British Journal of Economics, Management & Trade
10(3): 1-13, 2015, Article no.BJEMT.20122
ISSN: 2278-098X

SCIENCEDOMAIN *international*
www.sciencedomain.org

The Impact of Capital Flight on Economic Development: Nigeria in Focus

Paul C. Obidike[1], Kalu Ebi Uma[2*], Joseph Chukwudi Odionye[3] and Hycenth O. R. Ogwuru[4]

[1]Department of Accountancy, Management and Entrepreneurial Studies, Federal University Ndufu Alike Ikwo, P.M.B 1010, Abakaliki, Ebonyi State, Nigeria.
[2]Department of Economics and Development Studies, Federal University, Ndufu Alike-Ikwo, P.M.B 1010, Abakaliki, Ebonyi State, Nigeria.
[3]Department of Economics, Rhema University, Aba, Abia State, Nigeria.
[4]Abia State University, Uturu, P.M.B 2000, Uturu, Nigeria.

Authors' contributions

This work was carried out in collaboration between all authors. Authors PCO, KEU, JCO and HORO designed the introduction, review of literature, method of data analysis, interpretation, recommendations and conclusion. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/BJEMT/2015/20122
Editor(s):
(1) Chiang-Ming Chen, Department of Economics, National Chi Nan University, Taiwan.
Reviewers:
(1) Anonymous, University of Fort Hare, South Africa.
(2) Anonymous, University of Macedonia, Greece.
Complete Peer review History: http://sciencedomain.org/review-history/11649

Original Research Article

Received 13th July 2015
Accepted 5th September 2015
Published 30th September 2015

ABSTRACT

The study investigated the impact of capital flight on the economic development of Nigeria. Following the behavioural pattern of the variables on the basis of time series property test involving Augmented Dickey-Fuller (ADF), we adopted Autoregressive Distributed Lagged model (ARDL) due to Pesaran and Shin [44] in the study. The result of the Auto Regressive Distributed Lagged (ARDL) model showed that capital flight has negative and significant impact on economic development. The CUSUM and CUSUMSQ tests showed evidence of long run stability of the parameters of the model. We, therefore, made the following recommendations, among others: Government should take concerted steps to improve security of life and property in the country because security lapse is a threat to investment as well as business; the public resource managers should sincerely partner with anti-graft agencies to ensure that all the channels through which

**Corresponding author: E-mail: kaluskyebng@yahoo.com;*

public office holders launder money abroad are stopped; besides, the international anti-corruption law should be implemented to reduce the quantum of launder money and efficient public finance management discipline should be adhered strictly.

Keywords: Capital flight; economic development; impact; autoregressive distributed lagged model.

1. INTRODUCTION

The extent of capital flight the world over necessitates efforts to checkmate and regulate it, especially in the developing countries where it impacts adversely on the scarce capital, which encourages deficiency of developmental resources. This anomaly has persevered since there is no strong opposition or regulations. Actually, there are benefits and losses associated with capital flight but the losses far outweigh the gains, especially in the developing economies where it is so rampant. The individuals transferring and the receiving countries benefit while the citizens in the sending economies' living standard are to an extent retarded from huge capital fight. This can account for persistent low living standard and lack of industrialisation.

The high value of world-wide estimate of capital flight of $539 billion to $829 billion every year is worrisome and debilitates development intentions of the developing countries. The capital flight in countries represents a significant proportion of their gross domestic product (GDP). For instance, South Africa lost 9.2% of her GDP (US $ 13 billion) in 2000, China 10.2% of GDP (US $ 109 billion) in 1999; Chile 6.1% of GDP (US 4.7%) in 1998 and Indonesia 6.7% of GDP (US $14 billion) in 1997. Nigeria and other sub-Saharan African countries are estimated to have lost over 100% of their GDP ($230 billion) since 1970. In addition, between 1990 and 1995, Russia is estimated to have lost about $400 billion [1-4].

Nigeria has been besieged by myriad of problems emanating from the attitude of leaders, ideologies pursued, policies designed and loopholes created which give rooms for actions and activities that retard progress. The situation of diversion of public fund and the movement of human capital out of Nigeria has been in existence over three decades. The military leaders, the politicians and the bureaucrats who are in some cases technocrats have made things in such a way as to favor themselves and their allied organisations, thereby creating easy path of moving developmental capital outside the country. Between 1972 and 1978, Nigeria lost $7,573 million as a result of capital flight (IMF, 1996). Capital flight denies a developing country the essentials of development. When huge amount of dollars, pounds or yen are illegally transferred outside Nigeria by a government official or private individual who is in a position of authority, the role such funds suppose d play in the country is denied which affect aggregate economic activity.

Banks are seen as great accomplice in money laundering and illegal capital transfer in Nigeria. Just as [5] notes that bank may be part and parcel of illegal fund transfer of huge sums of cash using individual staff. He recalled a recent incident where $200,000 out of $1 million allegedly being illegal fund was transferred from Abuja to Lagos got missing. The individual bank official was mandated not to reveal the total cash at the Airport. The colossal lose of cash in various sectors of Nigerian economy is alarming. For instance, [6] states that Nigeria loses N1.5 trillion yearly on capital flight in the Maritime sector. Sectorial development and the linkages effects are thwarted by yearly lose of fund which impacts adversely on the lives of the populace.

[7] reports that annually, the sum of US$1.6 trillion to 1.44 trillion disappear without trace from developing countries and end up in tax haven or rich countries. A good proportion of this capital flight is transferred by multinational companies aiming at evading tax where they operate. This illicit capital flight is ten times the annual global aid flow and twice the amount of debt developing countries repay each year. This is highly devastating, considering the huge revenue it does deny Africans. One annoying thing is that citizens of the African countries aid in this transfer at the expense of their home economy. In similar vein, the Central Bank of Nigeria Governor, Sanusi points out that from 2008 to 2009, Nigeria has lost a colossal sum of $20 billion due to capital flight. Whereas, the total net flow of capital into Nigeria is very small when compared to the amount of capital taken away ([8]; CBN Bulletin, 2008).

One disgusting issue about illicit capital flight in Nigeria is the existence of various regulatory bodies, yet money laundering and capital flight is rising every year. Just as [9] points that there are laws put in place and directed to prevent and regulate money laundering and other economic crimes, which include: the Banks and Other Financial Institutions Act 1991; the Money Laundering (Prohibited) Act 2004; the Failed Banks (Recovery of Debts) and Financial Malpractices in Banks Act 1994; the Advanced Fee Fraud and Other Fraud Related Offences Act 1995 and the Money Laundering Act 1995. The regulatory body empowered to enforce the anti-money laundering and all economic crimes is the Economic and Financial Crimes Commission (EFCC) that was established in 2004. It is really disheartening that these bodies have been in place, yet every year we have cases of capital flight.

Provisions of all that a country needs for transformation of its economy hinge on capital which is highly scarce relative to its demand. The problem of growthlessness in Nigeria is associated with poor leadership quality and corruption that give rise to mismanagement, underutilization, misallocation of resource and illegal diversion of capital, and thereby creating deficiency of capital for provision of infrastructure, industrialisation and education reform. When investible capital is taken away from a country, the multiplier effect it ought to create and positive increase in aggregate economic activity, measured by real gross domestic product is entirely withdrawn.

One of the reasons for deficit financing in an economy is to accelerate economic development. In Nigeria, it is difficult to believe that the entire borrowed external funds for developmental purposes were brought into the country. To enhance productivity, borrowed funds are usually invested in productive venture capable of repayment. The reverse is the case in Nigeria over the years. This is the reason behind the articulated views of [10,11] that the less developed countries' borrowed funds are considerably diverted into private assets in foreign countries, thereby, a large chunk of what is supposed be public fund is made to become private fund, however, leaving the entire debt burden to the country, and mischievously depict a picture of external debt that do consume public expenditure. This accounts for the accumulation of external debt in some developing countries. The excessive desire by many in position of authority to acquire foreign asserts have promoted capital flight in many developing countries. The rise in external debt over the years is associated with capital flight. [12] notes that a rising debt burden may constrain the ability of government to undertake more productive investment programmes in infrastructure, education and public health.

[13] is of the view that changing the trend in capital flight has the potential of assisting domestic resources retention in developing countries which will definitely help bringing in a new way in the development of countries which invariably will reduce corruption, crime and terrorism, among others.

It is also pertinent to mention that the carted away capital in any way denies the country the tax revenue that is supposed to be gained if such fund is in circulation. So, the loss is a thing to really worry about as every effort is necessary to see how the developing economy can re-position to tackle the problem of development. The capital flight in Nigeria just for half a decade is enough to revive the epileptic power supply and poor education sector in Nigeria. Unwanted economic abnormalities, developmental disequilibrium and financial constraints can be rectified with considerable control of capital flight. This aspect of economic sabotage is easier for public office holders. In other words, it is mostly the prerogative of few Nigerians making life difficulties for numerous member of the society. This is why [14] points that capital flight is a response to unhealthy domestic policies and political instability of a country.

The Table 1 shows the net flows in Nigeria from 1970 to 2008 as represented on the Table 1.

This problem as seen is more pronounced in the mid 1960s, with low values (1965, 4.2, 1966, 2.8) of net capital flow. The worsening situation was recorded in 1974 and 2001 with -39.3 and -53.4 respectively. Although this situation appreciated in 2002, it started falling back in 2008.

In view of the above situation, the main objective of this study is to examine empirically the effect of capital flight on the real growth of the Nigerian economy. On this note, the paper will be presented in this order: section two is the literature and empirical review, section three will focus on the data sources, nature of data and methodology while section four presents results of data analysis, discussion of results, recommendations and conclusion.

Table 1. Net flow of capital from 1970 to 2008

Year	Net flows in million	Year	Net flows in Million	Year	Net flows in Million
1970	9.8	1983	90	1996	708
1971	28	1984	53	1997	462
1972	16	1985	59	1998	4385
1973	37	1986	94	1999	378
1974	-39	1987	153	2000	144
1975	30	1988	287	2001	-53
1976	64	1989	525	2002	777
1977	35	1990	517	2003	1266
1978	17	1991	669	2004	2504
1979	79	1992	227	2005	3256
1980	51	1993	5011	2006	5209
1981	42	1994	430	2007	6511
1982	66	1995	10858	2008	4817

Source: CBN Statistical Bulletin, (2008)

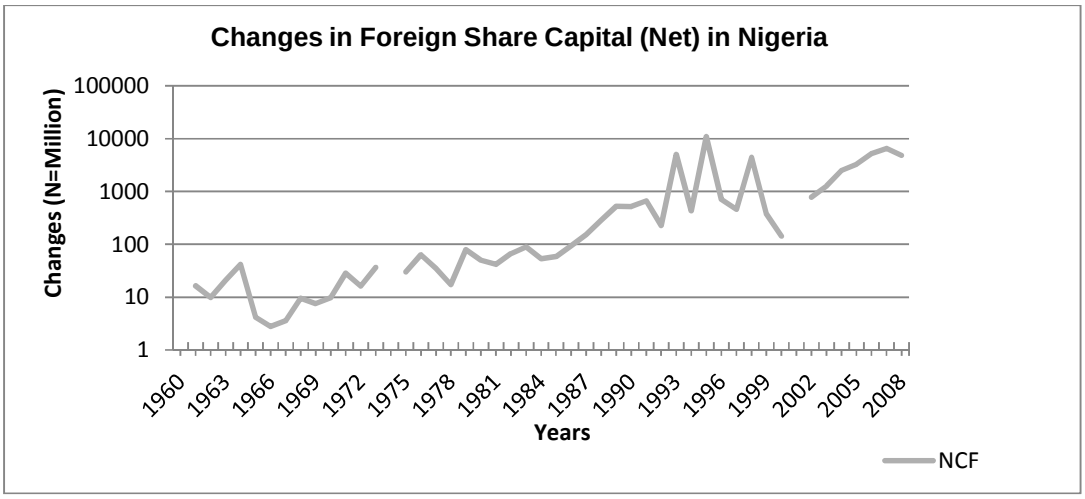

Fig. 1. Changes in net foreign share capital in Nigeria
Source: Fig. 1 plotted by author with data from CBN (2008)

2. LITERATURE AND EMPIRICAL REVIEW

In literature, there have been controversies on the term capital flight due to the various notions held about the term. While some see it as negative, others are of the view that it is a normal capital movement. The disagreement is that when capital moves from an advanced country to a developing country, it is referred to as foreign direct investment, but when the reverse is the case; it is termed capital flight [15]. In this regard, different definitions have been made about capital flight. For instance [2] defines capital flight as the transfer of assets in foreign country with the motive of reducing loss of principal, loss of return, or loss of control of one's financial wealth owing to government-approved activities. Capital flight is considered to consist of international capital flow that is aimed at avoiding government controls or the results of government action. He further points that people have the notion that capital flight is often because of the desire to avoid taxation, avoid confiscation, in search of better treatment, or of higher returns somewhere else. [16] defined capital flight as involving given report and not reported acquisition of foreign assets by non-bank private sector and members of the public sector. In [10] conception capital flight is short-term capital outflows made up of hot money which responds to political or financial crises, unfavourable taxes, an expected adverse capital control or domestic currency devaluation and possible rising hyperinflation.

To [17] capital flight is capital that 'runaway' which includes international assets redeployed or portfolio adjustment owing to significant realised worsening in risk return profiles that relates to assets existing in a particular economy. This 'run away' capital presupposes non -accounted capital movement from the society which might be handled either by the private or public officers. [18] perceived capital flight to include private outflows of any kind motivated by the desire of a member or members of a country to lessen the actual and/or potential level of government regulation (including risk of expropriation) over such capital as well as to acquire assets. This view captured most of the considered issues in the other definitions of capital flight just like [19] point that capital flight is that capital that is running away from the domestic financial market in order to guard against losses which is really in disagreement with the aspirations, interests, desires and the intentions of the domestic economy. The main point in all the definition shows the division of capital flight into legal and illegal, and positive and negative movement of capital.

Most of the definitions did not say anything about human capital flight aspect that has contributed to the manpower deficiency needed for development and also to the problem of growthlessness in the developing countries. Dr. Lalla Ben Barka, the Deputy Executive-Secretary of the Economic Commission for Africa notes that the emigration of African professionals to the West is one of the greatest obstacles to Africa's development and that African governments have a great responsibility to ensure that brains remain in the continent; otherwise, in 25 years' time, Africa will be empty of brains [20,21]. Specifically, the [22] points that the number of Nigerian migrants living abroad has increased from 1.9 million in 2004 to 3.4 million in 2012. Although, remittances are made by Nigerians in Diaspora but the high level of contributions in the domestic economy by the migrated high level manpower in monetary term is a colossal loss to the society.

[23-26] and others point that the controversy on the negative effect of migration is that the rate of outflow of emigrants is calculated to be colossal loses of critical human capital, which a country has invested resources through education and specialised training and it is not compensated by the recipient economy. On this basis, brain drain is viewed as international transfer of resources in the form of human capital which is not accounted for in the balance of payments statistics.

The cost can be seen on the estimate of UNCTAD that a highly trained African migrant between 25-35 years, the age group of Africans who usually travel abroad represents a monetary value of US $184,000 at 1997 prices [27,28]. The equivalent of this contribution to receiving countries cannot be remitted back home and aggregate costs sacrificed and subsidized in training the emigrated members cannot be recovered. It also presupposes that expenditure on education in developing countries is to an extent more beneficial to the Western countries that enjoy the best and brightest brain of poor countries and continue to be richer at the expense of the poor nations.

In consideration of the aforementioned, it is the intention of this study to operationally see capital flight as both normal and abnormal movement of capital (including human aspect) on the basis of the perceived positive gains and interests of the economic agent and the adverse impact of such on the society.

The problem of capital for development is among the considered factors in developing countries market liberalization and globalization. This is supported by the classical economists' theory of trade. The external liberalization of national economies involves elimination of national obstacles to economic activities, giving room to greater openness and integration of countries in the world markets. In many countries of the world, national barriers are being removed in the area of finance and financial markets, trade and direct foreign investment [29]. This intention is aimed at accelerating capital inflow for development which in different ways has empowered operators to illegally move scarce capital away to the detriment of the domestic economy. Hence, [30] points that integrated financial markets and high capital mobility made possible by the increasing globalization of world economies predisposes economies, especially developing ones to the volatility of capital flows.

[31] point that development involves a lot of activities on the part of the leaders of a country, which ensures positive changes in all the various sectors of the economy that improve the standard of living. [32] notes that Nigeria as a developing country is interested in enjoying the merit of globalisation in the form of increased foreign trade, foreign direct investment, foreign

aid and international borrowing. But many Nigerians have now employed this positive developmental intention to personal gain through diversion of needed capital for development for increased personal acquisition of foreign assets which the benefit is exclusive for the diverter. Consequently, there is skewed out flows of capital from the developing country not matched by the inflows.

[33] note that capital flight involves taking away domestic private savings to foreign country which it continuous transfer result into serious fall in aggregate domestic savings. This situation does reduce domestic banks saving and thereby retard credit facilitating ability. The effect is highly disadvantageous for the country in particular and Africa as a whole, given that it drains the foreign reserves, increase inflation, decreases tax collection or reduces aggregate tax revenue, reduces investment and undermines free trade.

However, it was reported by the [34] that the International Monetary Fund (IMF) has the responsibility for international financial system regulation, hence has encouraged liberalization and deregulation of financial markets in most developing countries. Consequently, the developing economies were made more vulnerable to external shocks and capital flight. Illicit capital flows are made up of three major types, which are flows emanating from criminal activities as the drug trade, capital flight due to corruption, and commercial illicit flows resulting to manipulation and abuse of transfer pricing and other tax evasion and avoidance actions of those in position of authority in both private and public sectors. Really, commercial flows account for about two-thirds of the illicit capital outflows from developing economies and very high when compared with the benefits from increased aid or debt relief. Behold, it can be pointed that there is lack of effective policy to tackle this capital drain.

There has been much attention on the issue of capital flight, the world over. The development of developing countries has a strong reliance on capital inflow from developed foreign countries which can be termed capital flight but perceived as normal. This presupposes that positive capital flight is when capital abundant individuals, corporate bodies or the government of a foreign economy make investment in capital deficient economy. On the contrary, the negative capital flight stem from the unapproved huge movement of capital from the developing countries retard development.

2.1 Empirical Review

Actually, different studies about capital flight in different countries have come up with various findings. For instance, [33] in their examination of the impact of capital flight on exchange rate and economic growth in Nigeria employed ordinary least square (OLS) and found that capital flight has a positive and significantly impact on the exchange rate in Nigeria. And also capital flight has a positive effect on economic growth in Nigeria. One may really wonder how capital flight has a positive effect on economic growth given the fact that the opportunity cost of foreign reserve use for personal foreign investment is the inability of the country to acquire equipment, plants and tools for developmental purposes.

[35] in his study of capital flight and economic performance of the Philippines, points that capital flight aggravates resources constraints and plays a role to weaken long-term economic growth and also that sustained capital flight for over three decades implies that the Philippines economy would be repositioned to lose the opportunity to achieve economic takeoff. This is really devastating and necessitates positive action to address the issue of capital flight.

In his study of capital flight and the Nigerian economy [36] empirically analyse the relative effect of capital outflows on the growth of gross domestic product (GDP). The study reveals amongst others that capital flight does significantly impact adversely on the growth rate of GDP; capital control is insignificant in stimulating GDP growth rate and exchange rate controls are also weak.

[1] examine the effect of the determinants of capital flight on the Nigerian economic growth between 1985 and 2010. The growth indicator used was Gross domestic Product (GDP) while the variable used as determinants of capital flight were foreign direct investment, inflation rate, exchange rate and fiscal deficit. Employing ordinary least square in the data analysis, the study found that in the short-run capital flight is mostly caused by inflation while the long-run result showed that both inflation and exchange rates significantly determine capital flight which in turn adversely influences economic growth.

[37] in their study of capital flight and its impact on economic growth: a case of Indonesia adopted regression model to investigate the influence of Gross Domestic product growth,

foreign direct investment, exchange rate, and inflation on the existence of capital flight. The study reveals a high level positive growth rate and only foreign direct investment have effect on capital flight.

[18] studied the causes of capital flight from Zimbabwe for the period 1980-2005. The outcome shows external debt, foreign direct investment inflows, and foreign reserves as the major causes of capital flight and also found that economic growth is negatively correlated with capital flight.

[38] examine the effect of capital flight on the Nigerian economy of using two stages least square method for the period 1970-2008. The result shows that capital flight negatively and significantly impact on economic growth and also that non-performance of domestic resources can trigger capital flight.

[39] investigated the association of money laundering through the private schools and churches using multiple regression analysis. The study's proposition is that money laundering in Nigeria is enhanced by uprising of churches and private schools through which finances easily leave due to defective banking regulations, lack of government control of the funds of private schools and faith group; insufficient enforceability of anti-money laundering laws and corruption. The study revealed that there are serious loopholes in Nigeria's money laundering laws which enables criminal assets to be preserved and protected under the auspices of schools and church's assets.

[40] embarks on the analysis of the trends of capital flight flows in Nigeria for the periods 1970-2004 using the residual method of estimation, including adjustments to account for the influence trade faking and exchange rate movements. The study found, among others, that trade faking is an important means through which capital flight is effected in Nigeria, with evidence that confirmed the existence of financial revolving poor relationship between capital flight and external indebtedness in Nigeria.

[41] investigated the effect of capital flight on the Nigerian economy employing Normal Inverse Gaussian (NIG) distribution from 1973-1989. The study found, among others that the period of oil wealth (economic boom periods) in Nigeria is associated with capital repatriation or capital inflow. The buoyant economic situation encourages capital flow and the years with poor economic environment and poor policy is associated with capital outflow.

3. DEFINITION OF MODEL VARIABLES AND METHODOLOGY

Annual series data was used for this analysis and was sourced from [42] and [43] The study covered the period 1980 to 2011. The choice of this period is informed by the financial reforms that took place in the country during this period as well as political stability that has taken place since 1999 till date.

Following the adaptive expectation hypothesis which posits that investors form their expectations based on past market information, the Autoregressive Distributed Lag (ARDL) model due [44] is shall be employed to capture the effect of the previous state of the economy. The rationale for this model is predicated on the fact that improvement in the economy is also enhanced by the policies and programmes in the previous state of the economy. The functional form is stated as:

$$GDP = f(GDP(-1), CPF, INF, EXR, INT,) \quad (1)$$

where GDP = Gross domestic product, GDP(-1) = previous state of the economy, CPF = Capital flight measured as the sum of net increase in external debt, net inflow of FDI, current account balance and net foreign reserves, INF = inflation rate, INT = interest rate, EXR = nominal exchange rate of the Nigerian naira vis-a-vis the US dollar. INF, INT and EXR are used as control variables to avoid the problem of omitted variable bias in the model. In order to estimate equation 1, we specify it in econometric form as:

$$GDP = \beta_0 + \beta_1 GDP(-1) + \beta_2 CPF + \beta_3 INF + \beta_4 EXR + \beta_5 INT + \mu... \quad (2)$$

Where β_0 = intercept, β_i (where i = 1, 2, ..., 5) = parameters to be estimated, μ = iid stochastic error term.

Following [45] and [46] that suggested that a log-linear form is more likely to find evidence of a deterrent effect than a linear form, we therefore log-linearized equation 2 as:

$$\ln GDP = \beta_0 + \beta_1 \ln GDP(-1) + \beta_2 \ln CPF + \beta_3 \ln INF + \beta_4 \ln EXR + \beta_5 \ln INT + \mu.. \quad (3)$$

ln = natural log of their respective variables.

To fully explore the data generating process, we first examined the time series properties of model variables using the Augmented Dickey- Fuller (ADF) and Phillip-Perron (PP) unit root test.

The ADF test regression equations with constant are:

$$\Delta Y_T = \alpha_0 + \alpha_1 Y_{T-1} + \sum_{j=1}^{k} a_j \ \Delta Y_{T-1} + \varepsilon_T \ldots (4)$$

where Δ is the first difference operator ε_T is random error term that is iid k = no of lagged differences Y = the variable. The unit root test is then carried out under the null hypothesis α = 0 against the alternative hypothesis of α < 0. Once a value for the test statistics

$$ADF_\tau = \frac{\hat{\alpha}}{SE(\alpha)} \quad (5)$$

is computed we shall compare it with the relevant critical value for the Dickey-Fuller Test. If the test statistic is greater (in absolute value) than the critical value at 5% or 1% level of significance, then the null hypothesis of α = 0 is rejected and no unit root is present. If the variables are non-stationary at level form and integrated of the same order, this implies evidence of co-integration in the model. The co-integration equation is stated in equation 6 as:

3.1 Co Integrated Equation

$$\left[\eta_m \log GDP_t = \alpha_1 + \sum_{i=2}^{p} \alpha_i \eta_m Z_t - \left[\eta_m \log GDP_t - \sum_{i=1}^{n} \beta X_{t-i} + v_{2t}\right]\right] \quad (6)$$

Where

$\left[\eta_m \log GDP_t - \sum_{i=1} \beta X_{t-i}\right]$ is the linear combination of the non co integrated vectors,

X is a vector of the non co integration variables. The individual influence of the co integrated variables can only be separated with an error correction mechanism through an error correction model as shown below. **The Error Correction Model** *Equation*

$$\left[\eta_m \log GDP_t = \alpha_1 + \sum_{i=2}^{p} \alpha_i \eta_m Z_t - \left(\lambda ECM_{t-i} + v_{4t}\right)\right] \quad (7)$$

Where $-\lambda ecm$ is the error correction mechanism, $-\lambda$ is the magnitude of error corrected each period specified in its a priori form so as to restore $\eta_m logGDP_t$ to equilibrium

4. RESULTS AND DISCUSSION

4.1 Unit Root Test Result

Arising from the above discussion, the Augmented Dickey Fuller (ADF) and Phillip Perron (PP) unit roots tests were employed to test for the time series properties of model variables. The null hypothesis is that the variable under investigation has a unit root against the alternative that it does not. The choice of lag length was based on Akaike and Schwartz-Bayesian information criteria. The decision rule is to reject the null hypothesis if the ADF and PP statistic value exceeds the critical value at a chosen level of significance (in absolute term). These results are presented in Tables 2 and 3.

As shown in Tables 2 and 3; all the variables examined were stationary (significant) at first differenced; that is, they were integrated of order one (I ~ (1)). In effects, the order of integration as shown by the unit root clearly left us with the suspicion of evidence of co-integration from the variables. And for this reason, we conduct co-integration test using Engle-Granger procedure. The result is shown in Table 2.

4.2 Results from co-integration Test

Given the unit root properties of the variables, we proceed to implement the Engle-Granger co-integration procedure. All the variables have the same order (I ~ (1)) of integration; we estimate their linear combination at their level form with the intercept term and obtain their residual which is then subjected to co integration test as shown in Table 4.

From the table, the residual t-adf of -4.395983 at lag length 1 is greater than 5% critical value of -3.6576 in absolute terms. This means that the residual is stationary at level form and hence there is long-run linear relationship or co-integration among the variables. Consequently, we estimated long run relationship among the variables.

To check the robustness in the long run relationship among the variables, we turn to ARDL model. The result of the ARDL is shown in Table 5.

The estimated models can be shown as:

$$GDP = 13.422 - 0.0759\ CPF + 0.029\ INF - 0.867\ INT + 1.071\ EXR + 7.97E\text{-}08\ GDP(-1) \quad (8)$$

From the results in Table 5 and equation 8 above, capital flight has a negative but significant impact on economic development in Nigeria. This is consistent with theoretical postulates implying that increase in capital flight will have adverse effect on the economic development of a country. This result corroborates the findings of [18] for Zimbabwe, [35] for Philippines, [1,38,36] all for Nigeria.

Interestingly, previous state of the economy has both positive and significant impact on its present state implying that previous state of the economy also enhances the economic situation of the country in current period.

Inflation has positive but insignificant impact on economic development in Nigeria given the probability level of t- statistic (ie 0.86 > 0.05). The implication is that the inflation is not the major problem in the Nigerian economy.

As expected, exchange rate has positive and significant impact on the economy development in Nigeria. This is in line with "a priori" expectation validating the Mundell-Flemming rule which says that depreciation in exchange rate increases export, and hence total output of a country. This result corroborates the findings of [38].

Interest rate has negative and insignificant impact on economic development implying that a rise in interest will worsen the economic situation of Nigeria since a rise in interest rate will deter investors from taking loan from the financial institutions and hence a decrease in total output.

The results show that the error correction term (ECM) for the estimated equation is statistically significant and negative. Thus, it will rightly act to correct any deviations from long-run equilibrium. Specifically, if actual equilibrium value is too high, the ECM will reduce it, while if it is too low, the ECM will raise it. The coefficient of -0.043 denotes that 4.3% of any past deviation will be corrected in the current period. Thus, it will take about twenty three years and four months for any disequilibrium in the economy resulted from capital flight to be corrected.

Table 2. ADF unit root test result

Variable	DCPF	DGDP	DINF	DINT	DEXR
I ~ (d)	1	1	1	1	1
Lag length	1	0	1	1	1
Level form t – adf	-0.262988	-0.688931	-2.344973	-2.401156	-0.332790
Ist diff. t – adf	-5.143786**	-3.535593*	-4.936971**	-6.232390**	-3.815136**
Critical @ 1% & 5% values	-3.6661 -2.9627	-3.6959 -2.9750	-3.6661 -2.9627	-3.6661 -2.9627	-3.6661 -2.9627

*NB ** indicates significance at both 5% and 1% critical value*
** indicates significance at 5%; D= number of differencing*

Table 3. PP unit root test result

Variable	DCPF	DGDP	DINF	DINT	DEXR
I ~ (d)	1	1	1	1	1
Lag length	1	1	1	1	1
Level form t – adf	-1.11	-1.77	-1.53	-3.49	-1.99
Ist diff. t – adf	-10.25**	-14.15**	-13.54**	-16.69**	-14.15**
Critical @ 1% & 5% values	-3.52 -2.89	-3.52 -2.89	-3.52 -2.89	-3.52 -2.89	-3.52 -2.89

*NB ** indicates significance at both 5% and 1% critical value;*
** indicates significance at 5%; D= number of differencing*

Table 4. Co-integration tests

Model	Variable	t-adf	Lag	5%Critical val	1% Critical val
1	Residual	-4.395983	1	-2.9591	-3.6576

The coefficient of determination and its adjusted are 0.957 and 0.946 respectively suggesting that there exists goodness of fit in the model. This means that about 95.7% of the deviations in economic development is accounted for by variation in the exogenous variables. The overall regression is significant at 1% level of significance implying that the joint effects of all the included variables are significant.

The Durbin Watson statistic shows evidence of no first order serial autocorrelation in the model given that it is approximately 2.

4.3 Short and Long Run Diagnostic Test

Short and long run diagnostic test were also carried out to know the validity of these results. The summary of the result is presented in Table 4.

Heteroskedasticity Test = 1.585981 (0.098702)
Jarque- Bera = 0.368816 (0.831597)

Heteroskedasticity test result showed no evldence of heterokedasticity in the model implying that the conditional variances of the error terms are equal. The Jarque – Bera statistic showed that the error term is normally distributed since the Jarque-bera statistic is not significant at 5% level.

Finally, we examined the stability of the long run parameter of the model. Thus we relied on Cumulative Sum (CUSUM) Figure 2 and Cumulative Sum of Squares (CUSUMSQ) test figure 3 proposed by [47]. The same has been used by [44] to test the stability of the long run. The results are presented in Figs. 2 and 3.

Table 5. ARDL test result

Variables	Dependent variable: Log (GDP)			
	Coefficient	Std. Error	t- stat	Prob.
Constant	13.42222***	1.737100	7.726798	0.0000
Log (CPF)	-0.075878**	0.025118	-3.020862	0.0342
Log (INF)	0.029978	0.167693	0.178769	0.8598
Log (INT)	-0.867091	0.685304	-1.265265	0.2190
Log (EXR)	1.070704***	0.141138	7.586219	0.0000
GDP (-1)	7.97E-08***	2.03E-08	3.927344	0.0007
ECM (-1)	-0.043067**	0.017524	-2.457601	0.0430
F- Stat.	81.96829***			0.0000
R^2 = 0.957183	Durbin Watson =			
Adj. R^2 =0.945505	1.709178			

****[**] (*) denotes significant of variable at 1% [5%] (10%) significance level respectively*

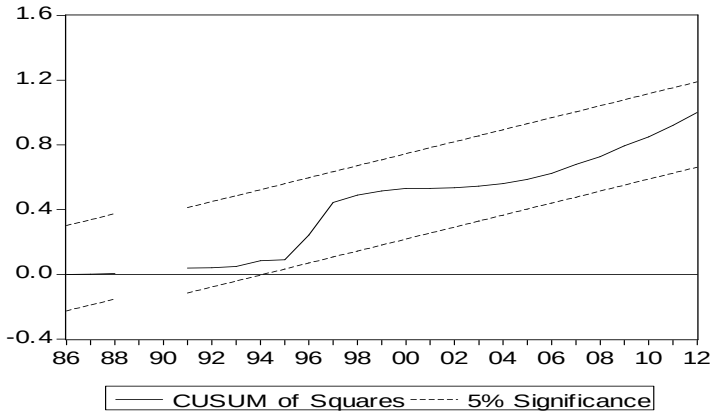

Fig. 2. Graphical show of result

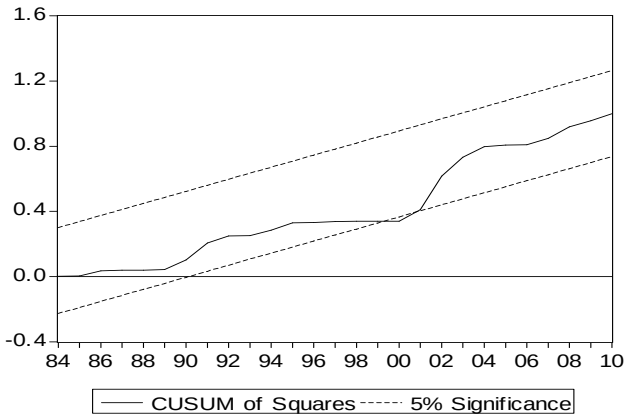

Fig. 3. Graphical show of result
As observed in the figs. 2 and 3, the plot of CUSUM and CUSUMSQ statistics stay within the critical 5% bound for the period

5. CONCLUSION AND POLICY RECOMMENDATIONS

The study has investigated the impact of capital flight on the economic development in Nigeria. Following the behavioural pattern of the variables, we adopted Autoregressive Distributed Lagged model (ARDL) in the study.

The result of the Auto Regressive Distributed Lagged (ARDL) model showed that capital flight has negative but significant impact on economic development in Nigeria. In the light of the finding of this study, the following recommendations are considered necessary for short, medium and long term implementations.

Since capital flight has negative but significant impact on economic development in Nigeria, policies that will discourage capital flight should be pursued. To achieve this, policy should focus on:

i) Government should take concerted step to improve security of life and property in the country because security lapse is a threat to investment as well as business. Where business and investment are threatened as a result of youth restiveness in the country, investors will be forced to move their assets abroad. The Amnesty Programme extended to militants in the Niger Delta region should also be sustained and strengthened in order to boost or stabilize economic activities which could lead to sustained economic growth and development in the country.

ii) The government should partner with anti-graft agencies to ensure that all the channels through which public office holders launder money abroad are stopped. In addition, international anti-corruption law should be implemented to reduce the quantum of launder money. Efficient public finance management discipline is imperative. A stable financial and macroeconomic environment that would reduce domestic economic uncertainty, reverse capital flight and attract foreign direct investment should also be created.

iii) Proper management of foreign direct investment inflows is needed to avoid possible leakages of the same money as capital flight. Besides, borrowed funds need be adequately documented and publicly intimated to the citizens and possibly be used for productive investment capable of interest service and loan repayment.

DISCLAIMER

This manuscript was presented in the conference IISE available link is http://www.iises.net/proceedings/3rd-economics-finance-conference-rome/table-of-content?cid=11&iid=37&rid=3051 Rome in April 2015

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Kolapo FT, Oke MO. Nigerian economic growth and capital flight determinants. Asian Journal of Business and Management Science. 2010;1(11):76-84.
2. Epstein G, et al. Capital flight and capital controls in developing countries. Northampton, MA; 2005.
3. Baker R. Capitalism's Achilles Heel, New Jersey: John Wiley & Sons; 2005.
4. Tikhomirov V. Capital flight from post Soviet Russia. Europe-Asia Studies. 1997; 49(4):591-615.
5. Kanu A. Access Bank Plc In Illegal Fund Transfer; 2012.
   Available:nigeriavillagesquare.com/.../access-bank-plc-in-illegal-fund-transfer.html (Retrieved on July 22, 2013)
6. The Guardian Nigeria. 'Nigeria Loses N1.5tr yearly to Capital Flight in Maritime sector; 2013.
   Available:http://envisionnigeria.com/index.php?option=com_content&view=article&id=%201433&Itemid=146 Retrieved on July 22, 2013
7. Africa Europe Faith and Justice Network (AEFJN). Capital flight and its impact on Africa; 2013.
   Available:http://www.aefjn.org/index.php/370/ articles/capital-flight-and-its-impact-on-africa.html (Retrieved on July 22, 2013)
8. The Vanguard Newspaper. How Far Can Sanusi go to check effects of clampdown on Banks; 2009.
9. Kingston KG. Churches and private educational institutions as facilitator of money laundering in Nigeria. African Journal of Education and Technology. 2011;1(1):30-38.
10. Cuddington JT. Capital flight estimates, issues and explanations. Princeton Studies in International Finance. 1986;58.
11. Pastor Jr M. Capital flight from Latin America debt crisis. World Development. 1990;18:1-18.
12. Sanusi JO. Management of Nigeria's domestic Debt' keynote address by the governor of the central bank of Nigeria, at the 7th Monetary Policy Forum organised by the Central Bank of Nigeria at the CBN Conference Hall, Abuja; 2003.
13. Kapoor S. Illicit Financial Flow and Capital Flight. A Redefined Brief Paper for the First Task Meeting on Illicit Financial Flows Held in Oslo 12^{th} – 13^{th}, 2007 December.
14. Cerven M. The measurement of capital flight and its impact on long-term economic growth: Empirical evidence from cross-section of countries. A Master Thesis; 2006.
   Available:http://www.iam.fmph.uniba.sk/studium/efm/ diplomovky/2006/cervena / (Retrieved on July 18, 2013)
15. Onwioduokit EA. Capital flight from Nigeria: An empirical re-examination. West African Monetary Institute Accra, Ghana; 2002.
16. Morgan Guaranty Trust Company. LDCs capital flight. World Financial Market; 1986.
17. Walter I. The Mechanisms of capital flight, in Lessard DR, Williamson J, eds) Capital Flight and Third World Debt, Washington, DC: Institute for International; 1987.
18. Makochekanwa A. An empirical investigation of capital flight from Zimbabwe. University of Pretoria, Department of Economics Working Paper Series. 2007;11:1-39
19. Harrigan J, Mavrotas G, Yusop Z. On the determinants of capital flight: A new approach. Journal of the Asian Pacific Economy. 2007;7(2):203 – 241.
20. Silvia CB. Brain Drain in Africa - Migration in the health sector. StudyMode.com; 2007.
   Available:http://www.studymode.com/essays/Brain-Drain-Africa Migration-Health-123395.html (Retrieved June 3, 2013)
21. Thalasa BA. Brain Drain. StudyMode.com; 2010.
   Available:http://www.studymode.com/essays/Brain-Drain-452987.html (Retrieved June 3, 2013)
22. International Organisation for Migration. Assessment of migration data management and IT capacities in Nigeria Terms of Reference; 2013.
   Available:www.acpmigration-obs.org/.../TOR Migration%20Data%20Assessment (Retrieved on July 22, 2013)
23. Caldwell JC. African Rural-urban migration, Canberra: Australia National University Press; 1969.
24. Adepoju A. Rural-Urban Socio-Economic Links: The example of migrants in Southwest Nigeria. In Modern Migrations in Western Africa, ed. J. Arnin. London: Oxford University Press; 1974.

25. Greenwood. Research on internal migration in the United States. Journal of Economic Literature. 1975;13(1).
26. Callaway A. Unemployment among African school leavers. The Journal of Modern African Studies. 1967;1(3).
27. Kartz E. Social capital and natural capital: A comparative analysis of land tenure and natural resources management in Guatamala. Land Economics. 2000;76(1).
28. Rena R. Brain drain and brain gain in Africa. Study Mode.com; 2008. Available:http://www.africaeconomicanalysis.org/articles/69/1/ Brain-Drain-And-Brain-Gain-In-Africa/Page1.html (Retrieved on June 3, 2013)
29. Khor M. Globalization and the South: Some critical issues, Penang, Malaysia: Third World Network; 2000.
30. Obiechina ME. Capital flows and financial crises: Policy issues and challenges for Nigeria. Central Bank of Nigeria Economic and Financial Review. 2010;48(1):93-111.
31. Eboh FE, Okanya OC, Uma KE. An assessment of globalisation on the Nigerian Economy. The Social Justice: An International Journal of Humanities and Social Science, South Africa. ICCR; 2010.
32. Onah FE. The impact of globalisation on Nigeria's industrial sector. Nigeria Journal of Social Sciences. 2007;4(1):24.
33. Zakaree S, Ayodeji S. Impact of capital flight on exchange rate and economic growth in Nigeria. International Journal of Humanities and Social Sciences. 2012; 2(13):247-255.
34. Eurodad, Crbm Weed, Bretton Woods. Addressing Development's Black Hole: Regulating Capital Flight', Project Report; 2008.
35. Beja E Jr. Capital flight and economic performance. Munich Personal Repec Archive Paper No 4885. 2007;1-25. Available:http://mpra.ub.uni-muenchen.de/4885/
36. Umoru D. Capital flight and Nigerian economy. European Journal of Business and Management. 2013;5(4):40-50.
37. Maski G, Wahyudi ST. Study of capital flight and its impact on economic growth: A case study of Indonesia. Journal of Basic and Applied Scientific Research. 2012; 2(7):7168-7174.
38. Samson O, Edeme R. Capital flight and Nigeria's economy. JORIND. 2012;10(2): 304-319. Available:www.transcampus.org./journals (Retrieved on July 22, 2013)
39. Kingston KG. Churches and private educational institutions as facilitator of money laundering in Nigeria. African Journal of Education and Technology. 2011;1(1):30-38.
40. Ajilore TO. An economic analysis of capital flight from Nigeria. International Journal of Economics and Finance. 2010;2(4):89-100.
41. Osu BO, Amamgbo OR, Adeosun ME. Investigating the effect of capital flight on the economy of a developing nation Via the NIG Distribution. Journal of Computations & Modelling. 2012;2(1):77-92.
42. Central Bank of Nigeria Statistical Bulletin, Abuja: Research Department; 2011.
43. The World Bank, World Development Indicators; 2011.
44. Pesaran MH, Shin Y. An autoregressive distributed Lag modelling approach to co-integration analysis. Chapter 11 in Econometrics and Economic Theory in the 20th Century: The Ragnar Frisch Centennial Symposium, Strom. S (ed) Cambridge Press: Cambridge; 1999.
45. Cameron S. A review of the econometric evidence on the effects of capital punishment. Journal of Socio-Economic. 1994;23:197-214.
46. Ehrlich I. The deterrent effect of capital punishment. American Economic Perspective. 1995;10:43-69.
47. Borensztein ED, De Gregorio J, Lee JW. How does foreign direct investment affect economic growth? NBER Working Paper No 5057; 1994.

Peer-review history:
The peer review history for this paper can be accessed here:
http://sciencedomain.org/review-history/11649