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DOMESTIC INVESTMENT AND CAPITAL FLIGHT NEXUS IN NIGERIA: EMPIRICAL EVIDENCE FROM NEW DATA SET[6]

This study investigated the impact of capital flight on domestic investment in Nigeria. The data for the study were mainly sourced from CBN statistical bulletins for the period 1981 to 2017. However, the capital flight data series used in this analysis were obtained from new estimates of capital flight from the Political Economy Research Institute (PERI) at the University of Massachusetts as constructed by Ndikumana and Boyce. The Auto-Regressive Distributed Lag (ARDL) bounds test approach was adopted for the study. The result showed that capital flight significantly decreases domestic investment in both the short run and long run. Other variables found to have a significant effect on domestic investment include credit to the private sector and inflation rate. With these findings, the study, therefore, recommended that policymakers in Nigeria should consistently evolve policy measures that will curtail capital flight and make the economy competitive and more attractive for domestic investment. Others include anti-inflationary policies, strengthening anti-graft agencies to improve their effort in tackling laundering of public funds and the maintenance of more stable macroeconomic indicators which allow foreign capital inflow so as to boost private domestic investment.
Keyword: Capital flight; Domestic investment; Credit
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1. Introduction

Capital flight has been a major challenge facing developing countries. The majority of these countries have struggled tremendously to be able to save up adequate capital of their own to

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aid domestic investment and push economic growth, but despite their efforts; these countries are still faced with the undesirable turnout as their effort has been severely influenced by the legal and illegal escape of domestic capital abroad (Ndikumana, Boyce, 2021). For a developing country such as Nigeria, the inherent need for adequate capital formation cannot be overemphasized, and the consequences of persistent outflow of local capital away from Nigeria is undeniable, given a look at the sluggish progress in most of the economic sectors due to lack of adequate investment.

.In Nigeria, the continuous shortfall in investment which could be attributed to poor investment climate, unstable polity, erratic policy changes and weak military and civilian governance, has greatly affected sustainable production and, as a result, limited the ability of the economy to reach its full economic potentials in terms of growth and development (Isaac et al., 2021; Orji et al., 2021). However, for any developing economy to find itself in this undesirable state where the domestically generated capital consistently flow out of the economy to find solace abroad leaves much to be desired. Such an economy will face a huge drop in autonomous investment, and output generation will suffer immensely as infrastructure deteriorates (Anthony-Orji et al., 2020; Ekeocha et al., 2021). Considering the state of infrastructural deficit facing Nigeria, the capital needed to establish, restore and renovate infrastructure is rarely available domestically, and in most cases, when sourced from abroad at some expense, the fund will be siphoned, thereby creating a wide gap in the nation's external debt.

In the Nigerian case, some of the efforts by Nigerian leaderships to curb capital flight and illicit financial flows over the decade include the establishment of the Economic and Financial Crime Commission by the Obasanjo regime. This effort was to dictate and prosecute financial crime offenders and help ensure sanity in financial-related issues, the introduction of a single windows trade platform in all of the country's ports of entry and ensuring company registration linking the Federal Inland Revenue Service (FIRS) to the Corporate Affairs Commission (CAC) website to be able to gain a proper monitory channel. Others include the introduction of the Voluntary Assets and Income Declaration Scheme (VAIDS), a tax amnesty scheme for tax offenders; the Bank Verification Number (BVN) scheme; enactment of law granting independence to the National Financial Intelligence Unit against money laundering and related crimes. Also, the government, in its bid to win the fight on capital flight, went further to sign a multilateral convention treaty to implement measures in order to prevent base erosion and profit shifting as well as common reporting standard multilateral competent authority agreement to continue the convention on mutual assistance in tax and tax-related matters. As part of the effort to check and recover illicit capital flow, the Nigerian government also hired a leading international asset tracking and investigation agency to trace illicit flows and assets from Nigeria to developed nations (Victor, 2016).

However, despite the efforts of both international and local financial authorities in an attempt to eradicate capital flight from Nigeria, the statistical outlook still indicates little or no success. CBN (2018) indicates that Nigeria recorded a massive capital flight on an average of about US$32 billion from 2004 to 2007, US$47.4 billion from 2008 to 2010. It increased massively to an average of about $78.2 billion between 2011 and 2014. In 2015 and 2016, it recorded an illicit flow of about US$14.5 billion and US$ 9.3 billion, respectively. Figure 1 (in Appendix) is an indicator of the state of capital flight in Nigeria compared to Mali and

Rwanda, from 2010 to 2018. The figure illustrates the amount of capital flight from selected African countries, with Nigeria ranking highest with an average of about US$ 14034.4 million in 2018. On the other hand, Figure 2 (in Appendix) depicts the declining level of domestic investment as a percentage of GDP in Nigeria. The global financial crisis and increase in capital flight could be the major causes of the decreasing domestic investment witnessed in the economy in the past decade, among other reasons.

Figure 2 indicates that domestic investment as a percentage of GDP was at 16.19% in 2011, and it declined to 14.91% and 14.9% in 2012 and 2013, respectively. It increased to 15.8% in 2014 and then declined to 14.48% and 13.62% in 2015 and 2016. The decline continued to 13.24% in 2017 and 12.93% in 2018. Though this poor performance can be attributed to so many factors, but inadequate domestic savings as a result of capital flight cannot be exonerated to have played a vital role. This pitiable performance of domestic investment and the persistent escape of capital from Nigeria despite numerous policy measures adopted by the federal government and financial authorities to ameliorate the situation is not desirable, and these facts dominated the motivation behind this study. On this premise, there is an inherent need to do more empirical investigation by looking at some questions not yet investigated in the extant literature as related to the effect of capital flight on domestic investment. Specifically, this study focuses on estimating the impact of capital flight on domestic investment in Nigeria within the period of 1981 to 2017. The capital flight data series used in this analysis are obtained from new estimates of capital flight from the Political Economy Research Institute (PERI) at the University of Massachusetts, which were constructed by Ndikumana and Boyce (2018). Others were sourced from the Central Bank of Nigeria Statistical Bulletin. The structural arrangement of the rest of the study is as follows; section 2 summarizes the reviewed literature, while section 3 focuses on the methodology. Section 4 proposes a result presentation and discussion of findings, while section 5 focuses on conclusion and policy recommendation.

2. Brief Review of Literature

2.1. Theoretical Literature

2.1.1. The Investment Diversion Theory

The theory postulates that due to macroeconomic and political uncertainty in developing countries and the simultaneous existence of better investment opportunities in advanced countries like foreign interest rate, a wide array of financial instruments, political and economic stability, favourable tax climate and secrecy of accounts. Some corrupt leaders and bureaucrats usually siphon scarce capital resources from their countries. These funds are therefore not available for investment, low economic growth, a decline in employment, increase in dependency ratio and high death rate. These negative macroeconomic effect in these countries sometimes motivates the necessity to borrow from abroad in order to reactivate the domestic economy, which therefore further siphon the domestic economy, thereby perpetrating external depending and indebtedness. The liquidity constraint crowding-out effect may result in the depreciation of domestic currency if the authorities are operating a floating exchange rate system (Ajayi, 1992). An attempt to defend the exchange rate at this

time leads to a loss of international reserves. The investment diversion thesis provides one of the well-known negative consequences of capital flight in the countries involved.

2.1.2. The Debt-Driven Capital Flight Theories

This thesis states that capital flight reduces the incentive to save and invest. The assumption here is that with large foreign debt, there is an expectation of exchange rate devaluation, fiscal crises, and the propensity of the crowding out of domestic capital and expropriation of assets to pay for the debt. The debt-driven thesis and the investment-driven thesis together suggest interdependency between capital flight, growth and external debt, with the linkage being mutually reinforcing. Capital flight leads to poor growth, which calls for the necessity to borrow in order to promote growth. Further borrowing or indebtedness promotes capital flight will, in turn, lead to poor economic growth and the cycle continues (Akani et al., 2016).

2.2. Empirical Literature

Although, empirical evidence showed that a series of research works had been carried out on the capital flight, but most of these studies focused on the determinants of capital flight, different measures of capital flight and also based on our knowledge, none of these studies has quantitatively investigated the impact capital flight could have on domestic investment. Other studies have also investigated the relationship between domestic investment, private investment and other variables, but not much have been done on their relationship with capital flight using the recent data we are adopting for this study (Orji et al., 2015a, 2015b). For example, Cuddington (1986) used a portfolio adjustment model to study capital outflow for four countries, namely; Uruguay, Venezuela, Mexico and Argentina, which was considered to be among the major flight countries, to ascertain the economic determinant of capital flight from the resident economy. The study suggested that factors such as foreign and domestic interest rate, inflation rate, among others as key agents in determining capital flow. From the empirical result, Argentina and Uruguay lagged real exchange rate and lagged error of the model were correlated with capital flight, Mexico was found to have a highly correlation between lagged capital flight and overvaluation of the exchange rate joined with the disbursement of public debt. Though, the result showed that the above findings are not statistically significant. The empirical result also showed that capital flight in Venezuela is mostly determined by the overvaluation of exchange rate and foreign interest which are both statistically significant.

Another study that adopted the portfolio choice model is the study by Quan and zark (2001) that analyzed forty-one (41) developing countries using a data that covers the duration of 16 years. The study related capital flight and rate of return differential, including risk aversion, financial risk, political risk and policy risk. The empirical result presented that above mentioned three risks have a significant impact on capital flight. Gachoki (2013) examined the impact of capital flight on private investment in Kenya. The study summarized the undermining effect of capital flight on private investment adopting ordinary the least square method. It found out that capital flight has a negative effect on private investment while real interest rate, the ratio of private credit to GDP, change in terms of trade and external debt

have a significant effect on private investment. Liew, Mansoramd & Puah (2016) carried out an empirical study on the macroeconomic determinant of capital flight in Malaysia using ADF and ARDF approach. The findings of the study suggested that the variables FDI, external debt and the stock market have a negative relationship with capital flight, whereas the findings indicated a positive relationship between capital flight and political risk.

Other literature includes Camara and Williams (2017) that used autoregressive distributive lag (ARDL) techniques to carry out a study on the short-run and long-run determinants of capital flight in Ghana. The study showed a negative but significant relationship between capital flight and Ghana's real GDP growth, whereas capital flight and lagged external debt is positively related. The study suggested that pro-growth policies and domestic borrowing should be encouraged. In the same accord, Lawal, Kazi, Adeoti, Osuma, Akinmulegun, Ilo (2017), used the Autoregressive Distributed Lag (ARDL) model to examine the impact of capital flight and its determinants on the Nigerian economy. The study used capital flight, current account balance, foreign direct investments, foreign reserve, inflation rate, external debt, and the real gross domestic product as variables. In summary, the findings indicated that there is a negative relationship between capital flight and economic growth.

However, the literature on domestic investment focused primarily on the effect domestic investment has on economic growth and other macroeconomic variables, affecting domestic investment without giving concise attention to the influence of capital flight on domestic investment. Oyedokun and Ajose (2018), investigated the impact of domestic investment on economic growth in Nigeria. The study used ARDL and ECM model after subjecting data sources from CBN statistical bulletin to cointegrating test which indicated a long-run relationship. The study discovered a positive and statistically relationship between domestic investment and economic growth. Ajayi and Kolapo (2018) examined the sensitivity of domestic private investment to macroeconomic indicators in Nigeria from 1986 to 2015. The study used ARDL and Engle-Granger Causality test to determine that private domestic investment is most sensitive to the money supply, gross domestic product and exchange rate in Nigeria. The Granger causality test revealed a unidirectional causality between money supply and domestic investment.

Das, Chowdhury & Islam (2021), tried to find the threshold point of institutional quality measures and their effect on the Bangladesh capital flight. The study adopted data from the WGI governance and ICRG databases for the period of 1989 to 2016 period. The result of the non-linear regression proved that up to a certain threshold level of institutional quality, interest rate differential reduces while economic growth stimulates net capital flight (NCF) of Bangladesh.

From the literatures reviewed, it is evident that most literatures on capital flight focused more on its determinant, impact on growth and method of capital flight measurement, while literatures on domestic investment focused on the impact on economic growth. Thus, this paper, therefore, contributes to the literature and fills this gap by investigating the impact of capital flight on domestic investment in Nigeria.

3. Methodology

The standard methodology is to calculate capital flight as the residual difference between capital inflows and recorded foreign-exchange outflows. Capital inflows consist of net external borrowing plus net foreign direct investment. Recorded foreign-exchange outflows comprise the current account deficit and net additions to reserves and related items. The difference between the two constitutes the measure of capital flight (Ndikumana, Boyce, 2001). However, the capital flight data series used in this analysis are obtained from new estimates of capital flight from the Political Economy Research Institute (PERI) at the University of Massachusetts, which were constructed by Ndikumana and Boyce (2018)[7]. The data set on capital flight is available for up to 30 African Countries, including Nigeria, from 1970 to 2018. Again, the time period covered in this analysis is from 1981 to 2017.

Data on Domestic Investment (INV), External Debt (EXTD), Inflation (INF), and Credit to Private Sector (CPS) are obtained from the Central Bank of Nigeria Statistical Bulletin (2018).

3.1. Model Specification

The model of this research paper is specified in a linear form and ranges from general to specific, in line with theory. This involves expressing the models in the mathematical form that will be used to ascertain the economic phenomenon empirically. In order to address our objective, this study will employ the Auto Regressive Distributed Lag (ARDL) bounds testing approach with a dynamic Error Correction Model (ECM).

We start by expressing the functional form of the relationships amongst the variables, as follows:

$$INV = f(CAPF, EXTD, INF, CPS) \qquad e.3.1$$

Where:

INV is a domestic investment;

CAPF is capital flight

EXTD is external debt

INF is an inflation rate

CPS is a credit to the private sector

Thus, we express e.3.1 in its mathematical form in e.3.2, then in econometric form by introducing an idiosyncratic error ε, and then take the natural log to linearize to e.3.3, such that:

[7] More details on the capital flight dataset for Africa and the methodology adopted by Ndikumana and Boyce (2018) in the calculations can be found at https://peri.umass.edu/capital-flight-from-africa.

$$lnINV_t = \beta_1 lnCAPF_t + \beta_2 lnEXTD_t + \beta_3 lnINF_t + \beta_4 lnCPS_t \quad \text{e.3.2}$$

$$lnINV_t = \beta_1 lnCAPF_t + \beta_2 lnEXTD_t + \beta_3 lnINF_t + \beta_4 lnCPS_t + ln\varepsilon_t \quad \text{e.3.3}$$

Therefore, the generalized form of the $ARDL(p,q)$ model for the objective is specified as follows:

$$lnINV_t = \psi_0 + \sum_{j=1}^{p} \beta_j lnINV_{t-j} + \sum_{i=0}^{q} \alpha_i lnCAPF_{t-i} + \sum_{k=0}^{q} \gamma_k lnEXTD_{t-k} + \sum_{m=0}^{q} \varphi_m lnINF_{t-m} + \sum_{n=0}^{q} \emptyset_n lnCPS_{t-n} + ln\varepsilon_t \quad \text{e.3.4}$$

As $j = 1,2,\dots,pandi, k, m, n = (0,1,2,\dots,q)$

Where ψ_0 is the constant and$\beta_j, \alpha_i, \gamma_k, \varphi_m, \emptyset_n$, are the parameters to be estimated and ε_t is the white noise error term.

To perform the bounds test for the co-integration, the conditional $ARDL(p,q)$ model is specified thus:

We have the generalized form of the $ARDL(p,q)$ model specified as follows:

$$\Delta lnINV_t = \sigma lnINV_{t-1} + \delta lnCAPF_{t-1} + \theta lnEXTD_{t-1} + \Omega lnINF_{t-1} + \Psi lnCPS_{t-1} + \sum_{j=1}^{p} \beta_j ln\Delta INV_{t-j} + \sum_{i=0}^{q} \alpha_i ln\Delta CAPF_{t-i} + \sum_{k=0}^{q} \gamma_k ln\Delta EXTD_{t-k} + \sum_{m=0}^{q} \varphi_m ln\Delta INF_{t-m} + \sum_{n=0}^{q} \emptyset_n ln\Delta CPS_{t-n} + ln\varepsilon_t \quad e.3.5$$

The hypotheses for the bounds-test are that the coefficients of the long-run equations are all equal to zero against the alternative that they are not, as stated below:

$$H_o: \beta_j = \alpha_i = \gamma_k = \varphi_m = \emptyset_n = 0$$

$$H_1: \beta_j \neq \alpha_i \neq \gamma_k \neq \varphi_m \neq \emptyset_n \neq 0$$

The short-run model of $ARDL(p,q)$ is specified if and only if, we are unable to reject the null hypothesis (i.e. there is no co-integration), as stated below:

$$\Delta lnINV_t = \psi_0 + \sum_{j=1}^{p} \beta_j ln\Delta INV_{t-j} + \sum_{i=0}^{q} \alpha_i ln\Delta CAPF_{t-i} + \sum_{k=0}^{q} \gamma_k ln\Delta EXTD_{t-k} + \sum_{m=0}^{q} \varphi_m ln\Delta INF_{t-m} + \sum_{n=0}^{q} \emptyset_n ln\Delta CPS_{t-n} + ln\varepsilon_t \quad e.3.6$$

We can then specify both the short-run and long-run model, which is the error correction model (ECM) if we are able to reject the null hypothesis (i.e., there is co-integration). The error correction model (ECM) representation is specified as:

$$\Delta lnINV_t = \Phi ECT_{t-1} + \sum_{j=1}^{p} \beta_j ln\Delta INV_{t-j} + \sum_{i=0}^{q} \alpha_i ln\Delta CAPF_{t-i} + \sum_{k=0}^{q} \gamma_k ln\Delta EXTD_{t-k} + \sum_{m=0}^{q} \varphi_m ln\Delta INF_{t-m} + \sum_{n=0}^{q} \emptyset_n ln\Delta CPS_{t-n} + ln\varepsilon_t \quad e.3.7$$

Where Δ is the first difference operator; Φ is the speed of adjustment parameter with a negative sign to show that there is a convergence in the long run.

In general, the outcome of the bounds-test indicates whether or not there exists a long-run relationship among variables in the model. This dynamic error correction model (ECM) is derived from ARDL model through a simple linear transformation. That is, the ECM integrates the short-run dynamics represented by $\sigma, \delta, \theta, \Omega,$ and Ψ with the long-run equilibrium without losing the long-run information represented with; $\beta_j, \alpha_i, \gamma_k, \varphi_m, and \emptyset_n$.

And p is the maximum lag order of the dependent variable, while q is the maximum lag length of the explanatory variables.

3.2. Justification of the Model

This study employed the autoregressive distributed lag (ARDL) model because of its dynamism; that is, the ARDL model is a model containing the lagged value(s) of the dependent variable, the current and lagged values of regressors or explanatory variables, unlike static models. ARDL model uses a combination of endogenous and exogenous variables, unlike a VAR model that's strictly designed for endogenous variables. And the study is interested in the behaviour of our endogenous variables given the exogenous variables.

ARDL model is a good alternative when Engle and Granger or the two-step procedure breaks down. That is, in time-series analysis, the error term usually suffers from the problem of autocorrelation because the series tends to co-move and there is a possibility of endogeneity. These problems of the static model stated above will render the Engle and Granger or two-step procedure impotent or ineffective and by this, Auto-Regressive Distributed Lag (ARDL) model will be employed to simultaneously account for the long-run and short-run relationship.

This model can also be applied when the variables are of a different order of integration (Pesaran, Shin, 1998). In other words, independent variables could be integrated at order zero, order one, a combination of orders thereof or mutually cointegrated and avoid problems such as spurious relationships, resulting from non-stationary time series data. ARDL model is relatively more efficient in the case of small finite sample data sizes, by employing the ARDL technique; unbiased long-run estimates are obtained. In the ARDL model, the lag length for $p, q,$ may not necessarily be the same, unlike the VAR model, which must be of equal lag length. With an error correction model (ECM), there will not be problems of spurious regression because all the variables that enter the model are stationary, and ECM captures both the short-run and long-run relationship.

This model is appropriate in capturing all the objectives of this study given the principle of parsimony which suggests that we would keep our regression model as simple as possible in as much as we can explain our dependent variable substantially. In general, employing another sophisticated model will negate the principle of parsimony which we have just stated.

4. Results and Discussion of Findings

4.1. Unit Root Tests

Table 1

Result of Augmented Dickey-Fuller unit root test of the variables

	Level Form			First Difference			
Variables	*5% critical value*	*ADF test statistics*	*p-values*	*5% critical value*	*ADF test statistics*	*p-values*	*Order of integration*
CAPF	-3.067670	-3.957110	0.0393	-2.967767	-4.122274	0.0359	I(1)
EXTD	-2.951125	-2.085071	0.2516	-2.951125	-3.348964	0.0203	I(1)
INF	-2.948404	-3.251008	0.0253	-	-	-	I(0)
CPS	-3.276263	-5.030701	0.0326	-	-	-	I(0)
INV	-2.945842	-0.492972	0.8811	-2.948404	-4.347939	0.0015	I(1)

Source: Eviews 9 Output Result of Augmented Dickey-Fuller unit root test of the variables.

Hypothesis Testing

H0: $\delta = 0$ (the variables are non-stationary)

Decision Rule: reject H0 if the absolute value of ADF cal. > ADF tab.

The result of the Augmented Dickey-Fuller unit root test for the variables as indicated in the table above showed that inflation rate and credit to the private sector are stationary at a level with their ADF value greater than there critical value at 5%. Capital flight, external debt, gross domestic product and domestic investment got stationary after the first difference and are regarded to be integrated of order one.

Table 2

Result of the bound test (co-integration of the variables) for the objective
Null hypothesis: No long-run relationship exists

F-statistic	5.499347		
	Critical Value Bounds		
Significance	|0 Bound	|1 Bound	Decision
10%	2.45	3.52	*Cointegrated*
5%	2.86	4.01	*Cointegrated*
2.5%	3.25	4.49	*Cointegrated*
1%	3.74	5.06	*Cointegrated*

Source: Eviews 9 Output for the result of the bound test (co-integration of the variables).

The result of the bound test presented in Table 2 shows that the value of the F-statistic lies above the upper bound value of the Pesaran test statistic. This is an indication that the null hypothesis that there is no long-run association among the variables in the model is to be rejected. Therefore, there exists a long-run relationship among the variables in the model.

Table 3

Test for Multicollinearity

	CAPF	EXTD	INF	CPS
CAPF	1.000000	-0.016242	-0.318360	0.708137
EXTD	-0.016242	1.000000	-0.196302	0.257488
INF	-0.318360	-0.196302	1.000000	-0.278595
CPS	0.708137	0.257488	-0.278595	1.000000

The result of the multicollinearity test shows that the independent variables are not highly correlated, so there is no problem with multicollinearity in the model.

4.3. Result of Model Estimation

For the objective of this study, which investigated the impact of capital flight on domestic investment in Nigeria, the Autoregressive Distributed Lag model was used as specified, and the analysis was carried out in this section. This study is focused on the long-run and short-run relationships between capital flight and domestic investment in Nigeria, and between domestic investment and other control variables such as external debt, inflation rate and credit to the private sector. To validate the effectiveness of calculated parameters of the variables, the study employed an exact (true) level of significance (p-value) approach in testing the research hypotheses. This implies that any estimated coefficient with a corresponding p-value less than or equal to (< or =) 0.05 is considered statistically significantly different from zero. The conclusion shall therefore be that effect of the independent variable on the dependent variable cannot be ignored in the study. The table below is the result of the ARDL co-integration and long-run form.

Table 4

Result of ARDL Cointegration and Long-run
Dependent Variable: INV

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(CAPF)	-0.028139	0.011132	-2.527720	0.0176
DLOG(CPS)	0.390103	0.128862	3.027292	0.0054
DLOG(EXTD)	-0.004149	0.016075	-0.258104	0.7983
D(INF)	-0.002373	0.000956	-2.481829	0.0196
CointEq(-1)	-0.501971	0.106747	-4.702439	0.0001
Cointeq = LOG(INV) - (0.0561*LOG(CAPF) + 0.7771 *LOG(CPS) -0.0083*LOG(EXTD) -0.0047*INF + 0.0190)				
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(CAPF)	-0.056058	0.022252	-2.519189	0.0180
LOG(CPS)	0.777143	0.246304	3.155223	0.0039
LOG(EXTD)	-0.008265	0.031667	-0.261002	0.7961
INF	-0.004727	0.002243	-2.107256	0.0445
C	0.018994	0.179952	0.105550	0.9167

Source: Authors' computation from Eview 9.

4.3. Interpretation of Long-run and Short-run Results

Table 4.4 shows the regression results for the cointegrating and long-run coefficients for the first objective of this analysis. The coefficient of capital flight (CAPF) in the short run is -0.028139, and -0.056058 in the long run, with p-values of 0.0176 and 0.0180, respectively. This result shows a negative relationship between capital flight and domestic investment in both the short run and long run, indicating that in the short run, a percentage increase in capital flight will reduce domestic investment by 0.02% and by 0.05% in the long run. The p-values for the coefficients in short run and long run are lesser than the conventional 5% statistical level of significance, indicating that the results are statistically significant. This result agrees with the findings of Gachoki (2013) that examined capital flight on private domestic investment in Kenya, which indicated a negative but statistically significant relationship between capital flight and private domestic investment in Kenya.

The result for inflation rate indicated that in the short run, the inflation rate has a coefficient of -0.002373, with a p-value of 0.0196 in the short run, and a coefficient of -0.004727 and a p-value of 0.0445 in the long run. This implies that in the short run, a 1% increase in the inflation rate will decrease domestic investment by 0.2% in the short run and 0.4% in the long run. The p-value for both short-run and long-run coefficients indicates that the results are statistically significant at 5%. This conforms to the study of Ajayi and Kolapo (2018) on domestic private investment and macroeconomic indicators.

However, credit to the private sector (CPS) has a coefficient of 0.390103 in the short run, 0.777143 in the long run with p-values of 0.0054 and 0.0039, respectively, indicating that the result is statistically significant in the short and long run. External debt has a coefficient of -0.004149 in the short run, and -0.008265 in the long run. The p-values are 0.79883 in the long run, 0.7761 in the short run. This indicates that in the long run and short run, the coefficients were negative but statistically insignificant. The external debt variable shows that it has a negative relationship with investment. As earlier discussed, Nigerian external debt stock was about $29 billion in 1999 at the advent of democracy, but it further increased to about $32 billion in 2000 and then declined to about $31 billion in 2002. Owing to a several uncertainties and policy issues in the country, Nigeria's external debt further rose sharply to $39 billion in 2004. This was followed by a series of negotiations and agreements with the Paris Club that eventually led to the forgiveness of Nigeria's debt, thus bringing the entire external debt stock down to about $9.6 Billion as at 2006. Unfortunately, the gains of the debt forgiveness were wiped off by subsequent administrations as Nigeria's external debt stock has soared from about $9.6 Billion in 2006 to about $42.6 Billion in 2018. Currently, Nigeria's external debt profile is still rising as a result of bad governance and corruption. The sad part of the story is that the borrowed fund are not properly utilized as their effect on the gross domestic product is minimal, thereby creating another problem of servicing this debt.

The cointegrating equation is negative with an associate coefficient of -0.501971, which indicates that about 50% of any movement into disequilibrium is corrected for within one period. Given a p-value of 0.0001, this indicates that the coefficient is highly significant.

4.3. Post estimation test result

4.3.1. Breusch-Godfrey Serial Correlation LM Test

This test employed the Breusch-Godfrey Serial Correlation LM Test to examine the tendency of serial correlation in the error term. The result is presented below

Table 5

Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.199363	Prob. F(2,18)	0.4602
Obs*R-squared	0.20663	Prob. Chi-Square(2)	0.3105

Hypothesis:

H0: $\mu_{1,} = \mu_2 = \mu_3 \neq \cdots \mu_p \neq 0$

Decision Rule: Reject H0 if the Fcal<Ftab; otherwise, do not reject. Or reject H0 is the P-value is greater than 0.05.

The result presented above shows that the probability of the F-statistics, which 0.4602 is greater than 0.05(5%). Also, the observations times R-squared (0.20662) is less than the chi-square P-value (0.3105). Hence, we reject the H0 and conclude that the model has no serial correlation.

4.3.2. Heteroscedasticity Test

To show the consistencies in the error term from one period to another entails us to conduct the heteroscedasticity test. The Breusch-Pagan-Godfrey heteroscedasticity test will be used to carry out this test. The result is shown in the table below. The null hypothesis is that the error term is homoscedastic.

Table 6

Heteroscedasticity result

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.127291	Prob. F(13,20)	0.0023
Obs*R-squared	14.76774	Prob. Chi-Square(13)	0.2248
Scaled explained SS	8.93695	Prob. Chi-Square(13)	1.1251

Source: Eviews 9 Output for Heteroscedasticity Test.

Hypothesis:

H0: $\sigma_1 = \sigma_2 = \sigma_3 \neq \cdots \sigma_p = \theta$ (Homoscedastic)

Decision Rule: Reject H0 if the Fcal<Ftab, otherwise, do not reject. Or reject H0 is the P-value is greater than 0.05.

From the result presented above, shows that the probability value of the Obs*R-square (0.2248) is greater than 0.05, this implies that the variance of the error term is constant. In

that, we do not reject the null hypothesis of homoscedasticity and we conclude that the error term is constant overtime.

4.3.3. Specification Error Test

The Ramsey regression equation specification error test (RESET) test is a general specification test for the linear regression model. It tests whether non-linear combinations of the fitted values help explain the response variables. The null hypothesis of this test is that the model is correctly specified.

Table 7

Ramsey RESET Test

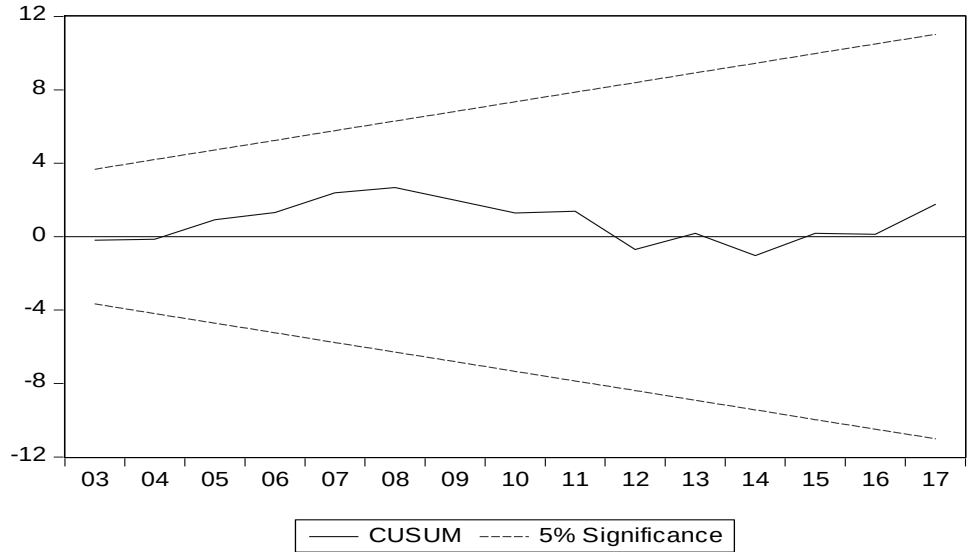
	Value	Df	Probability
t-statistic	1.309592	19	0.2404
F-statistic	1.57259	(1, 19)	0.2404

4.3.4. Diagnostic Test

The stability of the short-run model was tested using the CUSUM test. The idea behind this test is to reject the hypothesis of model stability if the blue line lies significantly outside the dotted red lines; otherwise, the model is said to be stable. The null hypothesis for the test is that the model is not stable. The result of this test is presented in Figure 3.

Figure 3

CUSUM TEST



The CUSUM test result above showed that the blue line lies significantly inside the dotted red line, thus we reject the null hypothesis and accept the alternative, which implies that the model is stable.

5. Conclusion and Policy Recommendation

The issue of capital flight has been a recurrent point of deliberation and has attracted the attention of many scholars, policy analysts and successive governments. This can be attributed to the adverse effect of capital flight on sustainable economic growth as it has limited the progress of different sectors of the economy. The findings of this study have improved our understanding of the impact of capital flight on domestic investment. It, therefore, concludes that there exists a negative relationship between capital flight and domestic investment. This may be attributed to the fact that more capital flight drains a country's capital level whose investors depend to get finances for investment. Thus as more capital is lost, less is left in a country for the investors to use for investment leading to private investment decline. According to Gachoki (2013), other indicators such as inflation rate and external debt significantly affects domestic investment and gross domestic product. Inflation and external debt is found to have an inverse relationship. This shows that as the inflation rate and external debt were increasing, the corresponding values of domestic investment were declining. On the other hand, credit to the private sector exhibits a positive relationship with domestic investment and gross domestic product. With reference to these findings, the following policy direction is recommended.

Firstly, macroeconomic stability should be the focus of economic reforms, together with the elimination of structural distortion and enhancement of a more favourable investment environment to boost domestic production capacity. This can be achieved by adopting anti-inflationary policies like non-expansionary monetary and fiscal policies. This recommendation is based on the inflation rate coefficient estimated, which is negative and statistically significant. Secondly, Strategic measures should be adopted in terms of foreign direct investment inflow management to avoid possible leakages of such capital inflow out of the economy as capital flight. The study, therefore, recommends the use of appropriate policy measures that will stimulate the availability of more capital for investment, since the increase in credit to the private sector is most likely going to increase domestic investment as the estimated coefficient indicated. Thirdly, the issue of corruption should be tackled in the utilization of external debt. All monies borrowed should be strictly monitored by the anti-graft agencies to ensure they are properly utilized for investment purposes and infrastructural facilities in the economy and not just for consumption and criminal diversion.

Finally, the government should strengthen anti-graft agencies to improve their effort in tackling the laundering of public funds. This is to ensure that all the channels through which public office holders launder money abroad are stopped. In addition, international anti-corruption laws should be implemented to reduce the quantum of laundered money. An enabling financial and macroeconomic environment that would minimize domestic economic uncertainty, reverse capital flight and attract foreign direct investment should also be created.

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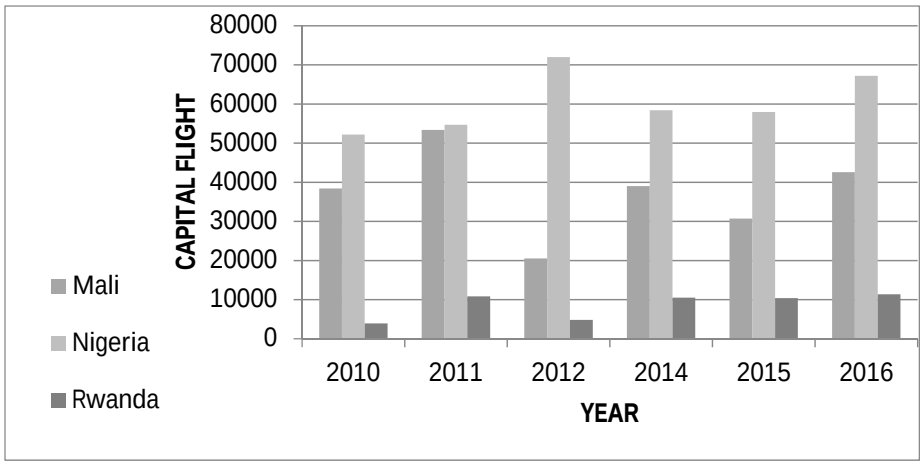
APPENDICES

Figure 1

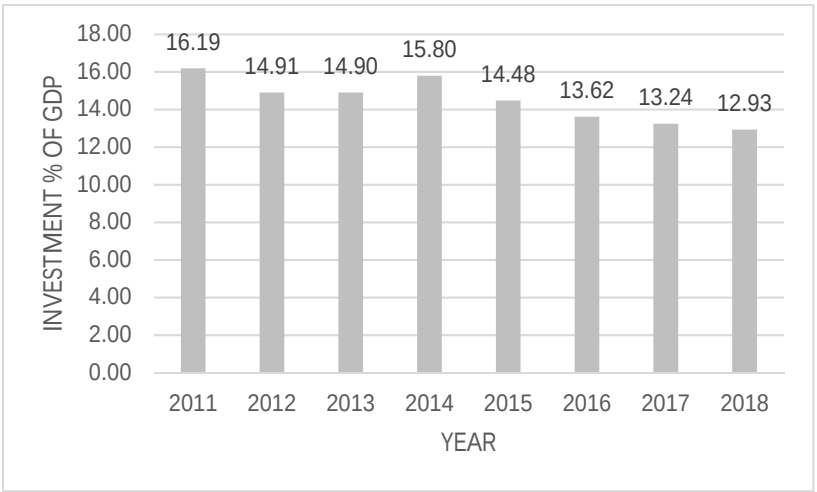
Capital Flight from Selected African Nations (US $ millions)



Source: World Bank Indicator (2018).

Figure 2

Nigerian domestic investment % of GDP



Source: World Bank Development Indicator (2016).