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MACROECONOMIC CONSEQUENCES OF PROLONGED CAPITAL FLIGHT ON SUSTAINABLE ECONOMIC GROWTH IN NIGERIA[1]

This study investigates the dynamic interactions between capital flight and key macroeconomic indicators in Nigeria over the period 1990–2024. Rather than treating capital flight solely as a consequence of macroeconomic instability, the study examines its co-movement with economic growth, domestic investment, inflation, oil prices and exchange rate behaviour. Annual time-series data were analysed using the autoregressive distributed lag (ARDL) framework and error correction modelling to capture both short-run dynamics and long-run adjustment processes. The findings suggest that capital flight exhibits procyclical behaviour with respect to real GDP and domestic investment, indicating those periods of economic expansion are associated with increased externalisation of capital. Inflation appears to be associated with higher capital outflows within the estimated models, while oil prices do not exert a consistent influence. Exchange rate movements are not significantly affected by short-run changes in capital flight, but adjustment dynamics indicate some evidence of gradual interaction among the variables over time. The study concludes that capital flight in Nigeria reflects a combination of structural economic conditions and portfolio reallocation behaviour rather than purely adverse macroeconomic performance. Policy implications emphasise institutional credibility, macroeconomic consistency and investment climate reforms as critical to moderating capital outflows.

Keywords: *capital flight, sustainable economic growth, Nigeria, macroeconomic stability, domestic investment, exchange rate.*

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МАКРОЕКОНОМІЧНІ НАСЛІДКИ ТРИВАЛОГО ВІДПЛИВУ КАПІТАЛУ ЩОДО СТАЛОГО ЕКОНОМІЧНОГО ЗРОСТАННЯ В НІГЕРІЇ

У цьому дослідженні вивчаються динамічні взаємозв'язки між відпливом капіталу та ключовими макроекономічними показниками в Нігерії у 1990–2024 рр. Замість того, щоб розглядати відплив капіталу виключно як наслідок макроекономічної нестабільності, у дослідженні аналізується його взаємозв'язок з економічним зростанням, внутрішніми інвестиціями, інфляцією, цінами на нафту та динамікою обмінного курсу. Щорічні ряди даних проаналізовано з використанням моделі авторегресії розподіленого лага (ARDL) та моделювання корекції помилок, щоб відобразити як короткострокову динаміку, так і довгострокові процеси адаптації. Відповідно до результатів, відплив капіталу демонструє проциклічну поведінку щодо реального ВВП та внутрішніх інвестицій, що вказує на те, що періоди економічного зростання пов'язані зі збільшенням відпливу капіталу. У рамках моделей, що були оцінені, інфляція пов'язана з більшим відпливом капіталу, тоді як ціни на нафту не чинять сталого впливу. Короткострокові зміни у відпливу капіталу не мають значного впливу на коливання обмінного курсу, але динаміка коригування вказує на певні ознаки поступової взаємодії між цими змінними з плином часу. У дослідженні зроблено висновок, що відплив капіталу в Нігерії відображає поєднання структурних економічних умов та поведінки з перерозподілу портфельних інвестицій, а не суто негативні макроекономічні показники. Автори підкреслюють, що інституційна довіра, макроекономічна стабільність та реформи інвестиційного клімату мають вирішальне значення для стримування відпливу капіталу.

Ключові слова: *відплив капіталу, стале економічне зростання, Нігерія, макроекономічна стабільність, внутрішні інвестиції, обмінний курс.*

Capital flight remains a persistent macroeconomic challenge in Nigeria, affecting the country's ability to sustain investment, stabilise its currency, and finance public expenditure. Over time, significant outflows of financial resources have reduced the domestic capital base

and weakened macroeconomic stability, particularly in an economy facing fiscal constraints and external vulnerabilities[2] [1; 2].

Nigeria's exposure to capital flight is closely linked to its economic structure, particularly its dependence on crude oil exports. Since the 1970s, oil has remained the dominant source of foreign exchange earnings, making the economy highly sensitive to global oil price fluctuations. Major price shocks in 1998, 2008, 2014, and 2020 led to sharp declines in government revenue and external inflows, reducing fiscal buffers and increasing economic uncertainty [3]. The 2020 oil price collapse, combined with the COVID-19 pandemic, further exposed structural weaknesses and contributed to economic contraction [4]. These conditions, alongside limited savings during boom periods and rising public debt, continue to constrain macroeconomic resilience.

Institutional and governance challenges also play a significant role. Weak regulatory systems, corruption, and policy inconsistency have reduced investor confidence and weakened the credibility of economic management. Studies show that institutional weaknesses contribute to resource diversion and reduce the efficiency of public spending [5; 6]. In the oil sector, governance gaps have been associated with substantial financial leakages [7], while declining foreign direct investment reflects concerns about policy uncertainty [8]. In this context, capital flight reflects both structural inefficiencies and responses to perceived economic risk.

In Nigeria, capital outflows occur through multiple channels, including illicit financial flows, trade misinvoicing, and profit repatriation by multinational corporations. Trade misinvoicing has been identified as a significant source of unrecorded financial outflows, while profit repatriation practices in key sectors reduce domestic reinvestment [9; 10]. In addition, financial innovation, particularly the rise of digital platforms and cryptocurrencies, has expanded the scope of cross-border capital movement, complicating regulatory oversight [11; 12].

The macroeconomic effects of sustained capital flight include declining foreign reserves, exchange rate pressure, inflationary instability, and reduced domestic investment. These dynamics weaken productive capacity and constrain fiscal space, limiting government investment in essential sectors such as health, education, and infrastructure [2; 13; 14]. Over time, these pressures contribute to persistent macroeconomic instability and slow structural transformation.

Despite extensive policy attention, capital flight in Nigeria remains inadequately understood in terms of its dynamic interaction with macroeconomic variables over time. In particular, the relationship between capital flight, economic growth, domestic investment, and exchange rate behaviour requires further empirical clarification. **This study, therefore, examines capital flight as part of a broader macroeconomic adjustment process, focusing on its interaction with key economic indicators over time.**

[2] Nigeria's total public debt portfolio as at December 31, 2023. (2024). Abuja: Debt Management Office. URL: https://dmo.gov.ng/debt-profile/total-public-debt/4591-nigeria-s-total-public-debt-stock-as-at-december-31-2023/file

Capital flight remains a persistent macroeconomic issue in Nigeria, driven by a combination of structural and institutional factors that affect the allocation and retention of domestic capital. The literature generally agrees that capital flight is not only a financial phenomenon but also reflects deeper weaknesses in governance, macroeconomic management, and economic structure.

Several studies identify institutional fragility and governance challenges as key drivers of capital outflows. L. Effiom et al. [15] argue that corruption and elite capture reduce trust in public institutions and encourage asset externalisation. N. Emezie and A. Anthony [16] further note that macroeconomic instability, including inflationary pressures and exchange rate misalignment, weakens confidence in domestic financial systems. Trade misinvoicing has also been identified as a significant channel of illicit capital movement, often enabled by weak enforcement and regulatory gaps [17]. In addition, G. Osuma et al. [18] show that political instability increases uncertainty and encourages precautionary capital withdrawal.

Beyond causes, the literature also highlights the macroeconomic consequences of capital flight. S. Ajayi and L. Ndikumana [19] provide cross-country evidence that capital outflows reduce resources available for investment and growth. In Nigeria, O. Amos [20] observes that capital flight often increases during periods when domestic reinvestment is most needed. Studies also show that capital flight interacts with exchange rate instability and external shocks, creating reinforcing cycles of volatility and further outflows [21]. At the investment level, R. Okpara et al. [22] and O. Okonkwo et al. [23] find that persistent capital flight weakens domestic capital formation, reduces productive capacity, and limits job creation.

Trade and external sector effects are also well documented. T. Ajilore [24] shows that capital flight can weaken trade balances through foreign exchange depletion and increased import dependence. U. Mazadu et al. [25] extend this by explaining how increased demand for foreign currency places pressure on exchange rates and reduces export competitiveness. Collectively, these studies suggest that capital flight contributes to macroeconomic instability through multiple interconnected channels.

The broader development implications are equally significant. A. Ayomitunde et al. [26] find that capital flight indirectly worsens poverty by reducing fiscal space for social investment. I. Abel and Y. Jabil [27] highlight that financial outflows are often accompanied by human capital migration, further weakening development capacity. Comparative evidence from other developing economies also confirms that persistent capital flight is associated with weaker long-term growth and reduced economic stability, particularly where institutional quality is low [28; 29].

Overall, the literature largely treats capital flight as a consequence of structural weaknesses and a constraint on economic performance. However, less attention has been given to its dynamic interaction with macroeconomic cycles, especially in resource-dependent economies like Nigeria. This gap suggests the need for a shift from purely causal explanations toward a framework that captures cyclical and interaction effects.

This study is anchored on Portfolio Choice Theory and the Institutional Quality Hypothesis. Portfolio Choice Theory explains capital flight as a rational response to risk-return differentials across countries, where macroeconomic instability and exchange rate volatility increase incentives for externalisation. The Institutional Quality Hypothesis

complements this by emphasising the role of weak governance, corruption, and policy inconsistency in reducing investor confidence and encouraging capital outflows.

Building on these frameworks, this study moves beyond conventional determinant-focused analysis to examine the dynamic interaction between capital flight and macroeconomic variables. In particular, it investigates whether capital flight behaves as a procyclical outcome of economic expansion or a countercyclical response to instability, thereby offering a more nuanced understanding of its macroeconomic role in Nigeria. By combining cyclical macroeconomic interactions with institutional explanations of investor behaviour, the study extends existing Nigerian capital-flight literature beyond conventional determinant-based analysis.

Research Design. This study adopts a quantitative research design based on annual time-series data to examine the macroeconomic consequences of capital flight in Nigeria. The approach allows for a systematic assessment of how persistent outflows of financial resources interact with key macroeconomic indicators over a long horizon. The modelling framework captures short-run dynamics and allows exploration of possible longer-run relationships.

Data Sources and Variable Definitions. The analysis utilises secondary annual data spanning 1990 to 2024. Capital flight serves as the central explanatory variable and is constructed using the residual method, which compares recorded sources and uses of foreign exchange to derive estimates of unrecorded outflows. Capital flight estimates are obtained using the residual method commonly applied in the literature, and are compared descriptively with published Global Financial Integrity estimates to ensure consistency in magnitude and trend. Specifically, the residual method combines data on external debt, foreign direct investment, current account balances and foreign reserves obtained from the Central Bank of Nigeria and the World Bank to estimate unrecorded capital outflows.

Three macroeconomic variables represent the core outcomes of interest. Real GDP growth measures overall economic performance and reflects the productive capacity of the economy. Domestic investment is captured through gross fixed capital formation, which indicates long-term capital accumulation. The foreign exchange rate is expressed as the value of the Nigerian naira relative to the United States dollar. Inflation, derived from the consumer price index, and global oil prices provide additional controls reflecting domestic price stability and external sector conditions.

Data for these variables are drawn from the Central Bank of Nigeria, the National Bureau of Statistics, the World Bank's World Development Indicators, and the U.S. Energy Information Administration. Where necessary, the variables are expressed in logarithmic form to reduce heteroscedasticity, stabilise variance, and ease the interpretation of proportional changes.

Analytical Framework. The empirical analysis employs the autoregressive distributed lag framework, which is particularly suitable for time-series data that exhibit mixed integration orders. The ARDL approach developed by M.H. Pesaran et al. [30] is appropriate where variables exhibit mixed integration orders of I(0) and I(1). The ARDL structure accommodates variables integrated at different orders and allows the estimation of short-run dynamics alongside possible long-run relationships where cointegration exists. It also

provides a coherent mechanism for distinguishing immediate responses from long-term adjustments.

Three ARDL models are estimated to examine the relationship between capital flight and (i) GDP growth, (ii) domestic investment, and (iii) the exchange rate. Each model allows both short-run dynamics and long-run effects to be evaluated within a unified framework. In the first specification, real GDP growth is the dependent variable, with capital flight and the control variables entering as regressors. The second specification examines domestic investment as the outcome variable. The third specification focuses on the foreign exchange rate, allowing the analysis to trace how capital flight influences currency behaviour over time.

In each model, the short-run component captures the immediate effect of changes in capital flight and the macroeconomic controls through the differenced variables, while the long-run component reflects possible longer-run associations derived from the level variables. The error-correction term measures the speed at which deviations from equilibrium are adjusted following short-run shocks.

Preliminary Testing. As a first step, descriptive statistics are used to characterise the data and identify potential irregularities. Conventional unit root tests are applied then to determine the integration order of each series and ensure that no variable is integrated beyond the first order. Establishing the stationarity properties of the data guards against spurious regression and confirms the suitability of the ARDL approach.

Long-Run Relationship Testing. Cointegration is tested using the ARDL bounds approach to determine whether a long-run relationship exists among the variables. The decision is based on whether the computed F-statistic exceeds the upper critical bound.

Model Estimation and Interpretation. Once cointegration is established, the ARDL models are estimated for both short-run and long-run coefficients. The short-run results reflect the immediate effect of capital flight on output growth, domestic investment, and the exchange rate. Where cointegration evidence is weak or inconclusive, the long-run coefficients are interpreted cautiously as indicative associations rather than definitive equilibrium effects. The magnitude and sign of the error-correction coefficient indicate how rapidly the system corrects disequilibrium. Where cointegration evidence is present or not strongly rejected, a negative and statistically significant error-correction coefficient may indicate gradual adjustment toward a longer-run relationship.

Diagnostic and Stability Tests. Robustness of the estimated models is ensured through a series of diagnostic tests. The residuals are examined for serial correlation using standard procedures and for heteroskedasticity through conventional variance-based tests. Model specification is assessed using functional form tests, while stability of the parameters over time is examined through cumulative sum procedures. These diagnostics help confirm that the models are statistically sound and suitable for policy interpretation.

Reporting of Findings. The final stage of the methodology involves presenting the estimated short-run effects, long-run relationships, and the speed of adjustment from disequilibrium. Emphasis is placed on interpreting the economic meaning of the results and drawing insights into how prolonged capital flight shapes Nigeria's macroeconomic trajectory through its influence on growth, investment, and currency stability.

Limitations of the Study. This study is limited by the use of secondary annual data, which may mask short-term fluctuations in capital flight and macroeconomic variables. In addition, capital flight is measured using the residual method, which depends on the accuracy of national accounts and balance of payments data. As such, the estimates may be subject to measurement error. The ARDL framework also assumes parameter stability over the sample period and may not fully capture structural breaks associated with major policy shifts, oil price shocks, or financial crises.

Results. This section presents empirical evidence on the dynamic interactions and co-movements between capital flight and key macroeconomic indicators in Nigeria over the period 1990–2024. It reports descriptive statistics and unit root tests, the ARDL bounds tests for cointegration, the short-run and long-run ARDL ECM estimates for GDP, domestic investment and foreign exchange rate, and a set of post-estimation diagnostic checks.

Descriptive Statistics of Key Variables. Table 1 summarises the distribution of the main variables in logarithmic form: capital flight (lnCF), real GDP (lnGDP), domestic investment (lnDI), foreign exchange rate (lnFER), inflation (lnINF) and oil prices (lnOIL).

Table 1

Descriptive Statistics of Key Variables (Logarithmic Transformation)

Statistic	lnCF	lnGDP	lnDI	lnFER	lnINF	lnOIL
Mean	5.8566	10.5135	8.5752	7.6295	3.1622	3.8044
Median	5.8553	10.5116	8.596	7.6532	3.1487	3.7587
Maximum	6.8212	11.0329	9.214	8.7097	3.6591	4.721
Minimum	4.894	10.018	7.8979	6.7465	2.7851	3.218
Std. Dev.	0.547	0.308	0.3627	0.4698	0.2017	0.3401
Skewness	–0.0605	0.0346	–0.028	0.3066	0.3837	0.4678
Kurtosis	2.0071	1.869	2.1276	2.7841	2.9559	3.399
Jarque-Bera	1.5467	1.9097	1.2368	0.6835	0.8469	1.2143
Probability	0.4615	0.3849	0.5388	0.7105	0.6548	0.5449
Observations	35	35	35	35	35	35

Source: author's computation using EViews (2025).

In Table 1, mean and median values for all variables are close, and the dispersion of each series is moderate, as reflected in the standard deviations. Skewness is near zero, and kurtosis is close to the normal benchmark of three in most cases. The Jarque-Bera statistics are insignificant, with p-values well above conventional thresholds. The summary statistics suggest that the variables do not exhibit extreme distributional distortions in logarithmic form, and therefore meet basic conditions for time-series estimation.

Trend Analysis of Capital Flight and Key Macroeconomic Indicators (1990–2024). Before presenting the econometric results, it is essential to explore the historical behaviour of capital flight alongside major macroeconomic indicators. These graphical illustrations strengthen the empirical narrative by providing a visual understanding of how capital flight

moves relative to GDP growth (Figure 1), domestic investment (Figure 2) and the foreign exchange (Figure 3) rate over the study horizon. The charts also highlight structural shifts, periods of instability, and possible points of macroeconomic vulnerability, which justify the subsequent ARDL modeling.

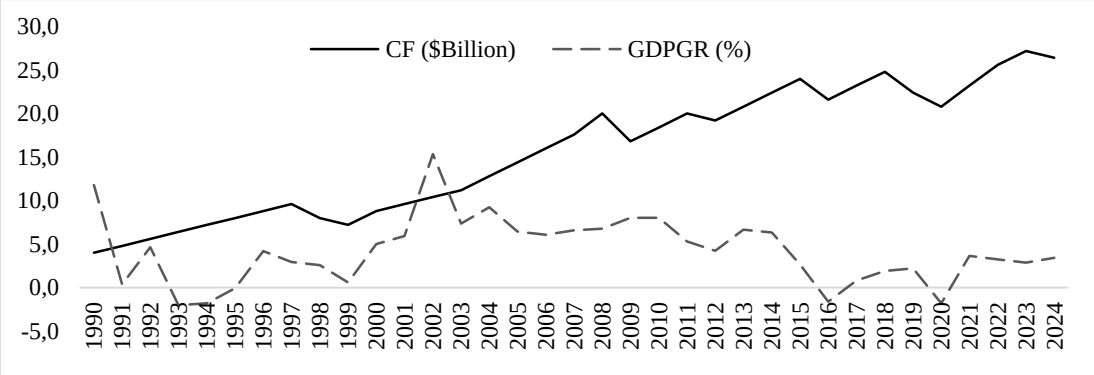

Figure 1. Trend of Capital Flight and Real GDP Growth in Nigeria (1990–2024)

Source: Author's computation. Capital flight series constructed using the residual method from data obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin and the World Bank World Development Indicators (WDI), and cross-checked with Global Financial Integrity estimates; real GDP growth data obtained from the World Bank WDI (2025).

The figure indicates that capital flight followed a generally upward path over the study period, while GDP growth fluctuated across different economic cycles. Periods such as the mid-2000s and post-2016 recovery show that increases in output sometimes coincided with rising capital outflows. However, the movements are not sufficiently stable to imply a consistent long-run relationship (Figure 1).

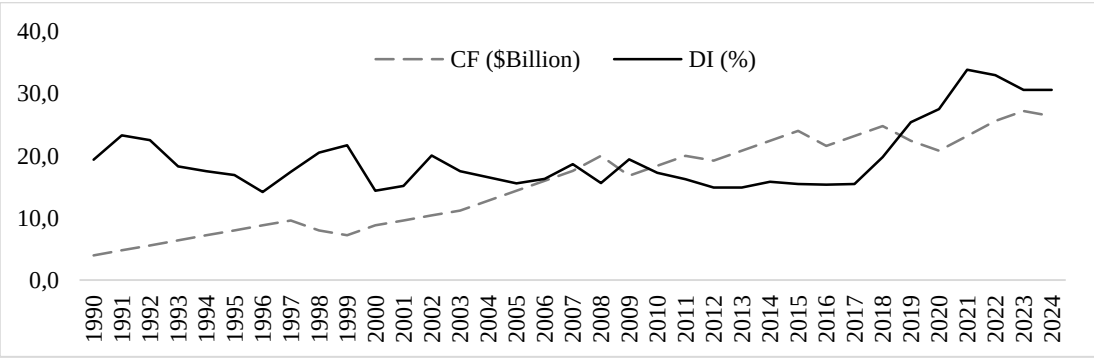

Figure 2. Capital Flight and Domestic Investment Trends in Nigeria (1990–2024)

Source: Author's computation. Capital flight series constructed using the residual method from data obtained from the CBN Statistical Bulletin and the World Bank WDI, and cross-checked with Global Financial Integrity estimates; domestic investment data (gross fixed capital formation) obtained from the WDI (World Bank, 2025).

The figure shows cyclical movements in domestic investment, while capital flight maintains a general upward trend. Although both variables occasionally move in the same direction, the overall patterns suggest differing long-term dynamics between domestic capital formation and external capital outflows (Figure 2).

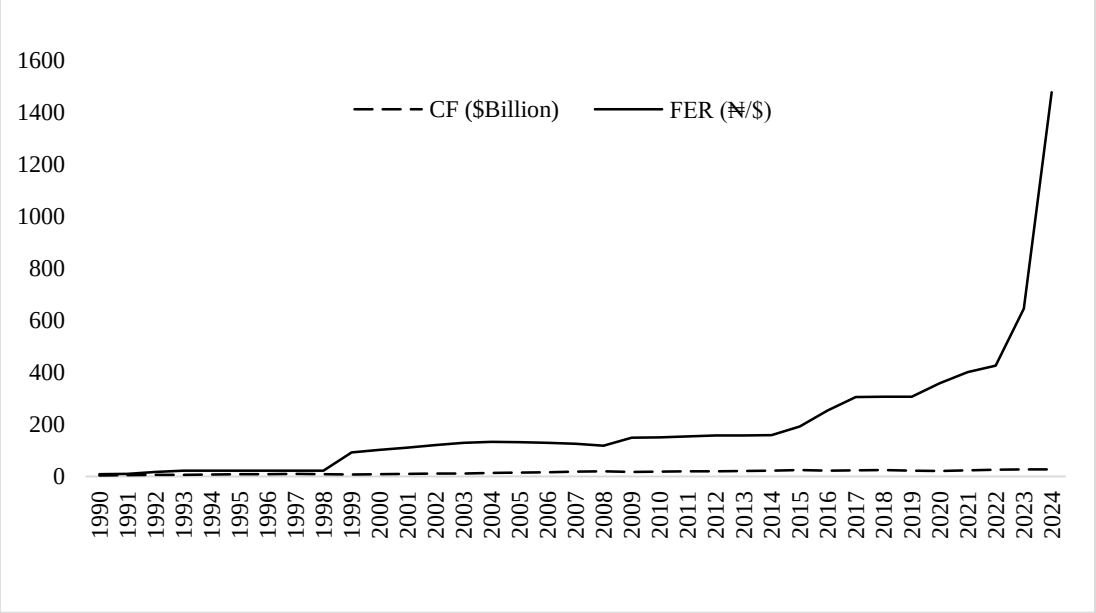

Figure 3. Capital Flight and Exchange Rate Trends in Nigeria (1990–2024)

Source: Author's computation. Capital flight series constructed using the residual method from data obtained from the CBN Statistical Bulletin and the World Bank WDI, and cross-checked with Global Financial Integrity estimates; exchange rate data obtained from the CBN (2024), *Monthly Average Exchange Rates of the Naira*.

The figure shows a steady rise in capital flight alongside pronounced depreciation of the naira, particularly after 2015. Exchange rate movements are more volatile than capital flight, although both variables appear to reflect underlying macroeconomic pressures such as reserve depletion and external shocks (Figure 3).

***Unit Root Test Results*.** To determine the order of integration of the series, Augmented Dickey Fuller (ADF) tests are applied to each variable in levels and first differences. The results are reported in Table 2.

In the ADF test result in Table 2, the null of a unit root cannot be rejected for lnCF, lnGDP, lnDI and lnFER in levels, but is strongly rejected in first differences, so these variables are integrated of order one. By contrast, lnINF and lnOIL are stationary in levels and can be treated as I(0) processes. No series is integrated of order two. This mixture of I(0) and I(1) variables is consistent with the requirements of the ARDL bounds testing framework and justifies the use of ARDL ECM models.

Table 2

Augmented Dickey-Fuller Unit Root Test Results

Variable	Level ADF	Prob.	1st Diff ADF	Prob.	Order
lnCF	–0.7895	0.8222	–9.0918	0.0000	I(1)
lnGDP	–0.3119	0.9238	–10.39	0.0000	I(1)
lnDI	–1.1733	0.685	–10.137	0.0000	I(1)
lnFER	–1.251	0.6513	–8.4973	0.0000	I(1)
lnINF	–5.3668	0.0000	–9.8742	0.0000	I(0)
lnOIL	–4.7715	0.0001	–10.443	0.0000	I(0)

Source: EViews output (2025).

ARDL Bounds Test for Cointegration. The existence of a long-run relationship between capital flight and each macroeconomic outcome is examined using the ARDL bounds testing procedure of M.H. Pesaran et al. [30]. The computed F statistics for each model and the relevant critical values are presented in Table 3.

Table 3

ARDL Bounds Test for Cointegration

(A) Computed F-statistics		
Model	F-statistic	
lnGDP	0.7778	
lnDI	3.0937	
lnFER	2.4391	
(B) Critical Values [30]		
Significance	I(0)	I(1)
10%	2.331	3.417
5%	2.804	4.013
1%	3.9	5.419

Source: EViews computation (2025).

For the GDP equation, the F statistic of 0.7778 lies below the lower bound at all reported significance levels, so the null hypothesis of no cointegration cannot be rejected. The domestic investment equation yields an F statistic of 3.0937, which falls between the lower and upper bounds at the 10 percent level and is therefore inconclusive at conventional levels. The foreign exchange rate equation produces an F statistic of 2.4391, which is also below the lower bound. The bounds test results provide weak and inconclusive evidence of cointegration across the specified models. This implies that strong long-run equilibrium relationships cannot be firmly established. Given the weak and inconclusive evidence from the bounds test, the results are interpreted primarily within a short-run dynamic framework, while long-run coefficients are reported with caution and not treated as strong equilibrium estimates. Accordingly, long-run estimates are treated as suggestive co-movement patterns rather than established long-run equilibrium relationships.

Overall, the bounds test results do not consistently confirm the existence of long-run equilibrium relationships across all models. However, given the integration properties of the variables and the interest in both short-run dynamics and longer-term relationships, ARDL

ECM models are still estimated. The significance and sign of the error-correction terms provide additional information about the presence and strength of long-run adjustment.

***Short-run and Long-run Effects of Capital Flight on Macroeconomic Indicators*.** Having established that the series are a mixture of I(0) and I(1) and that long-run relationships are not strongly ruled out, ARDL ECM models are estimated for each dependent variable. In all three models, capital flight (lnCF) is the main explanatory variable, while inflation (lnINF) and oil prices (lnOIL) act as controls. The short-run dynamics are captured by first differences and the error correction term, while the long-run coefficients describe equilibrium relationships.

Effect of Capital Flight on GDP Growth. Table 4 reports the short-run ECM for GDP growth, with the change in lnGDP as the dependent variable.

Table 4

Short-Run ECM Results for GDP Growth

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.0192	0.0085	2.2632	0.0313
D(lnCF)	0.1855	0.059	3.1433	0.0038
D(lnINF)	0.0759	0.0291	2.6039	0.0144
D(lnOIL)	0.0161	0.0191	0.8404	0.4075
ECT(–1)	–0.4388	0.1639	–2.6772	0.0121

Note: Model Statistics: $R^2 = 0.3719$; Adjusted $R^2 = 0.2853$; F-Statistic = 4.2931; DW = 2.40.
Source: EViews (2025).

Table 4 reports the short-run error correction model for GDP growth, with ΔlnGDP as the dependent variable. The coefficient on D(lnCF) is positive and statistically significant at the 1 percent level, which indicates a positive co-movement between capital flight and GDP growth, suggesting that capital outflows increase during periods of economic expansion, possibly reflecting higher income levels, profit repatriation and portfolio diversification behaviour. The short-run effect of inflation is also positive and significant, whereas the coefficient on D(lnOIL) is not significant.

The error correction term, ECT(−1), is negative and significant, with an estimated value of about −0.44. This implies that roughly 44 percent of short-run disequilibrium is corrected within one year, indicating a moderate speed of adjustment. The model explains around one third of the variation in GDP growth, and the overall F statistic is significant, with a Durbin–Watson statistic close to two.

The corresponding long-run coefficients for GDP are shown in Table 5.

Table 5

Long-run Coefficients of the ARDL Model for GDP Growth

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.814330	0.259032	26.3069	0.0000
lnCF	0.534979	0.023623	22.6467	0.0000
lnINF	0.090181	0.059006	1.5283	0.1366
lnOIL	0.073836	0.037589	1.9643	0.0585

Source: EViews computation (2025).

Long-run coefficients are presented in Table 5. The estimated coefficient indicates a positive association between GDP and capital flight; however, given the weak cointegration evidence, this should be interpreted as long-run co-movement rather than a stable equilibrium relationship. The estimates suggest that increases in capital flight coincided with periods of higher GDP within the sample period, although the absence of strong cointegration evidence limits broader long-run interpretation. This pattern may reflect the coexistence of economic expansion and external asset accumulation within the sample period.

Effect of Capital Flight on Domestic Investment. Table 6 presents the short-run ECM for domestic investment, with the change in lnDI as the dependent variable.

Table 6

Short-Run Dynamics of the ECM for Domestic Investment

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.031463	0.011164	2.8183	0.0086
D(lnCF)	0.103707	0.071759	1.4452	0.1591
D(lnINF)	0.060111	0.038906	1.5451	0.1332
D(lnOIL)	0.051894	0.025859	2.0068	0.0542
ECT(–1)	−0.535017	0.130851	−4.0887	0.0003

Note: $R^2 = 0.4088$; Adjusted $R^2 = 0.3273$; F-Statistic = 5.0136 (p = 0.0034); Durbin–Watson ≈ 2.76.
Source: EViews computation (2025).

The short-run ECM for domestic investment is reported in Table 6, with ΔlnDI as the dependent variable. The coefficient on D(lnCF) is positive but not statistically significant, which indicates that short-run changes in capital flight do not exert a strong immediate impact on domestic investment. The short-run coefficient on D(lnOIL) is positive and marginally significant, while D(lnINF) is not significant.

The error correction term is negative and highly significant, with an estimated coefficient of about −0.54. This suggests that approximately 54 percent of short-run disequilibrium is corrected within one year. The model achieves a reasonable fit, and the Durbin–Watson statistic signals limited serial correlation in the residuals.

The long-run estimates in Table 7 suggest a positive association between capital flight and domestic investment, but this result is interpreted cautiously given the weak cointegration evidence. The estimated coefficient on lnCF is positive within the model specification, although the weak cointegration evidence requires cautious interpretation of the reported long-run association. Oil prices also have a positive and significant long-run effect, whereas the coefficient on inflation is not statistically different from zero. Within the sample period, higher recorded capital outflows occasionally coincided with higher levels of domestic investment, although the weak cointegration evidence limits strong long-run interpretation.

Table 7

Long-run Coefficients of the ARDL Model for Domestic Investment

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.288816	0.399767	10.7283	0.0000
lnCF	0.606406	0.036457	16.6333	0.0000
lnINF	0.081857	0.091065	0.8989	0.3756
lnOIL	0.125136	0.058011	2.1571	0.0389

Source: EViews computation (2025).

***Effect of Capital Flight on Foreign Exchange Rates*.** The short-run ECM for the foreign exchange rate is summarised in Table 8, with the change in lnFER as the dependent variable.

Table 8

Short-run Dynamics of the ECM for Foreign Exchange Rates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.042421	0.040626	1.0442	0.3050
D(lnCF)	−0.013090	0.246630	−0.0531	0.9580
D(lnINF)	−0.154773	0.140753	−1.0996	0.2805
D(lnOIL)	−0.051059	0.091763	−0.5564	0.5822
ECT(–1)	−0.731930	0.197464	−3.7066	0.0009

Note: $R^2 = 0.4184$; Adjusted $R^2 = 0.3382$; F-Statistic = 5.2160 (p = 0.0027); Durbin–Watson ≈ 1.94.
Source: EViews computation (2025).

Table 8 presents the short-run ECM for the foreign exchange rate, with ΔlnFER as the dependent variable. None of the differenced regressors, including D(lnCF), is statistically significant. This indicates that short-run movements in capital flight, inflation and oil prices do not have a strong contemporaneous effect on changes in exchange rates within the estimated model.

Adjustment in the exchange rates equation operates mainly through the error correction term. ECT(−1) is negative and highly significant, with a magnitude of about −0.73, which implies that roughly 73 percent of short-run disequilibrium is corrected within one year. The model exhibits a satisfactory fit and a Durbin–Watson statistic close to two. Although the short-run response of the exchange rate to capital flight is not statistically significant, the strong error correction effect indicates that the exchange-rate series appears to adjust gradually following short-run shocks within the estimated specification.

***Diagnostic Tests*.** Table 9 summarises the main post estimation diagnostic tests for the three ARDL ECM models. These include the Breusch Godfrey LM test for serial correlation, the Breusch Pagan Godfrey test for heteroskedasticity, the Jarque Bera normality test and the Ramsey RESET test for functional form.

Table 9

Summary of Post Estimation Diagnostic Tests for ARDL ECM Models

Model	BG LM Test Stat	Prob.	BP-Godfrey Test Stat.	Prob.	Jarque-Bera Test Stat.	Prob.	RESET Test F. Stat	Prob.
InGDPGR	4.0934	0.0431	6.864	0.1433	1.0701	0.5856	2.8362	0.1033
InDI	9.2834	0.0023	0.6165	0.9612	0.1611	0.9226	0.1849	0.6705
InFER	0.2305	0.6311	2.4326	0.6568	8.5159	0.0142	3.1987	0.0861

Source: EViews Computations, 2025.

The Breusch – Godfrey LM statistics point to residual autocorrelation in the GDP and domestic investment equations, while the foreign exchange rate equation does not display significant serial correlation. The Breusch – Pagan – Godfrey tests do not indicate serious heteroskedasticity in any model. Jarque – Bera statistics suggest that the residuals of the GDP and investment models are approximately normal, whereas the residuals of the

exchange-rate model deviate from normality. The Ramsey RESET tests do not reject the null of correct functional form for any equation, although the exchange-rate model is somewhat closer to the rejection threshold.

Given the mixed evidence from the bounds tests, the empirical results are interpreted primarily as dynamic associations rather than strict long-run causal relationships.

Discussion. The results indicate that capital flight continued alongside changing macroeconomic conditions in Nigeria throughout the study period. The findings suggest that capital outflows may persist alongside periods of economic expansion, indicating that economic growth alone may not necessarily reduce incentives for external asset holding. This pattern aligns with studies that associate capital flight with institutional uncertainty, governance weaknesses, and investor risk perception rather than with output performance alone [20; 31].

The positive short-run coefficient on capital flight within the GDP model suggests that increases in capital outflows coincided with periods of higher economic activity during the sample period. One possible explanation is that periods of expansion may also involve higher profit repatriation, portfolio diversification, and external asset accumulation. However, given the weak cointegration evidence, the result should be interpreted as a short-run association rather than a stable long-run relationship.

The exchange-rate results indicate that short-run changes in capital flight do not exert a statistically significant contemporaneous effect on exchange-rate movements within the estimated models. This suggests that exchange-rate behaviour in Nigeria may be influenced more strongly by broader structural conditions, including reserve pressures, oil-price volatility, and policy adjustments.

Inflation remains an important macroeconomic factor within the analysis. Persistent inflation can reduce the attractiveness of domestic financial assets by weakening purchasing power and increasing uncertainty. This finding is consistent with M. Joseph [32], who links inflation persistence to declining investor confidence and capital preservation behaviour.

Oil prices, although important to Nigeria's external sector, did not emerge as a consistent driver of capital flight in the estimated models. This may suggest that the relationship between oil revenues and capital outflows depends more on institutional and fiscal management conditions than on commodity price movements alone. Similar observations are discussed in studies on resource-dependent economies and the resource-curse literature [33].

The findings also provide partial support for the theoretical frameworks underpinning the study. The observed co-movement between capital flight and periods of economic expansion is broadly consistent with Portfolio Choice Theory, which suggests that investors may diversify assets internationally in response to perceived risk and return considerations. At the same time, the persistence of capital outflows despite periods of economic growth aligns with the Institutional Quality Hypothesis, which emphasises the role of governance credibility, policy consistency and institutional trust in shaping investment behaviour.

Taken together, the findings indicate that policies aimed at reducing capital flight may require both macroeconomic and institutional measures. The findings further indicate that

policies focused solely on growth expansion may have limited effectiveness where underlying structural and governance concerns remain unresolved.

Conclusion. This study examined the interaction between capital flight and selected macroeconomic indicators in Nigeria over the period 1990–2024 using the ARDL framework and error-correction modelling approach. The analysis focused on the relationship between capital flight, GDP growth, domestic investment, exchange rate behaviour, inflation, and oil prices.

The findings suggest that capital flight remains a persistent feature of Nigeria's macroeconomic environment and appears to move alongside broader economic conditions rather than strictly during periods of economic decline. In particular, the results indicate that increases in capital flight coincided with periods of higher output and investment within the sample period. However, given the weak and inconclusive cointegration evidence across some models, the estimated long-run relationships should be interpreted cautiously.

The study further shows that inflation remains relevant in explaining capital flight behaviour, while oil prices do not appear to exert a consistent independent influence within the estimated models. Exchange-rate movements also appear to be shaped more by broader structural and policy conditions than by short-run fluctuations in capital flight alone.

The findings are broadly consistent with the view that capital flight in Nigeria reflects both macroeconomic conditions and institutional factors, including investor confidence, governance quality, and policy credibility. This aligns with the theoretical perspective that capital outflows may partly represent portfolio adjustment behaviour under conditions of uncertainty.

The study suggests that reducing capital flight may require a broader policy approach that combines macroeconomic stability with institutional reforms, improved regulatory credibility, and a more predictable investment environment.

Recommendations. Based on the key findings of this study, the following recommendations are proposed to address the persistent challenges of capital flight and promote sustainable economic growth in Nigeria:

The Central Bank of Nigeria should continue efforts toward exchange-rate unification while reducing administrative arbitrage between official and parallel markets to discourage capital flight and improve foreign-exchange market efficiency.

Strengthen coordination between the EFCC, ICPC and judicial institutions through faster financial crime prosecution and improved transparency in public procurement processes.

The Nigerian Investment Promotion Commission should simplify business registration procedures, improve contract enforcement, and expand access to long-term domestic credit for productive sectors by reducing transaction costs and strengthening legal protections for local investors.

The Ministry of Finance should expand fiscal incentives and infrastructure support for manufacturing, agriculture and non-oil exports to reduce dependence on oil revenue to minimize vulnerability to price shocks and reduce the impact of capital flight.

The Securities and Exchange Commission should strengthen reporting requirements for virtual asset service providers and improve inter-agency monitoring of cross-border digital transactions to curb unregulated capital flows and prevent illicit financial transfers.

Policymakers should distinguish between illicit capital flight and portfolio-driven capital outflows, as both require different regulatory and macroeconomic policy responses.

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