Capital Flight and Economic Growth in Nigeria

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Abstract
This study investigated the impact of capital flight on economic growth in Nigeria, focusing on specific macroeconomic variables, using an ex-post facto research design and econometric analysis of annual time series data from 1981 to 2022. The prevalence of capital flight from Nigeria, despite the government's efforts at curbing it formed the motivation for this study. The method of data analysis was the Autoregressive Distributed Lag (ARDL) regression technique, which was adopted following the mixed order of integration of the variables in the model. Empirical results revealed that gross domestic product (GDP) growth rate had a significant negative relationship with capital flight. Gross fixed capital formation, inflation rate, and interest rate exhibited a negative and significant relationship with GDP growth rate. It was concluded that capital flight depressed economic growth in Nigeria within the period under study. To curtail capital flight and enhance the growth of the economy, policy measures including enacting stricter anti-corruption and anti-money laundering policies, controlling inflation through industrialization, and enhancing public awareness on capital flight were recommended.

Keywords: Capital flight, economic growth, policy measures, Nigeria.

Introduction

The flight of capital from African countries deprives the continent of funds essential for fostering economic growth and development. According to estimates from the Organisation for Economic Co-operation and Development (OECD), Africa loses up to $50 billion annually as a

result of money laundering, tax evasion, diverted funds, offshore investments, and other forms of capital flight. The African governments are deprived of the required capital resources for economic growth and development due to such high levels of capital outflows and loss of revenues. More than any other region on the globe, Sub-Saharan Africa struggles with this problem, and these nations lose more money to capital flight than they receive in the form of aid or foreign private investment combined (Effiom *et al.*, 2014).

Ndikumana and Boyce (2021) defined capital flight as a residual of the balance of payments consisting of discrepancies between recorded foreign exchange inflows and recorded uses of these inflows. They maintained that capital flight manifests itself in an economy through illegal activities such as money laundering and trade misinvoicing (over-invoicing of imports and under-invoicing of exports). This implies that capital flight represents outflows of financial resources that are not recorded in official records of the transactions between the country and the rest of the world. The main record of such a transaction is the balance of payments (BOP). The balance of payments records the inflows of foreign exchange into the country and their uses. The main inflow comprises public external debts and foreign direct investment. The main uses of foreign exchange are the coverage of the current account deficits and net additions to foreign reserves.

Capital flight reduces the volume of production in an economy. To produce goods and services, capital must be combined with labour and other factors of production. Therefore, capital flight tends to reduce outputs, raising the unemployment rate, and worsening the poverty situation in the country. Agbaje (2014) argued that the issue of capital flight has not been given due attention in government initiatives to mobilise resources for growth and development in Nigeria. Capital flight from Nigeria exacerbates the scarcity of development resources, leads to a fall in domestic investment, and a loss of prospective tax collection for the government.

Capital flight slows down development and leads to chronic balance of payment deficits in most developing nations, including Nigeria, notwithstanding private transfers and long-term capital inflows (Ajayi, 2000). Economic growth is hampered partly because investment is shifted abroad, and also because required imports are constrained by the foreign exchange drain caused by both the flight itself and the fact that such assets rarely yield returns to the domestic economy (Pastor,1990).

Repatriations of flight capital will add to resource inflows such as overseas remittances, portfolio investments, official development assistance (ODA), and foreign direct investment (FDI). Reversing capital flight could assist Nigeria in reducing its expenditure-financing gap. The essential questions, however, are: What is the nature and degree of capital flight in Nigeria? What incentives exist to discourage capital flight and encourage its reversal to the Nigerian economy? A genuine focus on these issues will lower foreign debts, boost investor confidence, increase investment, and reduce the unemployment rate and its negative repercussions in the Nigerian economy.

Sustainable development may not be realized in Nigeria if sufficient resources are not mobilized and held domestically. These funds are required for the provision of social services such as health care, infrastructure, and education. Capital flight inhibits sustainable development in Nigeria by increasing reliance on foreign resources, which most often than not exposes the economy to external shocks. Therefore, Nigeria's economy requires conscious governmental actions to reverse the capital flight trend. Successive Nigerian governments have recognised the importance of addressing financial crimes and capital flight and have established institutions and implemented various policies to combat the ills. This includes the 2011 Money Laundering Prohibition Act, the Economic and Financial Crime Commission (EFCC) established in 2003, implementation of the Bank Verification Number (BVN) scheme, as well as the Voluntary Assets and Income Declaration Scheme (VAIDS). Thus, as opined by Victor (2016), the Nigerian government has adopted various measures to track assets and illegal flows of capital from Nigeria to developed countries.

Despite the government's efforts, statistical outlooks show little to no progress in curbing capital flight from Nigeria. For instance, in 2010, a year before 2011, when the Money Laundering Prohibition Act was enacted, capital flight from Nigeria stood at $23.8 billion. In 2012, a year after the enactment and implementation of the money laundering prohibition act, capital flight rose to $27.2 billion, representing 5.41% of GDP as against 4.68% in 2011. It increased further to $52.1 billion in 2013, which represented 10.24% of GDP. These are estimates by Ndikumana and Boyce (2021). In their estimates, a total of $2010.8 billion in capital flight was lost from the thirty African countries under consideration. Nigeria alone recorded $466.6 billion as capital flight. This represents 23.2% of the total capital flight and was the highest among the thirty countries considered for estimation. The sluggish performance of the economy and the high capital flight

from Nigeria, despite numerous policy measures adopted by the government to curb the flight of capital, formed the motivation for this study. The objective of this study is to examine the extent to which capital flight influences economic growth in Nigeria.

Methods of Measuring Capital Flight

The multiple definitions of capital flight in the literature have given rise to a range of approaches to its measurement. The measurement of capital flight is usually based on the definition adopted, and whether distinction is made between normal capital flows and flight capital flows. Thus, several measures of capital flight can be found in the literature. Murinde *et al.* (1996) identified four major methods: residual method, Dooley method, hot money method, and asset (or mirror stock statistics method. Boyce and Ndikumana (2001) and Ajayi (1997) identified accounting for "trade-faking" activities as additional methods of measuring capital flight.

The starting point for all measures is the balance of payments figure. The residual method, recommended by the World Bank (1985), gives a rather straightforward calculation of capital flight, and this may be responsible for its being the most widely accepted and applied method in the literature. The residual method compares the sources with the uses of capital flows. This means that for the non-existence of capital flight, the sources of funds must be equal to the uses of capital inflows. The net increase in external debt *(EXD)* and the net inflow of foreign investment *(FDI)* as sources are compared with the current account deficits *(CAB)* and additions to foreign reserves *(FRS)* as uses. If the sources exceed the uses of capital inflows, the difference is termed capital flight. Thus, the residual method, in a simple equation form, measures the magnitude of capital flight as:

$$CF = \Delta EXD + FDI - (CAB + \Delta FRS) \qquad\qquad (i)$$

Where: Δ represents change; CF denotes capital flight; EXD is external debt; FDI is net foreign direct investment; CAB is current account balance, and FRS is foreign reserves.

Following the residual approach developed by the World Bank (1985), capital inflows are either used to finance current account deficits or accumulated in the central bank as foreign exchange reserves. Accordingly, flows that do not go to either account are regarded as capital flight. More specifically, a surplus of inflows over reported uses reflects capital flight. Such funds are not recorded in the official statistics and therefore, according to the residual approach, are counted as capital flight.

Literature Review

Investment Diversion Theory

Kindleberger (1966) developed the investment diversion theory. According to the theory, investors (owners of capital) frequently withdraw their funds from nations that are already experiencing or are expected to experience macroeconomic or political instability. The business environment in emerging nations like Nigeria is plagued by numerous challenges, including excessive taxes, insufficient power supply, poor state of infrastructure, political, religious, and ethnic issues, high rate of inflation, and exchange rate problems. These are the alleged explanations offered by this hypothesis for the capital flight that developing countries experience.

Accordingly, the theory contends that due to the macroeconomic and political unpredictability in developing nations and the concurrent availability of better investment opportunities in developed nations, such as high foreign interest rates, a wide range of financial instruments, political and economic stability, and favourable tax, corrupt politicians and bureaucrats also divert limited capital resources from developing nations to developed ones. Therefore, the investment diversion argument explains the massive capital withdrawals from Nigeria. This harms the country's economic performance. Therefore, these funds are not accessible for investment at home, which causes a reduction in total investment, slow economic growth, which in turn causes a decline in employment, an increase in the dependence ratio, a rise in the poverty rate, and a high death rate. These unfavourable macroeconomic repercussions on these nations may drive the requirement to borrow from other countries to revive the domestic economy. If the authorities are running a floating exchange rate system, the liquidity restriction or crowding-out effect may cause the domestic currency to depreciate. Losses in international reserves result from attempts to defend the exchange rate during such a period. Investment diversion theory, which holds that investors divert their resources abroad due to unfavourable domestic conditions such as political instability or poor governance, helps to explain how capital flight can undermine domestic investment, leading to reduced economic growth.

Empirical Literature

Oladimeji *et al*. (2022) used annual time series data to examine the effect of capital flight on Nigeria's economic growth from 1980 to 2019. For estimation, the study used the ordinary least squares (OLS) analysis approach. The findings of this research demonstrated that capital flight significantly lowers Nigeria's GDP growth rate. It also showed that foreign direct investment and

gross capital formation (GCF) are factors favourably affecting Nigeria's economic growth. Since insecurity is a threat to investment and business space, the researchers advised that the government of Nigeria take immediate and long-lasting action to ensure the security of life and property in the country.

An empirical study of the effect of capital flight on domestic investment in Nigeria between 1980 and 2017 was conducted by Effiom *et al.* (2020). The study, which uses the Auto Regressive Distributed Lag (ARDL) econometric methodology, concludes that capital flight significantly and negatively affects domestic investment. Specifically, it was discovered that the long-term effects of capital flight on domestic investment were more detrimental than the short-term effects. This suggests that a steady and ongoing increase in capital flight has a cumulatively negative effect on domestic investment over time. The study also showed that domestic investment is discouraged by Nigeria's poor institutional quality. To ensure the availability of investible funds, they suggested fortifying institutions to stop the illicit outflow of capital from the Nigerian economy.

To examine the effects of money laundering and capital flight on emerging economies and the necessity of global collaboration in Nigeria's efforts to repatriate embezzled assets, Benjamin and Christian (2020) used a qualitative approach. A content analysis was used to ensure that the data taken from secondary sources was accurately represented. This study demonstrated the complex relationships between money laundering and capital flight, as well as the significant socioeconomic and political effects they have on developing nations like Nigeria. While benefiting the receiving nation, capital flight and money laundering also impede the expansion and development of the local economy. The study concluded by urging political will, legal reform, improved investigative capabilities, and cooperation between developed and developing nations to guarantee the return of Nigeria's embezzled and money-laundering assets.

Usman and Arene (2014) conducted a time-series study using Ordinary Least Squares (OLS) to empirically examine the effects of capital flight and its macroeconomic drivers on agricultural growth in Nigeria between 1970 and 2013. Their findings revealed an insignificant and negative relationship between total capital flight and agricultural growth. Furthermore, there was a negative correlation between agricultural growth and total capital flight, macroeconomic instability, political instability, interest rate divergence, and consumer price index volatility.

Makwe and Oboro (2019) used ordinary least squares analysis, the augmented Dickey-Fuller test, the Granger causality test, and the co-integration test to investigate capital flight and

economic growth in Nigeria between 1990 and 2017. The study found that net foreign investment overseas, external debt servicing, and external reserves, all of which are proxies for capital flight, have an indirect effect on economic growth as measured by GDP. Evidence on the detrimental effects of capital flight on Nigeria's economic growth over 40 years (1970–2009) was provided by Ajayi (2012). The primary estimation approaches employed in the study were cointegration and the Error Correction Mechanism (ECM). He offered an analysis of the subsequent detrimental effects of capital flight on domestic investment, external indebtedness, and the rate of economic growth. As a result, he suggested that money from foreign sources in the form of loans, gifts, and grants be used wisely for Nigeria's economic development.

Orji *et al.* (2020) looked into how capital flight affected Nigeria's economic expansion. They used the CBN statistics bulletin as their data source for the years 1981 to 2017 and used the Autoregressive Distributed Lag (ARDL) bounds test approach. Their empirical investigation revealed that capital flight considerably lowers economic growth over the long and short terms. Money supply, lending to the private sector, and domestic investment were also discovered to have a major impact on economic growth, all of which had a strong positive impact. Therefore, the researchers suggested proactive policy actions that will stop capital flight, boost economic growth, and make the economy competitive and appealing for local investment.

The study by Lawal *et al.* (2017) concentrated on the effects of capital flight and its factors on the Nigerian economy. Data covering the years 1981 to 2015 were analyzed using the Autoregressive Distributed Lag (ARDL) model. Current account balance, capital flight, foreign direct investments, foreign reserves, inflation rate, external debt, and real gross domestic product were among the factors. It was done to see if the variables under study had any long-run relationships. Their findings showed that capital flight hinders Nigeria's economic development, and they advised the government to adopt measures to encourage local investment and prevent capital flight.

Emmanuel et al. (2018) studied the effect of capital flight on economic growth in Nigeria between 1981 and 2016 using co-integration and the Ordinary Least Squares (OLS) econometric method of data analysis. The independent variables included capital flight, gross fixed capital formation, exchange rate, inflation rate, and labour force. Their empirical research revealed a negative association between economic growth and capital flight. Gross fixed capital formation had a detrimental effect on the country's GDP throughout the period under examination.　　　Onodugo *et al.* (2014) used time series data from

1970 to 2010 to evaluate the influence of capital flight on economic growth in Nigeria. The results of data analysis using the OLS econometric approach show that capital flight, interest rate, trade balance, and manufacturing output were major determinants of economic growth in Nigeria, whereas exchange rate and domestic political climate had no significant relationship with economic growth. Capital flight, currency rate, interest rate, and industrial output all had a negative relationship with economic growth, whereas trade balance had a positive relationship with economic growth.

According to Ekienabor *et al.* (2021), the rise in external debt and the substantial movement of massive funds out of the country by politicians, corporate bodies, and foreign investors have been a cause of worry among Nigerians in the face of economic hardship. The researchers were therefore motivated to examine the effect of capital flight on economic growth in Nigeria. The study covered the period 1981 to 2019. Data were analysed using the ordinary least squares technique. The empirical findings demonstrated a negative and significant link between capital flight and Nigerian economic growth. As a result, increased capital flight will have a severe negative impact on economic growth. Furthermore, the empirical research revealed a substantial negative link between external debt and economic growth in Nigeria.

Similarly, Bredino *et al.* (2018) used an econometric technique to study the effects of capital flight on economic growth in Nigeria from 1980 to 2012. Ordinary Least Squares (OLS) and co-integration/error correction were the analysis methods used. The results of the study demonstrated that capital flight has a negative influence on the country's GDP, while the exchange rate had a positive impact. To estimate the effects of capital flight, real interest rates, trade terms, foreign direct investment, and GDP growth rates on domestic investment in Nigeria, David (2013) uses a simultaneous equation. He discovered a negative correlation between capital flight and domestic investment in Nigeria and concluded that this hurt the country's economic growth rate.

Unlike most previous studies on capital flight, Saheed and Ayodeji (2012) discovered a positive relationship between capital flight and investment in Nigeria. He claimed that capital flight benefits Nigeria's economic progress. The researcher explained that capital flight can benefit the economy through foreign remittances. This is comparable to the findings of Adesoye *et al.* (2012), who discovered that capital flight has a beneficial impact on economic growth. Aderoju (2017) undertook an empirical analysis of the domestic investment and capital flight nexus in Nigeria between 1980 and 2015. The analysis was conducted using the Johansen Co-integration

test and the Ordinary Least Squares estimation approach (OLS). The aggregate findings demonstrated a significant positive link between Nigeria's gross domestic investment and capital flight. This was against what was anticipated beforehand. The outcome additionally demonstrated a strong positive correlation between the exchange rate and gross domestic investment.

Method of Study

Research Design

The ex-post facto (after-the-fact), also known as retrospective or post hoc research design, was used for this study. The study adopts an econometric method of data analysis with annual time series data covering the period from 1981 to 2022. The Auto Regressive Distributive Lag (ARDL) regression technique was used for data analysis.

Model Specifications

To empirically examine the influence of capital flight on economic growth in Nigeria, we applied a modified form of the model used by Emmanuel *et al.* (2018) in their study of the effect of capital flight on economic growth in Nigeria. They specified that economic growth (GDPG) is a function of capital flight (CAPF), gross fixed capital formation (GFCF), labour force (LABO), exchange rate (EXR), and inflation rate (INFR). The functional form of their model may be written as:

GDPG = f (LABO, GFCF, CAPF, EXR, INFR)   (i)

Where: GDPG, LABO, GFCF, CAPF, EXR, and INFR represent gross domestic product growth rate, labour force, gross fixed capital formation, capital flight, exchange rate, and inflation rate, respectively. Labour force is proxied by labour force participation rate, while GFCF is the domestic capital stock and a proxy for domestic investment. GFCF and CAPF are expressed as a percentage of GDP. To capture the impact of the financial sector on economic growth, we introduce the lending interest rate (INTR) into equation (xiv), and this gives us equation (xv) as follows:

GDPG = f (LABO, GFCF, CAPF, EXR, INFR, INTR)   (ii)

The variables are as described earlier. Thus, equation (xv) is used in this study to examine the empirical relationship between capital flight and economic growth in Nigeria. Equation (xvi) is the econometric form of equation (xv); which is our operational model.

$GDPG_t = \beta_o + \beta_1 LABO_t + \beta_2 GFCF_t + \beta_3 CAPF_t + \beta_4 EXR_t + \beta_5 INFR + \beta_6 INTR_t + \mu_i$ (iii)

β_0 is the intercept term to be estimated, while β_1, β_2, β_3, β_4, β_5, and β_6 are the coefficient estimates of the variables LABO (+), GFCF (+), CAPF (-), EXR(+/-), INFR (-), and INTR (-) respectively. The signs in parentheses represent a priori expectations of each of the variables. None of the variables is logged since they are in rates or expressed as ratios.

Since our analytical technique involves the use of the ARDL model, we show its functional form in equation (xvi), thus: $Y_t = \succ_0 + \sum_{i=1}^{p} \partial i \, y_{t-i} + \sum_{i=1}^{q} \S i \, x_{t-i} + Y_t + \mu_i$ (iv)

Where Y_t is the dependent variable as a function of its lag term Y_{t-i} and other explanatory variables, x_{t-i} p, and q signify lag orders for the lagged variables in the model for independent and dependent variables, respectively. On the other hand, the coefficients of vectors for both independent and dependent variables are captured by ∂i and $\S i$ respectively. Y_t is the slope of the time trend t. The error term μ_i *It* is normally distributed around its mean of zero, and it has a constant variance.

Data Collection and Sources

Data for this study were collected from secondary sources. Gross Domestic Product growth rate (GDPG), labour force participation rate (LABO), gross fixed capital formation as a percentage of GDP (GFCF), inflation rate (INFR) were sourced from the World Bank Development Indicators. Exchange rate (EXR), lending interest rate (INTR), Data on capital flight (CAPF) was extracted from Ndikumana and Boyce (2021).

Data Analysis and Discussion of Findings

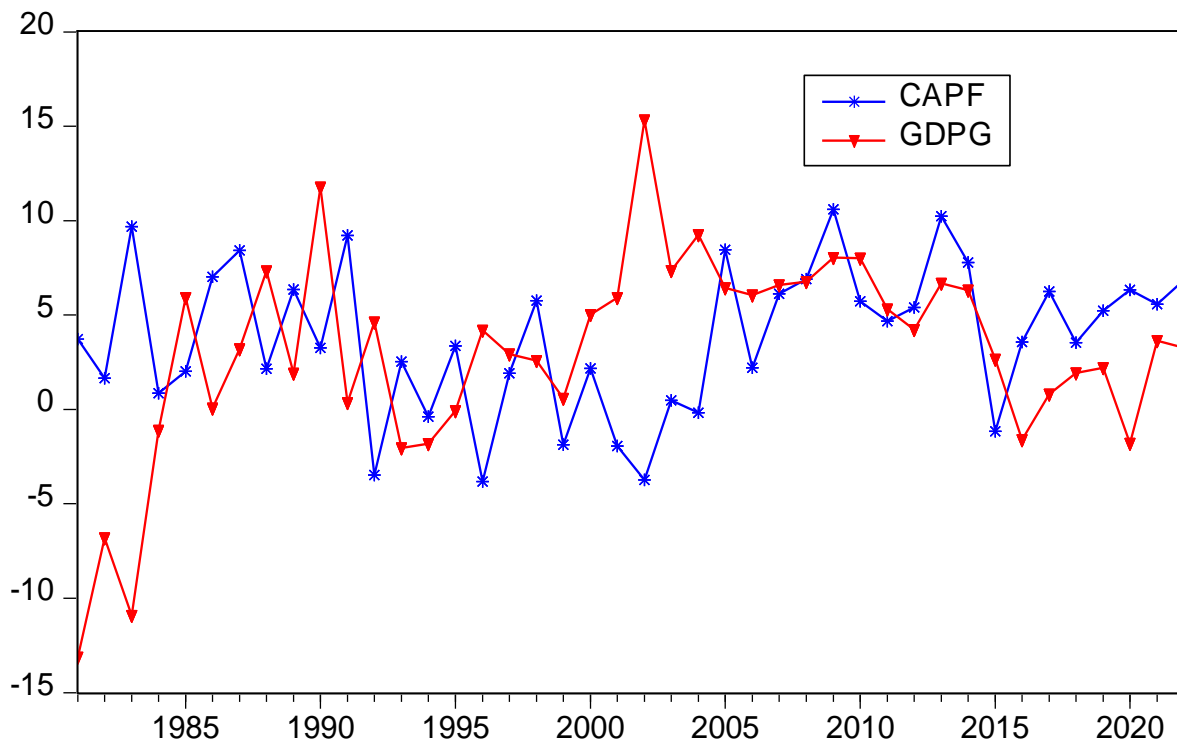Capital Flight and GDP Growth in Nigeria

Figure 4.1: Trend in Capital Flight (CAPF) and GDP Growth (GDPG)

Source: E-views Output from Raw Data

Figure 1 compares the changes in capital flight with the changes in gross domestic product growth rate from 1981 to 2022. In 1981, capital flight from Nigeria was 3.72% of GDP while the GDP growth was -13.13%. AS capital flight dropped from 3.72% of GDP in 1981 to 2.01% in 1985, we observe a rise in GDP growth from a negative value of -13.13% to a positive value of 5.91%, confirming the hypothesized negative relationship between capital flight and GDP growth within the five years. However, a sharp increase in capital flight was observed from 2.01% of GDP in 1985 to 7.02% of GDP in 1986, which also led to a sharp decline in the growth rate of the economy from 5.91% of GDP to 0.06% of GDP. Political unrest and uncertainty characterised the period time. General Muhammadu Buhari was deposed by General Ibrahim Babangida in a bloodless military revolution in August of 1985. Nationwide controversy arose from the rejection of the 1986 population census. The economic downturn was caused by these political upheavals, which also made investment unappealing and aggravated capital flight. The decline in the gross

domestic product growth rate during that time frame may also be related to the drop in the price of crude oil. Nigeria mostly depends on the export of its crude oil, and during this time, there was a significant drop in the price of crude oil globally, which had a detrimental effect on Nigeria's revenues.

Capital flight dropped from 7.02% of GDP in 1986 to 3.23% of GDP in 1990 while GDP grew from 0.06% to 11.78% within the five years. Capital flight fluctuated from 3.25% of GDP in 1990 to 9.21% of GDP in 1991, and dropped to 3.36% of GDP in 1995. On average, this represented a less than 1% rise in magnitude of capital flight within the five years; on the other hand, the growth rate of GDP dropped from a positive value of 11. 78% to a negative value of -0.07%. Thus, while an increase in capital flight was less than 1%, the fall in GDP growth averaged 11.85%. This suggests that, within the period, the response of GDP growth to capital flight was elastic. The significant decline in GDP with a little increase in capital flight within the period suggests that, apart from capital, other factors contributed to the fall in the gross domestic product growth rate. The execution of structural adjustment programmes (SAPs) under the direction of foreign financial organisations like the IMF and World Bank, political instability, bad economic policies, and resource mismanagement were some of these factors. Another was the sharp decline in oil prices. These initiatives were intended to correct economic imbalances, but resulted in civil unrest, currency devaluation, and austerity measures, which had a detrimental effect on GDP growth.

Considering another five years 1995 to the year 2000, capital flight fluctuated from 3.36% in 1995 to 5.77% of GDP in 1998 and 2.17% of GDP in 2000. The slight decrease in the magnitude of capital flight was accompanied by an appreciable rise in the growth rate of GDP between 1995 and the year 2000. Although there were fluctuations in capital flight within the period, the change in the growth rate of gross domestic product from -0.07% to 5.02% suggests that a reduction in capital flight can enhance GDP growth in Nigeria. Nigeria's gross domestic product may have increased as a result of the spike in oil export revenue brought about by the period's worldwide oil price increase. The growth rate of GDP rose from 5.02% in the year 2000 to 6.44% in 2005; although within the five years, there were years with higher growth rates of GDP such as 2002 and 2004 where the GDP growth rate were15.33% and 9.25% respectively. Although there was increase in growth rate of the economy, capital flight also increased from 2.17% of GDP to 8.45% of GDP within the same period. This suggests that the rise in growth rate of the economy within

the period must have been attributed to factors other than a reduction in capital flight. Such factors may include both a rise in the amount of crude oil produced and an increase in oil prices worldwide during the time. This trend can be observed from figure 4.1

Next, we examine the trend in capital flight and GDP growth for another five-year period. The magnitude in capital flight dropped from 8.45% of GDP in 2005 to 5.73% of GDP in 2010 while the average change within the period was 6.67%. In line with the expected negative correlation between GDP growth and capital flight, the gross domestic product increased from 6.44% of GDP in 2005 to 8.01% of GDP in 2010. On the average, GDP increased by 7.0% while capital flight declined by 6.6%.

GDP growth rate dropped from 8.01% in 2010 to 5.31% and 4.23% in 2011 and 2012 respectively. However, capital flight increased from 4.68% of GDP in 2011 to 5.41% in 2012. This suggests that the increase in the magnitude of capital flight may have contributed to the reduction in the gross domestic product growth rate within the period. However, the period 2013 to 2016 witnessed a steady decline in the growth rate of gross domestic product along with a fall in the magnitude of capital flight. Capital flight dropped from 10.24% of GDP in 2013 to 3.57% in 2016, while the gross domestic product growth rate reduced from 6.67% in 2013 to a negative growth rate of -1.62% in 2016. The direct relationship between gross domestic product growth rate and capital flight within the period implies that the growth rate of the economy was driven by other factors outside capital flight. This implies that several government initiatives and policies implemented during the time to enhance the business climate, draw in capital, and diversify the economy away from reliance on oil may have yielded little results.

Upward and downward swings in GDP growth rate and magnitude of capital flight were observed between 2017 and 2022. Capital flight dropped from 6.25% of GDP in 2017 to 3.53% of GDP in 2018; this was accompanied by a rise in gross domestic product growth rate from 0.81% to 1.92%. A rise in the size of capital flight from 3.53% of GDP in 2018 to 6.34% of GDP in 2020 resulted in a fall in gross domestic product growth rate from 1.92% to a negative growth rate of -1.79% in 2020. In 2022, capital flight was 6.87% of GDP while the growth rate of gross domestic product was 3.25%. Overall, the trend analysis suggests that capital flight has some influence over the gross domestic products growth rate; implying that any government policy and action aimed at stimulating economic growth in Nigeria should also involve actions against capital flight from the country.

Unit Root Test of Variables in the Model

Table 1   Unit Root Test Result of Variables in the Model

Variable	ADF Test Statistic	5% Critical Value	Order of Integration
GDPG	-3.203694	-2.936942	I (0)
LABO	-6.799485	-2.936942	I (1)
GFCF	-3.827658	-2.935001	I (0)
CAPF	-5.307326	-2.935001	I (0)
EXR	3.127535	-2.935001	I (0)
INFR	-3.300411	-2.935001	I (0)
INTR	-5.959738	-2.938987	I (1)

Source: E-views Output from Raw Data

The result revealed that five out of the seven variables in the model were stationary at their levels. The five variables are: gross domestic product growth rate (GDPG), gross fixed capital formation (GFCF), capital flight (CAPF), exchange rate (EXR), and inflation rate (INFR). They were integrated of order zero; that is ~ I(0). This is known through their ADF test statistics which were in absolute terms greater than their 5% critical values. The remaining two variables - labour force participation rate (LABO) and lending interest rate (INTR) were stationary at their first differences. They were integrated of order one; that is ~ I(1). This holds since their ADF test statistics became greater than their respective 5% critical values in absolute terms at their first differences. Since all the variables in the model attain stationarity; implying that the variables possess no unit root, spurious regressions will not occur when the variables interact in the same model.

Co-integration Test of Variables in the Model

Table 2   ARDL Bounds Test for Co-integration

Test Statistic	Value	Sign. Level	Lower Bound I(0)	Upper Bound I(1)
F-Statistic	6.304	10%	2.327	3.541
K	6	5%	2.764	4.123
		1%	3.790	5.411
T-Statistic	-5.252	10%	-2.57	-4.04
K	6	5%	-2.86	-4.38
		1%	-3.43	-4.99

Source: E-views Output from Raw Data

Table 2 shows that co-integration exists among the variables in the model; judging from both the F-statistic and the T-statistic results. The F-statistic value of 6.304 is greater than the lower

and the upper bound values of 2.76 and 4.12 respectively at 5% level of significance. Even at 1% level of significance, the F-statistic value is still greater than the corresponding lower and upper bounds of 3.79 and 5.41 respectively. Also, judging from the T-statistic result displayed in the lower part of Table 5.2, co-integration exists among the variables in the model. This is true because in absolute term, the T-statistic value of -5.25 is greater than the corresponding lower and the upper bound values of -2.86 and -4.38 respectively at 5% level of significance. Again, the T-statistic value is equally greater than its corresponding lower and upper bounds of -3.43 and -4.99 respectively at 1% level of significance. Therefore, cointegration exists among the variables in the model at 1% level of significance. This implies that there is a long-run relationship among economic growth (as proxied by GDP growth rate), labour force participation rate, gross fixed capital formation, capital flight, exchange rate, inflation rate and lending interest rate. On this basis, the long-term estimates related to the growth impact of these factors can be acquired. In order to account for potential disequilibrium between the short- and long-term, it is necessary to investigate both the short- and long-term effects of these factors on economic growth.

Long-run and Short-run Error Adjustment Estimates

Table 3: ARDL Long-run and Short-run Estimation Results
Dependent Variable: Gross Domestic Product Growth Rate (GDPG)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LABO	0.3608	0.5169	0.6980	0.4905
GFCF	-0.6300	0.2887	-2.1822	0.0371
CAPF	-1.2541	0.2263	-5.5418	0.0203
EXR	1.1016	0.1290	8.5366	0.9990
INFR	-0.7994	0.3633	-2.2000	0.0356
INTR	-0.4395	0.2019	-2.1764	0.0451
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(LABO)	1.4183	0.4272	3.3197	0.0024
D(EXR)	-0.0602	0.0214	-2.8068	0.0087
D(INTR)	-0.3846	0.1158	-3.3209	0.0024
CointEq(-1)*	-0.7403	0.1017	-7.2772	0.0000

R-Squared = 0.8934 Durbin-Watson = 1.9972
F-Statistic = 19.4344   Prob. (F-stat.) =0.000
Source: E-views Output from Raw Data

As shown in Table 3, capital flight exhibited negative relationship with GDP growth; and this is in conformity to its a'priori expectation. From the t-statistic of -5.541 along with the

probability of 0.0203, the estimate is significant at 5% level. The relationship is such that 1% point increase in capital flight reduces GDP growth by 1.25% point. Increase in capital flight reduces the availability of domestic capital and domestic investment which in turn reduces the growth rate of gross domestic product. The outcome confirms the a priori prediction that capital flight is growth-retarding since it implies a resource outflow, which limits the growth of local investments and productivity as a whole. This finding is in tandem with the findings of many of the previous researchers on this issue such as Oladimeji *et al*., 2022; Effiom *et al*., 2020; Benjamin and Christian, 2020; Usman and Arene, 2014; Makwe and Oboro, 2019; Ajayi, 2012; Orji *et al*., 2020; Lawal *et al*., 2017; Emmanuel *et al*., 2018; Bredino *et al*., 2018; Onudugo *et al*., 2014; and Ekienabor *et al*., 2021. However, some researchers such as Saheed and Ayodeji, 2012; Adesoye *et al*., 2012; and Aderoju (2017) had contradictory findings; they reported a positive impact of capital flight on economic growth in Nigeria.

Capital flight passed through some channels to exert the negative influence on economic growth in Nigeria. The reduction in domestic investment results from investors' loss of confidence in the domestic economy, leading to withdrawal of their investments. This is made clearer by referring the negative impact of gross fixed capital formation which captured domestic investment in this analysis. The negative impact of gross fixed capital formation on economic growth in our analysis implies a reduction in domestic investment which affects economic growth negatively. Furthermore, the reported detrimental effect of capital flight on economic growth is a reflection of the nation's underlying political and economic issues, which include poor leadership, misappropriation of public funds, money laundering, and unclear policies.

According to the findings, capital flight can have a long-lasting detrimental effect on Nigeria's economic growth by generating a vicious cycle of underinvestment, decreased productivity, and dimmed economic prospects. By reducing the tax base, it may indirectly lower government revenue, depriving the government of funds required to fund social services. This suggests that the slower economic growth rate brought on by capital flight will eventually increase income disparity and foster poverty, which will have a negative impact on development. The research highlights capital flight as a critical issue that must be addressed in order to support Nigeria's sustainable economic progress. This should involve closing the loopholes through which capital flies out of the country.

Domestic investment which is proxy by gross fixed capital formation as a percentage of GDP shows negative relationship with GDP growth. This is contrary to economic growth theory which predicts a positive relationship between domestic investment and the growth in gross domestic product. As the t-statistic of -2.1822 with the probability of 0.0371 revealed, the estimate is significant at 5% level. The magnitude of the relationship as shown by its coefficient of -0.6300 is that 1% point increase in gross fixed capital formation leads to a fall in gross domestic product growth rate by 0.63% point. Contrary to a priori expectation, gross fixed capital formation depressed economic growth in Nigeria within the period under study.

The impact of the inflation rate on the output growth is negative and significant. This conforms to a priori expectation. The negative and significant impact of the inflation rate on the output growth can be seen from its coefficient of -0.7994 and its t-statistic of -2.200 along with its probability of 0.0356. The coefficient of -0.7994 implies that 1% point increase in the rate of inflation reduced GDP growth by 0.80% point. The result confirms the theory that high and volatile inflation creates uncertainty and macroeconomic instability which reduces gross domestic product growth rate.

In conformity to a priori expectation, interest rate had a negative relationship with gross domestic product growth rate both in the short-run and in the long-run. Its long-run coefficient of -0.4395 means that 1% point increase in lending interest reduced gross domestic product growth rate by 0.44% point; and judging from its probability of 0.045, the estimate is significant at 5% level. This means that in the long-run, increase in lending interest rate will reduce the growth rate of gross domestic product through credit contraction and reduction in investment. Similarly, the short-run result also revealed that lending interest rate had a negative and significant relationship with gross domestic product growth rate. The short-run coefficient of -0.384 implies that in the short-run, 1% point increase in lending interest rate reduced GDP growth by 0.38% point; and from the probability of 0.0024, the estimate is significant at 1% level. A comparison of its short-run coefficient of -0.384 with the long-run coefficient of -0.4394 shows that the response of GDP growth to changes in lending interest rate was more severe in the long-run than in the short-run. This means that increase in interest rate over time had cumulative negative effects on GDP growth through sustained reduction in credits and investments.

The long-run impact of exchange rate on output growth was positive but insignificant. This implies that increase in the amount of naira going for a dollar led to increase in GDP growth rate.

Its coefficient of 1.1016 implies that in the long-run, a unit depreciation of naira stimulated GDP growth rate by 1.1% point. From its probability of 0.9990, the estimate was however insignificant; suggesting that in the long-run exchange rate may have limited growth effects on the Nigerian economy within the period under study. On the contrary, the short-run result revealed that a significant negative relationship exists between exchange rate and gross domestic product growth rate in Nigeria. This can be seen from the short-run coefficient of -0.0602 and its probability of 0.0087. This means that increase in the amount of naira going for a dollar resulted in a reduction in GDP growth rate. The magnitude of the relationship is that, in the short-run, a unit depreciation of naira reduces gross domestic product growth rate by 0.06% point. With exchange rate depreciation, export becomes cheaper; this is expected to boost export and stimulate output growth. However, for Nigeria which is highly import-dependent with weak industrial base and less commodities for export, the reverse would be the case. This explains the observed short-run negative relationship between exchange rate and economic growth in Nigeria within the period under study.

In the short-run, labour input, which was proxied by labour force participation rate had the expected positive relationship with gross domestic product growth rate. The coefficient of 1.4183 means that in the short-run, a percentage point increase in labour force participation rate enhanced GDP growth rate by 1.4% point. An observation of its t-statistic of 3.3197 with the probability of 0.0024 shows the estimation is significant at 1% level. This implies that in the short-run, labour is a significant determinant of economic growth in Nigeria. On the other hand, long-run impact of labour force on economic growth is positive but insignificant. This can be observed from its positive long-run coefficient of 0.3608 with its insignificant probability of 0.4905. The insignificant contribution of labour force to economic growth in the long-run may be attributed to low quality labour turnout in institutions of learning, which may result in mismatch between available skills and skills required for industrial growth. Shortage of skilled labour force can undermine its usefulness as an important factor input in the production process.

Next, we examine the extent to which the system can adjust back to equilibrium after a shock. The coefficient of the error correction term of -0.7403 along with its probability of 0.0000 is negative and statistically significant at 1% level. The implication of this is that any short-run disequilibrium in the model is adjusted back to long-run equilibrium by the speed of 74% annually. The possibility of this adjustment further confirms the earlier established co-integration among the

variables in the model. The R-squared has a value of 0.8934, which implies that the explanatory variables in the model jointly explain 89% of the variations in the dependent variable. More specifically, it means that 89% of changes in economic growth in Nigeria within the period under study were explained by the joint influence of the explanatory variables in the model. The value of the Durbin-Watson statistic of 1.997 is approximately 2.0, which shows that there is no autocorrelation in the model. The overall significance of the model estimation was assessed using the F-statistic test. The F-statistic value of 19.4344 with the probability of 0.0000 implies that the whole estimation is significant and that findings from the model estimation can be used for policy prescriptions.

Conclusion

The study revealed that capital flight exerted a negative and significant influence on economic growth in Nigeria. The negative impact of capital flight on economic growth supports investment diversion theory and portfolio choice theory in Nigeria. Capital flight implies misallocation of resources where fund that could have been invested domestically are instead diverted abroad, resulting in lower level of domestic investment, reduced capital formation and depression of economic growth. Capital flight can have a long-lasting detrimental effect on Nigeria's economic growth by generating a vicious cycle of underinvestment and decreased productivity. By reducing the tax base, it may indirectly lower government revenue, depriving the government of funds required to fund social services, which will have a negative impact on development. Thus, the research findings underscore the need to address the issue of capital flight, reverse its trend, in order to place Nigeria on the path of sustainable economic progress.

Recommendations

Based on the findings of the study, the following policy recommendations are offered in order to curtail capital flight and facilitate economic progress in Nigeria:

(i)   Anti-graft agencies such as Economic and Financial Crime Commission (EFCC) should be strengthened to improve their efforts in tackling money laundering and capital flight related practices. This should involve public prosecution and incarceration of offenders to serve as deterrents to others.

(ii)   Government should set up more industries and encourage private sector development in order to produce enough for domestic consumption and export. Adequate production level will stimulate the economy, bring down prices of goods and services, generate foreign exchange through exports, aid exchange rate appreciation and ultimately reduces incentive for capital flight.

(iii)   Government of Nigeria, working through the National Orientation Agency (NOA) and the Nigerian Investment Promotion Commission (NIPC) should educate the public on the causes, consequences, and preventive measures on capital flight in Nigeria. Such awareness campaign can help promote policies and behaviours that keep financial resources within the country; thus promoting investments and economic stability.

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