

Impact of Capital Flight On Economic Growth In Nigeri

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Abstract

The phenomenon of capital flight has become a trending macroeconomic issue in Nigeria. This study therefore examines the impacts of capital flight on economic growth in Nigeria. The real interest rates differential has been identified as a major determinant of capital flight in an economy. The study employs the vector error correction mechanism and granger causality test to examine the relationship between capital flight, interest rates differential, political instability and economic growth; using available data between 1980 and 2014. The results show a negative relationship exists between capital flight and economic growth in Nigeria. The results also show a positive and significant relationship between capital flight and interest rates differential, explaining that the higher risk-adjusted returns abroad influence domestic capital flight. The granger causality test explains the existence of bi-directional relationships between political instability and capital flight; interest rates differential and capital flight; political instability and economic growth; interest rates differential and economic growth; and interest rates differential and political instability. There is, however, a uni-directional relationship between capital flight and economic growth.

Keywords: Capital flight, interest rate differential, economic growth, vector error correction.

Introduction

Over the years, the issue of capital flight from developing countries including Nigeria has create a huge problem in the economic growth of the countries and has receive attention from researcher. Scholars have expresses concern over the magnitudes, grounds and penalties of this net flow. Investors from developed countries are seen as reacting to investment opportunities while investors from developing countries are said to be absconding the high risks they perceive at home (Ajayi, 1997).

Given that a country attains a sustainable level of development if it is able to sufficiently mobilize and retain resources so as to raise the welfare standard in the domestic economy, capital flight poses a serious concern to sustainable development of any nation as it creates inefficiency in the workings of the economy, reduces per capita income and investment in the domestic economy and worsen the problem of income inequality (Ajayi, 2014; Nkurunziza, 2014).

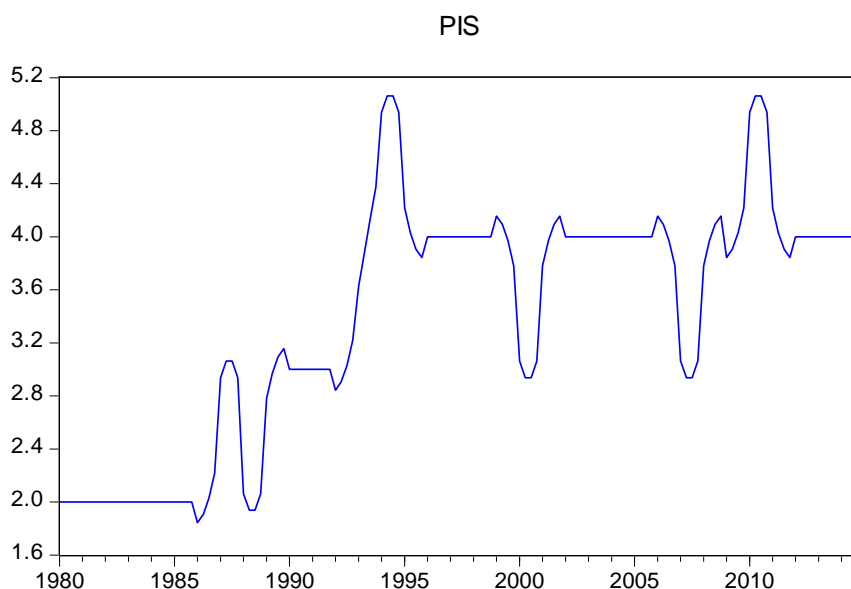
Ndikumana (2010) defines capital flight as the residual difference between capital inflows and the foreign exchange outflows. Thus, any inflow which neither offsets the deficits in the current account nor adds to reserves is termed capital flight. This is usually in response to economic and political uncertainties in a country where an investor tries to avoid the risks in the domestic economy and seeks to gain from higher yields abroad by investing in short-term securities. In the works of Akanbi (2015), capital flight connotes the migration of financial capital from one investment destination to another, so as to avoid risks (such as political instability, expected devaluation or depreciation of domestic currency, and hyperinflation) which holders perceive to be country-specific, or in search of higher returns on capital. Similarly, the failure of government may encourage capital flight. This is because poor governance manifests in corruption, unstable macroeconomic environment, trade mix-invoicing,

smuggling, and poor regulatory frameworks; all of which encourage capital flight (Boyce and Ndikumana, 2012).

As part of an unstable economic environment, Victor (2008) opines that capital flight could be directly stimulated by war, or through the fears of war, which heighten political risks; or indirectly through such means as inflation and public debts, thereby inducing capital flight. Capital flight has been modeled as outflows relating to asymmetric risks on domestic assets in relation to foreign ones. Assets may face relatively higher risk as a result of currency devaluation or depreciation, inflation, and financial instability in the domestic markets (Dornbusch, 1985) as well as some risks of expropriation (Kant, 2002; Khan and Haque, 1985). Usually an investor would prefer and consider holding wealth abroad if the risk-adjusted returns to investment are lower at home than abroad. This is premised on the real interest rates differential between the domestic economy and the rest of the world.

An unstable political environment may lead to loss of private wealth through expropriation or destruction in the case of violence. Lawson (2007) emphasizes that political instability distorts the economic system and expected incentives since a wealth holder may be influenced by the current political climate in deciding the proportion of his wealth to invest domestically. This, including corrupt practices, explains the non-economic cause of capital flight (Lawson, 2007). Nigeria is currently being faced with security challenges, including militancy, kidnapping and other terrorist attacks which have been frustrating investment, especially in the country's oil and gas sector (Premium Times, 2016). Below is the graphical illustration of the rate of political instability in the country from the period 1980-2014.

Figure 1: political instability index of Nigeria, 1980-2014

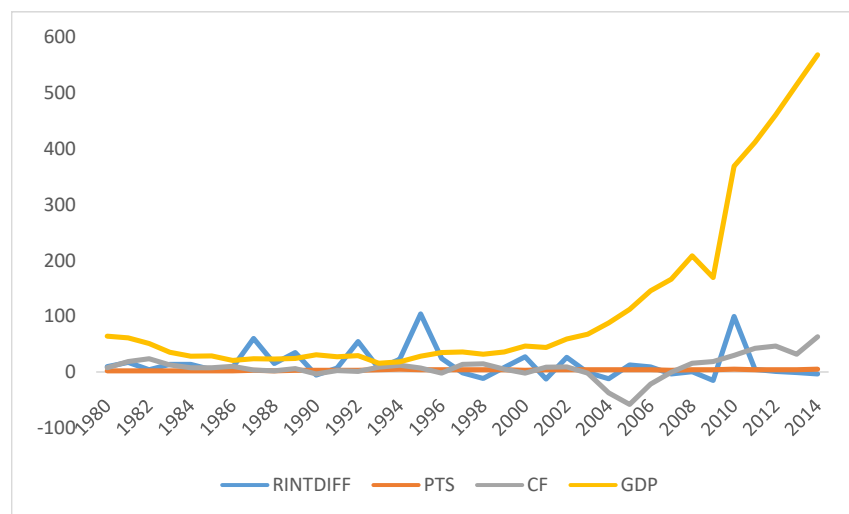


Source: world development data indicator

political stability as seen in figure 1 has been at an increasing rate from 1993 due to the annulment of the 1993 presidential election which paved the way for the intervention of General Sani Abacha's autocratic regime marked by political violence and unrestrained corruption raised the level of political instability in the country as can be seen from the data above. The recent political crisis in the country since 2006 is the Boko Haram, an Islamic extremist group based in northeastern Nigeria and other various violence

caused by religion and political reasons which has led to loss of life in places like Maiduguri, jos, kaduna, kano, tarabaetc in the country.

Figure 2: Capital flight, interest differential, political instability and Economic Growth



***Data used in plotting this diagram were sourced from the World Bank and IMF official databases**

Given the diagram in Figure 2, it can be observed that the fluctuations of political environment (PTS) figures are not really widespread, and as such more parallel to the horizontal axis.

As shown in figure1 the values of the real interest rates differential (RINTDIFF) keep fluctuating over time; rises to the optimum in 1995, fluctuates between other years, almost in the same manner as capital flight (CF) and also hovers around the optimum in 2010 after which it falls.

The widespread of capital flight in Nigeria has risen significantly in recent years, with the country losing about \$2billion annually as a result of weak educational policies alone; and an estimate of about \$22 billion has also been lost to trade mix-invoicing and other anomalies in the petroleum sector between 2002 and 2011 (This Day newspaper, 2016; Vanguard newspaper, 2014). Isabella (2014) identifies underdeveloped financial markets and large presence of foreign banks, weak banking regulations and supervision; capital control; financial derivatives; hedge and private equity funds as some of the factors that enhance capital flight and other illicit financial flows.

In Nigeria one of the vague and disturbing macroeconomic problems for the past two decades is the growing rate of capital flight. Furthermore, the recent global financial crisis generates problems of massive movement of funds out of the country coupled with the problem of political instability in the country, has undoubtedly contributed to the regeneration of growth of capital flight. According to Sanusi, over 22b left the country from 2008-2009 as a result of capital flight (vanguard newspaper, 29 August, 2009) this can cause a slowdown in the economic growth rate. Capital flight has a destructive effect on the country through hesitation of the foreign sectors to invest, causing weak investment performances in the country, high rate of unemployment as well as pronounced regressive effects on the distribution of wealth in the country and also threatening the development of the banking sub- sector. Based on these problems coupled with an attempt to improve upon the previous researches

carried out on the effects of capital flight, the study tests the empirical relationship between capital flight and political instability in Nigeria, using available data, since much work has not been done on this aspect even though many studies have examined the theoretical relationship. The study therefore undertaken to fill in the gap of examine the impact of capital flight in the Nigeria economic given the rate of political instability.

The study will be group into five sections, section one comprises of the introductions and aims of the study. Section two includes review of relevant literatures and theoretical framework, section three contains the methodology used to achieve the research objectives, Section four is concern with data analysis of the empirical results. Lastly, section five includes summary conclusion and recommendation.

Empirical Review of Literature

Several studies have been carried out to examine the impacts of capital flight on different economies.(see for example, Ajayi (1997) Ndikumana (2008), and Akanbi (2015).In the work of Victor (2008) on capital flight and war- using ordinary and generalized least squares, he obtained both positive and negative coefficients for war (dummy); which is similar to the results obtained byAkanbi (2015) and Ndikumana (2008) who used inflation differential as a measurement of economic environment that influences capital flight. Ndikumana (2008), using Panel OLS, established a negative relationship between capital flight and economic growth;which is similar to that obtained by Nkurunziza (2012), and Akanbi (2015) who obtained a negative coefficient for investment. This postulates that for most of the studies, empirical analysis explains that capital flight reduces growth potentials.

Akanbi (2015) obtained a negative coefficient for the real interest rates differential in his regression analysis, using Engel Granger two-step procedure of estimation to capture the long- and short-run dynamics of capital flight, he estimated that interest rates differential and investment affect capital flight (at 5%) of (2.45846) and (4.53176) standard errors, respectively in the long-run. He therefore posits that capital flight creates long term economic growth challenge, while also reducing capital for investment in infrastructures. The result is similar to that obtained by Ndikumana et al. (2016). However, positive coefficient was obtained for the same variable in the analysis of capital flight by Ndikumana (2008), Ajayi (1992) and Lawson (2007). Also, Ndikumana et al. (2014) established that the coefficient of lagged capital flight is positive. This connotes that capital flight in the current period is influenced by the previous period capital flight. Lawson (2007) andNdikumana et al (2016) also obtained a positive coefficient for lagged capital flight.The results obtained by Noor Azryani (2016) shows that Capital flight significantly contributes to variations of macroeconomic variables; to which innovations in capital flight turn out to influence the gross domestic products and exchange rate; with more than 46% of the GDP forecast error variance and 34% of exchange rate forecast error variance. The movements in CPI and interest rate are predominantly driven by their own shocks, which are more than 34 and 29 percent, respectively. These results suggest that capital flight incorporates its own information and the information of exchange rate.The significant impact of capital flight on GDP and exchange rate may also suggest that the growth or recession of economy and appreciation or depreciation of exchange rate could be due to their reactions to changes in capital flight. While analyzing the impacts of capital flight on economic growth and other macroeconomic variables in Nigeria, using the residual method of estimation, Ajilore (2010) obtained that for most of the periods, capital flight estimates had positive sign which indicates that residents persistency engage in capital flight. Thus, he identifies trade misinvoicing as a means by which residents illegally transfer capital abroad.

Theoretical framework

The investment diversion theory

This theory claimthat due to the macroeconomic and political uncertainty in developing countries and the synchronized existences of better investment openings in developed countries like high foreign interest rate, wide array of financial instruments, as well as political and economic stability. Our leaders and bureaucrats in developing countries usually tap resources from their countries to developed countries. These funds are therefore not available for investment at home, generating problems like decline in investment, low economic growth are and lack of employment opportunities. These negatives macroeconomic effect on the country sometimes persuades the necessity to borrow from abroad to re-energize the domestic economic, which is further drain off thereby enacting external dependency and indebtedness.The investment diversion theory shows a positive relationship between political instability and capital flight which creates a negative relationship to economic growth of a country.

Methodology and Data Sources

The research methodology used in this study comprises of empirical literature derived from existing studies on capital flight. Thus, the study adopts the Vector Error Correction Mechanism (VECM), going by the following procedures;

Unit Root Test

The first step in econometric techniques is to test for stationarity sequence such that the null hypothesis ($\rho=1$: not stationary) is tested against the alternative hypothesis ($\rho<1$: stationary). For VECM, it is expected that the null hypothesis may be rejected, implying that the data is stationary only after the first-difference.

There are many tests for establishing the stationary or otherwise of a series. Unit root can be tested using: Dickey-Fuller (DF) test, Augmented Dickey-Fuller (ADF) test, Phillips-Perron test and Kwiatkowski et al. test.

The Augmented Dickey-Fuller (ADF) (1979) regression tests for the existence of unit root

The extension of DF test (Augmented Dickey-Fuller test, ADF) allows for possibility that the error term is autocorrelated. The ADF test refers to the t statistics of coefficient on the following regression:

$$\text{Case 1: no constant no trend: } \Delta Y_t = \gamma Y_{t-1} + \sum_{i=1}^k \beta_i \Delta Y_{t-i} + \varepsilon_t$$

$$\text{Case 2: with constant but no trend: } \Delta Y_t = \alpha + \gamma Y_{t-1} + \sum_{i=1}^k \beta_i \Delta Y_{t-i} + \varepsilon_t$$

$$\text{Case 3: with constant and trend: } \Delta Y_t = \alpha + \lambda t + \gamma Y_{t-1} + \sum_{i=1}^k \beta_i \Delta Y_{t-i} + \varepsilon_t$$

Cointegration Test

The cointegration among the variables will be tested, when stationary is established after the first-difference. Johansen cointegration technique is therefore employed to examine the long-run relationship among the variables. Hence, the properties of the regression residuals for stationary is such that if error term (ε_t) is stationary, then the series are cointegrated. Thus, the long run relationship will be estimated using $Y_t = \beta_1 + \beta_2 X_t + \varepsilon_t$; and the order of integration of the residuals will be tested using the ADF test:

Vector Error Correction Mechanism

If the series are found to have one or more cointegrating vectors, then the Vector Error Correction Mechanism (VECM) will be a suitable tool of analysis. According to Sim (1980), if there is simultaneity among the series, there should be no distinction between the endogenous and exogenous variables and all should be treated as endogenous.

The VECM captures the short-run disequilibrium situation and the long-run equilibrium adjustment among the variables; while treating all the variables as endogenous. It examines the speed of convergence to equilibrium, and how much change in dependent variable is due to changes in the explanatory variables.

The general VECM specification is given by: $\Delta Y_t = \alpha_1 + \lambda ECT_{t-1} + \beta \Delta X_t + \varepsilon_t$; where: β is the impact multiplier (the short-run effect) which measures the immediate impact that a current change in X_t will have on a change in Y_t ; λ is the feedback (adjustment) effect, which shows the speed of adjustment, i.e how much of the disequilibrium is being corrected ($\lambda < 1$ to ensure stability).

Step 4: Causality Test

This refers to the ability of one variable to predict (and cause) another variable. According to Granger (1969), a variable, say Y_t is said to Granger-cause another variable, say X_t , if X_t can be predicted with greater accuracy, using the past values of the Y_t , other terms remaining constant. Hence;

$$Y_t = \alpha_1 + \sum_{i=1}^N \beta_i X_{t-i} + \sum_{j=1}^M \gamma_j Y_{t-j} + \pi_1 ECT_{t-1} + \varepsilon_{1t} \text{ and}$$

$$X_t = \alpha_1 + \sum_{i=1}^N \theta_i X_{t-i} + \sum_{j=1}^M \phi_j Y_{t-j} + \pi_2 ECT_{t-1} + \varepsilon_{2t}$$

Annual time-series data spanning thirty four (35) years- between 1980 and 2014- were obtained for estimations. Capital flight is calculated (following Boyce and Ndikumana (2011) who adopt the World Bank (1985) estimates, with adjustment for trade misinvoicing) by summing up the change in external debts stock, net inflow of FDI, and Trade Misinvoicing, and subtracting change in reserves and current account balances from the results. Therefore, data on all these variables, including that on Nigeria’s GDP and domestic deposit rates, as well as inflation

In line with this portfolio analysis and following Ndikumana et al. (2014), Victor (2008), Nkuruziza (2012) and Collier et al (2004), the relationship between capital flight, real interest rates differentials, political instability and economic growth is hereby expressed as shown below;

$$CF_t = f(RINTDIFF_t, PTS_t, GDP_t) \dots \dots \dots (1),$$

where:

- CF = Capital flight;
- RINTDIFF = Real Interest Rates Differential;
- PTS = Political Instability;
- GDP = Economic Growth.

The functional relationship between these variables (expressed in equation 1) is therefore simplified in linear equation form as:

$$CF_t = \beta_0 + \beta_1 RINTDIFF_t + \beta_2 PTS_t + \beta_3 GDP_t + \varepsilon_t \dots \dots \dots (2);$$

where:

β_0 is the intercept; β_1 , β_2 , and β_3 represent the coefficients of the variables, and ε_t is the white-noise error term.

In line with existing literatures, such as Boyce and Ndikumana (2011), Nkurunziza (2012; 2014), Ajayi (1995; 1997; 2014), among others, the coefficient of GDP is expected to be negative, indicating that capital flight reduces the level of growth. Also, the coefficient of the real interest rate differentials may be positive (in the direction of the domestic market) or negative (as expected, so as to conform to the portfolio theory). Similarly, the coefficients of political instability index and that of capital flight are expected to be positive each; negative capital flight indicates reverse capital flight.

Data Analysis and Interpretation

The results of the data analysis are summarized and explained below.

Figure 2 : Unit Root Tests

Variable	ADF Statistic/ PP Statistic		Remark
	T-Statistic	Critical Value	
CF	-4.286574	-2.954021	I(1)**
INTDIFF	-5.422305*	-2.954021	I(1)**
GDP	-7.158150	-2.957110	I(1)**
PTS	-8.518861	-2.954021	I(1)**

*indicates stationarity using the PP Test **indicates significance at 0.05

The table (figure 2) summarizes the results of the Augmented Dickey Fuller and Philip Perron tests for unit root. As denoted by I(1), the series are non-stationary at level (but stationary after the first difference). This is evident from the fact that the t-statistics is less than the critical value and the probability value is less than 0.05, for each of the series. The series are therefore modelled using first difference.

Hence, the long-run relationship will be tested using the Johansen cointegration test.

Figure 3 : Unrestricted Cointegration Rank

Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.493981	49.78057	40.17493	0.0041
At most 1 *	0.427514	27.30160	24.27596	0.0202
At most 2	0.234897	8.895256	12.32090	0.1753
At most 3	0.001806	0.059658	4.129906	0.8413

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level *denotes rejection of the hypothesis at the 0.05 level** Mackinnon -Hang-Michelis(1999) p-values -

In the results in figure 3, trace statistic indicates two cointegrating equations (None and At most 1) since the values of the trace statistic are greater than critical values, for each level, and it is significant at 0.05 level. Thus the series, as shown by the results, are cointegrated and therefore there is long-run relationship among the series.

Therefore, the Vector Error Correction Mechanism (VECM) will be used to obtain the speed of adjustment for convergence to equilibrium; and to examine the short-run disequilibrium situations as well as the long-run equilibrium adjustments between variables. The choice of VECM is informed based on the stationarity of the series after the first difference, and their cointegration.

Figure 4: Vector Error Correction Mechanism

Variable	Coefficient	Standard Error	T-Statistic
C	6.868333	3.25916	2.10739
ECT	-0.280135	0.08740	-3.20511
D(CF(-1))	0.458908	0.19445	2.36002
D(CF(-2))	-0.300885	0.18303	-1.64389
D(RINTDIFF(-1))	0.043751	0.08334	0.52496
D(RINTDIFF(-2))	0.159806	0.07193	2.22183
D(PTS(-1))	-1.512039	4.37139	-0.34589
D(PTS(-2))	2.071255	4.27062	0.48500
D(GDP(-1))	-0.186875	0.10784	-1.73288
D(GDP(-2))	-0.224634	0.11589	-1.93829
Coefficient of Determination (R^2)			0.47
F-Statistic			2.18
Akaike Information Criterion			8.10
Schwarz Information Criterion			8.56

The table above (Figure 4) summarizes the results of the VECM. From the results, it is observed that the coefficient of error correction term (ECT) is negative and less than one, since VECM treats all variables as endogenous. Thus, this explains that the rate of adjustment back to equilibrium is 2.8%. Similarly, the coefficient of capital flight (lagged 1) is positive and significant. This explains that current year capital flight is being influenced by the previous year capital flight. This is in line with the studies conducted by Ndikumana (2014); Lawanson (2007). Real Interest rates differential (lagged 2) is also positive and significant. This explains that investors are averse to domestic risks and opt for foreign investment if the interest rate is higher in the foreign market. This is similar to the results obtained by Ndikumana (2008); and may be considered the other side of findings by Ndikumana et al (2016), using the US treasury bills rate as a proxy for world interest rate to test the validity of portfolio theory. They obtained a negative and significant coefficient for interest rate differential, and explained in the direction of the domestic market (that higher interest rate in the domestic market discourages capital flight).

The coefficient of political instability is both negative and positive (for lagged 1 and 2 respectively), but not significant. This is in line with the studies conducted by Victor (2008). This may imply that political situation and terrorism in some parts of the country has not really affected the operations of investors. This may not also be unconnected with the present war against terrorist groups in Nigeria, which may have raised investors' confidence.

Finally, the coefficient of GDP (for the lagged periods 1 & 2) is negative and significant. This is in line with the studies conducted by Lawanson (2007), and Nkurunziza (2012) on Capital flight and poverty in Africa. This confirms the 'apriori' expectations that capital flight reduces the level of economic growth in a country.

Figure 5: Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
GDP does not Granger Cause CF	33	4.53013	0.0197
CF does not Granger Cause GDP		0.39342	0.6784
PTS does not Granger Cause CF	33	0.28305	0.7556
CF does not Granger Cause PTS		0.24387	0.7852
RINTDIFF does not Granger Cause CF	33	0.15762	0.8549
CF does not Granger Cause RINTDIFF		0.08113	0.9223
PTS does not Granger Cause GDP	33	1.96045	0.1596
GDP does not Granger Cause PTS		2.30296	0.1186
RINTDIFF does not Granger Cause GDP	33	0.37708	0.6893
GDP does not Granger Cause RINTDIFF		2.05297	0.1472
RINTDIFF does not Granger Cause PTS	33	1.08474	0.3518
PTS does not Granger Cause RINTDIFF		0.19559	0.8235

The Granger-Causality test was conducted, as shown by Table 5 (above), to examine the interrelationship among the variables of the model. From the table, it is observed that there are no causal relationships between political instability (PTS) and capital flight (CF); real interest rates differential (RINTDIFF) and capital flight (CF); political instability (PTS) and economic growth (GDP); real interest rates differential (RINTDIFF) and economic growth (GDP); and real interest rates differential (RINTDIFF) and political instability (PTS). However, there is a causal relationship between economic growth (GDP) through capital flight (CF), but without feedback.

Figure 6: Heteroskedasticity Test

Chi-Sq	df	Prob.
198.6080	180	0.1626

The results of the heteroskedasticity test is as shown (in figure 6) above. Since the probability value is greater than 0.05, null hypothesis may be rejected. In other words, it may be ascertained that there is no heteroskedasticity problem.

Figure 8: Serial Correlation LM Tests

Lags	LM-Stat	Prob
1	10.23358	0.8541
2	20.55230	0.1964
3	13.25884	0.6537

The table above (figure 8) summarises the results of the serial correlation LM test. It can be observed that the probability values for each of the lags is greater than 0.05. Hence, the null hypothesis may not be rejected. In other words, it can be confirmed that the series are free from serial correlation.

Summary, Conclusions and Recommendations

The study analyses the impacts of capital flight on economic growth in Nigeria. Empirical analysis of political instability as a factor inducing capital flight, using available data, was also considered; which previously has not been found in recent literatures.

The study found a (significant) negative relationship between capital flight and economic growth showing that an increase from lag 1 in capital flight will decrease economic growth by 18% percentage, which explains that the prevalence of capital flight reduces growth potentials. World Bank estimates were adopted in measuring capital flight. For most of the periods covered (1980-2014), the estimates of

capital flight is positive, signifying that investors and residents periodically transfer capital abroad. Similarly, capital flight was identified as a consequence of economic and political instabilities. Thus, interest rates differential was found to be a major reason investors consider repatriating capital abroad, since the coefficient was found to be positive and significant as seen in table 4. showing an increase in capital flight increases interest rate differentiate by 15% The coefficient of the index of political instability, however, was found to insignificantly influence capital flight. This may be the result of the current war on terrorism, which may have been restoring investors' confidence in Nigeria. However, political instability has a bi-directional relationship with GDP; this explains that political environment still induces capital flight. Reduction in political unrest in Nigeria, however, attracts foreign investors and restores investors' confidence.

Based on the findings of the study, it is hereby recommended as follows;

Real interest rates differential has been ascertained as a major factor inducing capital flight in Nigeria. A relatively stable macroeconomic environment should therefore be pursued by policy-makers. An economic environment with lower inflation rate tends to increase investors' real returns from investment and discourage flight capital. A contractionary policy is hereby recommended so as to reduce inflation and increase investors' real returns, thereby encouraging the retainment of private capital in the domestic economy.

It is also recommended that efforts towards improving the domestic economic performance, with lower Debts-to-GDP-ratio, should be doubled and re-doubled, so that investors would have confidence in the continuous working of the economy and reverse the phenomenon of capital flight.

Reduction in political unrest created by terrorism and political class will induce confidence towards increased investment, and therefore reduces capital flight. Government should therefore take its war against terrorism to the next level so as to increase domestic capital for investment and encourage the reverse capital flight.

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