ANALYSIS OF THE DETERMINANTS OF CAPITAL FLIGHT IN NIGERIA

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ABSTRACT
The objective of this research is to analyze the determinants of capital flight in Nigeria within the context of the Autoregressive Distributed Lag (ARDL) estimation technique. The study utilizes annual data for the period from 1981 to 2018. The bound test result confirms the existence of cointegration, furthermore, the study reveals that GDP growth rate, financial development, external debt, inflation and natural resources endowment are statistically significant and determinants of capital flight in Nigeria both in the long and short run. The study therefore, recommends the need for government to provide a stable financial and macroeconomic environment, address the decay in the critical infrastructure and also ensure that all external loans are invested into productive projects that give higher returns on investment.

Keywords: Capital flight, Determinants, Autoregressive Distributed Lag Approach, Nigeria.
JEL Classification: C22, F21, G11.

1. INTRODUCTION

Capital flight is the exit of private residents own capital for safe haven or for investment purpose. The subject began to emerge as an important economic challenge in the seventeenth century in Europe and in the twentieth century in the United State of America (Kindleberger, 1987). In the 1930s, and after World War II, concerns about capital flight became the subject of debates in development and financial economics. Capital flight regained momentum in the early 1980s when some Latin American countries (Brazil, Mexico, Argentina etc.) experienced series of sovereign debt default due to the phenomenon. Since then capital flight became one of the most widely discussed topics among researchers and policy makers across the globe.

Nigeria, like its many counterparts, has also witnessed a massive outflow of capital. The country is endowed with huge resources that can contribute to its development, but poor governance has stripped the country of its potential for growth and development. The possible disruptive effects of capital flight on Nigerian economy looks more severe and glaring when one considers the magnitude of the flight capital from Nigeria. Hermes and Lensink (1992) studied six SSA countries including Nigeria and reported that Nigeria had the largest prevalence of capital flight of US$21 billion, representing 60% of the total capital flight from the six countries. The scale of capital flight in Nigeria is assuming increasing significance. In the two decades from 1970, the scale of the challenge was modest, standing at $7,573 million between 1972 and 1989. In contrast, between 2010 and 2018 the country lost an estimated sum of US$12.84 (World Development Indicator, 2018). This massive capital flight has drained the country's financial resources for appropriate economic development, worsening the capital scarcity problem and deepening inequality (Ajayi, 1995).

A considerable number of studies had focused on discussing potential factors that may determine the occurrence and size of capital flight in Nigeria. (Lawanson, 2007; Bakare, 2011; Adekunle, 2011; Saheed and Ayodeji, 2012; Henry, 2013; Omoke, 2014; Uguru, Ozor and Nkwagu, 2014, Ayadi, 2014; Olawale and Ifedayo, 2015; Mbewe, 2015; Akanbi, 2015; Clement and Ayodele, 2016 & Oluwaseyi, 2017). Looking at these studies, the contribution of the present research to the literature is the introduction of natural resources endowment and financial development as explanatory variables as well as employing the most recent cointegration technique, the Autoregressive Distributed Lag (ARDL) approach. It is to this end that the research would fill the gap identified from the previous studies by analyzing the determinants of capital flight in Nigeria.

The rest of the paper is structured as follows: section two is the review of literature while section three addresses the methodology, section four is the results and discussion of findings while section five is the conclusion and recommendations.

2. LITERATURE REVIEW

2.1 Theoretical Literature

In this research work, our theoretical framework will centre on theories relating to the determinants of capital flight. Thus, the following are some of the theories:

Debt-driven Capital Flight Theory

It is also called the debt overhang thesis. The assumption here is that with large foreign debt, there are expectations of exchange rate devaluation, fiscal crisis, and the propensity of the crowding out of domestic capital and expropriation of assets to pay for the debt. There is a debt-driven capital flight when residents of a country are motivated to move their assets to foreign countries as a consequence of external debt. i.e. countries borrow and at the same time engaged in capital flight. Ajayi (1995) and Boyce (1992) further coined a theoretical framework for the possible links between debt and capital flight.

Investment Diversion Theory

Kindleberger (1966) originated the investment diversion theory. The theory postulates that capital flees out of developing countries because of the macroeconomic and political uncertainty that has eaten deep into the fabric of the developing economies as well as the simultaneous existence of better investment opportunities such as high interest rates, varieties of financial instruments, political and economic stability, favourable tax climate and secrecy of accounts in developed countries.

Portfolio Choice Theory

This theory suggests that capital flight takes place in response to a deteriorating domestic investment climate where the risk-adjusted rate of return to investments is unfavourable. Residents take their money and run because of the exchange rate, or more specifically the expected rate of appreciation or depreciation of the exchange rate, the costs of transferring capital abroad (direct and indirect costs), and other determinants of the rate of investment return. Sheets (1995) is one of the first to explicitly apply a portfolio choice framework in the

context of capital flight. His model suggests that capital flight is determined by the usual risk diversification motive along with two important incentives, namely relative risk and return differentials.

2.2 Empirical Literature

Okoli (2008) empirically analyzed the determinants of capital flight and their impact on the Nigerian economy from 1970-2005. The study employed the least square regression model and found that the type of government proved to be a significant contributor to capital flight, it also reveals that six of the twelve explanatory variables exert some significant effects on economic development, these include the total export, terms of trade, type of government, growth rate differential, inflation and sum of import and export as a ratio of GDP and capital flight exerts a negative effect on Nigeria's economic development.

Onodungo, Kalu, Anowor and Ukweni (2014) employed a two-step Engle-Granger Approach to determine the effect of changes in the exchange rate, trade balance, real GDP growth, interest rate differential, index of the political climate, and the manufacturing output on capital flight in Nigeria for the period 1970 to 2010. The study found that one period lagged capital flight and the other explanatory variables except for the exchange rate and the domestic political environment index have a significant and positive effect on capital flight.

Ayadi (2014) adopted the Least-Squares Dummy Variable (LSDV) estimator technique on panel data ranging from 1985 to 2007 to investigate the determinants of capital flight in Nigeria and South Africa. By utilizing the common coefficient and fixed effect model, capital flight according to the study is caused by the trade balance, domestic economic performance, one year lag of external debt and political instability.

Adegbite and Ojo (2014) employed Ordinary Least Squares (OLS) and Co-integration Technique to estimate and test the impact of selected economic and financial institutions' variables on capital flight in Nigeria between 1970 and 2011. The study specifically found that a high inflation rate induces capital flight while increase gross capital formation reduces it and an appreciable deposit rate on bank deposits encourages domestic savings while the credit to the private sector has not brought about the desire expectation of improving and sustaining the domestic economy.

In a time-series study, Usman and Arene (2014) empirically studied the effects of capital flight and its macroeconomic determinants on agricultural growth in Nigeria between 1970 and 2013, the study employed Ordinary Least Squares (OLS) and found that there is a negative and insignificant relationship between total capital flight and agricultural growth. In addition, total capital flight, macroeconomic instability, political instability, interest rate differential and variability in consumer price index show a negative relationship with agricultural growth.

Dim and Ezenekwe (2014) investigated the socio-economic determinants of capital flight in Nigeria from 1970 to 2012. The study employed Fully Modified Ordinary Least Square, Seemingly Unrelated Regression and Error Correction Mechanism to find out the determinants of capital flight in Nigeria. The study found that lagged capital flight, fiscal balance and exchange rate were significant determinants of capital flight in the country.

Akanbi (2015) investigated the determinants of capital flight in Nigeria from 1981 to 2010 using the Engle granger two steps procedure. The study found that the explanatory variables; defence expenditure, interest differentials, and investment individually affected capital. The study further confirmed that Nigeria is not only losing substantial amounts of funds that could be otherwise used for development and further stabilization, the capital flight also punishes long-term economic growth.

Lawal, Kazi, Adeoti, Osuma, Akinmulegun and Ilo (2017) applied the Autoregressive Distributed Lag (ARDL) model to investigate the impact of capital flight and its determinants on the Nigerian economy from 1981 to 2015. The study found the existence of a long-run relationship among the variables studied and capital flight has a negative impact on the economic growth of Nigeria.

Aderibigbe, Oyedokun and Asaolu (2019) studied the determinants of capital flight and its impact on tax bases in Nigeria from 1981 to 2015. Johansen Co-integration approach was employed and the study showed that annual borrowing, exchange rate, interest rate differentials, capital account openness, natural resource endowment and stock of external debt are key short-run and long-run determinants of capital flight in Nigeria, and that capital flight is a deterrent to tax base broadening in Nigeria and transparency in international business and finance.

3. METHODOLOGY

3.1.1 Model Specification

The model for the study can be expressed in a simple linear econometric model, with both the dependent and independent variables specified. This is along the line of similar linear models by Forson, Obeng and BrafuInsaidoo (2017).

$$\mathrm{KF_t} = \mathrm{EXD_t} + \mathrm{FD_t} + \mathrm{FER_t} + \mathrm{GDPGR_t} + \mathrm{INF_t} + \mathrm{NRE_t} + \mathrm{EXR_t} + \mu_t \quad (3.1)$$

Where, KF stands for capital flight, EXD stands for external debt, FD stands for financial development, FER stands for foreign exchange reserves, GDP stands for gross domestic product growth rate, INF stands for the inflation rate, NRE stands for natural resource endowment and EXR stands for exchange rate, μ_t is the stochastic disturbance or error term, t as a subscript for variables stands for time trend over the period of analysis.

The ARDL specification of equation (3.1) is presented as:

$$\begin{aligned}\Delta LKF_t = \alpha &+ \sum_{i=1}^{q}\beta_{i,1}\Delta LKF_{t-i} + \sum_{i=0}^{q}\beta_{i,2}\Delta LEXD_{t-i} + \sum_{i=0}^{q}\beta_{i,3}\Delta LFD_{t-i} + \sum_{i=0}^{q}\beta_{i,4}\Delta LFER_{t-i} \\ &+ \sum_{i=0}^{q}\beta_{i,5}\Delta LGDPGR_{t-i} + \sum_{i=0}^{q}\beta_{i,6}\Delta LINF_{t-i} \\ &+ \sum_{i=0}^{q}\beta_{i,7}\Delta LNRE_{t-i} + \sum_{i=0}^{q}\beta_{i,8}\Delta LEXR_{t-i} + KF_1 LKF_{t-1} + KF_2 LEXD_{t-1} \\ &+ KF_3 LFD_{t-1} + KF_4 LFER_{t-1} + KF_5 LGDPGR_{t-1} + KF_6 LNRE_{t-1} + KF_7 LINF_{t-1} \\ &+ KF_8 EXR_{t-1} + \mu_t \qquad (3.2)\end{aligned}$$

Hence, the error correction format of equation (3.2) is

$$\begin{aligned}\Delta LKF_t = \alpha &+ \sum_{i=1}^{q}\beta_{i,1}\Delta LKF_{t-i} + \sum_{i=0}^{q}\beta_{i,2}\Delta LEXD_{t-i} + \sum_{i=0}^{q}\beta_{i,3}\Delta LFD_{t-i} + \sum_{i=0}^{q}\beta_{i,4}\Delta LFER_{t-i} \\ &+ \sum_{i=0}^{q}\beta_{i,5}\Delta LGDPGR_{t-i} + \sum_{i=0}^{q}\beta_{i,6}\Delta LINF_{t-i} \\ &+ \sum_{i=0}^{q}\beta_{i,7}\Delta LNRE_{t-i} + \sum_{i=0}^{q}\beta_{i,8}\Delta LEXR_{t-i} \\ &+ ECM_{t-1} \qquad (3.3)\end{aligned}$$

Where ECM is the error correction version of the ARDL model and all other variables are as explained under equation (3.1)

3.2 Estimation Technique and Data Sources

The data set for this study basically comes from a secondary source and specifically time series data spanning the period of 1981 to 2018. It was obtained from Statistical Bulletin of the Central Bank of Nigeria (CBN), IMF's International Financial Statistics and World Bank's World Development Index (WDI) data on Nigeria. The time series data to be used for the estimation is on annual basis. Given the nature of the relationship estimated, and the stationarity properties of the variables in the model, the Auto-Regressive Distributed lag (ARDL) bounds testing approach was employed to estimate the model.

4. RESULTS AND DISCUSSION OF FINDINGS

4.1 Preliminary Tests Results

A two-pronged approach was adopted to test the general or statistical properties of the data set. First, the descriptive statistics (Table 1) showed that all the mean (average rates) of capital flight, external debt, financial development, foreign exchange reserve, GDP growth rate, inflation rate, natural resources endowment and exchange rate all have positive values. This is telling us that we have more of increase than decrease in the changes among the variables.

Table 1: Summary Statistic of Variables Under Study

	LKF	LEXD	LFD	LFER	GDP_GR	INF	LNRE	EXR
Mean	10.90018	17.35837	2.301656	9.115170	3.174706	19.35040	0.957035	88.54405
Median	9.712213	21.37202	2.105270	8.971974	4.212993	12.71577	0.960677	97.01772
Maximum	23.82729	22.89766	3.033669	10.97632	15.32916	72.83550	0.987242	306.0837
Minimum	5.342222	4.432212	1.777875	6.123899	-13.12788	5.388008	0.911601	0.617708
Std. Dev.	11.07956	8.423128	0.438662	1.364525	5.538560	17.24364	0.022524	87.13742
Skewness	0.017460	-1.573074	0.713433	-0.402493	-0.869820	1.741920	-0.357678	0.802967
Kurtosis	1.022385	3.562170	1.820201	2.176363	4.539286	4.838732	1.751626	2.974342
Jarque-Bera	6.194284	16.17261	5.427465	2.100103	8.543264	24.57028	3.277772	4.084502
Probability	0.045178	0.000308	0.066289	0.349920	0.013959	0.000005	0.194196	0.129736
Sum	414.2067	659.6182	87.46295	346.3764	120.6388	735.3152	36.36735	3364.674
Sum Sq. Dev.	4541.993	2625.116	7.119712	68.89136	1134.999	11001.69	0.018771	280938.4
Observations	38	38	38	38	38	38	38	38

Source: Authors' Computation using Eviews 9

Exchange rate has the highest standard deviation, which suggests that, the degree of variability in exchange rate is higher than that of any variable in the distribution. However, natural resources endowment has the lowest standard deviation, which shows that, the dispersion of the data is closer to its mean. External debt, foreign exchange reserve, GDP growth rate and natural resources endowment are negatively skewed, which suggests that majority of the distribution in these variables are concentrated to the left. Whereas, capital flight, financial development, inflation and exchange rate are positively skewed, which shows that, majority of the distribution in the variables are concentrated to the right. External debt, GDP growth rate and inflation have excess kurtosis of (3.562170, 4.539286 and 4.838732) respectively which means that, the distribution of External debt, GDP growth rate and inflation are leptokurtic in nature and exhibit fat tail (thick-tail) while capital flight, financial development, foreign

exchange reserve, natural resources endowment and exchange rate have lower values of (1.820201, 2.176363, 1.751626 and 2.974342) which is clearly lower than three (3) and implies that their distribution are platykurtic. The Jarque-Bera coefficients of foreign exchange reserve, natural resources endowment and exchange rate indicate that the series are normally distributed. This is due to insignificant probability values of the variables in the model. Whereas capital flight, external debt financial development, GDP growth rate and inflation rate are not normally distributed because the probability values are highly statistically significant.

Second, due to the inherent instability of macroeconomic time series data, testing the stationarity status of the variables becomes inevitable to avoid interpreting false regression coefficients. This research used the Augmented Dickey-Fuller and Philips-Perron testing approaches.

Table 2: Unit Root Test (Augmented Dickey-Fuller and Phillips-Perron)

Variable	Augmented Dickey- Fuller		Phillips – Perron	
	Level	First Diff.	Level	First Diff.
LKF	-4.479013***	-6.340046***	-14.27278***	-4.297724***
LEXD	-5.141132***	-6.134312***	-5.096892***	-19.93602***
LFD	-2.084517	-5.447436***	-2.076703	-6.3748***
LFER	-2.996964	-6.623657***	-2.554776	-6.010643***
GDPGR	-3.372180*	-10.21163***	-3.864096**	-11.68843***
INF	-3.970083**	-5.516298*	-2.824389	-10.32628***
LNRE	-2.177818	-6.454314***	-2.203549	-7.332029***
EXR	-1.949745	-4.543708***	-1.124559	-4.372842***

Note:***, ** and* indicate significant at 1%, 5% and 10% respectively.
Source: Authors' Computation using Eviews 9

The result of the ADF test presented in Table 4.2 shows that capital flight, external debt, GDP growth rate and inflation rate were stationary at level while financial development, foreign exchange reserve, natural resources endowment and exchange rate are stationary at first difference. Similarly, from the PP test, capital flight, external debt and GDP growth rate are all stationary at level while financial development, foreign exchange reserve, inflation rate, natural resources endowment and exchange rate are all stationary after first difference. The order of integration obtained from the unit root tests permitted the study to use ARDL model.

4.2 Bounds Test for Cointegration

The result of the ARDL bounds testing approach in Table 3 shows that the F-statistic value of (3.524364) is greater than the critical value bounds at 5% level of significance. Therefore, the null hypothesis of no cointegration cannot be accepted while the alternative hypothesis is accepted. This is also permitting the study to generate the long run and short run coefficients of the ARDL model.

Table 3: ARDL Bounds Test

Bounds Test		
F-Statistics	3.524364	7
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	1.92	2.89
5%	2.17	3.21
2.50%	2.43	3.51
1%	2.73	3.9

Source: Authors' Computation using Eviews 9

Table 4.3 Result of the Estimated Long-Run Coefficients of the ARDL

This section contains the results of long run relationship among the variables. The results are summarized and presented in Table 4.

Table 4: Dependent Variable: LKF

Variable	Coefficient	Std Error	t-Statistics	Prob.
LEXD	0.387774	0.190927	2.031003	0.0518
LFD	-9.716818	0.687221	-2.264022	0.0166
LFER	-0.735675	2.681608	-0.274341	0.7858
GDP_GR	-0.65389	0.381757	-2.712841	0.0978
INF	0.128091	0.182644	2.549914	0.0324
LNRE	0.524952	0.180088	2.914979	0.0080
EXR	0.016611	0.031877	0.521082	0.6064
C	21.68848	18.91622	1.146555	0.2613

R^2 = 0.87; AIC = 7.322, SBC = 7.713, HQC = 7.460; DW = 1.923 ADJ. R^2 = 0.79; F- Stats = 10.98524, P (F-Stats) =0.00000.

Source: Authors' Computation using Eviews 9

The estimated long run coefficients estimated shows that there is a statistically significant positive relationship between external debt and capital flight in Nigeria. This implies that any 1.0 percentage change in external debt will lead to about 0.39% percentage change in capital flight in the long run towards the same direction provided other factors are kept constant. This is in line with the study of Ozer, Doker and Turkmen (2013) & Ndikumana, Boyce and Ndiaye (2014). This also lend credence to the debt driven theory which stipulate that, with large foreign debt in an economy, residents would expect exchange rate devaluation, fiscal crisis etc. as a result resident would move their capital to safe haven.

The financial development coefficient is negative and statistically significant. This means in the long run a 1% increase in financial development is expected to lead to a corresponding decrease of about 9.72% in capital flight provided other factors are kept constant. This implies that financial development boosts investor confidence in the country and is expected to decrease the amount of capital flight. This result supports the findings of Raheem (2015), Kipyegon (2004) & Forson *et al*. (2017) and the theoretical postulations of investment diversion theory.

It is also demonstrated that GDP growth rate is negatively associated with capital flight and statistically significant. This implies that a 1% increase in GDP growth rate is expected to lead to a corresponding decrease of about 0.65% in capital flight provided other factors are kept constant. This means higher real GDP growth rates signal the presence of attractive investment opportunities at home and encourage investors to undertake more domestic investment thus reducing the flight of capital abroad. Several empirical studies that support this presumption include Henry (2013), Forson *et al*. (2017) & Al fayoumi, Alzoubi and Abuzayed (2011). It is also consistent with the theoretical postulations of investment diversion theory.

Furthermore, inflation rate has positive and statistically significant relationship with capital flight. This means a 1% increase in inflation rate is expected to lead to a corresponding increase of about 0.13% in capital flight in the long run provided other factors are kept constant. This denotes that an inflationary

economy is not attractive to investment hence encouraging capital flight. This is consistent with the findings of Ajayi (1992), Auzairy, Fun, Ching, Li, and Fung (2016) & Omoke (2014).

The coefficient of natural resources endowment is also positive and statistically significant. This by implication means that a 1% increase in natural resources endowment is expected to lead to a corresponding increase of about 0.52% in capital flight in the long run provided other factors are kept constant. This confirms the phenomenon of natural resources-fuelled capital flight. Indeed, the abundance of natural resources can give rise to a rent-seeking mentality, and thus constitutes an important worsening factor of the corruption level in a given country, hence capital flight. This is consistent with similar empirical findings by Ljungberg and Friedl (2014) & Kwaramba, Mahonye and Mandishara (2015) etc

Foreign exchange reserve is negative and statistically insignificant. The implication of this long run relationship means that a 1% increase in foreign exchange reserve is expected to lead to a corresponding decrease of about 0.74% in capital flight provided other factors are kept constant. Countries that have higher reserves experience less capital flight because higher reserves boost investors' confidence on domestic economy. The finding is in line with the findings of Ogbeide-Osaretin and Efe (2020) & Ahmad and Sahto (2015).

Finally, exchange rate coefficient is positive and statistically insignificant. This implies that any 1% change in exchange rate in the long run will lead to about 0.02% percentage change in capital flight towards the same direction provided other factors are kept constant. In theory, exchange rate stimulates the outflow of capital because it makes foreign assets seem cheap to acquire and at the same time it causes fear of devaluation in future, hence encouraging speculative capital outflows. This is in line with the study of Auzary *et al.* (2016) & Bosupeng and Nadolny (2019).

Table 5: Estimated Short-Run Coefficients of the ARDL Model

Dependent Variable: LKF				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LEXD)	0.496766	0.132102	3.760472	0.0008
D(LFD)	-13.297028	9.300631	-2.429696	0.0639
D(LFER)	-1.462959	3.267814	-0.447687	0.6578
D(GDP_GR)	-0.878746	0.304836	-2.882683	0.0075
D(INF)	0.09171	0.297214	2.943426	0.0535
D(LNRE)	0.884411	0.571847	2.460198	0.0222
D(EXR)	-0.007553	0.075255	-0.100371	0.9208
CointEq (-1)	-0.833102	0.181417	-4.592186	0.0001

Source: Authors' Computation using Eviews 9

The short-run dynamics which is otherwise known as the error correction model was carried out after the retrieval of the long run coefficients. The ECM shows the possibility of the restoration of the equilibrium in case of distortion in the economy. The result is presented in Table 5. The lag 1 coefficient of the error correction term yield a negative sign (-0.833) and

statistically significant at 1%. This implies that, in case of distortion in the economy, equilibrium can be re-established by 83% annually. Theoretically the 83% annual adjustment towards equilibrium signifies a fast adjustment process.

Out of the 7 parameters external debt, financial development, GDP growth rate, inflation and natural resources endowment as in the case of the long run statistically influence the level of capital flight. The only difference between the coefficients of these variables in the short and long run is the magnitude but the signs are the same.

Table 6: Results of the Diagnostics Tests

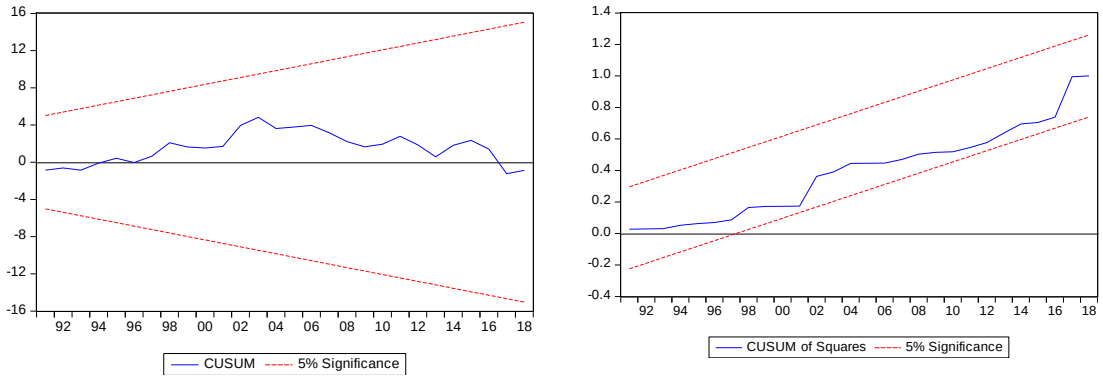
Normally test			
JarqueBera	0.435876	Prob.	0.804175
Breusch-Godfrey Serial Correlation LM Test			
F-statistics	0.059023	Prob. F(1, 27)	0.8099
Breusch-Pagan-Godfrey Heteroscedasticity Test			
F-statistic	1.377406	Prob. F(8,28)	0.249

Source: Authors' Computation using Eviews 9

A series of post estimation diagnostic tests of serial correlation (autocorrelation), normality and heteroskedasticity were carried out on the selected ARDL model. This is to ensure the adequacy of the model, as well as reliability of the results. For serial correlation test, Breusch-Godfrey Langrage Multiplier LM test was adopted to test the null hypothesis of no serial correlation. The result shows that the F statistics value of 0.059023 (corresponding to a p-value of 0.8099) is insignificant, thus confirming the presence of no serial correlation. For heteroskedasticity, Breuch-Pegan-Godfrey test was carried out to test the null hypothesis of no heteroskedasticity. The outcome of the test too did not show any evidence of heteroskedasticity going by the insignificant F statistics value of 1.377406 (corresponding to the p-value of 0.249). Finally, the test of normality of residual was carried out using the popular Jarque-bera statistics. The normality test testified that the model is normally distributed. This is resulted from the fact that the probability value of the Jarque-Bera is not statistically significant even at 10% level.

To determine the stability of the model and the estimated parameters, the cumulative sum of Residual Test (CUSUM) and Cumulative Sum of Squares of Residual Test (CUSUMSQ) were conducted on the model and shown in Figure 1. The CUSUM depicts that the model and the estimated parameters are largely stable. Closer scrutiny of the CUSUMSQ also shows that the model and the estimated parameters are stable given that the graph moves within the 0.05 critical values.

Figure 1. Cumulative Sum of Residual Test & Cumulative Sum of Squares of Residual Test



5. CONCLUSION AND RECOMMENDATIONS

The conclusion emanating from the above research findings is that long run cointegration exists between capital flight and the variables used and that external debt, financial development, GDP growth rate, inflation and natural resources endowment are significant determinants of capital flight in Nigeria over the period of study.

Based on these findings, the following recommendations are proffered:

1. Nigerian government should provide a stable financial and macroeconomic environment. This enabling environment for investment will encourage more inflow of funds from abroad and dissuade outflow of funds.
2. there is need for the government to ensure that any external loans are invested into productive projects that give higher returns on investment. This will enhance the country`s debt serving capacity thereby reducing the incidence of falling into a debt crisis hence capital flight.
3. government should strengthen the 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 capital flight.
4. since high GDP growth rate reduces capital flight in the country, there is need to address the decay in the critical infrastructure like power supply, transportation system etc and diversify the nation's economy as these will help to boost domestic productivity thereby reducing capital flight**.**

REFERENCES

Adegbite, E. O. and Ojo, O. M. (2014). Financial Institutions' Operations and Capital Flight in Nigeria. *International Journal of Research in Business and Technology*, 4 (3), 472-479.

Adekunle, A.K. (2011). Capital Flight and Financial Globalisation: Will Further Opening up Increase Capital Flight out of Nigeria?.*International Business Management*, 5 (6), 349-356.

Aderibigbe, T. A., Oyedokun, G. E. and Asaolu, T. O. (2019). Capital flight and Tax Base in Nigeria. *Fountain University Osogbo Journal of Management, (FUOJM)*, 4(1),1-14.

Ahmad, B. and Sahto, Q. D. (2015). Determinants of Capital Flight in Pakistan. *IBT Journal of Business Studies*, 11 (2), 55-64.

Ajayi, S. I. (1995). Capital flight and external debt in Nigeria. African Economic Research Consortium (AERC) Nairobi, Kenya. Research Paper 35.

Ajayi, S.I. (1992). An Econometric Analysis of Capital Flight from Nigeria, World Bank Western Africa Department, Working Paper Series, No. 993 (Washington DC, World Bank).

Akanbi, O.B. (2015). An Econometric Approach to Short and Long Run Analysis of the Nigerian Economy-Capital Flight in Nigeria. *International Journal of Research in Humanities and Social Studies,* 2(I12), 83-89.

Al-Fayoumi, N., Alzoubi, M. and Abuzayed, B. (2011). Determinants of capital flight: Evidence from MENA countries. A Paper presented at the Barcelona European Academic Conference.

Auzairy, N. A., Fun, C.S., Ching, T.L., Li, S.B. and Fung, C.S. (2016). Dynamic relationships of capital flight and macroeconomic fundamentals in Malaysia. *Malaysian Journal of Society and Space*,12 (2), 203 - 211.

Ayadi, F.S. (2014). Capital Flight in Developing Economies: A Panel Analysis of Nigeria and South Africa. *The International Journal of Humanities and Social studies,* 2 (10), 18-24.

Bakare, A.S. (2011). The determinants and roles of capital flight in the growth process of Nigerian economy: Vector Autoregressive Model approach. *British Journal of Management and Economics*,1(2), 100–113.

Bosupeng, M. and Nadolny, D. A. (2019). Exchange Rate Misalignment and Capital Flight from Botswana: A Cointegration Approach with Risk Thresholds. *Journal of Risk Financial Management*, 12(101), 1-26.

Boyce, J. (1992). The Revolving Door External Debt and Capital Flight: A Philippine Case Study. *World Development*, 20 (3), 335-349.

Clement, A.O. and Ayodele S. O. (2016). An Empirical Analysis of the Impact of Capital Flight on Nigeria Economy. *International Journal of Academic Research in Economics and Management Sciences*, 5 (2), 1-14.

Dim, C. and Ezenekwe, U. (2014). Capital Flight to Savings Gap in Nigeria: An Assessment of the Socio-Economic Determinants. *International Journal of Economics and Finance,*6(2), 75-86.

Forson, R., Obeng, K.C, and Brafu-Insaidoo, W. (2017). Determinants of Capital Flight in Ghana. *Journal of Business and Enterprise Development*, 2 (7), 151-180.

Henry, A. W. (2013). Analysis of the effects of capital flight on economic growth: Evidence from Nigerian economy. *European Journal of Business and Management, 5*(17), *21-32.*

Hermes, N. and Lensink, R. (1992). The Magnitude and Determinants of Capital Flight: The Case for Six Sub-Saharan African Countries. *De Economist*, 140(4), 515-530.

Kindleberger, C.P. (1966). European Integration and the International Corporation. *Columbia Journal of World Business,* Vol. 1, 65-73.

Kindleberger, C. P. (1987). Capital Flight - A Historical Perspective', in Donald R. Lessard and John Williamson (eds), Capital Flight and Third World Debt, Washington, DC: Institute for International Economics, 7–26.

Kipyegon, L. (2004). Determinants of Capital Flight from Kenya. Unpublished Master's thesis, Kenyatta University-Department of Economics.

Kwaramba, M., Mahonye, N. and Mandishara, L. (2015). Capital Flight, Natural Resources and Institutions in Zimbabwe. A paper Presented at the Centre for the Study of African Economies (CSAE) Conference, Oxford, UK, 2015.

Lawal, A. I, Kazi, P. K., Adeoti, O. J., Osuma, G. O., Akinmulegun, S., and Ilo, B. (2017). Capital Flight and the Economic Growth: Evidence from Nigeria. *Binus Business Review*,8(2), 125-132.

Lawanson, A. O. (2007). An econometric analysis of capital flight from Nigeria: a portfolio approach. African Economic Research Consortium Nairobi, Research Paper 166.

Ljungberg, D. and Friedl, C. (2014). Does Natural Resource Abundance Cause Capital Flight? Stockholm: Stockholm School of Economics, unpublished.

Mbewe, S. (2015). Capital Flight and the Role of Exchange Rates in Nigeria, South Africa and Zambia. Unpublished M.Sc. thesis, University of Cape Town, South Africa.

Ndikumana, L., Boyce, J. K. and Ndiaye, A. S. (2014). Capital Flight from Africa: Measurement and Drivers. In S. I. Ajayi and Ndikumana, L. (Eds.). *Capital Flight from Africa: Causes, Effects and Policy Issues.* Oxford: Oxford University Press.

Ogbeide-Osaretin, E.N. and Efe, O. M. (2020). Dynamic Empirical Analysis of the Determinants of Capital Flight in Nigeria, *Acta Universitatis Danubius. Œconomica*, (1) 42, 16-227.

Okoli, M.N. (2008). An empirical analysis of the determinants of capital flight and their impact on the Nigerian economy: 1970-2005. Unpublished doctoral dissertation, Federal University of Technology, Owerri, Imo.

Olawale, O. and Ifedayo, O. M. (2015). Impacts of Capital Flight on Economic Growth in Nigeria. *International Journal for Innovation Education and Research,*3(8), 10-46.

Oluwaseyi, M. H (2017). The capital flight from Nigeria: an empirical analysis. *Journal of Indonesian Applied Economics*, 7 (2), 131-145.

Omoke, E.U (2014). Impact of Inflation and Tax Rate on Capital Flight in Nigeria. A paper presented at the 4th Accounting and Finance Research Association International Conference, Abakaliki, Nigeria, November.

Onodungo, V.A., Kalu. I. E., Anowor, O. F. and Ukweni, N. O. (2014). Is capital flight healthy for Nigerian economic growth? An econometric investigation. *Journal of Empirical Economics,* 3(1), 21-24.

Ozer, A., Doker, A. C.and Turkmen, C. A. (2013). Analysis of Capital Flight in Developing Countries: A Study on Turkey between 1980 and 2010. A paper presented at the International Conference on Eurasian Economies, 2013.

Raheem, I. D. (2015). Re-examining the determinants of capital flight and the potential benefits of capital flight repatriation for SSA. *African Journal of Business and Economic Research,* 10(1), 55–94.

Saheed, Z.S. and Ayodeji, S. (2012). Impact of Capital Flight on Exchage Rate and Economic Growth in Nigeria. *International Journal of Humanities and Social Science,* 2 (13), 247-255.

Sheets, N. (1995). Capital Flight from the Countries in Transition: Some Theory and Empirical Evidence. Washington, DC: Board of Governors of the Federal Reserve System.

Uguru, L.C., Ozor, B.M. and Nkwagu, C.C. (2014). Capital Flight and Exchange Rate Volatility in Nigeria: The Nexus. *Research Journal of Finance and Accounting*, 5 (16), 27-36.

Usman, F.R. and Arene, C.J. (2014). Effects of capital flight and its macroeconomic determinants on Agricultural growth in Nigeria (1970-2013). *International Journal of Food and Agricultural Economics*, 2 (4), 107-126.

World Bank (2018). World Development Indicators (various years), Washington D.C.