

Impact of Domestic Investment on Economic Growth in Nigeria

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DOI 10.56201/ijebm.v9.no6.2023.pg67.78

ABSTRACT

This study investigated the impact of domestic investment on economic growth in Nigeria from the period 1990 to 2022. The dimensions that were used to proxy the independent variable are domestic investment, total exports, interest rate and inflation while real gross domestic product was used to proxy economic growth which is the dependent variable. Data used were sourced from secondary sources which includes; World Bank development indicators for various years and the Central Bank of Nigeria annual statistical bulletin. The Statistical Software employed to analyse the data was the eviews9. The results of the Unit root test show that domestic investment, total exports, interest rate and real gross domestic variables evaluated are all stationary after first difference- $I(1)$ - while inflation rate was stationary at level- $I(0)$ -. The Autoregressive distributed lag was used to analyze data. The results of the Autoregressive distributed lag estimates reveal that in both the long run and short run, domestic investment, total exports, coefficients have positive impact on real gross domestic product in Nigeria and both are also statistically significant at five percent level of significance in the long-run in Nigeria. Since it was found that increase domestic investment and total exports bring about economic growth, the study therefore, recommends amongst others that appropriate trade policies in favour of export expansion should be encouraged. The federal government of Nigeria should make concerted effort towards export promotion policy by encouraging domestic investors to go into more production. In order to achieve this, there is need for the government to reduce interest rate and tax rate.

Key words: Domestic Investment, Economic Growth, Nigeria

INTRODUCTION

It has been argued that although foreign direct investment (FDI) is beneficial to host countries by speeding up the process of economic growth and development but its multiplier effect is greater. In other words, developing countries should depend greatly on domestic investment rather than foreign direct investment (FDI). This is because, borrowing from outside is not a proper strategy for growth and development since it does not only have adverse effect on the balance of payment as these loans will be serviced in the future with the use of their domestic resources, but it equally carries a foreign exchange risk such as devaluation of their currency which is one of the specific conditionality's for borrowing from International Monetary Fund (IMF). Hence, domestic investment through the capital formation is not just paramount but serves as a prerequisite for the geometric acceleration of economic growth and development of every economy as it provides

domestic resources that can be used to fund the investment effort of the economy (Adegbite and Owulabi, 2007).

Domestic investment is an expenditure made to increase the total capital stock in the economy. This is done by acquiring further capital-producing assets and assets that can generate income within the domestic economy. Physical assets particularly add to the total capital stock. Boosting economic development requires higher rates of economic growth than savings can provide. Part of the finance for investment is provided by the corporate sector, bank loans and households' savings make up the other part. With this, savings is no longer a constraint to investment demand. With lower rates of interest, asset values tend to be on the upward swing which invariably represents the discounted value of such assets thereby increasing the rate of acquisition and investment in such assets increases aggregate demand. Investment, therefore, is not constrained by aggregate savings but more by domestic interest rates. Therefore, the new equation of investment is $\text{Investment} = (\text{Savings}) + (\text{newly created money available to Deposit Money Banks})$. Attempts at reducing expenditure have affected investment and had led to poor and sluggish growth and eventually affecting savings performance (Tang, et al, 2008).

Economic growth is described as the sustained increase in the real per capital income caused by a sustained growth on the country's gross national income or output for a given period of time usually a year. It can be defined as an improvement in the inflation-adjusted market value of the goods and services produced by an economy over time. Statisticians conventionally measure such growth as the percent rate of increase in the real gross domestic product, or real GDP. This of course indicates that when the real per capital income of a country increases over time, economic growth has taking place. A nation is expected to utilize the endowed resources effectively and efficiently in producing on its production possibility boundary (PPB) and even work towards expanding its production possibility boundary (Campbell, 2017). A nation's PPB expansion indicates increase in the growth rates of gross domestic product (GDP). Nigeria is an oil producing country with huge human and natural resources endowment. Nigeria constitutes the largest country in Africa and also one of the eight most populous countries in the world with is population of about 200 million in year 2019 (NPC, 2018).

A country's economic growth depends largely upon the proper functioning of the financial institutions which lead to rapid capital formation and to speeding up of the rate of economic growth (World Economic Forum, 2016). This study therefore focuses on the impact of domestic investment on economic growth in Nigeria using an annual data set from 1990 to 2022.

LITERATURE REVIEW

Conceptual Clarification

The Concept of Domestic Investment: Real domestic investment is an expenditure made to increase the total capital stock in the economy. This is done by acquiring further capital-producing assets and assets that can generate income within the domestic economy. Physical assets particularly add to the total capital stock. Boosting economic development requires higher rates of economic growth than savings can provide. Part of the finance for investment is provided by the corporate sector, bank loans and households' savings make up the other part. With this, savings is no longer a constraint to investment demand. With lower rates of interest, asset values tend to be

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The Concept of Economic Growth: Economic growth can be defined as an increase in value of goods and services produced in a country. Growth implies an increase in real GNP per unit of labor input. This refers to changes in labor productivity over time. Economic Growth is conventionally measured as the rate of increase in Gross Domestic Product (GDP). Growth is usually calculated in real terms (netting out the effect of inflation on the price of the goods and services product). Growth improved the standard of living of the people in that particular country. Economic growth is measured by the Gross Domestic Product (GDP) in Nigeria, economic growth is the rise in the gross domestic product (GDP) as the major quantitative measure of production for one year, whereas economic development includes both quantitative and qualitative improvements in a country's economic position (Ivic, 2015). Acemoglu and Robinson (2010) defined economic growth as a society's ability to enhance its human capital, physical capital, and technological capital over a certain period. Economic growth, as it is often and interchangeably used for sustainable development, is defined as economic development that feeds the hunger of the present generation without jeopardizing the yearnings of future generations. Ite (2003) sees it as a catalytic engine in which the direction of investments, institutional reform, resource exploitation, and technical development orientation is made relevant to future as well as existing demands. It is also an alternate development mechanism for improving human living standards without jeopardizing society's worth. Economic growth is defined in the context of this study as a sustainable increase of the production of a country over time.

Theoretical Framework

Neo-classical Theory of investment Neoclassical financial theorists have made acrobatic theoretical efforts to defang the principal-agent problem so that the Pareto efficiency properties of markets could escape unscarred from its grasp. Unfortunately, the assumptions required to accomplish this task have no significant foundation in empirical or institutional reality. Stiglitz has accurately characterized the neoclassical principal-agent literature as “the triumph of ideology over theory and fact”. Neoclassical investment theory, on the other hand, fails even to acknowledge the existence of the problem. Virtually all neoclassical models of the enterprise investment decision begin with the unsupported assertion that the firm's objective is the pursuit of the owners' objectives: the firm maximizes market value. Three points about the value maximization

assumption are worthy of note. First, there is a great deal of empirical and institutional evidence that this assumption is false and virtually no direct empirical evidence that it is true.³ Second, if this highly questionable assumption is rejected, it is not at all clear that a distinct neoclassical approach to the theory of the firm can be identified. In its absence, neoclassical theorists have not generally agreed upon method for choosing an enterprise objective function, for specifying the constraint set, or even for identifying the cost of financial capital.

Keynesian Theory of investment Gordon presents a formal model of what he calls the Keynesian theory of investment. We are less ambitious here, attempting only to sketch out the general characteristics of an investment theory based on the substitute core assumptions discussed in the previous sections. A realistic theory of investment should incorporate the assumption that the firm is a semi-autonomous agent with a preference function of its own. We would expect the firm to pursue growth in size or market share and in profits -its growth objective - and avoid threats to its decision-making autonomy or its financial security - its safety objective. The existence of this safety objective makes the firm itself risk-averse. Growth is attainable only through capital accumulation, but capital accumulation must be financed. Debt finance creates explicit, legally binding cash flow commitments to creditors. But even internal funding and stock flotation create implicit cash flow commitments to shareholders. If commitments to stockholders cannot be met out of the future operating profits generated by invested capital, management may experience a threat to its decision-making autonomy; if commitments to creditors are not met, the firm might go bankrupt.

Empirical Review

There exists so many studies on domestic investment and economic growth and majority of their findings have been similar. Qin et al (2006), their study shows a causal relationship between domestic investment and economic growth show that the causality is running from economic growth to domestic investment. Furthermore, Tang et al (2008), investigated the causal link between foreign direct investment, domestic investment and economic growth for the period 1988-2003 in China, by applying a multivariate VAR system with error correction model (ECM). Their findings show that domestic investment and economic growth are positively correlated, as such great economic growth spurs large domestic investment and vice versa. By implication, it means China's domestic investment has a greater impact on growth than FDI. They, therefore, recommend that the country's precedence should be based on encouraging and promoting domestic savings for domestic investment than attracting FDI. On the other hand, in the same study, they equally found that China's domestic investment and GDP do not have much impact on FDI inflows in the long run. Export has been considered as one of the important variables in determining economic growth. Therefore, domestic investment and export may be fundamental in generating sustainable economic growth. Adams (2009), analyzed the impact of FDI and domestic investment on economic growth in Sub Saharan Africa for the period 1990-2003, reveals that domestic investment is positively and significantly correlated with economic growth in both the Ordinary Least Squares (OLS) and fixed effects estimation. Egbetunde & Fadeyibi (2015), examine the relationship between investment and output growth in Nigeria using a time series data spanning for the period of 1981-2012. The study used Vector Error Correction Model

(VECM) and found that investment has a long run relationship with economic growth. The Granger causality results show that investment causes economic growth without feedback in Nigeria. Alimi & Alese (2017), performed a comparative analysis of investment funding of oil and agriculture industry in Nigeria. The study considered both debt and non-debt financing instruments. Employing both descriptive and long-run analyses to establish empirical facts, the time series data spanned from 1971 to 2011. They found all the adopted debt and non-debt financing instruments following the same direction with varying magnitudes. Specifically, savings and (development stocks and treasury bills) are the best non-debt and (debt) financing mix used to propel the development of both agriculture and oil sector. They however established a negative shock from treasury certificate and bond and international lending club to both sectors' output.

METHODOLOGY

Model Design

This study employed quasi-experimental research design that puts emphasis on cointegrations amongst variables in a study.

Model Specification

The model is expressed mathematically as following;

$$RGDP = F(DOMIV, TEX, INTR, INFL) \quad 1$$

Where RGDP = Real gross domestic product

DOMIV = Domestic investment

TEX = Total exports

INTR = Interest rate

INFL = Inflation rate

RGDP is the dependent variable

The linear regression model based on the above functional relation is expressed as:

$$LNRGDP = \beta_0 + \beta_1 LNDOMIV + \beta_2 LNTEX + \beta_3 INTR + \beta_4 INFL \quad 2$$

$$\Delta LNRGDP_t = \alpha_{0i} + \beta_{1i} LNRGDP_{t-1} + \beta_{2i} LNDOMIV_{t-1} + \beta_{3i} LNTEX_{t-1} + \beta_{4i} INTR_{t-1} + \beta_{5i} INFL_{t-1} + \sum_{i=1}^q \alpha_1 \Delta LNRGDP_{t-1} + \sum_{i=1}^{p1} \alpha_2 \Delta LNDOMIV_{t-1} + \sum_{i=1}^{p2} \alpha_3 \Delta LNTEX_{t-1} + \sum_{i=1}^{p3} \alpha_4 \Delta INTR_{t-1} + \sum_{i=1}^{p4} \alpha_4 \Delta INFL_{t-1} + et \quad 3$$

ECM

$$\Delta LNRGDP_t = \alpha_{0i} + \sum_{i=1}^q \alpha_{1i} \Delta LNRGDP_{t-1} + \sum_{i=1}^{p1} \alpha_{2i} \Delta LNDOMIV_{t-1} + \sum_{i=1}^{p2} \alpha_{3i} \Delta LNTEX_{t-1} + \sum_{i=1}^{p3} \alpha_{4i} \Delta INTR_{t-1} + \sum_{i=1}^{p4} \alpha_{5i} \Delta INFL_{t-1} + \lambda ECT_{t-1} + et \quad 4$$

$$B_1 \geq 0, \beta_2 \geq 0, \beta_3 \geq 0, \beta_4 \geq 0, \beta_5 \geq 0$$

Where β_0 is the regression constant or intercept, $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 are the regression coefficients or parameters and U is the random variable. All other terms are as earlier defined.

Empirical Results and Discussions

Table 1: Augmented Dickey Fuller and Philips Perron Unit Root Test for RGDP Model

Variable	ADF					PP				
	Level		1 st Diff		I(.)	Level		1 st Diff		I(.)
	Coeff.	5% CV	Coeff.	5% CV		Coeff.	5% CV	Coeff.	5% CV	
DOMIV	-1.623	-2.964	-3.205	-2.964	I(1)	-2.313	-2.960	-3.226	-2.964	I(1)
TEX	-1.710	-2.957	-6.378	-2.960	I(1)	-2.957	-1.698	-6.423	-2.960	I(1)
INFL	-4.540	-2.964	--	--	I(0)	-4.527	-2.964	--	--	I(0)
INTR	-2.245	-2.957	-7.011	-2.960	I(1)	-2.223	-2.957	-8.150	-2.960	I(1)
RGDP	-2.957	-0.569	-4.370	-2.960	I(1)	-0.662	-2.957	-4.290	-2.960	I(1)

The above table shows the result of unit root test conducted with both Augmented Dicky Fuller Test (ADF) and Philips Perron Test (PP). In line with the propositions of Jenkins and Box (1970). Variable that are not stationary at levels would be made stationary after first difference. DOMIV, TEX, INTR and RGDP were all stationary after first difference while INFL rate was stationary at level.

Table 2: Bound Test

ARDL Bounds Test
Date: 04/26/23 Time: 12:07
Sample: 1993 2021
Included observations: 29
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	K
F-statistic	6.556106	4

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49

1% 3.74 5.06

Source: Computed from E-view

The result presented in table 2, shows that the calculated F-statistics of 6.556 is higher than the upper bound critical value of 4.01 at 5% significant level. Based on this result, it is concluded that a long run relationship exists among the variables of RGDP model.

Table 3: ARDL-ECM Short-run Results for RGDP model

ARDL Cointegrating And Long Run Form

Dependent Variable: LOG(RGDP)

Selected Model: ARDL(1, 2, 2, 2, 3)

Date: 04/26/23 Time: 12:09

Sample: 1990 2022

Included observations: 29

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(DOMIV)	0.108615	0.137115	0.792152	0.4415
DLOG(DOMIV(-1))	0.461017	0.161663	2.851708	0.0128
D(INFL)	-0.001420	0.002240	-0.633592	0.5366
D(INFL(-1))	0.007807	0.001833	4.259652	0.0008
D(INTR)	-0.045546	0.008276	-5.503165	0.0001
D(INTR(-1))	-0.017991	0.007930	-2.268649	0.0396
DLOG(TEX)	0.257967	0.042372	6.088101	0.0000
DLOG(TEX(-1))	-0.097095	0.054343	-1.786703	0.0957
DLOG(TEX(-2))	0.139222	0.052813	2.636107	0.0196
CointEq(-1)	-0.411070	0.102097	-4.026268	0.0013

$$\text{Cointeq} = \text{LOG(RGDP)} - (-1.1593 * \text{LOG(DOMIV)} - 0.0096 * \text{INFL} - 0.0508 * \text{INTR} + 0.3844 * \text{LOG(TEX)} + 8.7172)$$

Source: Computed from E-view

Explanation of estimated short run for RGDP model

The result of the short – run dynamic regression of the model is presented in table 3. The regression result indicates that in the short run, INFL and INTR coefficients have negative relationship with RGDP but it is only the coefficients of interest rate that is statistically significant. A unit increase in interest rate would reduce real gross domestic product by -0.045546. What this means is, an increase in interest rate would lead to a decrease in real gross domestic product (economic growth) in Nigeria in the short run ceteris paribus. The coefficient of total exports is positively signed and statistically significant. One percent increase in total exports would increase real gross domestic

product by 0.257967. What this means is, an increase in total exports would lead to increase in real gross domestic product (economic growth) in Nigeria in the short run all things being equal. The coefficients of domestic investment and inflation rate are not statistically significant at 5% level of significance. Therefore, we shall waste time in explaining the variables since they are not statistically significant.

The ECM turned up with a negative value of -0.411070 and also statistically significant at 5% (0.0013) as the ECM coefficient suggests 41% speed of adjustment. This means that approximately 41% of discrepancy in the previous year is adjusted for the current year.

Table 4: ARDL Long Run Regression for RGDP Model

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(DOMIV)	1.159279	0.322890	3.590322	0.0030
INFL	-0.009645	0.004929	-1.956992	0.0706
INTR	-0.050814	0.026967	-1.884315	0.0805
LOG(TEX)	0.384397	0.172719	2.225559	0.0430
C	8.717225	1.861765	4.682237	0.0004

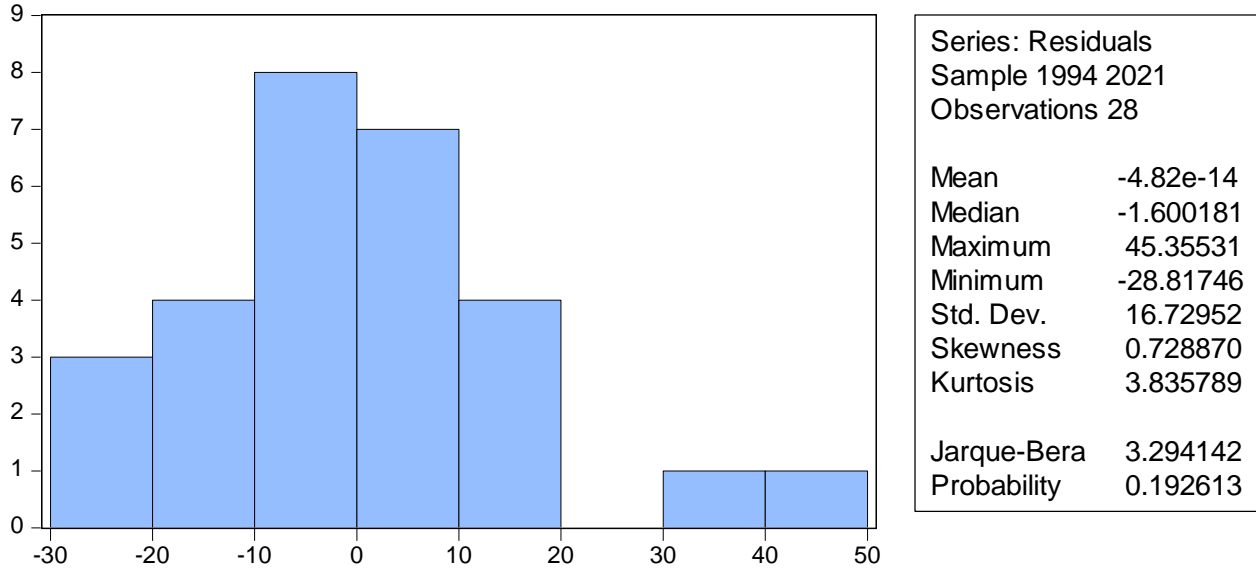
Source: Computed from E-view

Explanation of the Estimated Long-run for the Model

The result of the long run regression estimates for RGDP model is presented in table 4. The regression estimates indicate that all the coefficients of inflation rate and interest rate are negatively signed and statistically insignificant. The coefficients of domestic and total exports are positively signed and statistically significant at 5% level of significance in the long run. A unit increase in domestic investment would increase real gross domestic product by 1.159279. It thus means an increase in domestic investment would lead to increase in real gross domestic product (Economic Growth) in the long run in Nigeria. This finding is in conformity with that of Adekunle and Aderemi (2012), who examined the relationship between Domestic Investment, Capital Formation and Population Growth in Nigeria. They noted that there exists a positive relationship between economic growth and domestic investment in Nigeria. The finding is also in agreement with Tang et al (2008), they investigated the causal link between foreign direct investment, domestic investment and economic growth for the period 1988- 2003. They observed a positive relationship.

For total exports, one percent increase in total exports would increase real gross domestic product by 0.384397. It thus means an increase in total exports would lead to increase in real gross domestic product (Economic Growth) in the long run in Nigeria. Time might not be wasted to explain the effects of inflation rate and interest rate coefficients since they are both not statistically significant.

Post estimation Test for Model One



In testing the validity of regression, researcher check the normality of the regression residual. This very post estimation test will enable the researcher check if the estimated equation is in line with the basic assumption of the ordinary least square. Given the value of the Jarque- Bera statistic 3.294142 and its probability value of 0.192613, we assert that the residual are normally distributed.

Tables 4.1 Residual Diagnostics Test for RGDP

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.367610	Prob. F(2,12)	0.6999
Obs*R-squared	1.674205	Prob. Chi-Square(2)	0.4330

Source: Computed from E-view

The null hypothesis of Breusch-Godfrey serial correlation LM Test states that there is no serial correlation. From the table we observed that the F-statistics probability values are greater than the 5%, therefore, we accept the null hypothesis of no serial correlation. It means that the result is good for prediction.

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.525745	Prob. F(14,14)	0.8794
Obs*R-squared	9.992894	Prob. Chi-Square(14)	0.7627
Scaled explained SS	2.222898	Prob. Chi-Square(14)	0.9998

Source: Computed from E-view

The null hypothesis of heteroscedasticity test- Pagan-Godfrey states that there is no heteroskedasticity. From the table we observed that the F-statistics probability values are greater than the 5%, therefore, we accept the null hypothesis of no heteroskedasticity. It means that the result is good for prediction.

4.2 Stability Tests for RGDP

The test is meant to test the appropriateness and stability of the estimated ECM model. This is to check if the coefficients of the model are stable and can be used for prediction. The stability test was conducted using the cumulative sum (CUSUM) and cumulative sum of square (CUSUMSQ) tests. If the plot of the CUSUM and CUSUMSQ for the model lies within the 5 percent critical bound, it is suggestive that the model is stable. From our results, the model is stable.

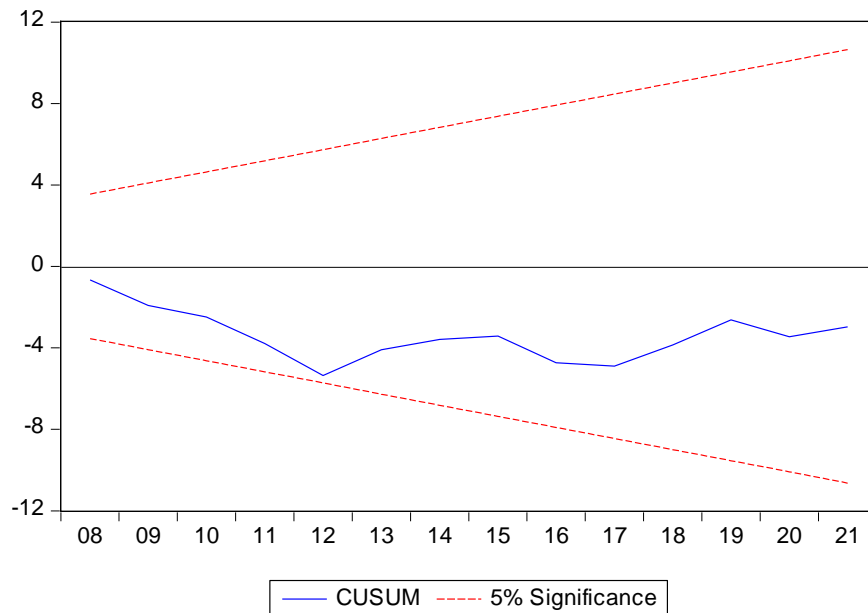


Figure 1b: Cumulative sum for the Model

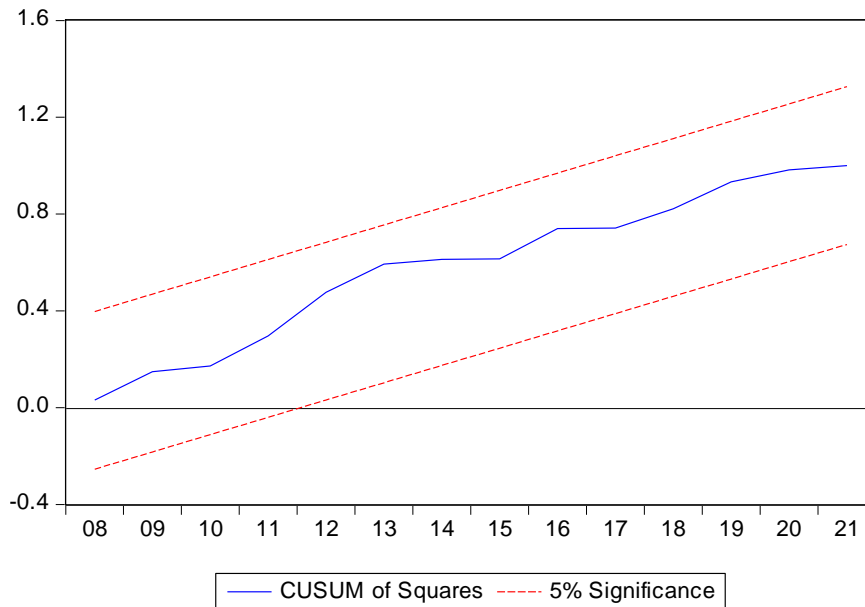


Figure 1b: Cumulative sum of Square for the Model

Conclusion/Recommendations

This paper examined the impact of domestic investment on economic growth in Nigeria from the period 1990 to 2022. The study empirically examined the short run and long-run cointegrations amongst variables by using ARDL. The findings reveal that that Real gross domestic product (RGDP) is negatively influenced by the coefficients of inflation rate and interest rate both in the long-run and short-run. But both inflation rate and interest rate are only statistically significant at 5% level of significance in the short-run. The coefficient of domestic investment and total exports positively influenced real gross domestic product in both the short and long-run and both are statistically significant in the long-run while the coefficient of total exports is statistically significant in both the long-run and short-run. It thus means that domestic investment and total exports increase real gross domestic product (Economic Growth) in Nigeria.

The study recommends that in order to sustain and enhance the existing relationship between financial sector development and economic growth in Nigeria, there is need to encourage domestic investment by adequately making funds available to investors for productive investment by reducing interest rate.

Appropriate trade and foreign exchange policies in favour of export expansion should be encouraged. The federal government of Nigeria should make concerted effort towards export promotion policy by encouraging domestic investors to go into more production. In order to achieve this, there is need for the government to reduce interest rate and tax rate.

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