

Asian Development Policy Review

ISSN(e): 2313-8343

ISSN(p): 2518-2544

DOI: 10.18488/journal.107.2020.83.171.184

Vol. 8, No. 3, 171-184.

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URL: www.aessweb.com



CAPITAL FLIGHT AND ECONOMIC GROWTH IN NIGERIA: A NEW EVIDENCE FROM ARDL APPROACH



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ABSTRACT

Article History

Received: 16 June 2020

Revised: 20 July 2020

Accepted: 24 August 2020

Published: 3 September 2020

Keywords

Capital flight

Economy

Growth

Domestic investment

Money supply

Autoregressive Distributed Lag

Model

Nigeria.

JEL Classification:

E22; F21; F41.

The issue of capital flight has been a recurrent topic of discussion among researchers especially in Africa. The cause, magnitude and consequences of this undesirable outflow of domestic capital have been a persistent concern among scholars. Nigeria among other African countries has been a victim of massive capital outflow to other developed nations. Thus, this study investigated the impact of capital flight on economic growth in Nigeria. In carrying out the analysis, data from CBN statistical bulletin was used for the period 1981 to 2017. The Autoregressive Distributed Lag (ARDL) bounds test approach was adopted for the study. The study showed that capital flight significantly decreases economic growth in both short run and long run. Other variables found to have significant effect on economic growth include money supply, credit to private sector and domestic investment. The study therefore recommended proactive policy measures that will curtail capital flight and make the economy competitive and attractive for domestic investment that enhances economic growth. Expansionary monetary policy should also be adopted to improve money supply whenever the policy environment is ripe for such.

Contribution/ Originality: This study adds to existing literature by using a modern econometric estimation technique, ARDL, to investigate the impact of capital flight on economic growth in Nigeria. The study makes some interesting findings by revealing that capital flight has a negative impact on economic growth in Nigeria. Thus, there is need to adopt strategic policy measures to avoid future leakages of such capitals out of the economy and as a matter of urgency, government at all levels should strengthen anti-graft agencies to improve their effort in tackling laundering of public funds.

1. INTRODUCTION

The issue of capital flight has been a recurrent topic of discussion among researchers especially in Africa. The cause, magnitude and consequences of this undesirable outflow of domestic capital have been a persistent concern among scholars. Nigeria among other African countries has been a victim of massive capital outflow to other developed nations (Olawale & Ifedayo, 2015). Taking into account the national income identity, economic growth has a direct correlation with investment, however, in the Nigerian case with inadequate capital organization for massive investment, poor investment policies and pitiable infrastructures, political instability and domestic

terrorism, capital abscond to other nations with more favorable investment return and this is regarded as capital flight. Thus, according to Otene and Edeme (2012) and Ajayi (2012) the persistent outflow of domestic capital as a result of economic and political uncertainties in the home country is referred to as Capital flight. This unfavorable situation deprives the home country enormous economic resources that could have aided domestic economic activities, enhance social welfare of residence and promote economic growth (Beja & Edsel, 2006) On the contrary, they lost capital implies goods and services forgone that would have been essential to sustaining economic expansion.

The lack of funding for proper economic development has led many African countries including Nigeria to resort to external borrowing in a bid to supplement domestic capital, and this has tremendously increased the accumulation of external debt. As recorded in CBN (2016) Nigerian external debt was about \$590.44 billion in 2009, in 2010 and 2011, it increase to \$689.84 billion and \$896.85 billion respectively. As at 2014, the eternal debt had reached \$1631.51billion and increased to \$2111.53billion and \$3478.92billion in 2015 and 2016 respectively. The ugly part of the situation is that the supposed borrowed fund are not properly utilized for capital projects that will foster growth, rather the borrowed funds are siphoned political office holders and shipped abroad, and this persistent practice has notably handicapped the availability of capital to private sectors, total domestic investment and other macroeconomic variables that influences growth. Evidence to this can be highlighted with a glance at some of the macroeconomic indicators as illustrated in the Figure 1 below:

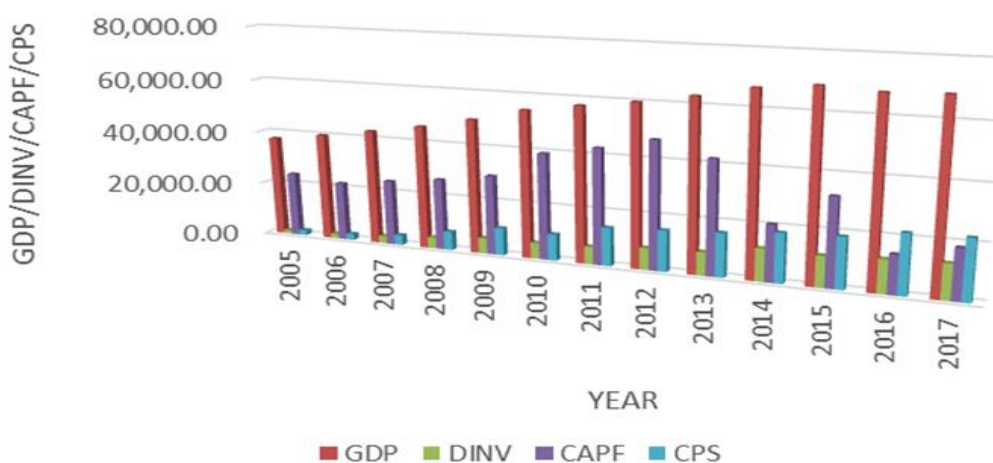


Figure-1. Capital flight, GDP and other macroeconomic indicators.

Figure 1 indicated that within 2005 and 2009, Nigerian economy recorded a gross domestic product (GDP) of about N43, 252 billion in average, an average of about N4, 993.96 billion capital to private sector (CPS), and an average capital flight (CAPF) of about N25, 229.14 billion in the same period. As from 2010 to 2013, the Nigeria GDP was about an average of N58817.98 billion, N13.839.29 billion average of capital to private sector and capital flight of about N42902.77 billion in average. Within 2014 to 2017, Nigeria GDP was at an average of N68149.74 billion, an average capital flight of about N21460.14billion and an average capital to private sector of about N20,279 billion (CBN, 2016). Though this pitiable performance of this economic indicators can be attributed to various economic factors, the over illustration indicated that capital flight cannot be exonerated to have played a vital role in creating this anomaly.

However, it is crucial to have better understanding and an in-depth knowledge of the capital flight concept, with this fact, it is important to point the difference between capital flight and capital export. When investors from countries that are developed move their capital abroad, they are considered to be responding to investment opportunities which are regarded harmless to their domestic economy as those capital yield returns back to their home countries. On the other hand investors from developing countries are regarded to be escaping economic, social and political risk when they make investment abroad. The formal which is the legal movement of capital in

search of investment opportunities abroad is regarded as capital outflow while the opposite can be attributed to be capital flight and its consequences are tremendous and unfavorable to the growth of any developing economy (Saheed, 2012).

Evidence from reviewed conceptual literature suggest that capital flight is diverse in definition as a result of the various capital flight measurement methods. Most scholar and researchers gave capital flight a peculiar attributions in line with the direction of their research taking into account the issues of capital flight measurement as will be discussed thus. Morgan Guaranty Trust Company (1986) as cited by Olawale and Ifedayo (2015) gave a definition of capital flight to imply the recorded and unrecorded foreign assets acquired by the non-banking institution in the private sector and some elements in the public sector. Cuddington (1986) as cited by Adetiloye (2011) is of the view that capital flight is a short-term speculative outflow of capital from a country. This specifically refer to capital outflows that are used in the acquisition of assets abroad added with net errors and omissions in a countries Balance of Payments. This definition of Cuddington can be regarded to be synonymous with the concept of “hot money flows. Olawale and Ifedayo (2015) explained capital flight to consisting of any form of private capital outflow motivated by the desire of resident of the domestic country to minimize the present and future level of control by the government including risk of confiscation of such capital. Also, Adetiloye (2011) posited that capital flight is the outflow of money supposed to be invested in one domestic economy to another with the intension escaping specific risk such as currency devaluation, anticipated depression, political crises, inflation etc. For this research purpose, capital flight will be defined as the outflow of domestic capital to foreign countries as a result of economic and political uncertainties. The predominance determinant of capital flight is mostly accredited to economic and non-economic factors. These factors are mostly drawn to impediments created primarily by deformities in macroeconomic policy of the domestic economy. These deformities reveal themselves mostly in fluctuating risk perception, financial sector restriction and suppression, exchange rate mismanagement, weak institutions, fiscal deficit, corruption, sluggish economic growth, rising taxes, etc. (Ajayi., 2005; N. Hermes, Lensink, & Murinde, 2002).

Furthermore, related empirical studies suggest that capital flight from Nigeria has a greater percentage when compared with other countries in Sub-Sahara African region. In other words capital flight from Nigeria is more severe than other countries in Africa. The study of Niels Hermes and Lensink (1992) suggested that capital flight from Nigeria is about US\$21 billion from 1976 to 1989; representing 60% of samples from six Sub-Sahara African countries. Also Ojo (1992) posited that the cumulating illegal outflow of capital from Nigeria within the period of 1975 to 1991 is about US\$35.9 billion which from their sample of study is more than double the total of Cote deivoir and Morocco. With the persistent escape of domestic capital from Nigeria, the relative effect on the economic growth can be highlighted with a review of the Nigerian GDP per capital growth as compared with other selected countries as illustrated in Figure 2.

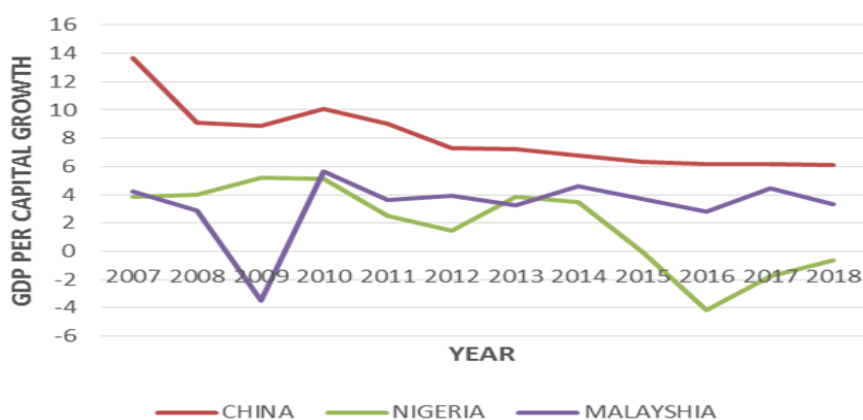


Figure-2. GDP per capital growth of selected countries.

Figure 2 shows that Nigerian GDP per capital growth performed poorly when compared to that of China and Malaysia. In case of China, their GDP per capital growth performed outstandingly when compared to Nigeria and Malaysia, that of Malaysia has its worst growth in 2009, but has since then maintained a stable growth. In the Nigeria case, the GDP per capital growth recorded its worst growth around 2016 and has since then maintained a sluggish growth.

Interestingly, the issue of capital flight has attracted the attention of financial and government institutions both locally and internationally. Over the years, strategies have been employed to help curtail the issue of capital flight both domestically and abroad. Some of the efforts of United Nations on the fight against capital flight include; establishment of a Financial Action Task Force (FATF) whose role is to set standards that guide international actions targeted to eliminate laundering of money and financing terrorism; Global Forum on Transparency and Exchange of Information for Tax Purposes whose role is to establish elucidated necessary to circulating information related to tax. Another is the Extractive Industry Transparency Initiative (EITI) created to ensure and enhance, accountable and open management of natural resources, and other subsequent works of the World Bank in many capital flight related areas (IMF, 2018).

In the Nigerian case, some of the efforts by Nigeria 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, a single window trade platform was introduced in every entry ports in the country, also ensuring a mandatory data capturing process for companies during registration that links the Corporate Affairs Commission and the Federal Inland Revenue Service (FIRS) database to be able to gain a proper monitoring channel. Other efforts include the introduction of the Voluntary Assets and Income Declaration Scheme (VAIDS), an amnesty scheme for self-repenting offenders associated with tax related crimes; the Bank Verification Number (BVN) scheme; enactment of acts that give independence and liberty 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 avert shifting of profit and base erosion together with common reporting standard multilateral competent authority agreement to carry on the convention on mutual aid 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, statistical outlook still indicates little or no success.

This pitiable performance of the economy, the sluggish growth of the different sectors of the economy and the persistent escape of capital from Nigeria despite numerous policy measures adopted by the federal government and financial authorities 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 economic growth. Specifically, this study will focus on estimating the impact of capital flight on economic growth in Nigeria within the period of 1981 to 2017. Data used for this study was sourced from the statistical bulletin of the Nigerian Central Bank. The structural arrangement of the rest of the study is as follows; section 2 summarizes the reviewed empirical literature while section 3 focused on the methodology. Result presentation and discussion of findings is positioned in section 4, while section 5 focused on conclusion and policy recommendation.

2. BRIEF REVIEW OF EMPIRICAL LITERATURE

Evidence from empirical review indicates that numerous studies have been conducted as related to capital flight issues, however, majority of these empirical studies focused on the determinants of capital flight, different measures

of capital flight and none based, on the knowledge of these study have quantitatively investigated the impact capital flight could have on Nigeria economic growth in the duration covered by this study.

Agu (2006) studied domestic macroeconomic policy and capital flight in Nigeria using micro portfolio management model. The study evaluated the concepts of risk, return on investment and assessment of their contributions and impact on the rate of capital flight. The study singled out political risk as the major determinant of capital flight and as well proposed a macro economic model that intended to evaluate empirically the impact of risk on capital movement and the control of such movement with the use of adequate domestic monetary and fiscal policies. Still surrounding risk and portfolio theory carried out an econometric study of capital flight in less developed countries. Taking Nigerian as a case a study, using data from Nigeria within the period of 1972 to 1989, the study estimated the linear determinant of capital flight adopting the ordinary least square with error correction method. The result validated the prior expectation that risk propels investors to seek for a safe haven for their portfolio to ensure profit maximization and higher expected return. The study went further to suggest that capital flight is determined by interest rate differentials, poor performances of the domestic economy in terms of growth, exchange rate depreciation among others.

Lawanson (2008) econometrically analyzed capital flight from Nigeria within the period of 1970 to 2007. The analysis utilized the residual method of capital flight measurement adjusting exchange rate fluctuate and trade invoicing. The empirical study derived its framework from portfolio choice theory and the analysis was conducted using ordinary least square (OLS) method. The results suggested that factors such as real growth, real interest rate differentials, exchange rate premium, domestic debt, inflation, fiscal deficit parallel market among others determine the portfolio choice of investors, the behavior of asset holders in Nigeria and as well the direction of capital flow. Uguru (2010) carried out a study on capital flight and its impact on some indicators of economic recession in Nigeria. In the study variables such as capital flight, inflation rate, employment rate, interest rate, exchange rate was analyzed using the ordinary least square method. The findings indicated a negative relationship between capital flight and other macroeconomic variables studied. Apart from studies on Nigeria, other country specific literatures on capital flight are as well scanty and focused also on determinant of capital flight.

Considering the issue of capital flight in Cameroon, Ghana and China, Njimanted (2008) adopted the two stage square technique and co-integration error correction mechanism to analyze capital flight measurement, its determinant and impact on economic growth in Cameroon with time series data from the period of 1970 to 2005. The result of the findings posited that political instability, inflation, interest rate, external debt, fiscal deficit are the main factors determining capital flight. In the Ghanaian case, Richmond, Camara, and Williams (2017) used the 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. Gunter (2017) examined capital flight, corruption, family effects and its relationship with economic growth of nexus in China. The study adopted residual method and Cuddington balance of payment method as a measure of capital flight, adjusting assets of banking industry in china and miss-invoicing china's trade balance. The result of the findings suggested that capital control and capital flight has no long term relationship. The study also considers corruption, migration and cot transaction as the major determinants of capital flight.

Interestingly, Gusarova (2009) used a panel data containing capital flight estimate measured in multiple proxies for 139 countries within the period of 2002 to 2009 to estimate the statistical impact of capital flight on the growth rate of real gross domestic product using Auto Regressive Distributive Lag model (ADRL) The findings showed an ambiguous significant result contrary to previous studies as capital flight showed no significant and negative impact on GDP. The study augured that this ambiguous result is most likely to be as a result of measurement error bias, limited available data enough to have a significant impact on the result and a possibility

that capital flight might have little effect on GDP per capital growth to be significant. [Kunieda, Okada, and Shibata \(2014\)](#) empirical investigated the impact of corruption by the government officials, capital account liberalization and economic growth with special reference on panel data from 109 countries. The results of the findings suggested that corruption is a major determinant of capital flight and poses' great danger to economic growth. [Efobi and Asongu \(2016\)](#) used panel data from 29 countries in Africa to study capital flight and terrorism using Quantile regression (QR), the Generalized Method Moment (GMM) and Forward Orthogonal Deviations (FOD). The results from the study revealed terrorism persistently increased capital flight. On the same accord, the Quantile regression result indicated that transitional terrorism has a positive relationship with capital flight while terrorism dynamics indicated a low effect on rate of capital flight distribution.

[Tchoffo and Nembot \(2020\)](#) made a comparative analysis of the effects of capital flight on economic growth in ECCAS, ECOWAS and SADC countries over the 1984–2015 period. The empirical results from the pooled mean groups (PMG) regression shows that the effect of capital flight on economic growth is negative and significant in SADC, while it is either negative or positive in ECOWAS and ECCAS when considering the interaction between capital flight and private investment or not.

Other studies such as [Zobeiri, Akbarpour Roshan, and Shahrazi \(2016\)](#) in Iran and [Geda and Yimer \(2017\)](#) in Ethiopia found a negative relative relationship between capital flight and economic growth using the ICOR method. In another similar study, [Ndiaye \(2014\)](#) and [Fofack and Ndikumana \(2010\)](#) using the generalized method of moment, find that economic growth in SSA is negatively affected by capital flight. On the other hand, [Collier, Hoeffler, and Pattillo \(2004\)](#); [Adesoye, Maku, and Atanda \(2012\)](#) and [Owusu \(2016\)](#) find that capital flight positively affects economic growth in Nigeria. Similarly, [Weeks \(2015\)](#) using a sample of oil-producing countries, find that capital flight positively affects the level of economic growth.

That notwithstanding, studies such as [Wujung and Mbella \(2016\)](#) and [Adams and Klobodu \(2018\)](#) find that capital flight does not affect economic growth in Cameroon and in 6 SSA countries respectively. In Nigeria, [Usman and Arene \(2014\)](#) also examined the impact of capital flight and its macroeconomic determinants on agricultural growth in Nigeria from 1970 to 2013 and found an insignificant relationship between total capital flight and agricultural growth.

From the above reviewed literature, it is evident that most related studies on capital flight directed attention on capital flight determinant and method of capital flight measurement. Base on the knowledge of this study, none did justice to the impact capital flight has on key macroeconomic variables. Thus, this paper, therefore contributes to literature and filled this gap by investigating the impact of capital flight on economic growth in Nigeria using the ARDL model. The results of the research will help policy makers in knowing that the impact of capital flight on the nation's economy and what policy instruments are to prevent further escalation of capital flight in Nigeria.

3. METHODOLOGY

This study adopts a linear form of model specification ranging from general modeling to a more specific model as obtainable with theory. In order to capture the objective, Auto Regressive Distributed Lag (ARDL) bounds testing approach with dynamic Error correction model (ECM) was employed. This study focused on the long run and short run impact of capital flight on economic growth in Nigeria from 1980–2017.

3.1. Model Specification

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

$$GDP = f(CAPF, INV, INF, CPS) \quad (1)$$

Where;

INV is domestic investment.

CAPF is capital flight.

INF is inflation rate.

CPS is credit to private sector.

GDP is real gross domestic product.

Thus, we express Equation 1 in its mathematical form in Equation 2 then in econometric form by introducing an idiosyncratic error ε , and then take the natural log to linearize to Equation 3 such that:

$$\ln GDP_t = \beta_1 \ln CAPF_t + \beta_2 \ln INV_t + \beta_3 \ln INF_t + \beta_4 \ln CPS_t \tag{2}$$

$$\ln GDP_t = \beta_1 \ln CAPF_t + \beta_2 \ln INV_t + \beta_3 \ln INF_t + \beta_4 \ln CPS_t + \ln \varepsilon_t \tag{3}$$

Therefore, the generalized form of the $ARDL(p, q)$ model for the objective is specified as Equation 4:

$$\begin{aligned} \ln GDP_t = & \psi_0 + \sum_{j=1}^p \beta_j \ln GDP_{t-j} + \sum_{i=0}^q \alpha_i \ln CAPF_{t-i} + \sum_{k=0}^q \gamma_k \ln INV_{t-k} + \sum_{m=0}^q \varphi_m \ln INF_{t-m} \\ & + \sum_{n=0}^q \phi_n \ln CPS_{t-n} + \ln \varepsilon_t \end{aligned} \tag{4}$$

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

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

To perform the bounds test for co-integration, the conditional $ARDL(p, q)$ model is specified as Equation 5:

$$\begin{aligned} \Delta \ln GDP_t = & \sigma \ln GDP_{t-1} + \delta \ln CAPF_{t-1} + \theta \ln INV_{t-1} + \Omega \ln INF_{t-1} + \Psi \ln CPS \\ & + \sum_{j=1}^p \beta_j \ln \Delta GDP_{t-j} + \sum_{i=0}^q \alpha_i \ln \Delta CAPF_{t-i} + \sum_{k=0}^q \gamma_k \ln \Delta INV_{t-k} \\ & + \sum_{m=0}^q \varphi_m \ln \Delta INF_{t-m} + \sum_{n=0}^q \phi_n \ln \Delta CPS_{t-n} + \ln \varepsilon_t \end{aligned} \tag{5}$$

The bound test hypothesis for the coefficients is that at the long run, the coefficient equation is equal to zero while the alternative is the opposite, as stated below:

$$H_0: \beta_j = \alpha_i = \gamma_k = \varphi_m = \phi_n = 0$$

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

The short run model of $ARDL(p, q)$ can only be specified if and only if, we accept the null hypothesis (i.e. there is no cointegration), as stated below in Equation 6:

$$\begin{aligned} \Delta \ln GDP_t = & \psi_0 + \sum_{j=1}^p \beta_j \ln \Delta GDP_{t-j} + \sum_{i=0}^q \alpha_i \ln \Delta CAPF_{t-i} + \sum_{k=0}^q \gamma_k \ln \Delta INV_{t-k} \\ & + \sum_{m=0}^q \varphi_m \ln \Delta INF_{t-m} + \sum_{n=0}^q \phi_n \ln \Delta CPS_{t-n} + \ln \varepsilon_t \end{aligned} \quad (6)$$

But if and only if we reject the null hypothesis and accept the alternative which indicates the presence of cointegration, we specify the error correction model (ECM) as stated in Equation 7:

$$\begin{aligned} \Delta \ln GDP_t = & \Phi ECT_{t-1} + \sum_{j=1}^p \beta_j \ln \Delta GDP_{t-j} + \sum_{i=0}^q \alpha_i \ln \Delta CAPF_{t-i} + \sum_{k=0}^q \gamma_k \ln \Delta INV_{t-k} \\ & + \sum_{m=0}^q \varphi_m \ln \Delta INF_{t-m} + \sum_{n=0}^q \phi_n \ln \Delta CPS_{t-n} + \ln \varepsilon_t \end{aligned} \quad (7)$$

3.2. Justification of the Model

The dynamism of autoregressive distributed lag (ARDL) model unlike other static model, made it must suitable for this study. The model is characterized by the use of endogenous and exogenous variables combined together, making it more suitable than VAR model and others that are designed strictly for endogenous variables. Therefore, since this study is interested on the behavior of our endogenous variables given the exogenous variables, it become logically accepted to adopt this model. It is also a better alternative in a situation were by there could be a structural break down of Engle and Granger or the two step procedure as a result of possible endogeneity. As stated by Pesaran and Shin (1998); Pesaran, Shin, and Smith (2001) ARDL model can be applied also in scenario where the variables under study are characterized by a variation in their order of integration thereby eliminated the possibility of spurious result that could occur when time series variables are not stationary. The lag length for p, q , in ARDL model unlike in the VAR, does not necessarily need to be alike, which implies that it must not possess equal lag length. Also, with error correction model (ECM) there will not be any problem of spurious regression because all the variables that enters the model are stationary and ECM estimates their relationship both in the short run and long run. These attributes of the ARDL and the nature of the objective of the study, formed the decision to adopt the model for this analysis.

4. RESULTS AND DISCUSSION OF FINDINGS

Table-1. Result of Augmented Dickey-Fuller unit root test of the variables.

Variables	Level Form			First Difference			Order of integration
	5% critical value	ADF test statistics	p-values	5% critical value	ADF test statistics	p-values	
CAPF	-3.067670	-3.957110	0.0393	-2.967767	-4.122274	0.0359	I(1)
GDP	-3.951125	-2.085071	0.2516	-2.851125	-3.048964	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)
MS	-2.976263	4.030714	1.0000	-	-	-	I(0)

Table 1 shows the result of the Augmented Dickey-Fuller unit root test for the variables. The result shows that inflation rate, capital to private sector and money supply are stationary at level with their ADF value greater than their critical value at 5%. Capital flight, gross domestic product and domestic investment got stationary after first difference and are regarded to be integrated of order one.

Table-2. Result of bound test (cointegration 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

As showed in the bound test result in Table 2, the F- statistic value lies above upper bound value of Pesaran test statistic. This implies that the null hypothesis which states that there is no long run relationship should be rejected and the alternative accepted. Thus, there is a longrun relationship between the dependent variables and the explanatory variables.

4.1. Result of Model Estimation

The Autoregressive Distributed Lag model was used to estimate the variables of this study. To validate the effectiveness of calculated parameters of the variables, the study employed exact (true) level of significance (p-value) approach in testing the research hypotheses. This implies that any estimated coefficient with corresponding p-value less than or equal to (\leq) 0.05 is considered statistically significantly different from zero. The table below is the result of the ARDL cointegration and long-run form.

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

Table 3 shows the regression results for the cointegrating and long run coefficient for the second objective of this analysis. The first column of the cointegrating form of the result presented above shows that an increase in log gross domestic product of the previous year by one percent will increase gross domestic product of the current year by 0.55%. The coefficient of log capital flight (CAPF) in the short run is -0.043321, -0.016749 in the first-year lag and -0.061154 in the long run with p-values of 0.0063, 0.0016 and 0.0009 respectively. This result shows a negative relationship between capital flight and gross domestic product in the short run and the long run as well. 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 Otene and Edeme (2012) that examined the impact of capital flight on gross domestic product in Nigeria which indicated a negative but statistically significant relationship between capital flight and Nigeria gross domestic product.

Domestic investment has a coefficient of 0.124631 in the short run, and 0.333503 in the long run. The p-values were 0.0419 in the long run, 0.0116 in the short run. In the long run and short run, the coefficients were negative and significant and this implies that a 1% increase in domestic investment will increase log of GDP by 0.12% the short run and 0.33% in the long run. The result for inflation rate indicated that at the short run, inflation rate has a coefficient of -0.060381, with a p-value of 0.4291 in the short run, and a coefficient of -0.000291 and a p-value of 0.8042 in the long run. The p-value for both short run and long run coefficient indicates that the results are not statistically significant at 5% critical value.

However, log capital to private sector has a coefficient of 0.134793 in the short run, 0.513519 in the long run with p-values of 0.0033 and 0.0010 respectively, this indicates that the result of the coefficient at 5% level is

statistically significant. Money supply has a coefficient of 0.153115 in the short run, 0.152684 in the first year lag and 0.327705 in the long run with p-values of 0.0216, 0.0528 and 0.0340, this indicate that the results are statistically significant in the both short run and long run.

Table-3. Result of ARDL cointegration (short-run) and long-run form.

Dependent Variable: GDP				
Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(GDP(-1))	0.550829	0.125310	4.395731	0.0003
DLOG(CAF)	-0.043321	0.013670	-2.904914	0.0063
DLOG(CAF(-1))	-0.016749	0.004593	-3.646725	0.0016
DLOG(INV)	0.124631	0.057319	2.174347	0.0419
DLOG(MS)	0.153115	0.061452	2.491618	0.0216
DLOG(MS(-1))	-0.152684	0.074175	-2.058426	0.0528
DLOG(CPS)	0.134793	0.040455	3.331972	0.0033
D(INF)	-0.060381	0.000473	-0.806667	0.4293
D(INF)	0.001527	0.000330	4.623868	0.0002
CointEq(-1)	-0.373704	0.076658	-4.874969	0.0001
Cointeq = LOG(GDP) - (0.0612*LOG(CAF) + 0.3335*LOG(INV) + 0.3277				
*LOG(MS) -0.5135*LOG(CPS) -0.0009*INF + 8.9970)				
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(CAF)	-0.061154	0.015620	-3.915153	0.0009
LOG(INV)	0.333503	0.120070	2.777582	0.0116
LOG(MS)	0.327705	0.144032	2.275228	0.0340
LOG(CPS)	0.513519	0.133844	3.836688	0.0010
INF	-0.000291	0.001159	-0.251234	0.8042
C	8.997023	0.078776	4.210862	0.0000

The coefficient of the co-integrating equation is negative with the value of -0.373704, this indicates that about 0.37% 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

The post estimation test that will be analyzed in this section includes the Breusch-Godfrey Serial Correlation LM test, white Heteroskedasticity test and other diagnostic tests to ensure the absence mis-specification errors.

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-4. Breusch-godfrey serial correlation lm test.

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.496608	Prob. F(2,13)	0.2600
Obs*R-squared	0.363283	Prob. Chi-Square(2)	0.6415

The result presented in Table 4 shows that the probability of the F-statistics is greater than 0.05(5%). Also, the observations times R-squared is less than the chi-square P-value. 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-5. Heteroscedasticity result.

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.693259	Prob. F(18,15)	0.7725
Obs*R-squared	15.44015	Prob. Chi-Square(18)	0.6316
Scaled explained SS	5.216152	Prob. Chi-Square(18)	0.9985

The result presented in Table 5 shows that the P-value of the Obs*R-square (0.6316) is higher than 0.05, this implies that the variance of the error term is constant. In that, the null hypothesis of homoscedasticity was accepted and we conclude that the error term is constant overtime.

4.3.3. Specification Error Test

In other to check specification error, the Ramsey regression equation specification error test (RESET) was used. The result indicates that the model is correctly specified.

Table-6. Ramsey RESET Test.

Ramsey RESET Test			
	Value	Df	Probability
t-statistic	0.376307	14	0.7123
F-statistic	0.141607	(1, 14)	0.7123

4.3.4. Diagnostic Test

In CUSUM test was carried out to ascertain the stability of the short run model. The result shows that the blue line lies significantly inside the dotted red lines which indicates that the model is stable. The result is presented in Figure 3 below.

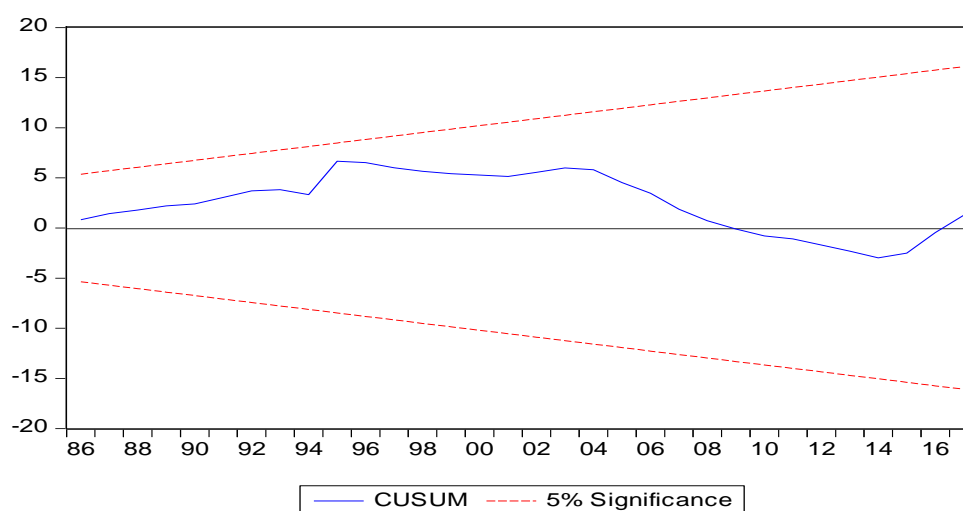


Figure-3. Cusum test.

5. CONCLUSION AND POLICY RECOMMENDATION

The focus of the study was to ascertain the impact of capital flight on Nigerian economic growth. Considering the behavioral pattern of the variables used for estimation, this study adopted Autoregressive Distributed Lagged model (ARDL). The finding of the analysis shows that capital flight has a negative but statistically significant

relationship with gross domestic product both in the short run and long run. Also, inflation rate has a negative relationship with gross domestic product and statistically significant in the short run alone. Again, money supply has a positive and statistically relationship with gross domestic product in the long run and in short run. Furthermore, capital to private sector has positive relationship with domestic investment and gross domestic product and both are statistically significant. Finally, the cointegrating equation has a negative sign for the estimation. This implies that some percentage of the movement into disequilibrium is corrected within the one year lag.

In conclusion, the study shows that capital flight has a negative impact on economic growth in Nigeria. With reference to this findings, the study recommend that 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 stimulates economic growth since increase in economic growth is mostly likely going to reduces capital flight.

Secondly, since money supply has a positive and statistically significant relationship with gross domestic product, monetary authorities should adopt expansionary monetary policy to facilitate more economic activities that will ensure economic growth.

Finally, as a matter of urgency, government at all level should strengthen anti-graft agencies to improve their effort in tackling laundering of public fund. This will reduce or possibly end the laundering of public funds abroad by public officials. This can be achieved by terminating all money laundering channels both locally and international. Also, more effort should be added to create a financial and economic friendly environment that is limited of economic uncertainty. This will improve foreign direct investment and possibly reverse capital flight.

Funding: This study received no specific financial support.

Competing Interests: The authors declare that they have no competing interests.

Acknowledgement: All authors contributed equally to the conception and design of the study.

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