

AN EXAMINATION OF THE EFFECT OF CAPITAL FLIGHT ON SELECTED MACROECONOMIC VARIABLES IN NIGERIA: A COINTEGRATION & CAUSALITY TESTING

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ABSTRACT

The challenge posed by capital flight have always engaged attentions of economists, policymakers and successive governments in Nigeria because it has denied the country of enormous resources which would have been used to accelerate the rate of economic growth and improve on the welfare of the citizens. It is in the light of this that this study empirically examines the effect of capital flight on selected macroeconomic variables in Nigeria using a cointegration and causality testing approach. Employing annual time series data sourced from the Central Bank of Nigeria statistical Bulletin (2015) and World Bank Development Indicators database (2015), variables employed in the model (capital flight, gross domestic product, investment and unemployment) were stationary as well as possessing longrun relationship within the study period. From the findings of this study, we conclude that capital flight has significant negative influence on economic growth and unemployment in Nigeria between 1999–2015. Consequently, it was recommended among others that government should create an enabling environment for investment to thrive by as much as possible curtailing the incidence of terrorism by Boko Haram as witnessed in the North, kidnapping that is rampant across the country and militancy by diverse interest groups in the Niger-Delta region. Secondly, capital flight occurs when unscrupulous elements, corrupt leaders and bureaucrats siphon scarce capital resources from their countries to advanced countries. These funds are therefore, not available for investment at home leading to decline in aggregate investment, low economic growth, thus reducing the rate of employment. Since there is a cause-and-effect relationship between capital flight and growth, government should therefore fund and strengthen the different anti-corruption agencies to adequately fight the menace of corruption and official thievery that has become a norm in Nigeria.

KEYWORDS

Capital Flight, VECM, Cointegration and Causality

1. BACKGROUND TO THE STUDY

While scholars like (Schineller, 2003) view capital flight as the international capital movements which respond to heightened domestic economic and political uncertainty, to others like (Chang & Cumby, 1990; Ajayi, 1992) capital flight is defined as net illegal outflow of capital, which inhibits economic development and growth from the countries of origin. Berger (1987) also views capital flight as illegal movement of capital from one country to another. Capital flight is clearly

not the same meaning as capital export, which consists of conveyance of capital in accordance with the law. While capital export is a normal economic phenomenon, which does not significantly harm the economy concerned from the global perspective; capital flight presents a danger and leads to the impoverishment of the economy, worsening the possibility of investments and prospects for further development of the economy.

It is generally acknowledged that shortage of funds to finance economic development is a major challenge confronting the African continent and some countries in Asia and Latin America. Thus encouraging continuous operation and inflow of foreign capital by the way of foreign investment cannot be over-emphasized in order to bridge the existing resource-gap in the third world countries. Many developing countries have resorted to external borrowing as a way of bridging their saving-investment gap. It is indeed a paradox, however, that while many third world countries are suffering from inadequate resources, huge amount of funds are being siphoned abroad by wealthy residents and political office holders in such countries without counting the economic loss that accompanies such unpatriotic decisions (Adaramola & Obalade, 2013). Nigeria for instance, with the rate of almost \$10 billion annual loss to capital flight is the leader in the league of African / third world countries suffering from this menace. Others are Egypt, Algeria, Morocco and South Africa. Capital flight if successfully tackled would not only relieve the economy of the burden but leave more resources for poverty alleviation (NBF News, 2010). It is a truism that outflow of funds from these debt-ridden economies would further increase their external indebtedness, further worsen and deplete their external reserves, exacerbate their external trade balances, reduce domestic savings and hamper future growth potentials.

According to Ajayi (1992) while several studies have been carried out on capital flight in Latin American countries, few studies have been done on the causal factors, measurements, conduits, economic determinants and empirical investigations and consequences of this concept in Nigeria. It is based on the magnitude of impact of capital flight on economic variables in Nigeria and the lack of adequate research on the topic that this study titled “**An Examination of the Effect of Capital Flight on Selected Macroeconomic Variables in Nigeria: A Cointegration & Causality Testing**” is conducted, employing econometric technique for empirical analysis. The study is aimed at further enriching the literature on the topic in Nigeria as well as a tool for policy making in other developing and third world countries.

1.1 Research Questions

Flowing from the above, the relevant questions which form the pivot of this study are:

- (i) What influence has capital flight on economic growth of Nigeria?
- (ii) What is the effect of capital flight on unemployment rate in Nigeria?
- (iii) What is the relationship between capital outflow and economic growth in Nigeria?

1.2 Research Hypothesis

Three hypotheses shall be verified independently through OLS econometric software before bringing the study to a close. These hypotheses are:

- (i) Capital flight has no significant influence on economic growth in Nigeria;
- (ii) Capital flight has no significant effect on unemployment rate in Nigeria;
- (iii) There is no significant relationship between capital flight and economic growth in Nigeria

The next section of this study shall briefly enumerate the major causes of capital flight in an economy; section three is methodology with section four devoted to data presentation, analysis and discussion of empirical results. Finally section five is conclusion and policy recommendations.

2. LITERATURE REVIEW

Nigeria, a country with a large poor population is classed among the developing countries of the world. Though she earns much foreign exchange from crude oil exports, she is still in need of capital to develop, maintain and upgrade her infrastructure. Moreover, she suffers from persistent budget deficit accompanied by high unemployment rate and deficit external balances. The country has been faced with continuous outflow of capital, which has made some scholars conclude *a priori* that the country is facing capital flight challenges. In whichever way it is viewed, capital flight takes place through transferring a part of domestic private savings abroad, the persistence of which can lead to a serious decline in domestic savings and when this occurs, banks' domestic resources in form of savings fall, curtailing the banks' ability to provide credit. The impact of this is staggering, especially for Africa, as it drains foreign reserves, heightens inflation, reduces tax collection, cancels investment and undermines free trade (Global Financial Integrity, 2010). Besides removing resources that could otherwise be used for poverty alleviation and economic growth, it tends to restrict the capacity and ability of affected countries to mobilize domestic resources and access foreign capital necessary to finance economic growth and development. Consequently, capital flight contributes to the retardation of economic growth and development of third world countries (Olawale, 2015)

The size of capital flight in developing countries is assuming a serious dimension and posing huge threat to sustainable growth especially in Africa. According to Boyce and Ndikumana (2001), many poor countries are losing more resources via capital flight than through debt servicing. They estimated that Africa is a net creditor to the rest of the world because the private asset held abroad as measured by accumulated capital flight is far more than the external debt stock of Africa. Their conclusion based on this is that efforts of donor agencies in increasing savings in developing countries may be ineffective as capital flight leads to a loss of scarce domestic savings. Capital flight in Nigeria is more severe than it is elsewhere in other Sub-Saharan African countries. Reliable and comprehensive data does not exist on the magnitude of capital flight from countries of low-income Africa, but it is believed that capital flight particularly from Nigeria has been substantial. According to Chang and Cumby (1990, 19) net capital outflows from Sub-Saharan Africa was estimated at US\$40 billion between 1976 and 1987 and this figure is identical to flows from some Latin American countries such as Argentina, Brazil or Venezuela. Capital flight from Nigeria alone is estimated to be about US\$17.5 billion, with US\$11 billion in outflows between 1985 and 1987 alone.

Capital flight represents foregone investment in manufacturing plants, infrastructure, and other productive capacity. In addition, capital flight escapes governments' taxation thus depriving nations of revenues capable of contributing to fiscal deficits and constraining expenditures on social welfare programmes, defence and infrastructural development. In addition, the magnitude of tax evasion due to capital flight by the highest income class (an opportunity not open to middle class and the low income class) accelerates income disparities and aggravates social instability. Shortages of investment funds and tax revenues associated with capital flight have led to massive building of foreign debt requiring countries to seek more external funds thereby aggravating the debt crisis. Capital flight has been eroding Nigerian economy of critical financial resources that could be utilized for building capital formation, investment, tax revenues, restructuring pensions and other social infrastructures etc. over the years. Ojo (1992) made a huge cumulative estimate

of capital flight from Nigeria of more than US\$35.9 billion between 1975 and 1991 alone. Hermes and Lensink (1992) estimate capital flight from six Sub-Saharan African countries (including Nigeria) from 1976 to 1989 and found that Nigeria has the largest incidence of capital flight of US\$21 billion. This represents 60 percent of the combined capital flight figure of the six countries in African Sub-region.

2.1 Causes and Factors Influencing Capital Flight in Nigeria.

According to Ajayi (2000) cited in Ayodele (2014) various causes of capital flight in any developing economy like Nigeria among others are:

- (i) Risk perception of investors: This factor goes with the theory of portfolio selection. Portfolio selection depends so much on the choice of investors who choose where to hold their wealth, either at home or overseas. The choice of either of this is influenced by the risk and return trade off and other considerations within the economy. A rational investor will usually invest where he/she can get a higher return on his/her investment. This has really eluded Nigeria due to the other factors to be discussed.
- (ii) Exchange rate misalignment: This has encouraged the development of parallel market premium in the foreign exchange market and it usually exposes the wealth holder to capital losses should devaluation or depreciation happen. Fiscal deficit and macroeconomic distortions in the economy encourage flights of capital because of their attendant effect on the instability of exchange rate they bring about.
- (iii) Financial sector constraints and repression: The financial market repression regulates the return on capital and does not allow the financial institutions to develop products and services that meet clients and customers needs, thus encouraging them to seek investment of their funds outside the shores of the country.
- (iv) Corruption by political leaders and extra-ordinary access to government funds: These have led to unwholesome transfer of funds to overseas from Nigeria for the main purpose of escaping sanctions and seizures by government. Baker (1999) however, established the strongest link between capital flight and political corruption when he divided capital flight into two - legal and illegal. The legal aspect of capital flight covers the movement of capital out of the economy, which involves the proper transfer of after-tax profits, which is documented as it passes through the border and remains in the book of the entity from which it is transferred. On the other hand, the illegal component is tax evading and therefore illegal for the country from which it originates and thereafter disappears. All stolen monies by Nigeria political holders fall into this latter category and has really reduced the domestic investible funds drastically (Baker, 1999).
- (v) Economic instability: Economic indices such as inflation rate, depreciation of naira, civil unrest such as kidnapping, Niger Delta crises and the Boko Haram insurgency have really sent away many investors from the country to a safer economy where fortunes await their fund. Other would-be investors around the globe think twice before investing in Nigeria because of these glaring insecurity challenges.
- (vi) Political crisis: The political scene of Nigeria lately has been bedeviled by the “do or die” syndrome in our political space. This phenomenon has sent wrong and terrible signals to the outside world. This always leads to insecurity of lives and properties; hence many investors attempt to transfer their life saving funds outside the economy especially around electioneering periods when Nigeria is preparing for general elections.

- (vii) Financial globalization: Capital flight being a challenge to domestic investment is exacerbated by the process of financial globalization that enables capital to move freely among countries. Since capital seeks the best avenue where it can earn the highest return given a level of assured risk, the domestic investment environment has not been attractive enough for investment. Financial globalization, in some cases has rendered some national governments monetary policies ineffective. Since financial globalization connotes the liberalization of the capital account, it enables capital to move in and out of the domestic economy which reduces the level of restrictions (Ojo, 2008). In fact, some foreign private banks even aid some corrupt Nigeria politician to save their loots, thereby draining the available fund for capital accumulation locally.
- (viii) Poor infrastructural facilities: As noted by Ojo (2007), Nigerian economy is presently overwhelmed with infrastructural deficit that has impeded the development of the country and its transformation into an industrial economy. Due to this, the economy has constantly lost resources to capital flights over the years. For example, Dunlop Plc left the country to Ghana due to epileptic nature of power supply in Nigeria. This trend has continued unabated as companies and firms relocate to neighbouring countries where there is a favourable environment for business. This malaise results in excessive importation and unfavourable balance of payment problems for the country.

3. RESEARCH METHODOLOGY

The study titled “An examination of the effect of capital flight on selected macroeconomic variables in Nigeria” adopts the survey method of research design and the population consists of macroeconomic variables from which data on the study - economic growth (proxy for gross domestic product), investment (proxy for gross fix capital formation) and unemployment rate were generated. The study covers the period of sixteen (16) years, i.e. (1999-2015). The period is purposely chosen to coincide with the Fourth Republic, a time Nigeria assessed huge revenue from oil with little or nothing on ground to show for such earnings, possibly owing to large outflows of these funds through unethical channels by unscrupulous politicians and unpatriotic citizens. The data are essentially secondary data sourced from World Bank database and Central Bank of Nigeria (CBN) statistical bulletin. The null hypotheses stated in this study were tested at 5% level of significance and F-statistic value of the granger causality test.

3.1 Method of Data Analysis:

The study adopts the Johansen Cointegration and Pairwise Granger Causality approach in its analysis with an error correction mechanism to determine the short run dynamics in the model. These techniques will be carried out through E-views version 8.0 econometric software.

3.2 Conceptual Framework and Model Specification

The conceptual framework revealed the relationship between the variables of the study. The selected macroeconomic variables considered in the study are economic growth, investment and unemployment rate served as independent variables while capital flight is the dependent variable.

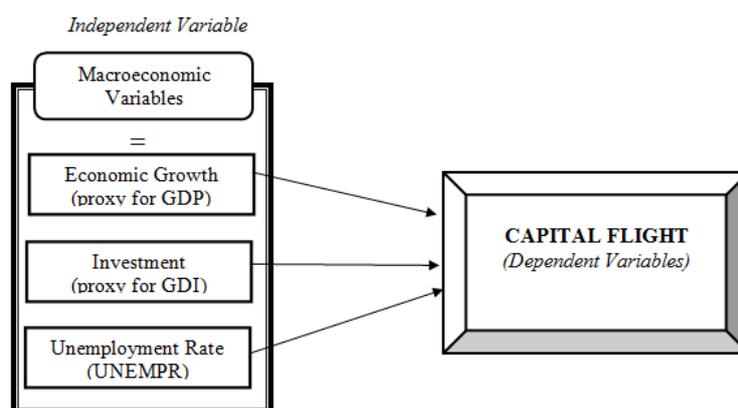


Fig 1 Source: Sketched by the Author

3.3 Definition of Independent Variables in the Model / A priori Expectation

Gross Domestic Product (GDP): This refers to the total value of goods and services produced within a territory during a specified period usually one year. This is a proxy for economic growth which refers to an increase in the capacity of an economy to produce goods and services, compared from one period of time to another. On *a priori*, it is expected that this coefficient (gross domestic product) will turn out positive in relation to capital flight, meaning that as economic growth rises, the volume of capital flight within the study period rises.

Investment: An investment is an asset or item that is purchased with the hope that it will generate income or will appreciate in the future. In an economic sense, an investment is the purchase of goods that are not consumed today but are used in the future to create wealth. In finance, an investment is a monetary asset purchased with the idea that the asset will provide income in the future or will be sold at a higher price for a profit. This variable is proxied by gross fix capital formation and on *a priori* it is hoped that the coefficient will come out negative depending on the volume of capital flight within the period under reference. If the independent variable (investment) comes out negative, it means therefore that a rise in capital outflow from the Nigerian economy results to a drop / fall in investment in the economy.

Unemployment: The number of people in a country who are qualified and willing to work but cannot find any work to do. The unemployment rate is a measure of the prevalence of unemployment and it is calculated as a percentage, by dividing the number of unemployed individuals by all individuals currently in the labor force. The theoretical *a priori* expectation here is for the coefficient of unemployment to be positively related to capital flight. If unemployment is positive, it implies outflow of capital contributes to a rise in the unemployment figures in Nigeria. If otherwise, then it can be inferred that capital flight is not hurting employment in Nigeria.

Definition of Dependent Variables in the Model

Capital Flight: This describes an outflow of money from one country to another as investors lose faith and confidence in their external investments. Typically it happens when a nation's currency is under strong downward pressure either because of speculative selling or because of fundamental factors such as a recession, poor trade performance or a steep fall in asset prices or interest rates. Another root cause is weakening faith in the creditworthiness of a national government especially when they are running up large budget deficits that might be unsustainable. Foreign investors may choose to withdraw their money if they expect a hike in

taxes on their investments. When capital flight happens the currency is likely to drop sharply as money leaves the economy and there may be little that the central bank can do about this e.g. by intervening in the markets or by raising short-term interest rates.

Another school of thought defines capital flight as “a large-scale exodus of financial assets and capital from a nation due to events such as political or economic instability, currency devaluation or the imposition of capital controls”. Capital flight may be legal, as is the case when foreign investors repatriate capital back to their home country, or illegal, which occurs in economies with capital controls that restrict the transfer of assets out of the country. Capital flight can impose a severe burden on poorer nations, since the lack of capital impedes economic growth and may lead to lower living standards. Paradoxically, the most open economies are the least vulnerable to capital flight, since transparency and openness improve investors’ confidence in the long-term prospects for such economies. From the above definition of capital flight, it can be concluded that the concept is devoid of official account or measurement as those involved in the act does so illegally and in reaction to unfavourable economic climate in a nation.
<https://www.tutor2u.net/economics/blog/capital-flight>

3.4 Variable Measurement

CAPFLT is the total yearly estimated amount of capital flight in million of United States dollars.

GDP is expressed in billions US dollars

INVT is measured in billions of US dollars

UNEMPR is expressed in percentage

3.5 Model Estimation Procedure

The study employs three-prong procedural steps. The first step, descriptive statistics and stationarity test of the data in order to understand, describe and summarize the data in a meaningful way. It also helped to know if the data are normally distributed through their averages and *Jarque-Bera* values. The next step is the determination of the stability of the variables. For the purpose of this research, the Augmented Dickey-fuller (ADF) unit root test is applied. This test of the time series data is required because a non-stationary regressor invalidates many standard empirical results. The presence of a stochastic trend is determined by testing the presence of unit roots in time series data. Thereafter, the Johansen co-integration test is applied to establish whether there is a long-run equilibrium relationship between the variables in the model. The primary step in the Johansen cointegration test is to obtain the optimal lag length because the Johansen cointegration test is sensitive to lag length. If the lag length is too much, the test will give a misleading result. The optimal lag length was determined by the Akaike Information Criterion (AIC) and Schwarz Information Criterion (SC). However, in a situation where any of the criteria (AIC or SC) picks an optimal lag length different from the other, the Schwarz Information Criterion is a better criterion to be used to determine the optimal lag length (Koehler and Murphree, 1988).

The Vector Error Correction Model (VECM), a test for short run and long run relationships or dynamics between variables is also conducted. The Vector error correction model is specified as in equation one below:

$$\sum_{i=0}^{m-1} \beta_t \quad \sum_{i=0}^{m-1} \gamma_t \quad \sum_{i=0}^{m-1} \delta_t \quad 19$$

$$\Delta \text{CAPFLT}_t = U_t + \alpha_t \Delta \text{CAPFLT}_{t-1} + \beta_t \Delta \text{GDP}_{t-1} + \gamma_t \Delta \text{INVT}_{t-1} + \delta_t \Delta \text{UNEMP}_{t-1} + \varphi_{t-1} + \mu_t$$

....(eqtn 1)

Where Δ is the first difference operator, α_t and β_t , γ_t , and δ_t are the coefficients estimated from equation (1). φ = Speed or rate of adjustment, The Vector error correction mechanism will indeed tell how much of deviation from the long run is being corrected. In order to confirm the robustness and validity of regression model, some post-estimation tests were conducted. These are the autocorrelation and heteroscedasticity tests. Having described the estimation procedure, the next discussion is on the model evaluation criteria. In the next section, the findings of the evaluation is presented and discussed after preliminary analysis of the data.

4. EMPIRICAL FINDINGS AND DISCUSSIONS

4.1 Preliminary Analyses

The preliminary analyses are in two parts: Descriptive Statistics and Stationarity test

4.2 Descriptive Statistics

The characteristics of the data and the summary of the descriptive statistics of the variables are presented in Table 1 below:

Table 1: Summary of Descriptive Statistics

	CAPFLT	GDP	INVT	UNEMP
Mean	31120908	2.32E+11	15.99232	7.967059
Median	20657318	1.66E+11	7.816524	4.100000
Maximum	95356346	5.68E+11	59.30075	18.34000
Minimum	4679212.	3.59E+10	0.300004	4.100000
Std. Dev.	29710232	1.90E+11	19.21068	4.932717
Skewness	1.247459	0.566969	1.070508	0.872243
Kurtosis	3.146910	1.716160	2.838123	2.374561
Jarque-Bera	4.424390	2.078292	3.265523	2.432704
Probability	0.109460	0.353757	0.195389	0.296309
Sum	5.29E+08	3.95E+12	271.8694	135.4400
Sum Sq. Dev.	1.41E+16	5.75E+23	5904.807	389.3072
Observations	17	17	17	17

Source: Author’s computation from E-views 8.0

There is evidence of significant variation in the trends of the variable over the period of consideration. This is shown by the large difference between the minimum and maximum values of the series. As regards the statistical distribution of series, the results show that all the series are

positively skewed. The standard deviation shows that capital flight (CAPFLT) is the most volatile variable while gross domestic product (GDP) is the least volatile among the variables. The kurtosis statistics reveals that all the variables are platykurtic, suggesting that the distributions are flat relative to normal distribution.. Lastly, the Jarque-Berra statistics is a goodness of fit of whether sample data have skewness and kurtosis matching a normal distribution. There is normality of all variables, considering the fact that all the Jargue-Berra probability values are greater than the threshold of 5%.

4.3 Augmented Dickey Fuller Test

Unit Root test was carried out to determine the stationary of the variables. The Augmented Dickey Fuller (ADF) test was employed in carrying out this test. The null hypothesis is rejected if the test statistic in absolute terms is greater than the test critical values in absolute terms at the conventional levels of significance (1%, 5%, and 10%). For the purpose of this research analysis, 5% level of significance would be applied. The variables were lagged in order to reduce the values. The results of the Unit Root test conducted are presented in Table 2.

Table 2: Augmented Dickey Fuller Unit Root Test at Level and 1st Difference

Variable	Level	1 st Difference	5% Critical Value	Order of Integration
Log(CAPFLT)	Non-Stationary	-4.199946	-3.098896	I(1)
Log(GDP)	Non-Stationary	-5.437545	3.081002	I(1)
Log(INVT)	Non-Stationary	-5.044238	3.081002	I(0)
Log(UNEMP)	Non-Stationary	-4.135354	3.081002	I(1)

Source: Author's Computation using E-views

The test was based on two statements of hypothesis, the null which states that there is unit root, implying that variables are not stationary. The alternative hypothesis states that there is no unit root, implying that variables are stationary. However, the review of table two above showed stationarity of variables used for this study with focus on 5% level of significance. From empirical evidence above, we reject the null hypothesis and accept alternative hypothesis, thus concluding that the variables capital flight, gross domestic product, investment and unemployment rate are stationary series. After ascertaining the stationarity properties of the variables in the model, their long run relationship will be determined through Johansen Cointegration test. But before then, lag length selection test will be conducted to determine the lag to be used for the estimate.

4.4 Optimal Lag Length Selection

It is imperative to determine the optimal lag length. The Optimal lag length is determined by the Akaike Information Criterion (AIC) and the Schwarz Information Criterion (SC). This is presented in

Table 3: Included observations: 16

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-54.07936	NA	0.016724	7.259920	7.453067	7.269811
1	-19.50535	47.53927*	0.001788*	4.938168*	5.903904*	4.987622*

* indicates lag order selected by the criterion

LR = Sequential modified LR test statistic (each test at 5% level)

FPE: Final Prediction error

AIC= Akaike information criterion

SC = Schwarz information criterion

HQ= Hannan-Quinn information criterion

The result above portrays different lag length criteria and the respective lag length chosen. From the results, LR test statistics, the Final Prediction error Akaike Information Criterion Schwarz information criterion, and Hannan-Quinn information criterion obtained lag length structure one (1) for CAPFLT, GDP, INVT, and UNEMP. The implication of the lag length selected explains the effect of the outcome of previous year on the current year. However, based on the appropriate lag length structure, the researcher accepted the lag order (1) for the model. After establishing the lag order length, the co-integration, and long-run equation results were estimated and explained in the next section.

4.5 Longrun Analysis (Cointegration Test)

To test for co-integration, we adopt the Johansen maximum-likelihood approach because the Engle-Granger approach can be extremely weak under mild cases of autocorrelation. The Johansen-Juselius also provides likelihood ratio statistics with exactly known distributions. If the variables are co-integrated, the final stage of the time-series analysis is to construct dynamic error correction models (ECMs) that take into account the underlying co-integration properties. Economically speaking, two or more variables will be cointegrated if they have a long-run or an equilibrium relationship between or among them (Gujarati, 2004:822). That is, if they can walk together for a long time without deviating from an established path. The output is as presented below.

Table 4a: Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.971955	96.98344	47.85613	0.0000
At most 1 *	0.872501	43.37402	29.79707	0.0008
At most 2	0.563098	12.47937	15.49471	0.1353
At most 3	0.003904	0.058668	3.841466	0.8086

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

Table 4b: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.971955	53.60942	27.58434	0.0000
At most 1 *	0.872501	30.89466	21.13162	0.0016
At most 2	0.563098	12.42070	14.26460	0.0958
At most 3	0.003904	0.058668	3.841466	0.8086

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

The above illustrate Johansen's co-integration test under both trace and maximum eigenvalue. The trace and maximum eigenvalue test indicates two co-integrating relationship thus revealing the presence of a unique longrun economic relationship among the variables CAPFLT, GDP, INVT and UNEMP during the period under reference. Since there is at least one co-integrating vector, an economic interpretation of the relationship between capital flight, gross domestic product, investment and unemployment can be obtained by normalizing the estimates of the unconstrained cointegrating vector on GDP.

Panel 1: Normalizing the Estimates of the Unconstrained Co-integrating Vector.

$$1.0000(\text{CAPFLT}) = -8.90\text{E-}5(\text{GDP}) + 1.982190(\text{INVT}) + 14247056(\text{UNEMP})$$

(2.8E-05) (175860) (1146568)

Note: Standard errors are in parenthesis

Source: Author's computation from E-views 8.0

The parameters (i.e., long-run estimates) of the cointegrating vector for the long-run equation are presented in Panel 1. The results in Panel 1 above show a negative and statistically significant relationship between GDP and the dependent variable capital flight. The result reveals that in the longrun a billion dollar decrease in gross domestic product is caused by a 8.90 billion dollar rise in the volume of capital outflow from Nigeria. This result reveal the fact that as the rate of capital flight increases and more money is taken out of the country, the domestic economy suffers as a result of a fall in gross domestic product figures. The coefficient of investment is positively related to capital flight which is contrary to theoretical a priori expectation. Unemployment rate is positive in line with a priori expectation. The result indicates that unemployment rate in Nigeria rises as more money takes flight out of the country. When funds that could have been invested in

productive ventures to reduce the rate of joblessness among the teeming populace is frittered away to foreign shores by some unscrupulous, corrupt leaders and bureaucrats who siphon scarce capital resources from their countries to advanced countries, the economy suffers for it and the likely consequences will be increase in unemployment among the citizens.

4.6 Vector Error Correction Mechanism

In the short-run, deviations from the long-run relationship established in panel 1 could occur due to shocks to any of the variables. In addition, the dynamics governing the short-run behavior of the model are different from those in the long-run. Due to this difference, the short-run interactions and the adjustments to long-run equilibrium are important because of the policy implications. The error-correction model arises from the long-run co-integration relationship. To check for the speed of adjustment of the model from the short run to the long run equilibrium state, we consider the error correcting term (ECM). The error-correction term shows the adjustments of the model from short-run disequilibrium to long-run equilibrium trends. The greater the coefficient of the error correction term, the faster the speed of adjustment of the model from the short run to the long run vice-versa. Below is the ECM output indicating the coefficient of the ECM term.

Table 4: Vector Error Correction Mechanism

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ECM(-1)	-0.149647	0.08338	-1.79482	Insignificant

Source: Author’s computation using E-views 8.0

The estimated coefficient of the ECM term which is also the speed of adjustment to equilibrium is negative as required by economic theory. From the ECM result above, the ECM coefficient - 0.149647 is rightly signed but not statistically significant at 5% level of significance. It indicates that just about 15% of the disequilibrium or distortion in the Nigerian economy is yearly being corrected for, though slowly due to the low coefficient of the ECM term.

4.7 Granger Causality Test (Cause and Effect Analysis)

The existence of cointegration relationships indicates that a long-run equilibrium relationship exist between capital flight, economic growth, investment and unemployment in Nigeria between 1999 to 2015. But in order to determine which variable causes the other, granger causality test was used. The granger causality test results are presented below.

Table 5: Extracted Output of Granger Causality Test

Description	Prob. Value	Decision
GDP does not Granger Cause CAPFLT	0.0383	Reject
CAPFLT does not Granger Cause UNEMP	0.0544	Reject
UNEMP does not Granger Cause GDP	0.0002	Reject

Source: Author’s computation using E-views 8.0

To determine the direction of causality between capital flight, gross domestic product, investment and unemployment rate in Nigeria, granger causality test was performed. According to the preceding table, the results suggest unidirectional causality running from gross domestic product to capital flight; capital flight to unemployment and from unemployment to gross domestic product within the period under reference. The probability values are used to determine whether to accept or reject the stated hypothesis. The economic implication of the unidirectional causality from GDP to CAPFLT is that a rise in gross domestic product leads to increases in the volume of funds taken out of the economy through capital flight. There is the temptation among Nigerian politicians in times of a boom in the economy to get more involved in sharp practices that grant them undue access to public funds which they repatriate out of the country through illegal channels. In a nutshell, the boost to Nigerian GDP figures between 1999 to 2015 was an impetus to capital flight within the same period.

In a similar vein, as more funds leave the shores of Nigeria illegally, the country pays dearly for it as the effect on the economy is unquantifiable. As the benefits from investible funds take flight either due to lack of patriotism or unfavourable economic climate that could lead to foreign partners taking out their investment funds out of the economy to more favourable business destinations, the consequence in the longrun remains the persistent rise in our unemployment figures and as unemployment figures keep mounting, the country's gross domestic figures nose-dives because able-bodied and trained manpower that should be engaged in productive activities are out of job.

The above empirical analyses are in agreement with the view of Ajayi (1992) and Pastor (1989) who identified two main theories in support of the concept of capital flight. These theories viz the investment diversion theory and austerity thesis provides some of the well-known negative consequences of capital flight in the countries involved. They become more relevant owing to the fact that they further amplifies, augments and or supports our findings, hence they are restated for emphasis and confirmation of our empirical findings from both our long run cointegration result and the result of the granger causality test.

The Investment Diversion Theory: This theory postulates that due to the macroeconomic and political uncertainty in developing countries and the simultaneous existence of better investment opportunities in advanced countries such as high foreign interest rate, more friendly and favourable investment climate, political and economic stability, favourable tax climate and secrecy of account, some unscrupulous, corrupt leaders and bureaucrats usually siphon scarce capital resources from their countries to advanced countries. These funds are therefore, not available for investment at home leading to decline in aggregate investment, low economic growth, hence declining the rate of employment, increase in dependency ratio and high death rate. In the view of Ajayi (1992) these negative macroeconomic effects on these countries sometimes motivate the necessity to borrow from abroad to reactivate the domestic economy, which is sometimes further siphoned thereby perpetuating external dependency and indebtedness. The liquidity constraint or crowding-out effect may result to depreciation of the domestic currency if the authorities are operating a floating exchange rate system. An attempt to defend the exchange rate at this time leads to loss of international reserves.

The Austerity Thesis: This thesis views the poor in several indebted situations due to capital flight. They suffer more because they are exposed to excruciating austerity measures by government to pay for debt obligations to international banks that in turn pay interest to capital flight from residents in these countries (Pastor, 1989). Poverty in developing countries reduces them to hewers of wood and drawers of water while perpetuating international inequality and dependency and widening the gap between the rich countries and poor countries. Furthermore, the tax that the poor may pay is small, which again constrains the ability of government to muster

enough resources to promote growth and development with poverty alleviation. Thus, a vicious circle of external debt, capital flight, poor growth and poverty is created. Drawing from the above analysis, capital flight destroys the domestic macroeconomic environment and enhances the absence of transparency and accountability. These distortions manifest themselves in weak governance, large government deficits, overvalued exchange rate, high and variable inflation coupled with financial repression Ajayi (1992).

5. TEST OF HYPOTHESIS

This sub-section presents the result of hypothesis testing with conclusion:

- (i) Capital flight has no significant influence on economic growth in Nigeria;
- (ii) Capital flight has no significant effect on unemployment rate in Nigeria;
- (iii) There is no causal links between capital flight and economic growth in Nigeria

Considering the negative impact of capital flight on economic growth and unemployment in Nigeria from the long-run cointegration equation, we reject the null hypothesis stated above and thus conclude that capital flight has significant negative influence on economic growth and unemployment in Nigeria between 1999–2015. Similarly, it is concluded that there is a causal flow from capital flight to economic growth judging from the granger causality test result. This implies that capital flight caused economic growth to stagnate in Nigeria within the period under reference.

6. CONCLUSION / RECOMMENDATIONS

The challenge posed by capital flight have always engaged attentions of economists, policymakers successive governments in Nigeria because it has denied the country of enormous resources which would have been used to accelerate the rate of economic growth and improve on the welfare of the citizens. It is in the light of this that this study empirically examines the effect of capital flight on selected macroeconomic variables in Nigeria using a cointegration and causality testing approach. Using annual time series data sourced from the Central Bank of Nigeria statistical Bulletin (2015) and World Bank Development Indicators database (2015), variables employed in the model (capital flight, gross domestic product, investment and unemployment) were stationary as well as possessing longrun relationship within the study period. From the findings of this study, we conclude that capital flight has significant negative influence on economic growth and unemployment in Nigeria between 1999–2015. Similarly, it is concluded that there is a causal flow from capital flight to economic growth. This implies that capital flight caused economic growth to stagnate in Nigeria within the period under reference.

Consequently, the following recommendations were suggested:

- (i) Government should create an enabling environment for investment to thrive by as much as possible curtailing the incidence of terrorism by Boko Haram as witnessed in the North, kidnapping that is rampant across the country and militancy by diverse interest groups in the Niger-Delta region. When lives and property are not secured, investors flee to better investment destinations thus leading to increase capital flight.
- (ii) Capital flight occurs when unscrupulous elements, corrupt leaders and bureaucrats siphon scarce capital resources from their countries to advanced countries. These funds are therefore, not available for investment at home leading to decline in aggregate investment, low economic growth, thus reducing the rate of employment. Since there is a cause-and-effect relationship between capital flight and growth, government should therefore fund and strengthen the different anti-corruption agencies to adequately fight

the menace of corruption and official thievery that has become a norm in Nigeria. Unless and until stiff penalties are meted out to offenders, more such criminals will be embolden to continue in that spirit of thievery which is the very reason Nigeria has remained under-developed.

- (iii). As much as possible, expatriates should be encouraged to keep their investible fund in the economy. If need be, tax reliefs should be given to them as a source of motivation to remain in the country.
- (iv) Furthermore, adequate checks should be put in place by the monetary authorities and immigration officials to checkmate the activities of politicians aided by corrupt bank officials / executives to illegally cart away funds appropriated for domestic development to acquire property worth billions of naira outside the country. Nigeria is renowned for this unpatriotic act, the trend must be checked, as it is a bad omen to the economic development of Nigeria.

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