

Effects Of Capital Flight On Exchange Rate In Nigeria: 1986-2015

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ABSTRACT: The study presented a critical examination of the effects of capital flight on exchange rate in the Nigerian economy over a period of 30 years (1986-2015). An Ordinary Least Square (OLS), Augmented Dickey-Fuller unit root test and Co-integration tests were adopted to carry out an extensive analysis of such variables as Gross Domestic Product, Capital Flight and Exchange Rate. The results revealed that the variables have a significant effect in the positive direction with a coefficient of 0.007421 and probability value at 0.05. This implies that capital flight encourages increasing demand for foreign currency which tends to exert pressure on exchange rate at 0.74 percent, thereby increasing the rate, among other factors. Based on the empirical findings, the study recommended that decayed infrastructure and utilities should be rehabilitated; monetary authorities should seriously regulate the activities of premium currency marketers; and foreign firms should be encouraged to make use of local skills and raw materials available in the domestic economy, rather than importing them. This will save foreign exchange, improve technical skills of Nigerian citizens, reduce unemployment and limit the flight of capital from the economy.

KEYWORDS: Capital flight, exchange rates

1.1. Introduction

The magnitude in which capital flight negatively affects resources needed for development all over the world cannot be overemphasized. This therefore, calls for an attempt to control the outflow of capital which impedes development as a result of scarcity of capital in developing countries. (Paul, Kalu, Joseph and Hyacinth, 2015).

The study of capital flight and its adverse effects in economic development in any economy is of great importance to developing countries because of the critical role external assets play in economic growth when allowed to perform their function in the economy. (Khan 1989).

According to Ajayi (1995), government officials who siphon money to foreign countries and private businesses that seek a safe place for their capital due to fear of economic recession have contributed to the flight of capital, which have led to increase in the interest rate, thereby making credit expensive. This, according to him, would lead to a loss of revenue, especially if the government predominantly determines the rate of exchange in the economy.

Capital flight from developing countries such as Nigeria, leads to insufficient resources meant for development as well as a fall in economic growth. According to Pastor (1990), the reduction in economic growth is because investible funds have been taken to a foreign country and also because incomes generated from imports are, in most cases, not taken back to the country. In corroboration of this fact, Ogboru (2006)

has asserted that the value of the US dollar per naira has continually been high. For example, one US dollar is exchanged for 360 naira. The reason for the persistent rise of the dollar against the naira is that Nigerians prefer to patronize imported products from overseas. And as a result, they will need to pay much more for the foreign goods with the domestic currency. This, according to him, depletes the foreign reserve of the country, and thus, negatively affects the economic growth and development of the country.

Nigeria is regarded as one of the developing countries with high levels of poverty and has a debt burden that is so large that the country cannot take on additional debt to finance its future projects due to the large outflow of capital meant for development in the country. The issue of capital flight is therefore, of great importance to the nation. However, little attention has been paid to the causes and consequences of capital flight with a focus on its effects on the exchange rate in the economy. It is to this end that the paper would investigate empirically how capital flight affects exchange rate in Nigeria. The study is structured into six sections. Section one is the introduction which discusses the background of the study, Section two examines the conceptual, theoretical and empirical literatures. Section three addresses the main issue of the paper. Section four deals with the model specification and analysis. Section five analyses the empirical results and discusses the findings. Section six concludes with a summary and proffers some recommendations.

1.2. Objectives of the Study

Capital flight encourages an increase in the demand for foreign currency in developing countries, for example Nigeria, which tends to increase the exchange rate between the Naira and the US Dollar. The major objective of this study, therefore, is to examine the effect of Capital flight on exchange rate in the Nigerian economy. The other objectives include to:

- i. Identify the consequences of Capital Flight on Exchange Rate in the Nigerian economy.*
- ii. Examine the relationship between Capital Flight and Exchange Rate in the Nigerian economy.*
- iii. Suggest measures to curb capital flight in the Nigerian economy.*

2.1. Conceptual Framework

2.1.1. Concept of Capital Flight

Saheed, Zakaree and Ayodeji (2012) have viewed capital flight as a diversion of domestic savings away from financing domestic real investment in favour of foreign financial investment. According to them, capital flight encourages increasing demand for foreign currency, which tends to exert pressure on exchange rate, thereby increasing the rate of the Naira against the U.S Dollar. Adetiloye (2012) has asserted that capital flight occurs when all actual entries are added up and the resulting total amount of money calculated (which is done by adding all deposits and subtracting all the money paid out or spent) will show the total amount of money remaining in a cash account of an account holder or the total amount of money owed by an account holder to the bank when the account is overdrawn. The result of the differences in values between the debits and credits in the current and capital accounts is known as errors and omissions, which is referred to as ‘statistical discrepancy’ in Balance of Payment accounting.

According to Cuddington (1989), as cited in Paul, Kalu, Joseph and Hyecinth (2015),

Capital flight is short-term capital outflows made up of hot money which responds to political or financial crises, unexpected taxes, an expected adverse capital control or domestic currency devaluation and possible rising hyperinflation.” (Paul, Kalu, Joseph and Hyeceinth 2015, 4).

From the above concept, therefore, capital flight is referred to as the movement of money or assets outside an economy which consists of the flow of funds or capital from one country to another as a result of political or economic instability in order to earn short-term profit on differences in interest rate or expected changes in exchange rate. These unanticipated capital outflows are as a result of undesirable circumstances resulting from political or economic instability. The flight of assets occurs when foreign and domestic investors sell off their assets in a particular country because of perceived weakness in the nation’s domestic currency, excessive and uncontrollable increases in the prices of goods in the economy and thus seek better opportunities that exist abroad.

2.1.2. Concept of Exchange Rate

Countries normally engage in international transactions with one another. These transactions, which are mostly economic, are made among individuals, firms, organisations and government. Most times, economic agents involved in international transactions do not use the same national currency. Obadan (2012) has, therefore, noted that exchange rate is made up of key currencies, most especially the U.S. dollar, because it plays a central role in international currency markets, which are generally accepted for the settlement of international trade transactions and other external obligations. He maintained that the exchange rate is determined by the forces of demand and supply in the foreign exchange market. To Saheed, Zakaree and Ayodeji (2012), exchange rate is the price at which domestic currency is exchanged for foreign currency. Thus, it is the rate at which one currency is exchanged for another currency. For the purpose of this paper, exchange rate is viewed as the rate at which one currency is exchanged for another currency for the purpose of moving large amount of these monies out from a developing economy to an advanced country and for the settlement of external debts.

2.2. Theoretical Framework

2.2.1 Theory of Capital Flight

a. The Tax- Depressing Thesis

This theory postulates that capital flight leads to potential loss of revenue because wealth held abroad is outside the control of the government and therefore, such wealth cannot be taxed. If tax rates are expected to be high in the future, it will discourage private investors from investing in the economy and unexpected increases in tax rate may raise investment risk, thereby leading to lower domestic investment. The fall in government revenue thus, makes the task of political and economic transformation in promoting economic growth and development difficult to attain. The outcome of this is the reduction in the ability of the government to pay its debt obligations. This in turn increases the debt burden, which impedes economic growth and development. (Ndikumana and Boyce 2002).

b. Austerity Thesis

This theory focuses on the poor in severely indebted countries, as a result of the negative impact of capital flight. According to the theory, the poor suffer more because the resources that could otherwise have been used on the expenditure of such basic necessities of life as: the provision of basic healthcare facilities, affordable educational services, good roads, portable water, stable electricity and other essential services are

illegally taken out of the country (Kapoor 2007). In the same vein, Pastor (1990) revealed that capital flight reduces the amount of taxable income and assets by the government which invariably lead to unequal distribution of wealth amongst the rich and poor in the society. Hence, poverty in developing countries reduces the poor to a state of impoverishment, resulting to over-dependence on foreign aid, thereby, widening the gap between rich and poor countries. Furthermore, the tax that the poor can afford to pay is relatively small. This inhibits government from raising sufficient resources to promote economic growth and development meant to combat the problems of poverty. Consequently, a vicious circle of external debt, capital flight and low economic growth is created.

2.2.2 Theory of Exchange Rate

a. Monetary Approach to the Balance of Payments

The monetary approach to the balance of payments stresses the fact that the exchange rate is the relative price of two currencies. According to this approach, an imbalance occurs if the demand for money differs from the amount supplied by the monetary authorities. In the basic monetary model with fixed exchange rates, such an imbalance gives rise to an adjustment process which redistributes the world's capital stock between the two countries until a new stock equilibrium is achieved. In the flexible price monetary approach under which exchange rates are determined by the forces of demand and supply, such a disequilibrium results to an immediate adjustment of the exchange rate to equate the demand for and supply of money. This approach indicates that the domestic currency depreciates if the money supply increases and appreciates if the income level increases.

b. Mundell-Fleming Model

The Mundell-Fleming model was developed by Fleming (1962) and Mundell (1963), which was formulated by Robert Mundell and Marcus Flemming, who made a simultaneous analysis of the Balance of Payments in open economies in the 1960s. The framework of their analysis is known as the IS-LM-BP models, which is an extension of the IS-LM model. They are the goods market, financial market and the balance of payments markets respectively. The Mundell-Fleming model indicates that the behaviour of an economy depends on the exchange rate system it has adopted. The model was first developed in order to understand how different exchange rate systems work and how the choice of exchange rate regime influences monetary and fiscal policies. Firstly, the model assumes that the economy operates with a floating exchange rate. That is, it is assumed that the central bank allows the exchange rate to adjust to changing economic conditions. The model also examined how the economy operates under an exchange rate system whereby government determines the rate of exchange. The Mundell-Fleming model describes the market for goods and services similar to the IS-LM model, but it adds a new term for net exports. According to Martin (2010), the Mundell-Fleming model can have different implications under different exchange rate regimes. For instance, under a fixed exchange rate system that allows private funds to move freely across countries without restrictions, monetary policy becomes ineffective. Hence, an expansionary monetary policy resulting in an outward shift of the LM curve would in turn make capital flow out of the economy. The central bank under a fixed exchange rate system would have to intervene by selling foreign currency in exchange for domestic currency to depreciate the foreign currency and appreciate the value of the domestic currency. This would reduce real balances in the economy until the LM curve shifts back to the left, and the interest rates come back to the world rate of interest.

However, the Mundell-Fleming model is accompanied with its shortcomings. According to Jhingan (2011), their analysis failed to put into consideration the situation

of unemployment and inflation in both developed and developing countries. Secondly, monetary and fiscal policies operate under certain economic obligations, in which he asserted that due to political reasons, some governments may be unable to follow a rigid fiscal policy and a monetary policy of high interest rate, hence, they become unsuccessful because capital flows may not be responsive to interest.

Review of Empirical Literature

Capital flight through the foreign exchange market is possible under a relatively free payments system. Thus, in the absence of capital or exchange controls, residents simply transfer funds abroad at the prevailing exchange rate in the form of foreign or domestic currency, travelers' cheques or other cheques. The availability of foreign exchange therefore facilitates the sale and purchase of foreign currencies and the transfer of funds from one country to another by residents, which have made the massive outflow of capital possible. It therefore, becomes imperative to study the effects of capital flight on exchange rate. In specific terms, this paper focuses on the Nigerian economy.

According to Obadan (2004), capital flight takes place through various channels, among which are through the foreign exchange market, presenting false or forged documents of exported or imported goods by overvaluing or undervaluing the prices of such goods, the black or parallel foreign exchange markets, precious metals and collectibles.

Saheed, Zakaree and Ayodeji (2012) have examined the relationship between capital flight, exchange rate and economic growth in Nigeria. According to them, capital flight encourages increasing demand for foreign currency, which tends to exert pressure on exchange rate, thereby increasing the rate. Their study adopted the segregation approach to examine the impact of capital flight on exchange rate and economic growth (GDP). They found a positive effect of capital flight on economic growth compared to previous studies observed in their study. They therefore, suggested that parts of the capital outflow were used for the importation of industrial or capital goods, which are then used domestically in the process of production. They also found capital flight has a positive and statistically significant impact on exchange rate.

In a similar study, Adedayo and Ayodele (2016) presented an empirical analysis of the impact of capital flight on the Nigerian economy between the period 1980 and 2014. Ordinary Least Square (OLS), Augmented Dickey-Fuller unit root test and Co-integration test were adopted to carry out an extensive analysis of the adopted variables which included Gross Domestic Product, Capital Flight and Exchange Rate. The results revealed that the variables have a significant effect in the positive direction. This implies that as capital flight inflow increases into the economy, it in turn increased the exchange rate, causing a positive influence on the Nigerian economy within the period considered. In another study, Paul, Kalu, Joseph and Hycenth (2015) examined the Impact of Capital Flight on Economic Development in Nigeria. They asserted that the situation of diversion of public funds and the movement of human capital out of Nigeria have retarded economic growth in Nigeria. In terms of methodology, Paul et al. employed the Augmented Dickey Fuller (ADF) and Phillip Perron (PP) unit roots tests to test for the time series properties of the model variables. The study covered the period 1980 to 2011. They found that capital flight has a negative but significant impact on economic development in Nigeria. They also found that the exchange rate has a positive and significant impact on economic development in Nigeria. This, according to them, is in line with "a priori" expectation validating the Mundell-Flemming rule which states that depreciation in exchange rate increases export, and hence increases the output of a country.

3.1 Effects of Capital Flight and Exchange Rate in Nigeria

Some studies done on the relationship between capital flight and exchange rate in Nigeria include: Saheed, Zakaree and Ayodeji (2012), Okoli (2008) and Otene and Richard (2012). The study undertaken by Saheed, Zakaree and Ayodeji (2012) demonstrated that the continuous demand for foreign currency especially the U.S. dollars caused by capital outflow tends to put pressure on the exchange rate; that is, the amount of dollar that can be purchased by a unit of Nigeria's currency. Therefore, the desire to invest abroad becomes so great that investors willingly pay extra charges to secure their investments abroad. These investors sell their local currency holdings at even greater discounts. This makes the domestic currency to fall, while imports become more expensive. This leads to inflation, which further erodes confidence in the domestic economy.

To buttress the above assertions, Okoli (2008) cited two observable trends in less developed economies which are consistent with the effect of capital flight. First, she asserted that since the domestic currency has been discounted, there is preference in conducting business in U.S. dollars in such an economy. Secondly, the loss in confidence in domestic currencies is so great that the change in the exchange rate would surpass the inflation rate. Hence, those able to invest abroad are captivated by the attractive prosperous economy of the developed world, and therefore, will have less confidence in the local currency; while those who cannot afford investing abroad have little or no choice but to operate in the domestic economy. Otene and Richard (2012) have empirically examined the impact of capital flight on the Nigerian economy using the two-stage least square technique for the period 1970 -2008.

In the estimated model, capital flight reported a negative and significant impact on economic growth and real exchange rate (REXR) measures. They found that the price of other currencies has a positive relationship on Gross Domestic Product (GDP), and Capital Flight (KF) which is a proxy for net flows shows a negative impact on exchange rate and Gross Domestic Product (GDP). Hence, they concluded that the non-performance of domestic resources can trigger capital flight. They therefore, recommended the maintenance of a stable financial and macroeconomic environment which would allow foreign capital inflow so as to boost private domestic investment.

Capital flight is considered an observable occurrence that should be avoided because of its negative consequences on the Nigerian economy. From the examination of the effects of capital flight on exchange rate in Nigeria, this study has identified the following as the negative consequences of capital flight: reduction in economic growth potentials, damage of exchange rate, and effects on current account balance.

I. Reduction in Economic Growth Potentials

Any amount of money siphoned to a foreign land cannot contribute to domestic investment, which implies capital flight is a diversion of domestic savings away from domestic real investment. As stated by Ajayi (2007), when these resources are kept away from the economy, they become unavailable for the importation of equipment and materials that are necessary for the growth of the domestic industry and the economy. Not only does capital become unavailable, but the credit it could produce through the multiplier effect is also eroded. For example, profits from selling oil for export will not stimulate domestic economic growth since it is not refined locally. In addition, political officials who hold public offices take advantage of their offices to siphon money abroad which further depletes the investible funds in the domestic economy. Hence, money supply becomes unstable. This instability is much higher than that which is experienced in developed countries and leads to making monetary policies ineffective. As a result,

the level of productivity and profitability of business enterprises reduces. Therefore, capital flight leads to a net loss in the resources of a country meant for investment.

II. Damage of Exchange Rate

Capital flight prevents capital accumulation which limits exchange rate mechanisms of Less Developed Countries (LDC). The damage in exchange rate mechanism comes as a result of the urgency by the wealthy in developing countries to invest capital abroad in the form of cash. These capitals which are sent overseas are in both local and foreign currencies, usually in U.S. dollars. Hence, these accumulated capitals which are in local currency must first be converted into the currency of the developed country. Thus, a large number of those seeking to invest abroad in such manner demand less of the domestic currency. This results to further loss of confidence in the domestic economy.

III. Effects on Current Account Balance

Capital flight constitutes perhaps a large part of a country's export income and more than four times the payment needed to service external debt. This situation negatively affects the current account balance. When capital flight affects the current account balance negatively, it could become a major factor behind potential currency devaluation and budget deficits. It is therefore pertinent to state here that the consequence of capital flight goes beyond mere accounting financial losses. Capital flight represents a real loss to the productive capacity of workers in an economy. Besides the loss in potential output, such an economy will experience a loss in its social welfare. Capital flight is regarded as a threat to the economy and the populace; and as such, progressive economic policies must be put in place in order to curb and reverse the incidences of capital flight which can be crucial to achieving full employment and sustainable development.

Table 3.1. Trend in Capital Flows in Nigeria, 1980-2015

Year	Net Capital Inflows (\$)	Net Capital Inflows (% of GDP)	Net Capital Outflows(\$)	Net Capital Outflows (% of GDP)	Net Capital Flows(\$)
1980	(738,870,000)	(1.15)	455,200	0.01	738,870,000
1981	542,327,300	0.89	8,225,000	0.01	(542,327,300)
1982	430,611,300	0.84	(27,000,000)	(0.05)	(430,611,300)
1983	364,434,600	1.03	861,000	0.00	(364,434,600)
1984	189,164,800	0.06	1,501,000	0.01	(189,164,800)
1985	485,581,300	1.68	1,847,000	0.01	(485,581,300)
1986	193,214,900	0.93	14,411,000	0.07	(193,214,900)
1987	610,552,100	2.53	(7,890,000)	(0.03)	(610,552,100)
1988	378,667,100	1.63	5,061,000	0.02	(378,667,100)
1989	1,884,250,000	7.78	797,748,200	3.29	(1,884,250,000)
1990	587,882,900	1.91	414,600,000	1.35	(587,882,900)
1991	712,373,400	2.60	411,500,000	1.50	(712,373,400)
1992	896,641,300	3.06	260,100,000	0.89	(896,641,300)
1993	1,345,369,000	8.52	532,700,000	3.37	(1,345,369,000)
1994	1,959,220,000	10.83	328,200,000	1.81	(1,959,220,000)
1995	1,079,272,000	3.78	191,753,400	0.67	(1,079,272,000)
1996	1,593,459,000	4.55	597,184,600	1.71	(1,593,459,000)
1997	1,539,446,000	4.30	102,972,800	0.29	(1,539,446,000)
1998	1,051,326,000	3.28	158,801,000	0.50	(1,051,326,000)
1999	1,004,326,000	2.80	172,817,600	0.48	(1,004,917,000)
2000	1,140,138,000	2.46	168,938,500	0.36	(1,140,138,000)
2001	1,190,632,000	2.70	93,883,560	0.21	(1,190,632,000)
2002	1,874,042,000	3.17	172,161,500	0.29	(1,874,042,000)
2003	2,005,390,000	2.96	167,321,400	0.25	(2,005,390,000)
2004	1,874,033,000	2.13	260,755,100	0.30	(1,874,033,000)
2005	4,982,535,000	4.44	14,635,080	0.01	(4,967,899,000)

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2006	4,854,417,000	3.34	319,622,800	0.22	(4,534,794,000)
2007	6,034,971,000	3.63	867,529,700	0.52	(5,167,441,000)
2008	8,196,606,000	3.94	1,501,590,000	0.51	(7,145,016,000)
2009	8,554,841,000	5.05	1,525,140,000	0.90	(7,029,701,000)
2010	6,026,232,000	1.63	911,716,700	0.25	(5,114,515,000)
2011	8,841,114,000	2.15	816,764,600	0.20	(8,024,349,000)
2012	7,069,934,000	1.53	1,530,129,000	0.33	(5,539,805,000)
2013	5,562,874,000	1.08	1,227,438,000	0.24	(4,335,436,000)
2014	4,655,849,000	0.82	1,601,233,000	0.28	(3,054,617,000)
2015	3,064,200,000	0.43	1,435,200,000	0.21	(1,629,000,000)

Sources: International Monetary Fund (IMF), Balance of payment Statistics Database, United Nations Conference on Trade and Development (UNCTAD) Statistics, Foreign Direct Investment (FDI) database (www.unctad.org/fdistatistics), National Bureau of Statistics and Index Mundi (Internet database).

Table 3.1 above indicates capital flows in Nigeria for the period 1980 to 2015. According to the International Monetary Fund (2011), total capital inflows are defined as net non-resident investment in Nigeria, while total capital outflows are defined as the net investment of Nigerian residents abroad. As such, the values taken on by both concepts can either be positive (increase in liabilities or assets) or negative (decrease in liabilities or assets). The table shows that capital inflow range from (US\$738,870,000) representing a negative contribution of 1.15 percent of GDP in 1980 to \$US 485,581,300 or 1.71percent contribution to GDP in 1985, while capital outflow rose from \$US 455,200 in 1980 to \$US 7,890,000 in 1987 representing a negative contribution of 0.03 percent to GDP. The year 1986 recorded a decline in capital inflow representing about 0.93 percent contribution to GDP as against 1.68 percent in 1985, while capital outflow of the year 1986 recorded a massive outflow of capital by residents amounting to \$US 14,411,000 which became higher compared to the capital flow recorded in 1985 amounting to \$US 1,847,000. The trend however, changed in 1989 when capital inflow hit about \$US 1,884,250,000 representing 7.78 percent contribution to GDP, while capital outflow of the same year increased substantially from \$US 5,061,000 to \$US 797,748,200 between the periods 2011 to 2014. The inflow of capital fell substantially from US\$8,841,114,000 or 2.15 percent of GDP to \$4,655,849,000or 0.82 percent of GDP, while the outflow of capital increased from US\$1,530,129,000 in 2012 to US\$ 1,601,233,000 in 2014, representing a fall in GDP from 0.33 percent in 2012 to 0.28 percent in 2014. However, the inflow of capital fell from US\$4,655,849,000 in 2014 to an estimated sum of US\$3,064,200,000 in 2015 representing a fall in GDP from 0.82 to 0.43, while capital outflow fell from US\$1,601,233,000 in 2014 to US\$1,435,200,000 in 2015. This fall in outflow of capital could possibly be associated with the anti-corruption and money laundering campaign by the present administration of President Muhammadu Buhari.

According to the United Nations Conference on Trade and Investment (UNCTAD), capital inflow in the form of Foreign Direct Investment fell by 27 percent between the period 2014 and 2015. It is averred that this could be due to the fragile nature of the global economy, volatility in the financial and commodity markets and weak aggregate demand.

In a nutshell, the table shows that the inflow of capital is as a result of borrowed fund that come into the country in the form of foreign direct investment from developed countries, while the outflow of capital by residents is as a result of the political and economic instability experienced in the country, and the obligations of the Nigerian government to pay the debts owed to foreigners. In addition, the total capital flow between the period 1981 to 2015 proved negative values, which indicate incidences of capital flight except for the period 1980, implying that capital flight did not occur.

Table 4.1. Annual GDP (\$m), Exchange Rate (N/\$) and Capital Flight (\$m) for the period 1986-2015.

YEAR	GDP	EXR	CAPF
1986	257.78	1.75	6656
1987	295.09	4.02	1160
1988	256.00	4.54	-149
1989	275.41	7.36	3187
1990	328.61	8.04	103
1991	328.64	9.91	-3608
1992	337.29	17.30	2346
1993	342.54	22.07	3307
1994	345.23	22.00	1405
1995	352.65	21.90	-2576
1996	367.22	21.88	-3484
1997	377.83	21.89	1496
1998	388.47	21.89	-524
1999	393.11	92.34	3337
2000	412.33	101.70	-2006
2001	431.78	111.23	-5
2002	451.79	120.58	5025
2003	459.01	129.22	3591
2004	527.58	132.89	-1508
2005	561.93	131.27	6933
2006	595.82	128.65	8285
2007	634.25	125.81	1493
2008	672.20	118.55	3440
2009	718.98	148.90	372
2010	54,612.26	150.30	1285
2011	57,511.04	153.86	2059
2012	59,929.89	157.50	3351
2013	63,218.72	157.31	5900
2014	67,152.79	158.55	7065
2015	69,780.69	192.44	1678

Source: Central Bank of Nigeria (CBN) Statistical Bulletin (various issues), CBN Annual Reports and Statements of Accounts (various issues), Global Financial Report of the World Bank (2015), World Bank International Debt Statistics (various years), International Monetary Fund (IMF, 2016), Global Financial Report of the World Bank (various years) and Index Mundi (internet database) website and Author's Computation (2016).

The table above shows the trend of gross domestic product, exchange rate and capital flight in Nigeria for the period 1986 to 2015. From the table, the year 1992 to 1993 witnessed an increase in EXR from 17.30 to 22.07, and capital flight rose from US\$2346 million to US\$3307 million, GDP rose from US\$337.29 million to US\$342.54million indicating a rise in economic activities within the period. It is also obvious from the table that for most parts of the 1990s, the country experienced incidences of capital flight. For instance, the periods 1990, 1992, 1993, 1994, 1997 and 1999 recorded US\$ 103 million, US\$ 2346 million, US\$ 3307 million, US\$ 1405 million, US\$ 1496 million and US\$ 3337 million respectively.

Using the residual measures of estimating capital flight, negative values indicate capital net flows or capital reversal, while positive values imply that capital flight has taken place. From the table, the periods 1988, 1991, 1995, 1996, 1998, 2000, 2001 and 2004 recorded

- US\$ 149 million, -US\$ 3680 million, -US\$ 2576 million, -US\$ 3484 million, -US\$ 5million and -US\$ 1508 million respectively witnessed a reversal in capital. This capital reversal is due to the reduction or sudden stop in the inflow of capital in the form of foreign direct investment into the domestic economy. The reason for the reduction or sudden stop in capital inflow is related to some domestic conditions within the

economy. This is attributed to the political instability and the economic slowdown that discourages foreign investors from investing in the domestic economy. As a result, the country suffers liquidity crisis in which it uses its foreign exchange reserves to service its debts. This leads to currency depreciation that creates inflation and economic recession. On the other hand, the positive values of capital flight as evident from the table reflect that the country witnessed the outflow of capital from the domestic economy to foreign countries. For instance, the periods 1986, 1987, 1989, 1990, 1992, 1993, 1994, 1997, 1990, 2002, 2003, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014 and 2015 recorded US\$ 6656 million, US\$ 1160 million, US\$ 3187 million, US\$ 103 million, US\$ 2346 million, US\$ 3307 million, US\$ 1405 million, US\$ 372million, US\$ 1285 million, US\$ 2059 million, US\$ 3351 million, US\$ 5900 million, US\$ 7065 million and US\$ 1678 million respectively. This is attributed to the great extent that capital flows outside the domestic economy through investors that take advantage of investment opportunities in foreign countries and the unrestricted access to government funds by corrupt officials, thereby reducing investible funds in the Nigerian economy.

It is also evident from the table that the Naira currency depreciated steadily against the US dollar during the study period. In the early 1990s, the naira fell to approximately ₦10 per US dollar. For instance in 1990 and 1991, the exchange rate was 8.04 and 9.91 Naira currency against the US\$ dollar. The Naira further depreciated in the mid and late 1990s, though the currency became stable within this period. For instance, between the years 1995, 1996, 1997 and 1998, the exchange rate became 21.90, 21.88, 21.89 and 21.89 respectively. This is attributed to the adoption of a fixed exchange rate regime by the military government of General Sani Abacha. By the year 2000, the exchange rate became over a hundred naira to one US dollar. It can thus be observed that in the mid 2000s, the Naira further depreciated. For instance, in 2009, 2010, 2011, 2012, 2013, 2014 and 2015, the Naira fell steadily against the US\$ dollar which stood at 148.90, 150.30, 153.86, 157.50, 157.31, 158.55 and 192.44 respectively. The reason for the further depreciation of the Naira is not far-fetched. Nigerians prefer patronizing imported products rather than produce its indigenous products; and as the country's population increases, the demand for imported goods increases, thereby depleting the nation's foreign reserves and increasing the incidences of capital outflow in the economy.

In addition, the poor infrastructural facilities have discouraged the production of goods in Nigeria. Such infrastructural facilities include: bad road networks and facilities, inadequate power supply coupled with high tax charges on businesses, making it difficult for goods to be produced in Nigeria. As a result, Nigerians depend on other countries to produce goods that should otherwise be produced in the country, thereby increasing the rate of importation. This further increases the outflow of capital already experienced in the country.

The period 2014 and 2015 witnessed a dramatic fall in CAPF from \$7065million to \$1675 million respectively, and a rise in GDP from US\$ 67,152.79 million to US\$ 69,780.69 million. This however, indicates an improvement in the economy and substantial reduction in the fall of capital flight within the period; this could be as a result of the concerted efforts made by the present administration of President Muhammadu Buhari to curb illegal capital outflow by corrupt government officials and the repatriation of such stolen funds into the country to enhance economic growth and development.

5.1 Methodology, Analysis and Discussion of Findings

5.1.1 Unit Root Test Result

This study applied unit root test to determine if the data is stationary before any analysis can be conducted. It is recommended that the unit root test be conducted to validate the data for analysis. In this case, the natural logarithm of the data is taken to bring the variables to a common base in order to enhance the linearity of the model and a unit root test is conducted. The Unit Root Test Result is presented in table 5.1.

Table 5.1: Augmented Dickey Fuller (ADF) Unit Root Test Result for Model I

Variables	ADF t-statistics	P-value	5% critical value	Order of integration	Conclusion
LOGEXR	-4.9092	0.0005	-2.9719	I(1)	Stationary
LOGCAPF	-4.4056	0.0017	-2.9678	I(0)	Stationary

Source: Author's Computation using EViews 9

The result of the unit root test as shown in Table 5.1 indicates that EXR were stationary after first differencing with intercept at 5 percent critical value with probability value (p-value) of 0.0005, while capital flight was stationary at level with intercept at 5 percent critical value and probability value of 0.0017.

5.1.2 Ordinary Least Square Results

The results of the estimated model using the OLS method are presented in table 5.3

Table 5.2: The Results of the Estimated Model using (OLS) Method for Model I

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	68.44173	13.28458	5.151968	0.0000
LOGCAPF	0.007421	0.003639	2.039041	0.0510
R-squared	0.129291	Mean dependent var	83.18833	
Adjusted R-squared	0.098194	S.D. dependent var	64.27226	
S.E. of regression	61.03517	Akaike info criterion	11.12512	
Sum squared resid	104308.2	Schwarz criterion	11.21853	
Log likelihood	-164.8768	Hannan-Quinn criter.	11.15500	
F-statistic	4.157688	Durbin-Watson stat	0.294929	
Prob (F-statistic)	0.050986			

Source: Author's Computation using EViews 9

The results of the Ordinary Least Square (OLS) estimates as shown in table 5.2 indicate a positive relationship between EXR and CAPF, which is in line with our *a priori* expectation. Hence, CAPF has a positive relationship of 0.007421. From the OLS results therefore, the simple regression equation becomes: $\log EXR = 68.4417 + 0.0074CAPF_t$

Based on the equation, the coefficient of the constant or intercept is 68.4417, implying that if the explanatory variable was held constant, CAPF would be 68.4417 units. This shows that if the value of the explanatory variable, EXR, remains unchanged, the value of CAPF would be 68.4417 units.

5.1.3 Co-integration Test Results

Table 5.3. Co-integration Test Results Using Johansen Co-integration Test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistics	0.05 Critical Value	Prob.**
None *	1.000000	1028.644	15.49471	0.0001
At most 1	0.000468	141.5753	3.841466	0.9086

Source: Author's Computation Using Eviews 9

*denotes rejection of the hypothesis at 5% significance level

Table 5.3 revealed that both the Eigen value and the Trace Statistics tests indicated one co-integrating equation at 5% significance level. This implies that a long-run equilibrium relationship exists amongst the variables specified in the model.

5.2. Discussion Of Findings

In order to ensure that the regression analysis on the proposed model does not produce spurious results, it is necessary to analyse the behaviour of the time series in employing preliminary tests by determining the stationarity and the order of integration, I(d). The results of the stationarity of all the variables were determined using the Augmented Dickey Fuller (ADF) test. It was found that EXR was stationary at first difference, while CAPF was stationary at level. The OLS result revealed that a positive and significant relationship exists between EXR that and CAPF, with a coefficient of 0.007421 and p-value of 0.05. This implies a unit increase in EXR that led to 0.007421 unit increase in CAPF. However, the p-value standing at 0.05 means it is statistically significant. This result is consistent with our *a priori* expectation and the p-value showed it is significant. This result implies that the continuous demand for foreign currency especially the US dollar resulting from capital outflow tends to put pressure on the EXR. This result is consistent with Saheed et al. (2012) and Ajayi (2008) who found that there exists a positive and significant relationship between EXR and CAPF.

The result is also in line with Akani (2013), who discovered that an overvalued exchange rate leads to increasing expectations of depreciation of the Naira currency in the near future. Hence, the accumulated capitals which are in local currency must first be converted into the currency of the developed country, in most cases, the US dollar. Thus, a large number of those seeking to invest abroad in such manner demand less of the domestic currency and more of foreign currencies. This results to further loss of confidence in the domestic economy, thereby damaging the exchange rate.

The study also found that the coefficient of determination (R^2) showed the percentage variations in independent variables that can be explained by dependent variables. The R^2 of 0.129291 or 12.9% of the model showed that over 12% of variations in the explained variable can be explained by changes in the explanatory variable used in the study, while the remaining 87.1% is explained by other variables not included in the model. This means the model does not show the goodness of fit of the model. The Durbin-Watson statistics of 1.939306 showed that the model is free from serial correlation. The study also found that there exists a long-run relationship among the variables used in the model.

6.1. Summary, Conclusion and Recommendations

6.1.1 Summary

This study is an attempt to critically evaluate and provide an insight into the situation of capital flight in Nigeria and its relative impacts on exchange rate. The ordinary least square method of analysis and co-integration methods of analysis were adopted to extensively investigate how the massive outflow of capital affects exchange rate in Nigeria. The study employed the residual measure in computing capital flight figures within the study period.

The study specifically adopted the Mundell-Fleming model as developed by Fleming (1962) and Mundell (1963), which showed the existence of a relationship between capital flight and exchange rate. The study focused on the link between capital flight and exchange rate in Nigeria. Econometric diagnostic tests were carried out using the ADF Unit Root Test to assess the stationarity of the data. The study employed the OLS technique to estimate the model's parameters, and found that exchange rate impacts positively on capital flight in Nigeria, which implies that investors demands more of foreign currency, especially the U.S. dollar, than the local currency, in this case, the Naira. This results to a loss of confidence in the domestic economy, thereby damaging the exchange rate between the Naira and the Dollar.

6.1.2 Conclusion

This study showed that a positive and significant relationship exists between capital flight and exchange rate in Nigeria. In other words, capital flight encourages increasing demand for foreign currency which tends to exert much pressure on exchange rate, thereby increasing the rate among other factors. Based on the findings, the study established that capital flight is detrimental to the Nigerian economy, which makes investors to lose confidence in the economy.

6.1.3 Recommendations

The following recommendations are made based on the findings of this study:

- i. This study recommends the rehabilitation and improvement of the existing and decayed infrastructure and utilities such as power, roads, public transportation system, water and environmental sanitation, with the aim of attracting private foreign resources in the form of Foreign Direct Investment. This will go a long way in encouraging Nigerians in foreign countries to repatriate their capital back to Nigeria for industrial development.
- ii. The activities of premium currency marketers should be seriously regulated by the monetary authorities. This will help reduce the amount of foreign currencies that leave the domestic economy, and would therefore, strengthen the value of the Naira currency.
- iii. Lastly, both private and government institutions should employ workers who are directly involved in the production of goods and services in executing projects within the economy. In addition, foreign firms should be encouraged to make use of local skills, manpower, technology and raw materials available in the domestic economy, rather than importing them. This will save foreign exchange, improve technical skills of the Nigerian citizens, reduce unemployment and limit the flight of capital from the economy.

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