

Empirical Investigation of the Effect of Capital Flight on Nigerian Economic Growth

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Abstract: The study focused on the effect of capital flight on Nigerian economic growth. The study adopted an ex-post facto research design by utilizing secondary data obtained from the CBN Statistical Bulletin, NBS, IMF and World Bank, using time series data from 2002 to 2021. The study utilized panel data techniques for a twenty-year period (2002 to 2021) to explore the effect of capital outflows, external debt, external reserve, and exchange rate. The findings of the study revealed that capital outflow (CO) has a negative relationship with Nigerian economic growth and the effect is significant ($\beta = -0.289965$; P-Value = 0.006). External debt (ED) has a negative correlation with Nigerian economic growth and the effect is insignificant ($\beta = -0.088933$; P-Value = 0.7899). External reserve (ER) has negative relationship with Nigerian economic growth and the effect is significant ($\beta = -57032.05$; P-Value = 0.0329). Exchange rate (EX) has a negative correlation with Nigerian economic growth and the effect is insignificant ($\beta = -0.235292$; P-Value = 0.422). The study concluded that capital flight significantly affects Nigerian economic growth. The study therefore recommended that Government should enact law to protect and encourage Nigerians involved in capital flight in the past to repatriate their stolen money/ laundered money back home and invest them in the real sector of the economy and there must be a limit on foreign borrowing tendencies of government at all levels and agencies as well as private sector organizations. In addition, foreign borrowing must be limited to only infrastructural development desires of the country. Nigeria Government should stop importation of petroleum products into the country and fix all the four (4) refineries in the country to reduce foreign currency spent on importation of petroleum products.

Keywords: Capital flight, Capital outflow, Economic growth, Exchange rate, External debt, External reserve

1. Introduction

From 1970-2018, African countries lost over \$2 trillion via capital flight, which is nearly the annual gross domestic product of all sub-Saharan African countries put together. Juxtaposed to \$47 billion of foreign support inflows, African countries lose a projected \$60 billion annually via capital flight. Angola, country rich in oil, lost over \$100 billion in capital flight from 1986-2018 due to the mishandling of oil resources via the collusion among the multinational companies, political elite, and international banks (Ndikumana and Boyce, 2021). South Africa, a country well-to-do in numerous minerals, lost \$329 billion from 1970-2018 because of embezzlement of state resources by state-owned companies, mis-invoicing of mineral exports, and the collusion of private actors and politicians. In Cote d'Ivoire, the cocoa sector has enriched the multinational companies and political elite via exports at the expense of Ivorian farmers. As of 2021, projected total capital flight stood at \$71.1 billion for Cameroon, \$50 billion for Ghana, and \$71.5 billion for Zambia (Oladimeji, Olasunkanmi & Ohiaeri, 2022).

Economic growth implies a rise in the volume or size of a country's economy over a particular period. The size or volume of an economy is usually measured by the total production of goods and services in the economy, which is known as gross domestic product. Economic growth could be quantified in "real terms" or "nominal". Nominal economic growth indicates a rise in the dollar worth production over time. This comprises changes in both the size of production and the values of goods and services manufactured. According to Reserve Bank of Australia (2022), real economic growth is the increases in the size manufactured only, which takes away the impact of prices changing. This is because, it better suggests how much a country is producing at a point in time, compared with other given times.

The phenomenon of capital flight in developing nations, such as Nigeria, has gained substantial relevance owing to its destructive effect on the expansion of their economies. It is usually acknowledged that the paucity of funds to finance economic development is a main challenge facing the African continent. As a result, several emerging countries have resorted to foreign borrowing to bridge the saving-investment gap. Ndikumana (2018) opined that while the problem of capital flight has been ascribed to the external-debt problem of emerging economies, which in turn hinders developmental efforts and intentions in the developing countries where it is flourishing.

The magnitude of capital flight or capital outflow occurring from developing to advanced countries has necessitated attempts to control capital flow from emerging countries, where it influences the limited capital unfavorably. According to Aderibigbe, Oyedokun, and Asaolu (2019), this occurrence has resulted in a dearth of developmental projects and impeded economic growth in such host countries. For example, report revealed that the erstwhile Libyan president, Muammar Gaddafi, hidden over \$20 billion in four banks in South Africa. In the same vein, former Tunisian president, Ben Ali, stole and sent about \$20 billion to an unknown country between 1987 and 2011. Surprisingly, the issue of capital flight is not unusual in Nigeria. Akinwale, (2020) opined that Nigeria is confronted with capital flight; it is therefore a contradictory phenomenon that capital from Nigeria exits to develop countries that are capital-surplus. Capital is required in Nigeria for providing employment opportunities, investment, fighting insecurity challenges, tackling infrastructural shortfalls, fighting poverty, providing an enabling environment for businesses to flourish, improving the socio-economic circumstances of her residents, and driving development mostly among others. For instance, according to United Nations (2015), it was shown that capital that left Nigeria amounted to \$4 billion between 1993 and 1998. Likewise, the Economic and Financial Commission recounted that capital flight from Nigeria to the United Kingdom, the United States of America, and South Africa was worth \$250 million between 1999 and 2007 (Akinwale, 2020).

Hence, the extent of capital flight happening in Nigeria has significantly impacted economic growth and expansion as examined by various circumstances. The circumstances include political purposes and socio-economic, political uncertainty, weak financial institutions, economic power, and corruption, amongst others.

The purpose of this study is to investigate the effect of capital flight on economic growth in Nigeria. The specific objectives are to:

1. Investigate the effect of capital outflow on Nigeria's Real Gross Domestic Product.
2. Examine the effect of external debt on Nigeria's Real Gross Domestic Product.
3. Determine the effect of external reverse on Nigeria's Real Gross Domestic Product.
4. Examine the effect of exchange rate on Nigeria's Real Gross Domestic Product.
- 5.

2. Literature Review

Capital Flight

Capital flight, in economics, happens when money or assets swiftly move or flow out of a country, due to an event of economic consequence or as a result of a political activity such as change in government or economic globalization¹. Such activities could be a rise in taxes on capital or capital holders or the government of the country default on its debt obligation that interrupts investors and causes them to lower their assessment of the assets and resources in that country, or otherwise to lose confidence in its economic power. This leads to the disappearance of wealth, and is typically complemented by a sharp drop in the exchange rate of the affected country and decrease in a variable exchange rate regime, or a compulsory devaluation in a fixed exchange rate regime. This fall is principally destructive when the capital belongs to the people or citizens of the affected

country for the reason that not only are the citizens now troubled by the loss in the economy and devaluation of their currency but their assets have lost much of their nominal value. This leads to dramatic reductions in the purchasing power of the country's assets and makes it more and more expensive to import goods and acquire any form of foreign facilities, e.g. medical facilities.

Capital flight is an occurrence exemplified by large outflows of resources and/or capital from a country due to some activities, resulting in adverse economic consequences to that country. Furthermore, CFI (2019) described capital flight as the swift withdrawal or removal of resources and capital from specific regions or cities within a country (Note that capital flight may involve the withdrawal or removal of both foreign and domestic capital).

Capital flight refers to the illegitimate movement of resources, money, or financial assets from investments in one country to another to prevent country-specific risks such as political instability hyperinflation and anticipated devaluation or depreciation of currency. It can also be considered as a movement or flow of local saving from less advanced economies away from financing local real investment for a foreign financial investment in developed economies of the world leaving the economic progress and advancement of the less developed economies at base. Capital flight in Nigeria is more severe than it is in different places in Sub-Saharan African countries due majorly to unhealthy economic situation, political instability, and the high scale of corruption at all levels of government in Nigeria. This variable hypothetically is expected to exert a negative effect on the domestic investment of the economy (Rahmon, 2017; Ajose & Oyedokun, 2018).

Olawale and Ifedayo (2015) opined that capital flight arises through the transfer of a significant percentage of domestic private savings abroad, the persistence of which can lead to a serious harmful effect on domestic savings, thereby constraining banks' capability to provide credit or loan to domestic investors capable of encouraging and improving economic growth and development.

3. Theoretical Review

This study is anchored on the Purchasing Power Parity (PPP) Theory. Professor Gustav Cassel of Sweden propounded this theory in 1918 and suggested that the nominal foreign exchange rate should consider the purchasing power of one currency compared to another (Stephen & Sanmi, 2011). Each time a nation saves a dollar of revenue, it can utilize it to finance domestic capital or an overseas asset or resources and stimulate its economic growth (Suranovic, 2012). This theory shows that the transactions or operations of a country in the form of capital outflows directly and indirectly adjudicate its overseas exchange rates and eventually influences its economic growth (Bohlin, 2010).

Enhanced returns on overseas resources relative to local resources as well as the uncertainty about whether purchasing power parity promotes capital flight (Ayadi, 2008). In the overseas currency exchange market, net capital outflow represents the source of supply of dollars, making it the changeable that connects the two markets (Ellyne & Mbewe, 2015). This theory was beneficial in this study as it endeavored to depict the significance of foreign exchange rates to the effects of capital flight on economic growth. It describes that when determining gross domestic product, Purchasing Power Parity provides a more precise picture regarding a country's overall standard of living, which suggests its economic growth.

When capital moves out of a country, it merely offers purchasing power in contrast to commodities and services in its own country (Taylor & Taylor, 2004). Virtually all exchange rate structures have failed to expunge the occurrences of capital flight and the impetus to sort out the increasing foreign exchange rate has been missing (Stephen & Sanmi, 2011). Finally, when investors expect a real depreciation, they gravitate towards engaging in capital flight to prevent the risk of loss of purchasing power. The consequence of this is that gross domestic product adversely impacts and additionally devalues the domestic currency (Ellyne & Mbewe, 2015).

This study is anchored on Debt Overhang Theory. Myers introduced this theory in 1977 (Myers, 1977). He concentrated on corporate finance and the theory was first utilized to development economics by Krugman (1988) and Sachs (1989) after the Latin American debt crisis in 1980s (Krugman, 1988; Sachs, 1989). When external debt surpasses the predictable present value of the possible future payments to the creditors, the country no longer has any inducement to implement the essential financial and macro-economic changes to enhance its economic growth and refund the creditors (Freytag, Pettersson, & Schmied, 2016).

The debt overhang theory postulates that there is a likelihood that in time to come, external debt will be greater than the country's repayment ability and the estimated debt servicing payments will dissuade both the domestic and overseas investments. According to Ngugi, Ngugi and Njaramba (2016), the theory demonstrates that the stock of public debt as well as the debt payments influence economic growth and modifies the significances of public expenditure by this means preventing investment in the country.

4. Empirical Review

Ewubare, Wokekoro and Bozi (2022) examined the impact of capital flight on economic development in Nigeria covering the period 1980 to 2020. Time series data within the period were gathered on every of the variables utilized in the model from the Central Bank of Nigeria (CBN) Statistical Bulletin, 2020. The data analysis was performed for both the short run and the long run connections using the ARDL assessment while the ADF tests were employed in testing for stationarity of the time series, Post-test assessment consist of serial heteroskedasticity, autocorrelation, and CUSUM tests. The research used GDP as the predicted/dependent variable while capital flight served as the key explanatory/independent variable. Other sub-variables employed consist of balance of payment, inflation, and exchange rate. The study discovered that there is a negative but significant relationship between the GDP and the explanatory/independent variables over the period. Consequently, it was recommended that deliberate/strategic actions should be implemented to avert potential leaks that trigger enormous capital flights. These actions should be on restricting the financial outflows from the system through the regulatory authorities. The authorities must increase efforts to checkmate the excesses of dishonest/corrupt businesspeople and politicians who act as agents to siphon resources out of the country. There should be the application of the appropriate procedures and laws to guarantee capital flight is curbed as this will improve the economic growth and development in Nigeria.

Amadi, Ihemeje, Hanson, Obioma and Ogbonna (2021) assessed the impact of capital flight on the economic growth of Nigeria, data were gathered from the CBN Statistical Bulletin. The study employed ordinary least square (OLS) regression technique for analysis and was complemented by different tests together with Augmented Dickey Fuller (ADF) unit root test, Auto-Regressive Distributed Lag (ARDL) model, C- integration and Bounds (long-run) tests and Granger Causality tests. The report showed a negative and non-significant relationship between capital flight and the economy. Also, overseas direct investment had a negative and statistically significant correlation with economic growth, while foreign borrowing had a positive and statistically significant correlation with the economy. Lastly, overseas reserves and current account balances had positive and no significant correlation with economic growth in Nigeria. Based on the findings, it is concluded that, Capital flight has a damaging impact on the economy with the outflow of much desired financial assets/resources triggering reduction in economic happenings and growth; foreign borrowing is an significant determining factor of economic growth; overseas direct investment is an significant determining factor of long-run economic growth; current account balances has an advantageous consequence on the economy though, the degree of its outcome is rather negligible. In addition, overseas reserves perform an essential role in economic growth in Nigeria. It is therefore recommended that: a stable economic, political atmosphere be provided and sustained; it is further recommended that the government should inspire the inflow of foreign direct investment; it is similarly recommended that strong and steady foreign reserves balances be sustained in order to enhance investor confidence; it is important to improve the overseas exchange strategies and policies of the country to eradicate the need to continuously safeguard the domestic currency with the country's stock foreign exchange. Foreign borrowing must be curbed and restricted to only infrastructural development requirements of the country.

Alejo, Aremu, Matthew, Owolabi, Okorie and Osabuohien (2021) carried out a study of the correlation between capital flight and poverty reduction in Nigeria, the study employed secondary data covering the period 1981 to 2017. The study utilized the Augmented Dickey Fuller (ADF) test; Philip Perron (PP) test; Kwiatkowski, Phillips, Schmidt, and Shin's (KPSS) all types of unit root tests; Johansen test for co-integration and Dynamic Ordinary Least Square (DOLS) for long run assessments. The research found that a rise in poverty level in the country would be preceded by increasing capital flight together with rising reliance ratio and reduction in economic

growth rate. Therefore, this study recommends that the Federal Government of Nigeria through the appropriate regulatory authorities should compel regulation against unlawful movement of capital and prosecute wrongdoers. The Federal Government must be seen to strengthen the agency attempts against illegal movement of funds in the country. Contracts to overseas countries' companies should be awarded with the requirement of having at least 50 percent of the operation and management staff and manufacture inputs obtained domestically and establishing factories in the country rather than running marketing outfits.

Tarawalie and Jalloh (2021) assessed the determinants of capital flight in Sierra Leone and the direction of causality between capital flight and key variables, within the context of the autoregressive distributed lag (ARDL) estimation technique and the granger causality framework. The research employs periodical data covering the period 2000: Q1 to 2019: Q1. The bound test outcome validates the presence of cointegration. The long run outcome depicts that real corruption, effective exchange rate, and external debt are the major contributing factor of capital flight in Sierra Leone. Precisely, the finding signifies that high levels of corruption, real effective exchange rate, and accumulation of external debt trigger a growth in capital flight. Additionally, the outcome shows that external debt, corruption, lagged capital flight, and financial deepening are the most important drivers of capital flight in the short run. Whilst corruption, lagged capital flight, and external debt accumulation increase capital flight, the outcome shows that a well-developed financial structure lower capital flight. The research therefore encourages the Government to take actions to strengthen and empower the Anti-corruption Commission and the judiciary with a view to deepening the fight against corruption and minimize capital flight. Furthermore, government should put in place multimodality to guarantee stringent capital controls, strengthen the financial market, and sustain broad macroeconomic steadiness as blueprint to minimize capital flight.

Otieno, Kiprop and Muluvi (2021) examined the determinant of capital flight from East African Community countries that comprise Burundi, Kenya, Rwanda, Tanzania, and Uganda, the study utilized panel data for the years 1988 to 2018. The study used real gross domestic product, external debt, interest rate differential, corruption index, and exchange rate as independent variables. Secondary data were collected from EAC member countries National Bureau of Statistics. Levin-Lin-Chu panel unit root test was conducted, capital flight and Exchange rate discovered to be stationary. The fixed effect regression outcomes revealed that external debt, corruption, and exchange rate had positive and statistically significant impact on capital flight while real GDP had a negative and significant impact on capital flight. Therefore, government and policymakers must strive to achieve a wide investor base for its local and overseas commitments, regarding cost and risk, and should deal with investors in the same way. In addition, there is a need to harmonize the judiciary and the executives in EAC to accelerate the fight against corruption which is a main interest for a capital flight.

Uddin, Yousuf and Islam (2017) investigated how capital flight is affecting determinants in Bangladesh: an econometric estimation from 1973 to 2013. The study employed Ordinary Least Squares (OLS) technique that is linear in Regression was used to assess the determinants of capital flight. This research recognizes foreign debt, foreign direct investment flows, external reserves, interest rate differentials, current account surplus are the main measures of capital flight. This study discovers some other causes of capital flight that comprise financial crimes, political instability that produced massive illegitimate incomes, export under invoicing and import over invoicing, corruption in tax management, illicit financial deals in the administration of public-owned enterprises, default nature of bank loans by the big industrial organizations, manipulation of stock exchanges, dishonest nature of amassing illegitimate money. This analysis also finds that there is strong positive correlation between interest rate differential and capital flight and between change in foreign debt and capital flight. The research recommended that government and policy makers in Bangladesh must concentrate on steadying economic and political environment. They must apply strong and accurate policies regarding foreign debt and foreign direct investment, as well as regarding monetary policies concerning interest rates.

5. Methodology

The study employed an *ex-post facto* research designer. The research concentrated on two domestic and two internationally registered and established financial data collection organizations. Domestic institutions from where data was gathered comprise the National Bureau of Statistics, which happens to be the major agency of

the Government responsible for collection, analysis and dissemination of statistical data in Nigeria and the Central Bank of Nigeria (CBN), that is charged with formulation of monetary policies in Nigeria. International organizations comprised of the International Monetary Fund (IMF) and World Bank were gathered on capital outflow, external debt, external reserves, exchange rate, real gross domestic product. This research paper applied purposive sampling to choose secondary data in Nigeria. The study employed secondary data acquired from the Central Bank of Nigeria (CBN), Nigeria National Bureau of Statistics, International monetary Fund (IMF) and World Bank. This research paper utilized panel data techniques for a twenty-year period (2002 to 2021) to explore the effect of capital outflows, external debt, external reserve, exchange rate. Real Gross Domestic Product (GDP) from 2002 – 2021, Capital Outflow (CO) from 2002 – 2021, External Reserve (ER) from 2002 – 2021 and External Debt (ED) from 2002 – 2021 were employed for the study.

6. Results and Presentation of Data

The aim of this study was to empirically ascertain the relationship between capital flight and Nigerian economic growth. Interdependent model was formulated for the study is the capital flight reaction model and for capital flight reaction model, the dependent variable is the real gross domestic product, while the independent variable capital flight was measured by capital outflow, external debt, external reserve, and exchange rate.

Presentation of Data

Table 1: Descriptive Statistics for Capital Flight Reaction Function

	CO	ED	ER	EX	GDP
Mean	4425939	4017673	196.988	6816875	56132149
Median	3080720	2403291	155.585	5875568	59425200
Maximum	16980208	15855231	399.96	14473752	73382770
Minimum	9235	438891	118.57	931469	31064270
Std. Dev.	4616795	4330399	89.3984	3993154	14594119
Skewness	1.593702	1.455803	1.041597	0.543301	-0.388316
Kurtosis	4.889349	4.281172	2.615235	2.335357	1.6402
Jarque-Bera	11.44099	8.432373	3.739787	1.352046	2.043512
Probability	0.003278	0.014755	0.15414	0.508636	0.359962
Sum	88518786	80353464	3939.76	136000000	1120000000
Sum Sq. Dev.	405000000000	356000000000	151849.4	3030000000	4050000000
Observations	20	20	20	20	20

Source: Authors' Computation from E-view 9, 2023

The descriptive statistics of capital flight reaction function is shown in Table 1 . The above statistics show that the mean or average of capital outflow (CO) within the period under review is ₦4,425,939M with a corresponding minimum and maximum of ₦9,235M and ₦16,980,208M respectively. External Debt (ED) has a minimum of ₦4,388,91M, a maximum of ₦15,855,231M and an average of ₦4,017,673M. Also, the value of the kurtosis shows us the skewness or flatness of the dataset. When kurtosis = 3, the distribution is normal (Mesokurtic), the values are scattered around the mean. Kurtosis > 3 shows that the distribution has more values higher than the mean of the distribution (Leptokurtic). Kurtosis <3, shows that, there are more values below the sample mean. From the above table, capital outflow (CO) and external debt (ED) have kurtosis values that are greater than three (3) i.e., $K > 3$. This is indicative of the fact that (CF) and (ED) are Leptokurtic i.e., the distributions have more values greater than the mean of the distribution. On the other hand, the kurtosis value of ER, EX, and GDP are less than three ($K < 3$) meaning that their values are less than the sample mean.

Correlation Coefficient Matrix

Capital Flight Reaction Function:

Table 2: Correlation Matrix for Capital flight reaction Model

	RGDP	CO	ER	ED	EX
RGDP	1.00	-0.51	-0.77	-0.45	-0.79
CO	-0.51	1.00	0.52	0.22	0.62
ER	-0.77	0.52	1.00	0.88	0.91
ED	-0.45	0.22	0.88	1.00	0.71
EX	-0.79	0.62	0.91	0.71	1.00

Source: Researchers' 2023

From the output of the Pearson correlation matrix shown in Table 2,, there is moderate negative correlation between RGDP and capital outflow with a coefficient of (-0.51). The coefficient of (-0.77) is indicative of a high negative correlation between RGDP and external reserve (ER). Likewise, there is a weak negative correlation between RGDP and External Debt (ED). Finally, the coefficient (-0.79) suggests a strong negative relationship between exchange rate and RGDP.

Presentation of Hypotheses

Analysis of the Capital Flight Reaction Function

In the capital flight reaction function, real gross domestic product (RGDP) is the dependent variable, while capital outflow, external reserve, exchange rate and external debt are the explanatory variables. The hypotheses are recast in the null forms and tested at 5% level of significance.

- (i) There is no significant effect between capital outflow (CO) and real gross domestic product (RGDP).
- (ii) There is no significant effect between external debt (ED) and real gross domestic product (RGDP).
- (iii) There is no significant effect between external reserve (ER) and real gross domestic product (RGDP).
- (iv) There is no significant effect between exchange rate (EX) and real gross domestic product (RGDP).

The short run and long run analysis of capital flight reaction function is shown below.

Short Run Analysis of Result

The linear regression result is analyzed in table 4.4 below.

Table 3: Analysis of Short Run Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11789482	5681632.	2.075017	0.0556
CO	-0.902895	0.447943	-2.015647	0.0621
ER	325249.5	67666.46	4.806657	0.0002
ED	-4.384546	0.892098	-4.914869	0.0002
EX	0.276411	0.970359	0.284854	0.7797
R-squared	0.861067	Mean dependent var		56132149
Adjusted R-squared	0.824018	S.D. dependent var		14594119
S.E. of regression	6122261.	Akaike info criterion		34.30508
Sum squared resid	56200000	00 Schwarz criterion		34.55401
Log likelihood	-338.0508	Hannan-Quinn criter.		34.35367
F-statistic	23.24142	Durbin-Watson stat		1.023797
Prob(F-statistic)	0.000003			

Source: *Computed Result from (E-Views 9), 2023*

Table 3 shows the short run multiple regression results of the capital flight reaction model. The coefficient of determination depicted by an R^2 value of 0.86 or 86% indicates that 86% of changes in the independent or explanatory variables (capital outflow, external reserve, external debt and exchange rate) account for the change in real gross domestic product. Put differently, the explanatory power of the model is 86% which is a very good fit. The negative coefficient of capital outflow (-0.90) is in tandem with *a priori* expectation though statistically insignificant. Specifically, the negative sign indicates that an increase in capital outflow will result to a 90% decrease in real gross domestic product. The negative coefficient of external debt (-4.38) is in tandem with *a priori* expectation and statistically significant. To be precise, the negative sign indicates that an increase in external debt will result to a 438% decrease in real gross domestic product. The signs of coefficients of external reserve and exchange rate are both in consonance with *a priori* expectation, while external reserve is statistically significant, exchange rate is statistically insignificant. However, the value of the Durbin Watson statistics of (1.02) suggests the presence of serial autocorrelation in the model. This may be due to non-stationarity of dataset which may lead to spurious or non-sense regression. Hence, it is important for us to carry out other diagnostic tests before interpreting the data.

Long Run Analysis Result

We began the long run analysis by conducting the augmented dickey fuller unit root test to ascertain the presence or otherwise of unit root in the data set. The test is necessary to eliminate the error of interpreting spurious regression.

Table 4: Parsimonious Error Correction Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CO(-1))	-0.289965	0.087514	3.313355	0.0062
D(ER(-1))	-57032.05	23663.69	-2.410107	0.0329
D(ED(-1))	-0.088933	0.326343	0.272516	0.7899
D(EX(-1))	-0.235292	0.282997	-0.831431	0.422
ECM (-1)	-0.037398	0.06886	-0.543106	0.597
C	2973365	408068.7	7.286432	0
R-squared	0.552178	Mean dependent var		2224231
Adjusted R-squared	0.365585	S.D. dependent var		1604144
S.E. of regression	1277703	Akaike info criterion		31.22023
Sum squared resid	1960000000	Schwarz criterion		31.51702
Log likelihood	-274.9821	Hannan-Quinn criter.		31.26115
F-statistic	2.959268	Durbin-Watson stat		1.668205
Prob(F-statistic)	0.05737			

Source: Authors Computation form E-Views, 2023

As seen from Table 4, the coefficient of the error correction term (ECM) has a negative sign though not statistically significant. The negatively signed ECM indicates that any deviation from the equilibrium values will be stabilized in the long run by the ECM values. Similarly, the Durbin Watson 1.66 which is closer to 2, indicates that the presence of serial or autocorrelation has been eliminated in the long run analysis. The coefficient of best fit or determination R^2 of 0.55 (55%) means that 55% of changes in the dependent variable are explained by changes in the independent variables (capital outflow, external reserve, external debt and exchange rate). In terms of the individual coefficient of the model, capital outflow has a negative and statistically significant effect with Nigerian economic growth.

Hence, we reject the null hypothesis that there is no significant effect between capital outflow and Nigerian economic growth. External reserve has a negative and statistically significant effect with Nigerian economic

growth. Therefore, we reject the null hypothesis that there is no significant effect between external reserve and Nigerian economic growth. External debt has negative and statistically insignificant effect with Nigerian economic growth. Hence, we accept the null hypothesis that there is no significant effect between external debt and Nigerian economic growth. Exchange rate has negative and statistically insignificant effect with Nigerian economic growth. Therefore, we accept the null hypothesis that there is no significant effect between exchange rate and Nigerian economic growth.

Presentation of Hypotheses

From the analysis of capital flight functions, the following are the summarized interpretation of the findings of hypotheses one to four.

Hypothesis One: Capital outflow (CO) will have no significant effect on real gross domestic product (RGDP).

From Table 4, capital outflow has a negative coefficient of (-0.289965) and statistically significant effect with real gross domestic product (RGDP). Specifically, the negative sign indicates that an increase in capital outflow would result to 29% decrease in real gross domestic product (RGDP). Since the p-value of capital flight is 0.0062 and is less than 0.05, we rejected the null hypothesis that there was no significant effect between capital outflow and real gross domestic product (RGDP). This means that capital outflow (flight) significantly affected real gross domestic product (Nigerian economic growth) in the period of the study. Thus, research question 1 is answered, objective 1 is achieved and hypothesis 1 is successfully tested.

Hypothesis Two: External debt (ED) will have no significant effect on real gross domestic product (RGDP).

From Table 4, external debt has a negative coefficient of (-0.088933) and statistically insignificant influence with real gross domestic product (RGDP). Precisely, the negative sign indicates that an increase in external debt would result to 9% decrease in real gross domestic product (RGDP). Since the p-value of external debt is 0.7899 and is greater than 0.05, we accepted the null hypothesis that there was no significant effect between external debt and real gross domestic product. This implies that external debt did not significantly affect real gross domestic product (Nigeria economic growth) in the period of the study. Thus, research question 2 is answered, objective 2 is achieved and hypothesis 2 is successfully tested.

Hypothesis Three: External reserve (ER) will have no significant effect on Nigerian economic growth.

From Table 4, external reserve has a negative coefficient of (-57032.05) and statistically significant effect with real gross domestic product (RGDP). Specifically, the negative sign indicates that a decrease in external reserve would result to 57032% decrease in real gross domestic product (GDP). Since the p-value of capital flight is 0.0329 and is less than 0.05, we rejected the null hypothesis that there was no significant effect between external reserve and real gross domestic product (RGDP). This means that external reserve significantly affected real gross domestic product (Nigerian economic growth) in the period of the study. Thus, research question 3 is answered, objective 3 is achieved and hypothesis 3 is successfully tested.

Hypothesis Four: Exchange rate (EX) will have no significant effect on real gross domestic product (RGDP).

From Table 4, the exchange rate has a negative coefficient of (-0.235292) and statistically insignificant outcome with real gross domestic product (RGDP). Specifically, the negative sign indicates that a decrease in exchange rate would result to 24% decrease in real gross domestic product (RGDP). Since the p-value of exchange rate is 0.422 and is greater than 0.05, we accepted the null hypothesis that there was no significant effect between exchange rate and real gross domestic product (RGDP). This implies that exchange rate did not significantly affect real gross domestic product (Nigerian economic growth) in the period of the study. Thus, objective 4 is achieved and hypothesis 4 is successfully tested.

In the short run multiple regression result of the capital flight reaction function, the coefficient of determination depicted by an R^2 value of 0.86 or 86% signifies that 86% of changes in the independent or explanatory variables (capital outflow, external reserve, external debt and exchange rate) account for the change in real gross domestic product. Put differently, the explanatory power of the model is 86% which is a very good fit. The negative coefficient of capital outflow (-0.90) is in tandem with a priori expectation though statistically insignificant. Specifically, the negative sign indicates that a 1% increase in capital outflow will result to a 90% decrease in real gross domestic product. The signs of coefficients of exchange rate and external debt are both

in consonance with *a priori* expectation and are statistically significant. However, the value of the Durbin Watson statistics of (1.02) suggests the presence of serial autocorrelation in the model. This may be due to non-stationarity of the dataset which may lead to spurious or non-sense regression. Hence, the justification of us conducting second order regression test.

To test for stationarity or otherwise of the time series data used for the study, the ADF unit root test and the Johansen co-integration tests were conducted. The ADF test was calculated at 0.05 (5%) level of significance at levels and first difference. The ADF test in the above table indicates that the variables were stationary at various orders. Specifically, Real Gross Domestic Product (GDP) and External Debt (ED) were both stationary at levels, while Capital outflow (CO), external reserve (ER) and Exchange rate (EX) were stationary at first difference.

The result of both the trace and max-eigen co-integration shows that there are two (2) co-integrating equations. The above result is in tandem with the previous ADF unit root tests where only two (2) variables were stationary at levels.

The coefficient of the error correction term (ECM) has a negative sign though not statistically significant. The negatively signed ECM indicates that any deviation from the equilibrium values will be stabilized in the long run by the ECM values. Also, the Durbin Watson 1.66 which is closer to 2, indicates that the presence of serial or autocorrelation has been eliminated in the long run analysis. The coefficient of best fit or determination R^2 of 0.55 (55%) means that 55% of changes in the dependent variable are explained by changes in the independent variables. In terms of the individual coefficient of the model, capital outflow has a negative and statistically significant effect with real gross domestic product (RGDP). Hence, we reject the null hypothesis that there is no significant effect between capital outflow and real gross domestic product (RGDP). External reserve has a negative and statistically significant effect with real gross domestic product (RGDP). Therefore, we reject the null hypothesis that there is no significant effect between external reserve and real gross domestic product (RGDP). External debt has negative and statistically insignificant influence with Nigerian economic growth. Hence, we accept the null hypothesis that there is no significant effect between external debt and real gross domestic product (RGDP). Exchange rate has negative and statistically insignificant effect with real gross domestic product (RGDP). Therefore, we accept the null hypothesis that there is no significant effect between the exchange rate and real gross domestic product (RGDP).

7. Discussion of Findings

In the capital flight reaction function, real gross domestic product (RGDP) is the dependent variable, while capital flight is the independent or explanatory variable and being measured by capital outflow, external debt, external reserve, and exchange rate. In the short run analysis, all the signs accompanying the coefficients of the explanatory variables were in tandem with *a priori* expectations. However, only two variables, namely, external reserve and external debt were statistically significant. While capital outflow and exchange rate were statistically insignificant. Also, the Durbin Watson statistics showed the presence of serial correlation, hence the justification for carrying out second order econometric analysis.

The result of the parsimonious error correction model (long run analysis) indicates that capital outflow has a negative and statistically significant relationship with Nigerian economic growth. The above stance is in harmoniousness with some empirical studies of Bredino, Fiderikumo and Adesuji (2018) and Okonkwo, Ojima and Manasseh (2020) which concluded that there was a negative and statistically significant relationship between capital flight and economic growth in Nigeria during the period of the studies. In addition, the finding of the parsimonious error correction model (long run analysis) shows that external debt has a negative and statistically insignificant correlation with Nigerian economic growth. This agrees with some experimental studies of Ngunjiri (2019) and Muli and Ocharo (2018) which found out that external debt repayments, external debt servicing did not significantly affect economic growth, foreign direct investments and current account balance in Kenya. Furthermore, the outcome of the parsimonious error correction model (long run analysis) shows that external reserve has a negative and statistically significant relationship with Nigerian economic growth. The above stance is in consonance with some empirical studies of Amadi, Ihemeje, Hanson, Obioma and Ogbonna

(2021), which concluded that there was a negative and statistically significant relationship between external reserve and economic growth in Nigeria during the period of the study.

In conclusion, the finding of the parsimonious error correction model (long run analysis) shows that exchange rate has a negative and statistically insignificant correlation with Nigerian economic growth. This is the surprising findings as there are no specific conditions under which the exchange rate has an insignificant effect on economic growth. However, Anthony, Jonathan, Kenneth & Onyinye (2020) suggest that the impact of exchange rate fluctuations on output growth and inflation is limited. Additionally, Bredino, Fiderikumo and Adesuji (2018) have found that a high real exchange rate (undervaluation of the currency) stimulates economic growth, particularly for developing countries. Conversely, Orimolade and Olusola (2018) have found that a real appreciation (depreciation) of the exchange rate reduces (raises) annual real GDP growth. Therefore, the impact of exchange rates on economic growth is complex and depends on various factors, including the country's economic conditions, exchange rate regime, and other macroeconomic variables (Okonkwo, Ojima & Manasseh, 2020). This study has offered potential opportunity for future research to explore and provide answers to under what condition can exchange rate not insignificantly influence a country's economic growth.

High levels of capital flight can undermine a country's economic growth prospects. Recent studies, such as those by finance experts have indicated that capital flight often leads to reduced investment, both domestic and foreign, and lower economic output. It hampers the ability of governments to finance public expenditures and infrastructure projects, which are essential for long-term growth. In addition, capital flight can lead to a depreciation of the domestic currency, which may result in higher inflation and reduced purchasing power for consumers, further hampering economic growth. These adverse consequences of capital flight underscore the importance of maintaining a conducive economic environment for sustainable growth. Capital flight can destabilize a country's financial system, leading to financial crises, while simultaneously impeding economic growth.

8. Conclusion and Recommendations

Although there are significant numbers of experimental studies on the effect of capital flight on economic growth in emerging countries in Sub-Saharan Africa, this study investigated the effect of capital flight on Nigerian economic growth.

Hence, the conclusions drawn from this study's empirical findings indicate that there was a negative functional relationship between capital outflow and Nigerian economic growth and the effects were significant. Therefore, capital outflow (flight) was discovered to have affected economic growth and the effect of capital outflow (flight) on Nigerian economic growth was significant.

The findings of this study substantiate the Purchasing Power Parity (PPP) theory which postulates that when investors expect a real depreciation, they gravitate towards engaging in capital flight to prevent the risk of loss of purchasing power and to serve as hedge on the risk of loss of purchasing power. This action affects real gross domestic negatively and reduces a country's economic growth. This study revealed that capital outflow (flight) affected Nigerian economic growth during the period of study and the effect was significant. The findings of this study demonstrated that all forms of capital flight are bad for the economy.

Also, the results established that there was a negative correlation between external debt and Nigerian economic growth. However, the effect was not significant on Nigerian economic growth.

External debt negatively affects Nigerian economic growth. Although the negative effect has not reduced Nigerian economic growth. Nevertheless, increased borrowing might result in the insignificant to turn significant and this may possibly lead to government's inability to fund its future debt commitments when they fall due.

Moreover, findings showed that there was a negative relationship between external reserve and Nigerian economic growth and the effects were significant on Nigerian economic growth. Thus, external reserve was revealed to have affected economic growth and the effect of external reserve on Nigerian economic growth was significant. The implication of this is that a high external reserve would make Nigeria's economy to be better off, while a low external reserve would be harmful to the economy. This can be accomplished by enhancing local

production of important goods and services to reduce the outflow of foreign reserve and diversifications of the economy.

Findings also revealed that there was a negative correlation between exchange rate and Nigerian economic growth. However, the effect was insignificant on Nigerian economic growth. Thus, exchange rate was discovered to have affected economic growth and the effect of exchange rate on Nigerian economic growth was insignificant. The results of this study establish that capital outflows transactions of a country directly and indirectly control its exchange rates, and this is influenced by capital flight in Nigeria. The findings of this study authenticate the Purchasing Power Parity (PPP) theory which postulates that when investors expect a real depreciation in the economy, they gravitate towards engaging in capital flight to prevent the risk of loss of purchasing power and to serve as hedge on the risk of loss of purchasing power.

This study offers the following recommendations:

1. Government at all levels must provide friendly and enabling environment through the availability of infrastructural amenities needed to encourage investments that will bring more capital inflows from foreign countries.
2. Government should enact law to protect and encourage Nigerians involved in capital flight in the past to repatriate their stolen money/ laundered money back home and invest them in the real sector of the economy.
3. There must be a limit on foreign borrowing tendencies of government at all levels and agencies as well as private sector organizations. In addition, foreign borrowing must be limited to only infrastructural development desires of the country.
4. Healthy and stable external reserves balances must be maintained to enhance investors' confidence in their ability to repatriate invested capital without difficulties. This can be accomplished by enhancing local production of important goods and services to reduce the outflow foreign exchange.
5. Nigeria Government should stop importation of petroleum products into the country and fix all the four (4) refineries in the country to reduce foreign currency spent on importation of petroleum products.

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