively invest in these economies. In other words, active local/native investment levels, alongside the condition of an economy, are powerful incentives for foreign financing and investment. The significant causality links shown to run from exchange rate to real GDP, domestic investment and foreign direct investment is the most well-defined and conventional. Exchange rate is generally acknowledged to be the direct result of the interaction between nations. Thus, foreign investment greatly influences exchange rate, as the results show, whereas the level of domestic investment and economic situation dictates whether or not there would be any interaction in the first place – which justifies the existence of the index of the relations between the two economies, or exchange rate. Lastly, interest rate is shown in Table 4 to be caused by real GDP, domestic investment, foreign investment, as well as exchange rate. Firstly, real GDP determines – to a great extent – the banking situation in an economy, such that instances of borrowing, lending, investment, are all

predicated upon how healthy an economy is. In the same vein, changes in interest rate are caused by both domestic and foreign investment because in cases where domestic investment is low, policy makers judiciously reduce interest rates to entice investors, whether local or foreign. Exchange rate also considerably influence interest rate, especially through the dynamic of foreign investment – i.e. exchange rate affects foreign investment which affects economic growth which affects interest rate.

Table 4. Granger Block Exogeneity Results

Excluded	Chi-sq	df	Prob.
Dependent variable: LNGDP			
LNDI	9.126	2	0.0104
LNFDI	20.515	2	0.0000
LNEXR	5.903	2	0.0522
LNINT	5.412	2	0.0668
All	28.107	8	0.0005
Dependent variable: LNDI			
LNGDP	1.061	2	0.5882
LNFDI	0.138	2	0.9332
LNEXR	1.107	2	0.5747
LNINT	0.058	2	0.9711
All	2.813	8	0.9455
Dependent variable: LNFDI			
LNGDP	40.510	2	0.0000
LNDI	70.366	2	0.0000
LNEXR	3.073	2	0.2150
LNINT	4.981	2	0.0829
All	100.16	8	0.0000
Dependent variable: LNEXR			
LNGDP	78.768	2	0.0000
LNDI	16.381	2	0.0003
LNFDI	9.700	2	0.0078
LNINT	0.325	2	0.8496
All	150.99	8	0.0000
Dependent variable: LNINT			
LNGDP	13.794	2	0.0010
LNDI	9.952	2	0.0069
LNFDI	10.768	2	0.0046
LNEXR	153.39	2	0.0000
All	204.625	8	0.0000

Source: Author's Computation

From Table 5, this null hypothesis could not be rejected because the probability (66.84%) is greater than 5%. Thus, the residuals of the dependent estimated model are normally distributed. Similarly, the probability that there is serial correlation in the model (i.e. that estimated values of the dependent variable correlate with their residuals) (12.47%) is greater than 5%. Similar conclusions are reached for heteroscedasticity (9.39% > 5%) and regression specification error test (RESET, 63.97% > 5%). Thus, it is obvious that there is no heteroscedasticity in the model, and it is well specified. Last on

the list of diagnostic tests, the CUSUM and CUSUMSQ test indicates whether the model parameters are stable, i.e. within the 5% critical level. According to Figure 1, the model parameters (represented by the blue line) are within the 5% critical level (represented by the red lines). Thus, the parameters are within the econometric bounds, meaning that the model is stable.

Table 5. Diagnostic Tests Results

Tests	*Value*	*Prob.*	*Remark*
Normality	0.8058	0.6684	*Residuals are normal*
Serial correlation	2.1729	0.1247	*No serial correlation*
Heteroscedasticity	1.8926	0.0939	*No heteroscedasticity*
Ramsey RESET	0.2256	0.6397	*Model is well specified*

Source: Researcher's Computation

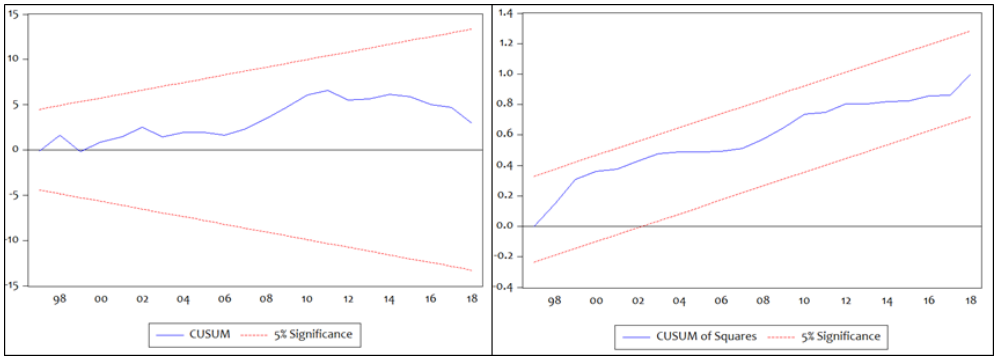

Figure 1. Results of CUSUM Stability Tests

CONCLUDING NOTE

The wealth and prosperity of a nation is not only defined in terms of the amount of returns that can be generated from the processing, manufacture, and trade of its resources; the living conditions of the citizenry must also be taken into account. More to the point, an economy that can support its own growth – in other words, that contributes substantially to its own development – is one that is thought of as strong, independent to a degree, and something to boast of. In such an economy, the citizenry are not only beneficiaries of economic growth, but also participants that support and promote that growth. This is one of the reasons that domestic investment is typically believed to be more influential – and greatly more desired – than foreign investment. The Nigerian economy has been on a growth curve since 1981, going from about ₦15.26 trillion naira to the recorded ₦69.8 trillion, and an average of ₦33.7 trillion as the intervening 38-year average. This seeming appreciation in real GDP is not without cause, as the findings of this study demonstrate; investment plays a big part in deciding the volume of the economy's productive capacity. Moreover, the economy of Nigeria in the present year has grown inversely to domestic investment in the short term, but will grow proportionally and significantly in the long run. To be precise, domestic investment in Nigerian economy significantly promotes the economy in the long run, just as Iya and Aminu (2015), Bakari (2017), Oyedokun and Ajose (2018), and Ikpesu (2019) discovered and reported. Therefore, Abdulmumuni and Tukur (2012) were right in stating that domestic investments can serve as a means of faster and sustainable channel for modern economic growth, particularly through capital formation, productivity, infrastructural development, export, etc., thereby making the domestic investors to automatically seek out the most favourable investment opportunities. This relationship between domestic investment and the economy of Nigeria is almost exactly antithetical to that of foreign investment. In the case of foreign direct investment, the relationship

is positive in the short term, but negative in the long run. This means that the economy will retard in the long run with increased foreign direct investment. Ultimately, both domestic and foreign direct investments are significant long run determinants of Nigerian economic growth, except that it grows parallel with domestic investment, but inversely to foreign direct investment. Policy makers and advocates of a balanced Nigerian economic growth must take these variables into account.

RECOMMENDATIONS AND POLICY IMPLICATION

Based on the findings of this study, the following recommendations are put forward:

i. Increased domestic investment for long run effects

Policy makers in Nigeria must deliberately take the regularity and volume of local investment into account. More importantly, actions relating to this decision must consider the parts played by both local investments sourced from the government, and those sourced from private firms, establishments and individuals. Increasing and augmenting these forms of domestic investment will certainly lead to – and balance – the growth of the Nigerian economy.

ii. Regulated foreign direct investment

While it is conventional for some developing nations and economies to depend on the inputs of foreign economies (in the form of cash, medical aid and supplies, security, etc.), the Nigerian economy must stand apart and regulate foreign investments, whether this is aggregate foreign direct investment, or some other variety of extraneous capital. All gaps ensuing from this action must be underwritten and subsidized by evaluated import and export services, such that trade globalisation benefits the Nigerian economy rather than leach it.

iii. Normalised exchange rate and trade operations

Any effort to balance the growth of an economy must always take interaction with sister economies into account; which is how exchange rate plays a vital role in macroeconomics. Therefore, to groom the Nigerian economy to benefit its people and promote development, exchange rate must be normalised to the degree to which the economy of Nigeria is safe from breaking down or failing to achieve its intended purpose at any point in time. As a precedent, this requires critical well-thought-out steps in international and global trading and transactions, as well as administration and governance.

iv. Optimised local investment options

It has already been evaluated that domestic investment is a significant exponent of Nigerian economic growth. Therefore, besides improving gross domestic investment, optimising local options for investment also guarantees a balanced economic growth. This is a realistic approach to domestic investment where the exact contribution of private investment is measured against public (government-funded) investment, and the results are optimised for the highest possible outcome. If, for example, private investment is estimated to be the more powerful of the two, public investment should be directed towards infrastructural development and other foundational options, while private investment is allowed the spotlight for more disadvantaged sectors of the economy (by, for example, creating empowering domains for non-public investors.

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