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Investigating the Effect of Capital Inflow on Domestic Investment in Nigeria: A Vector Error Correction Model (VECM) Approach

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Abstract
The exact role of capital inflows enhancing domestic investment and promoting economic growth has been of great concern to policymakers and researchers taking into account the huge reliance on capital inflow in Nigeria. This study investigates the effect of capital inflow on domestic investment in Nigeria between the periods 1981 to 2016 using Vector Error Correction Model (VECM) approach. The variables used are the various components of capital inflow (foreign borrowing, foreign direct investment, portfolio investment, official development assistance and workers' remittance) and domestic investment. The study revealed that a rise in the various components of capital inflows (foreign direct investment, portfolio investment, and official development assistance) would enhance domestic investment in the country while a rise in foreign borrowing and workers remittance would lead to decrease in domestic investment. Furthermore, the study revealed that capital inflows (portfolio investment and official development assistance) Granger cause domestic investment in the country. The study recommends that for government to close the savings and foreign exchange gap there is the need for appropriate policies to be design to determine the optimal level of capital inflow that will enhance domestic investment in the country. In addition, the government should provide adequate social amenities, infrastructural facilities, political stability and also conducive environment that is business friendly so as to attract foreign capital into the country for investment purpose.
Keywords: Capital Inflow, Economic Growth, Domestic Investment, Nigeria, VECM.
JEL CODE: F21, O55, P33

1. Introduction

One of the key hurdles to growth in developing economies, Nigeria inclusive, is the inadequacy of capital which has prevented government in undertaking developmental projects that would increase domestic demand and ensure inclusive growth. Research findings have shown that the inflow of foreign capital affects domestic investment positively (Sakyi&Opolan, 2016; Boudias, 2015; Dzansi, 2013; Luca & Spatafora, 2012; & Ahmad, 2010). But Herze and Grimm (2011); Javed and Sahinoz, (2005); Ghose, (2004);Liuyong andGuoliang, (2002) findings showed that capital inflow has a negative effect on domestic investment because of the destabilising effect of capital inflow if not properly managed (Dagnachew, 2014; Obadan, 2013; Okojie, 2013).

The theoretical basis for the justification of foreign capital was well enriched in the two-gap model (Nwokoma, 2013; Iyoha, 2001; Chenery &Strout, 1966). According to the model, developing economies are faced with savings and foreign exchange gap and this hinders their growth. The savings gap occurs when savings is less than investment. According to both the Classical and Keynesian economists for growth to be achieved savings must be equal to investment (Omoreige & Ikpesu, 2016).Studies have shown that the inflow of capital is important for both developed and developing economies as it aids sustainable development for developed countries and serves as a tool of increasing the capital available in less developed countries for the purpose of investment and enhancing economic growth (Nwokoma, 2013; Obadan, 2004). Also, the inflow of foreign capital enables developing economies to have the needed capital and technology which are useful in harnessing their local resources (Rajiv & Sunil, 2012; Essien & Onwioduokit, 1999) thus closing the savings and foreign exchange gap (Adegbite & Adetiloye, 2013).

The findings of Ghosh, Qureshi, and Sugawara (2014) showed that the inflow of foreign capital is mostly considered to be the driver of economic growth as it helps to finance investment and enhance capital market development thus promoting domestic consumption and higher incomes (Boudias, 2015). According to World Bank (2006), Nigeria has benefitted massively from the flow of foreign capital although the share of Nigeria from the global flow is small. Similarly, World Bank report 2011, showed that the flow of foreign capital into Nigeria rose tremendously and by 2010 the flow was around 7.7 billion naira comprising portfolio investment and foreign direct investment. In addition, Ernest and Young (2013) documented that among the recipients of capital inflow, Nigeria has the largest share in Africa mostly FDI which worth about $120 billion.

There is a dearth of literature investigating the effect of capital inflow on domestic investment in Nigeria. Also, studies have shown that wide gap still exists in developing economies between the capital mobilized and the capital needed for investment purposes (McRollins & Orji, 2014). Hence, the justifications of this study using a Vector Error Correction Model (VECM) approach.

2. EMPIRICAL LITERATURE

Studies abound that examines the link between capital inflow and domestic investment. One of such studies is the work by Adams, Sakyi, and Opolan (2016) who investigated the link between foreign capital and domestic investment in 25 Sub-Saharan Africa countries using a pooled mean group estimation technique. The research findings showed that foreign direct investment affects domestic investment positively while external debt affects domestic investment negatively. Investigating the effect of the inflow of foreign capital on domestic investment in fifty-eight developing countries within the periods 1978 to 1995, Bosworth and Collins (1999) conclude that foreign direct investment affects domestic investment positively. This implies that foreign direct investment enhances domestic investment. The study also revealed that portfolio investment affects domestic investment negatively. Luca and Spatafora (2012) showed that foreign capital affects domestic investment positively. This suggests that the inflow of foreign capital enhances domestic investment positively.

Wang and Meng (2008) documented that in China, the inflow of capital has a positive and significant effect on total investment. Yasmeen et al, (2011) adopting Ordinary Least Square (OLS) techniques showed that remittance affects domestic investment positively in Pakistan. Ahmad (2010) concludes that there is a positive relationship between domestic investment, foreign direct investment, and economic growth. The study thus concluded that foreign direct investment complements domestic investment and enhances the growth in Pakistan.The research findings of Dollar and Easterly (1999) showed that official development assistance aid domestic investment. Dzansi (2013) explored the effect of remittance on domestic investment in 79 developing nations within the periods of 1995 to 2005. The research outcome showed that remittance increases domestic investment. This implies that the flow of remittance to the developing economies enhances domestic investment. Adopting a using Least Square Dummy Variable (LSDV) model, Gyimah-Brempong (1992) revealed that in Sub-Saharan African countries official development assistance positively affects domestic investment.

Amadou (2011) empirical research outcome showed that the inflow of capital affects domestic investment positively in Togo. The result further showed that loans and foreign direct investment are the main channels through which the inflow of capital affects domestic investment positively in Togo. Herzer and Morrissey (2013) in their empirical research showed that official development assistance impacts domestic investment positively.Several empirical findings in the literature have also shown that capital inflow impacts negatively on domestic investment. Herzer and Grimm (2012) adopting a panel cointegration and causality approach showed that official development assistance impact investment negatively. This lends credence to the research findings of Herzer and Morrissey (2013) that official development assistance impact negatively on investment. In addition, the research findings by Yuniarto (2010) showed that in Indonesia domestic investment is not influenced by the inflow of foreign capital.

Ghose (2004) noted that in developing countries that foreign direct investment crowd out domestic investment. Also, the research findings of Liuyong and Guoliang (2002) showed similar result as their study revealed that foreign direct investment crowd out domestic investment in China. Snyder (1996) carried out a cross-country study exploring the relationship between official development assistance and domestic investment. The study revealed that an insignificant relationship exists between domestic investment and ODA. Similarly, Javed and Sahinoz (2005) documented that vast amount of foreign debt might negatively affect domestic investment instead of increasing domestic investment. Adopting panel cointegration and causality techniques, Herze and Grimm (2011) showed that official development assistance has a negative relationship with domestic investment in 39 countries. Using a general equilibrium approach of foreign trade, Munemo (2011) documented that in Africa, official development assistance reduces investment in two ways by increasing the foreign price of goods and increasing the prices of goods imported which affects domestic investment.

Summarily, the foregoing literature suggests that the relationship between capital inflows and domestic investment is still controversial. Hence, this study aims to investigate the effect of capital inflows on domestic investment in Nigeria using a vector error correction model (VECM) technique.

3. Methodology

3.1 Source of Data

The study employed time series data which were obtained from CBN statistical bulletin and World Bank Development Indicator covering the period 1981 to 2016. The variables used in the study are capital inflows comprising foreign borrowing, foreign direct investment, portfolio investment, official development assistance and worker's remittance. Table 3.1 shows the variables used in the study, their abbreviation and source of data.

Table 3.1 Data Abbreviation & Description

Variables	Abbreviation	Source of Data
Gross Domestic Investment	GDI	World Bank Development Indicator
Foreign Borrowing	FB	CBN Statistical bulletin
Foreign Direct Investment	FDI	CBN Statistical bulletin
Portfolio Investment	PI	CBN Statistical bulletin
Official Development Assistance	ODA	World Bank Development Indicator
Worker's Remittance	REM	World Bank Development Indicator

Source: Authors', 2018

3.2 Model Specification

The study employed Vector Error Correction Model Techniques (VECM) techniques based on the behaviour of data and the objectives of the study. The study adopted the modeling techniques of Ahmad (2010) with some modification. According to Ayadi et al., (2000), the VAR/VECM analysis is often employed in the evaluation of the performance of large macroeconomic model. The VECM model is used to capture the linear interdependencies among multiple time series. Maddala (1992) noted that the VAR/VECM is the starting point when analysing the interrelationship among variables. According to Sims (1981), VAR/VECM technique is used in studies involving a description of data, forecasting, structural inference and policy analysis.

The Vector autoregressive models (VECM) that establish the dynamic interaction of the variables of the study is expressed as follows:

$$GDI_t = \propto_1 + \sum_{j=1}^{n} \theta_j GDI_{t-j} + \sum_{j=1}^{n} \beta_j FB_{t-j} + \sum_{j=1}^{n} \gamma_j FDI_{t-j} + \sum_{j=1}^{n} \alpha_j PI_{t-j} + \sum_{j=1}^{n} \delta_j ODA_{t-j} + \sum_{j=1}^{n} \Omega_j REM_{t-j} + \mu_{1t} \dots\dots\dots (a)$$

$$FB_t = \propto_2 + \sum_{j=1}^{n} \beta_j FB_{t-j} + \sum_{j=1}^{n} \theta_j GDI_{t-j} + \sum_{j=1}^{n} \gamma_j FDI_{t-j} + \sum_{j=1}^{n} \alpha_j PI_{t-j} + \sum_{j=1}^{n} \delta_j ODA_{t-j} + \sum_{j=1}^{n} \Omega_j REM_{t-j} + \mu_{2t} \dots\dots\dots (b)$$

$$FDI_t = \propto_3 + \sum_{j=1}^{n} \gamma_j FDI_{t-j} + \sum_{j=1}^{n} \theta_j GDI_{t-j} + \sum_{j=1}^{n} \beta_j FB_{t-j} + \sum_{j=1}^{n} \alpha_j PI_{t-j} + \sum_{j=1}^{n} \delta_j ODA_{t-j} + \sum_{j=1}^{n} \Omega_j REM_{t-j} + \mu_{3t} \dots\dots\dots (c)$$

$$PI_t = \propto_4 + \sum_{j=1}^{n} \alpha_j PI_{t-j} + \sum_{j=1}^{n} \theta_j GDI_{t-j} + \sum_{j=1}^{n} \beta_j FB_{t-j} + \sum_{j=1}^{n} \gamma_j FDI_{t-j} + \sum_{j=1}^{n} \delta_j ODA_{t-j} + \sum_{j=1}^{n} \Omega_j REM_{t-j} + \mu_{4t} \dots\dots\dots (d)$$

$$ODA_t = \propto_5 + \sum_{j=1}^{n} \delta_j ODA_{t-j} + \sum_{j=1}^{n} \theta_j GDI_{t-j} + \sum_{j=1}^{n} \beta_j FB_{t-j} + \sum_{j=1}^{n} \gamma_j FDI_{t-j} + \sum_{j=1}^{n} \alpha_j PI_{t-j} + \sum_{j=1}^{n} \Omega_j REM_{t-j} + \mu_{5t} \dots\dots\dots (e)$$

$$REM_t = \propto_6 + \sum_{j=1}^{n} \Omega_j REM_{t-j} + \sum_{j=1}^{n} \theta_j GDI_{t-j} + \sum_{j=1}^{n} \beta_j FB_{t-j} + \sum_{j=1}^{n} \gamma_j FDI_{t-j} + \sum_{j=1}^{n} \alpha_j PI_{t-j} + \sum_{j=1}^{n} \delta_j ODA_{t-j} + \mu_{6t} \dots\dots\dots (f)$$

Where:
GDI is domestic investment
FB is foreign borrowing
FDI is foreign direct investment
PI is portfolio investment
ODA is official development assistance
REM is worker's remittance
A_i is matrice of coefficients to be estimated
ε_t is the error term.

The above model shows the response of domestic investment to shocks in the various components of capital inflows. The model tends to examine how domestic investment would respond to a shock in the various components of capital inflows (foreign borrowing, foreign direct investment, portfolio investment, official development assistance and workers' remittance). In estimating the model, various analytical techniques such as unit root test, Var-lag selection criteria, cointegration test, impulse-response function, variance decomposition

AR inverse root graph, Granger causality test and diagnostic test were carried out.

4. Result and Discussion

4.1 Unit Root Test

The study employed the Kwiatkowski, Phillips, Schmidt and Shin statistic (KPSS) in testing for the stationarity of the data. Time series data is said to be stationary if the mean and variance are constant overtime. The KPSS is based on linear regression which is stated as follows:

$$x_t = r_t + \beta_t + \varepsilon_1$$

Where β_t is deterministic trend
r is a random walk
$\varepsilon$is a stationary error

Testing for the stationarity of data using KPSS, the LM-Statistic is compared with the critical value. The null hypothesis of absence of unit root test cannot be rejected if the value of the LM-Statistics is less than the critical value at 5%.A cursory look at table 4.1 shows that at first difference, all the variables' LM-Statistic is less than the critical value at 5 percent level of significance. Hence, the null hypothesis of absence of unit root cannot be rejected.

Table 4.1: Unit Root Test

KPSS			
INTERCEPT AND TREND			
		CRITICAL VALUES	
VARIABLES	**LM-STATISTICS**	**5%**	**Order of Integration**
LOG(GDI)	0.0892	0.146	1(1)
LOG(FB)	0.0888	0.146	1(1)
LOG(FDI)	0.0913	0.146	1(1)
LOG(PI)	0.0946	0.146	1(1)
LOG(ODA)	0.0564	0.146	1(1)
LOG(REM)	0.1312	0.146	1(1)

Source: Authors' Computation and EViews 9 Output.

4.2 VAR Lag Order Selection Criteria

Table 4.2 presents the result of the optimum lag structure for the VAR. The essence of carrying out this test is to determine the lag length to be used in the estimation of the cointegration test and the VECM. The lag length is selected if the majority of the selection criteria is in favour of a particular lag. A cursory look at table 4.2 shows that majority of the selection criteria such as the FPE, AIC, and the Hannan-Quinn Information Criteria (HQ) select the optimum lag length of 2 thus indicating that the optimum lag to be used is 2.

Table 4.2: Optimal VAR Lag Selection

LAG	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	NA	0.9731	16.9998	17.2877	17.0854
1	178.4346*	0.0020	10.7447	12.7605*	11.3441
2	47.9880	0.0015*	9.9837*	13.7272	11.0968*

**** indicates lag order selected by the criterion***
Source: Author estimation using EViews 9

4.3 Cointegration Test

The study adopted the Trace and the Maximum Eigenvalue tests of Johansen-Juselius cointegration test to determine the existence of long-run relationship between the variables. According to the test, the null hypothesis of absence of cointegration (r) is rejected at 5% significance level if the probability value does not exceed 5%. The cointegration test is reported in table 4.3. Examination of table 4.3 shows that the variables are cointegrated (there is long-run relationship between the variables). For instance, employing Trace test, the null hypothesis is rejected at r=0, r ≤ 1, r ≤ 2, r ≤ 3, r ≤ 4, and r ≤ 5 since their respective probability values are less than 5 percent. Hence, the study concludes that using trace test; the variables are cointegrated. Similarily, adopting maximum-eigenvalue test, the result revealed that null hypothesis was rejected at r=0, r ≤ 1, r ≤ 2, and r ≤ 5 (since their respective probability value is less than 5 percent) but accepted r ≤ 3 and r ≤ 4 because their respective probability values are greater than 5 percent. Since the majority of the cointegration equation (r) reject the null hypothesis of no cointegration, the study also concluded that using maximum-eigenvalue test; the variables are cointegrated. Hence, the Vector Error Correction Model (VECM) technique becomes appropriate.

Table 4.3 Results of Johansen-JuseliusCointegration

Trace Test			**Maximum Eigenvalue**		
Null Hypothesis	t-test	*P*-Value	Null Hypothesis	t-test	*P*-Value
r = 0*	282.2644	0.0000	r = 0*	156.4923	0.0001
r ≤ 1*	125.7721	0.0000	r ≤ 1*	55.6808	0.0000
r ≤ 2*	70.0913	0.0001	r ≤ 2*	33.8954	0.0068
r ≤ 3*	36.1960	0.0080	r ≤ 3	19.1611	0.0923
r ≤ 4*	17.0348	0.0291	r ≤ 4	11.5843	0.1273
r ≤ 5*	5.4505	0.0196	r ≤ 5*	5.4505	0.0196

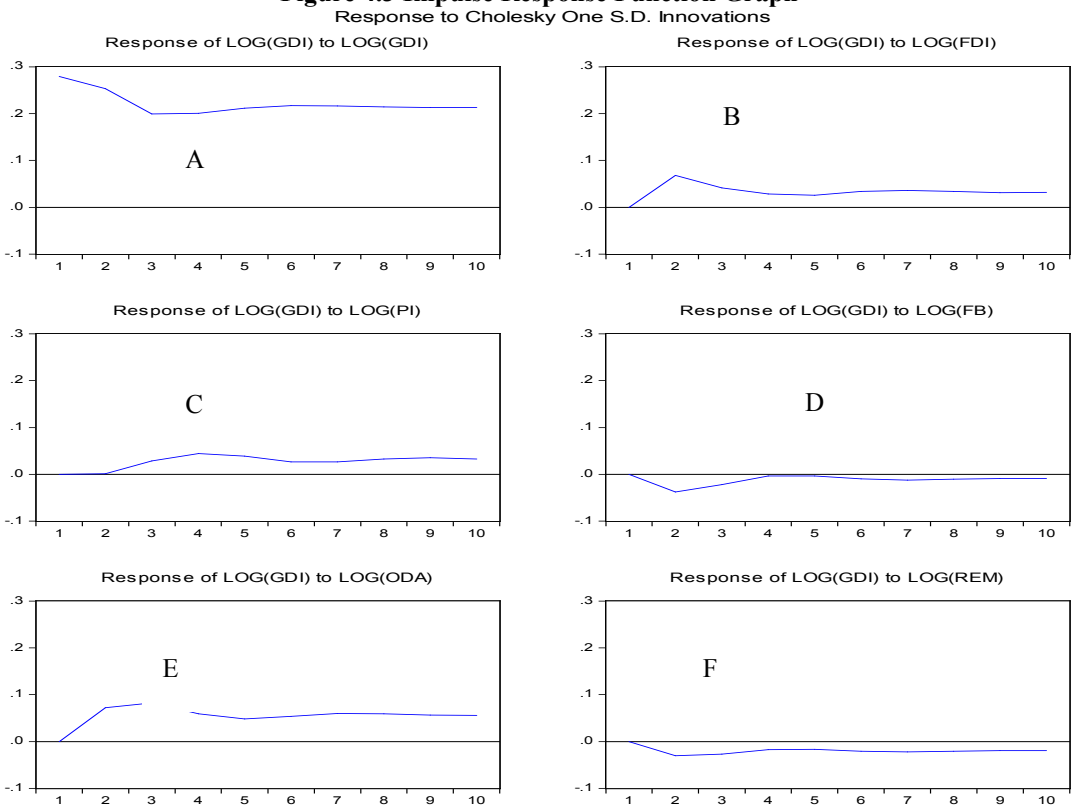
**** indicates p-value ≤ 0.05 and rejection of null hypothesis***

Source: **Author estimation using EViews 9**

4.4 Impulse Response Function

Figure 4.3 depicts the reaction of a dependent variable to one of its shock. It traces the effect on the present and future values of the dependent variable of one standard deviation shock to one of the innovations. One standard deviation in the model is calculated in percentage. For each of the variables, the horizontal axis of the impulse response function depicts the number of periods that have passed after the impulse has been given while the vertical axis measures the response of the variable (Anetor et al., 2016). The impulse response function reported is for a horizon of ten periods. Figure 4.3.1illustrates the graph of the impulse response function. **Panel A** shows that domestic investment (Log (GDI)) responds positively to its own shock. **Panel B** presents the result of the response of domestic investment to a shock in foreign direct investment. The result indicates that a shock in foreign direct investment produces a positive effect on domestic investment. This implies that a rise in foreign direct investment would lead to increase in domestic investment. This lends credence to the research findings of Adams et al., (2016); Ahmad (2010) and Amadou (2011). **Panel C** shows the response of domestic investment to a shock in portfolio investment. The outcome of the impulse response function indicates that a shock in portfolio investment will cause domestic investment to react positively. This suggests that a rise in portfolio investment would lead to increase in domestic investment. This negates the research findings of Amadou (2011). **Panel D** reports the response of domestic investment to a shock in foreign borrowing. The result showed that a shock in foreign borrowing will produce a negative effect on domestic investment. This indicates that a rise in foreign borrowing would lead to decrease in domestic investment. This negates the research findings of Amadou (2011). **Panel E** presents the response of domestic investment to a shock in official development assistance. The result showed that a shock in official development assistance would produce a positive effect on domestic investment. This implies that a rise in official development assistance would lead to increase in domestic investment. This supports the research findings of Dollar and Eastery (1999); Herzer & Morrissey (2013); Gyimah-Brempong (1992); Muneno (2011); and Herzer &Grimm (2011). Finally, **Panel F** shows the response of domestic investment to a shock in workers remittance. The outcome of the impulse response function revealed that a shock in workers remittance would produce a negative effect on domestic investment. This implies that a rise in workers remittance would lead to a decrease in domestic investment. This negates the research findings of Dzansi (2013); and Yasmeen et al, (2011).

Figure 4.3 Impulse Response Function Graph



Source: Author estimation using EViews 9
X axis measure the number of periods that have passed after the impulse has been given
Y axis measure the response of the variable

4.5 Variance Decomposition

The variance decomposition depicts the percentage of a variable forecast error variance that occurs as a result of shock from a variable in the system. It provides information on the relative significance of each random innovation in affecting the variables in the VAR. Enders (1996) noted that variance decomposition explains the proportion of the movement in a sequence due to its own shock compared to shocks from other variables. The Cholesky method is used in the testing of variance decomposition.

Table 4.4 revealed the outcome of the variance decomposition of domestic investment (Log (GDI)). The SE in the table depicts the forecast error while each column shows the percentage of a variable forecast error variance that occurs due to the shock from a variable in the system. The result revealed that the own shocks of domestic investment constitute a significant source of variation in its forecast error in the time horizon ranging from 100% in the first period to 88.74% in the tenth period.

The result further indicates that official development assistance and foreign direct investment accounts for the major variation in domestic investment. For instance, in the second period, foreign direct investment accounts for 3.33% while official development assistance accounts for 3.39% of the variation in domestic investment. In the seventh period, official development assistance accounts for 5.97% while foreign direct investment accounts for 3.0% of the variation in domestic investment. Similarly, in the tenth periods, foreign direct investment accounts for 2.46% while official development assistance accounts for 6.05% of the variation in domestic investment. In conclusion, the variance decomposition result showed that official development assistance accounts for most of the variation in domestic investment.

Table 4.4 Variance Decomposition of LOG (GDI)

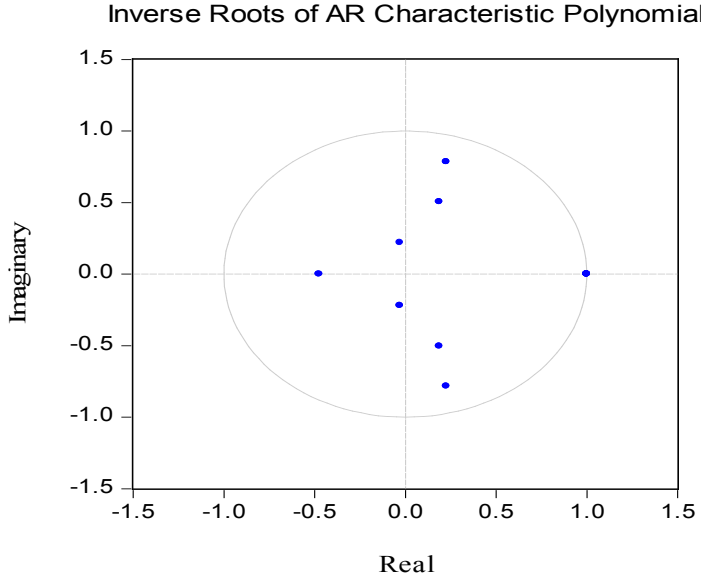
PERIODS	S.E.	LOG(GDI)	LOG(FB)	LOG(FDI)	LOG(PI)	LOG(ODA)	LOG(REM)
1	0.27930	100.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.3927	92.1100	0.61120	3.2253	0.0494	3.3905	0.6135
3	0.4522	88.8818	0.5350	3.3164	0.5523	5.8816	0.8329
4	0.5013	88.3718	0.4583	3.0070	1.20962	6.1526	0.80064
5	0.5485	88.6994	0.3938	2.7193	1.5052	5.9178	0.764455
6	0.5943	88.8843	0.3361	2.6413	1.5085	5.8551	0.7748
7	0.6373	88.8091	0.29545	2.6206	1.5071	5.9681	0.7996
8	0.6768	88.7208	0.2622	2.5734	1.5854	6.0538	0.8043
9	0.7135	88.7092	0.2360	2.5072	1.6868	6.0639	0.7970
10	**0.74841**	**88.7359**	**0.2145**	**2.4604**	**1.7374**	**6.0576**	**0.7941**

Source: Authors' Computation and EViews 9 Output
Notes: These figures show the variance decomposition of LOG (GDI)

4.6 Inverse Roots of AR

The study plotted the AR inverse root graph to determine the stability and reliability of the impulse response function and the robustness of the VECM model. The impulse response function and variance decomposition are stable and reliable if the polynomial roots fall within the unit circle. Figure 4.2 reports the inverse root graph. A cursory look at the graph revealed that all the polynomial roots fall within the unit circle. Thus these results indicate that the VECM model is stable and the impulse response functions reliable.

Figure 4.2: Inverse Root Graph



Source: Authors' Computation and EViews 9 Output

4.7 Granger Causality

The study used VAR Granger Causality/Block Exogeneity Wald Tests to determine the direction of causation between the variables. The null hypothesis of absence ofGranger causality is rejected at 5 percent level of significance if the p-value does not exceed 5 percent (p-value ≥0.05).Table 4.5 present the result of the VAR granger causality between the variables. A cursory look at table 4.3.5 indicates that the probability value between portfolio investment (PI) and domestic investment (GDI) is 0.0128, which is less than 5 percent. Hence, the null hypothesis is rejected and the alternative hypothesis accepted. This implies that portfolio investment Granger cause domestic investment. The result further revealed that the probability value between official development assistance (ODA) and domestic investment is 0.0207 which is less than 5 percent. Hence, the null hypothesis is rejected and the alternative hypothesis accepted, suggesting that official development assistance granger cause domestic investment.

Table 4.5 Granger Causality Probability Values

VARIABLES	LOG(PI)	LOG(ODA)	LOG(REM)	Direction of causality
D(LOG(GDI))	0.0128	0.0207	0.8107	**PI↛GDI; ODA↛ GDI**

Source: Authors' Computation and EViews 9 Output

4.8 Diagnostic Test

The study also carried out diagnostic test inorder to ascertain the validity and reliability of the model estimated. The diagnostic test includes autocorrelation test and heteroskedasticity test. A model is said to be serially correlated when the error terms are not independently distributed across observations while there is presence of heteroskedasticity when the size of the error term differs across values of an independent variable. In ascertaining the presence/absence of autocorrelation; the study used the VEC residual serial correlation LM test. The null hypothesis of no serial correlation is accepted at 5 percent level of significance if the p-value does exceed 5 percent (p-value > 0.05).

Also, in ascertaining the presence/absence of heteroskedasticity the study used VAR residual heteroskedasticity test. The null hypothesis of no heteroskedasticityis accepted at 5 percent level of significance if the p-value does exceed 5 percent (p-value > 0.05). Table 4.6 reports the result of the diagnostic test. The result revealed that there is absence of autocorrelation and heteroskedasticity in the model, thus suggesting that the model is valid and reliable. For instance, the result of the VEC residual serial correlation LM test indicates that at lag 1 LM statistic of 50.3577 has a p-value (0.0565) which is more than 5 percent. Hence, the null hypothesis of no serial correlation is accepted since the p-value is greater than 5 percent.

In addition, at lag 2 the LM statistic of 27.2290 has a p-value (0.8535) which is greater than 5 percent. Hence, the null hypothesis of absence of serial correlation cannot be rejected since the p-value is greater than 5 percent. Similarly, the result of the VEC residual heteroskedasticity test revealed that the chi-square of 308.0319 has a p-value of 0.2752 which is greater than 5 percent. Hence, the null hypothesis of absence of heteroskedasticity cannot be rejected.

Table 4.6: Diagnostic Tests

Test	Test Statistic	*P*-Value
VEC Residual Serial Correlation LM Test (Lags 1 to 2)	LM =50.3577 LM =27.2290	0.0565 0.8535
VEC Residual Heteroskedasticity Test	$\chi 2$ = 308.0319	0.2752

Source: Authors' Computation and EViews 9 Output

5. Conclusion

The study investigated the effect of capital inflow on domestic investment by examining the response of the various components of capital inflow (foreign borrowing, foreign direct investment, portfolio investment, official development assistance and workers' remittance) to shock in domestic investment within the periods 1981 to 2016 in Nigeria. Data were sourced from Central Bank of Nigeria (CBN) Statistical Bulletin and World Development Indicator (WDI) a World Bank publication. Data used in the study are domestic investment and various components of capital inflow: foreign borrowing, foreign direct investment, portfolio investment, official development assistance and workers' remittance. The analytical technique used in the study is the Vector Error Correction Model (VECM).

The study revealed that there is a long-run relationship between the variables. The impulse response function showed that a rise in the various components of capital inflows (foreign direct investment, portfolio investment, and official development assistance) would lead to increase in domestic investment while a rise in foreign borrowing and workers remittance would lead to decrease in domestic investment. The result further indicates that official development assistance accounts more for the variation in domestic investment. In addition, the study revealed that portfolio investment Granger cause domestic investment and also, official development assistance Granger cause domestic investment.

The study recommends that for government to close the savings and foreign exchange gap there is the need for appropriate policies to be design to determine the optimal level of capital inflow that will enhance domestic investment in the country. In addition, the government should provide adequate social amenities, infrastructural facilities, political stability and also conducive environment that is business friendly so as to attract foreign capital into the country for investment purpose.

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