External Debt and Capital Flight in Developing Countries

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Abstract

This study examines the relationship between external debt and capital flight in developing countries using a panel dataset of 78 countries spanning 2000–2024. The study is motivated by the persistent reliance of developing economies on external borrowing to finance investment and development, alongside the growing concern that increasing external debt may stimulate capital outflows rather than support domestic capital accumulation. Drawing on the debt-driven capital flight hypothesis, the study argues that rising external debt increases expectations of future macroeconomic instability, taxation, inflation, and repayment risk, thereby encouraging residents to transfer assets abroad. Methodologically, the study employs a comprehensive panel econometric framework. After conducting descriptive statistics and correlation analysis, the study tests for cross-sectional dependence, panel unit roots, slope heterogeneity, and cointegration. Given the presence of cross-sectional dependence and heterogeneous slope coefficients, the study applies the Method of Moments Quantile Regression (MM-QR) as the main estimator and Bootstrap Quantile Regression (BS-QR) as a robustness check. This approach allows examination of how the impact of external debt varies across levels of capital flight. The findings reveal that external debt significantly increases capital flight, with the effect becoming stronger at higher quantiles of capital flight. This suggests that external borrowing exerts a more harmful influence on countries already experiencing elevated capital outflows. The results also show strong persistence in capital flight, indicating that past outflows contribute to future outflows. In addition, economic growth and financial development reduce capital flight, whereas political stability generally exerts a negative but weaker effect. The study concludes that poorly managed external borrowing contributes to capital flight in developing countries and highlights the need for prudent debt management, stronger institutions, and improved domestic financial conditions to retain capital and support sustainable development.

Keywords: External Debt, Capital Flight, Developing Countries, MM-QR, BS-QR

Introduction

External borrowing has emerged as a key source of financing for development in most developing economies, especially when domestic savings are insufficient to finance investment and economic growth (Todaro & Smith, 2006). In this regard, governments are highly dependent on foreign capital inflows to finance the savings-investment gap and maintain economic activity. This

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dependency is sharper in sub-Saharan Africa and other developing economies, where structural factors such as low income levels, underdeveloped financial depth, and fixed current account deficits strengthen reliance on external funding sources (Ayadi & Ayadi, 2008). This has made external borrowing one of the tools widely viewed as a requisite for financing development and aiding macroeconomic stability (Adepoju et al., 2007).

Although this is crucial, the growing stock of external debt has raised concerns about its macroeconomic consequences. The association between external borrowing and capital flight is one of the most severe problems linked to this trend in developing economies. Capital flight is a high level of flight of financial resources from domestic economies to foreign destinations and is usually motivated by macroeconomic instability, poor institutional structures, and future economic uncertainty (Ndikumana & Boyce, 2003). In most developing nations, especially in sub-Saharan Africa, external debt has been increasing in tandem with capital outflows, suggesting a close, systematic relationship between the two.

There is empirical evidence that external borrowing may be a major cause of capital flight. Research has shown that a high percentage of borrowed funds is often diverted to foreign countries rather than invested locally. For example, Ndikumana and Boyce (2011) estimate that 60 to 67 cents of every dollar borrowed in sub-Saharan Africa leaves the economy through capital flight during the same time frame. Likewise, the correlation between external debt and capital flight is strong and positive in the study by Otieno et al. (2022), which proves that capital outflows by developing economies are driven by debt. This trend is what most people have termed the revolving door hypothesis, whereby capital inflows in the form of foreign borrowing are accompanied by capital outflows, thereby defeating the purpose of foreign financing.

The correlation between external borrowing and capital flight is also supported by the prospects of future economic situations. As external debt levels increase, they may expect higher taxation, inflation, or exchange rate depreciation to service the debt. The expectations motivate domestic wealth holders to migrate their assets abroad to diversify risk (Cerra et al., 2008). This can also be exacerbated by poor governance, corruption, and transparency in the use of debt, which can encourage the diversion of borrowed funds into foreign assets held by individuals (Ndikumana & Boyce, 1998).

The continued capital flight and the increase in external borrowing have created a paradox in most developing economies. Although these countries are highly indebted, in most cases, they have substantial personal assets abroad, making them net creditors to the world economy (Boyce and Ndikumana, 2012). This contradiction suggests a structural divergence between foreign funding and domestic capital accumulation, casting doubt on the usefulness of borrowing policies for developmental attainment.

Although there is a large body of literature on the determinants of capital flight and the role of external debt, most studies have used these variables alone or as part of larger models that also include economic growth or welfare outcomes (Hermes et al., 2002; Ndikumana, 2009). This leaves room for a more sustained empirical study that distinguishes the direct correlation between external borrowing and capital flight, especially in developing economies with structural heterogeneity and financial vulnerability.

Further, the literature is mostly based on traditional econometric models that presuppose cross-sectional independence and homogeneous country slopes. These assumptions are limited and may not adequately reflect the diverse economic and institutional environments in developing countries. This weakness highlights the importance of more sophisticated panel estimation methods that account for cross-sectional dependence and heterogeneous impacts.

In this context, this study seeks to conduct a rigorous empirical investigation into how external borrowing affects capital flight in developing nations. Through this relationship, the study aims to make contributions to the literature by providing a better understanding of the effects of external debt on capital outflows and by applying the latest econometric methods to address key methodological constraints in earlier studies.

The key objective of the study is to examine how external borrowing and capital flight are prone to developing economies. This study is particularly important in the context of developing economies, where external borrowing and capital flight remain significant challenges to sustainable development. Policy-wise, the research offers a clear understanding of how governments can better manage external debt without incurring significant capital costs, thereby enhancing macroeconomic stability and resource allocation (Fofack & Ndikumana, 2014).

The research also helps bridge an important gap in the existing literature. Although previous studies have examined external debt and capital flight independently (Gusarova, 2009; Otieno et al., 2022), the current study combines the two variables to provide a more comprehensive picture of the third-party effects on economic performance and welfare outcomes.

In addition, the research is significant for development planning because it emphasises the need for policies that facilitate capital retention, institutional frameworks, and the proper use of borrowed funds (Almounsor, 2008). The study provides grounds for employing strategies to achieve inclusive growth and alleviate poverty by identifying the mechanisms through which capital flight erodes the benefits of external borrowing (Aladejare & Dimnwobi, 2025).

Lastly, the research provides an empirical basis for further investigation, as it uses a panel-based analytic model and addresses methodological shortcomings in the earlier literature. It also offers evidence-based suggestions that may inform policymakers, researchers, and international development agencies in addressing the two-fold dilemma of external debt and capital flight in developing world economies.

Literature Review

This section provides a literature review of studies examining the relationship between external debt and capital flight. Table 1 presents a summary of the empirical literature on external debt and capital flight.

Table 1: Empirical Literature on External Debt and Capital Flight

Authors	Country/Area	Data	Methodology	Main Findings
Agyeman et al. (2022)	Sub-Saharan Africa (27 countries)	Panel (2000–2015)	Dynamic panel; System GMM	External debt → Growth (–ve); Capital flight → Growth (–ve); Interaction (–ve stronger)
Otieno et al. (2022)	Sub-Saharan Africa (33 countries)	Panel (1970–2004)	Econometric model	External debt → Capital flight (+ve strong)
Ampah & Kiss (2019)	SSA (HIPCs)	Panel (1990–2015)	PCSE regression	External debt → Policy effectiveness (–ve); Capital flight → Policy effectiveness (–ve)
Kwesi & Kiss (2017)	Ghana	Time series (1970–2012)	ARDL; Granger causality	Capital flight → External debt (+ve); bidirectional (both)

Liew et al. (2016)	Malaysia	Time series (1975–2010)	ARDL; cointegration	Political risk → Capital flight (+ve); External debt → Capital flight (–ve)
Ndikumana (2014)	Africa (39 countries)	Panel (1970–2010)	Panel analysis	External debt → Capital flight (+ve); Growth → Capital flight (–ve)
Cerra et al. (2008)	Developing countries	Panel (1970–2001)	Panel econometrics	External debt → Capital flight (+ve); Institutions → Capital flight (–ve if strong)
Alam & Quazi (2003)	Bangladesh	Time series (1973–1999)	ARDL	Political instability → Capital flight (+ve); Growth → Capital flight (–ve)
Ndikumana & Boyce (2003)	SSA (30 countries)	Panel (1970–1996)	Econometric analysis	External debt → Capital flight (+ve strong)
Harrigan et al. (2002)	Malaysia	Time series (1970–1996)	VECM	External debt → Capital flight (+ve); Growth → Capital flight (–ve)
Fedderke & Liu (2002)	South Africa	Time series (1960–1995)	Econometric analysis	Political instability → Capital flight (+ve)
Okungu (2012)	Kenya	Time series (1980–2010)	OLS; cointegration	External debt → Capital flight (insignificant); Growth → Capital flight (–ve)
Ndikumana & Boyce (2011)	SSA (33 countries)	Panel (1970–2004)	Empirical panel estimation	External debt → Capital flight (+ve strong)
Chipalkatti & Rishi (2001)	India	Time series (1971–1997)	Simultaneous equations	External debt ↔ Capital flight (both +ve)
Hermes et al. (2002)	Multi-region	Review	Literature review	External debt → Capital flight (+ve)
Ndikumana & Boyce (1998)	Zaire	Historical	Residual method	External debt → Capital flight (+ve strong)
Alesina & Tabellini (1989)	Developing economies	Theoretical	General equilibrium model	Political instability → Capital flight (+ve)
Ndikumana (2009)	SSA (40 countries)	Panel (1970–2004)	Panel regression	External debt → Capital flight (+ve); Growth → Capital flight (–ve)
Ize & Ortiz (1987)	General (theoretical)	Theoretical	Macro-fiscal model	External borrowing ↔ Capital flight (both)

The empirical literature reviewed has shown that some significant patterns exist about the correlation between the external debt and the capital flight in developing economies. To begin with, regarding the methodological approaches, most of the studies use panel data analysis, and time-series econometric analysis. Dynamic panel estimators, including System GMM, are the most used panel methods because they can be used to address endogeneity and dynamic interaction (e.g., Agyeman et al., 2022; Ndikumana, 2009). By contrast, in country-specific research, often the tools applied are ARDL models, cointegration, and estimates using OLS (e.g., Alam & Quazi, 2003; Kwesi & Kiss, 2017). Although these methods are very informative, they are usually linear and might not represent heterogeneous impacts among nations.

Second, geographically, the literature is massively concentrated on the sub-Saharan Africa due to the unresolved problems concerning external debt and capital flight in the region. Fewer studies are generalized to the Asian economies like Malaysia, Bangladesh and India whereas relatively fewer studies take the cross-regional approach. This shows a high regional bias whereby Africa was the major empirical point of interest because it is highly exposed to both external borrowing and capital outflow.

Third, cross-sectional dependence and heterogeneity in slope are not considered as a critical limitation in current literature in terms of panel estimations. The implicit assumption that is taken in most studies is cross-sectional independence and equal slope coefficients among countries, which is not realistic when working in the context of developing economies with structural and institutional and macroeconomic heterogeneity. These econometric problems may result in bias and inconsistent estimates in case they are ignored, thereby undermining the strength and external validity of the empirical results.

In addition, several of the available studies are based on traditional econometric methods that fail to consider distributional heterogeneity or nonlinear dynamics of the relationship between external debt and capital flight. This has caused the lack of detailed evidence on the relationships in relation to their possible variability in different quantiles or economic circumstances.

In order to fill these gaps, the current research in question considers a more efficient and sophisticated methodological framework, i.e., the Method of Moments Quantile Regression (MMQR) approach. In contrast with the traditional panel estimators, MMQR can be used to study heterogeneous impacts at various points of the conditional distribution, thus identifying the cross-country diversities in the effect of external borrowing on capital flight. Moreover, the research clearly considers cross-sectional dependence, slope heterogeneity and provides more credible and policy-relevant findings. In this respect, the research will further advance the literature by improving both the methodological rigor and empirical applicability through providing a more detailed insight into the external debt capital flight nexus in the developing economies.

Model Specification, Data and Methodology

The objective of the study is to examine the relationship between external borrowing and capital flight. Capital flight is used as a dependent variable and measured through residual method. This method captures unrecorded capital outflows resulting from the difference between recorded inflows and outflows of foreign exchange. This method is also known as World Bank residual method. This method is widely used in the literature because it provides a thorough measurement of illegal and unreported financial transfers (Ajilore, 2005; Bashir et al., 2023; Heydari et al., 2024).

At the beginning of the model, external borrowing is the main explanatory variable. The external debt stock as a proportion of GDP serves as a proxy for external borrowing. According to debt driven capital flight hypothesis, citizens are encouraged to move their assets abroad as a precautionary measure since increasing external debt raises expectations of future taxes, inflation or default risk (Boyce, 1992). This logic predicts that capital flight is expected to respond positively to external debt accumulation. At this point, the functional form is expressed as:

$$KF_{it} = f(EDST_{it}) \quad (1)$$

The corresponding econometric specification is:

$$KF_{it} = \alpha_0 + \alpha_1 EDST_{it} + \varepsilon_{it} \quad (2)$$

The lagged value of capital flight is proposed is introduced in order to present the dynamic behavior of capital flight. Capital flight is widely recognized as persistent phenomenon as previous outflows indicate weak institutions, policy uncertainty and lack of confidence which tend to reinforce future outflows . Including lagged dependent variable also helps control for inertia and omitted dynamic effects. When lagged capital flight is taken into account, the functional form becomes:

$$KF_{it} = f(EDST_{it}, KF_{it-1}) \quad (3)$$

The modified econometric form is as follows:

$$KF_{it} = \alpha_0 + \alpha_1 EDST_{it} + \alpha_2 KF_{it-1} + \varepsilon_{it} \quad (4)$$

The macroeconomic performance is then captured by adding GDP growth as a control variable. From an economic perspective, greater GDP growth indicates better returns on local assets and stronger investment opportunities that reduce capital flight. On the other hand, weak growth reduce confidence and encourages people to move their assets abroad. As a result, the negative relationship between GDP growth and capital flight is expected. The functional form is extended to:

$$KF_{it} = f(EDST_{it}, KF_{it-1}, GDPG_{it}) \quad (5)$$

The following is the econometric specification:

$$KF_{it} = \alpha_0 + \alpha_1 EDST_{it} + \alpha_2 KF_{it-1} + \alpha_3 GDPG_{it} + \varepsilon_{it} \quad (6)$$

The institutional and governance factors are then taken into consideration by adding political stability. Fears of expropriation, policy reversals, violence and lax property rights enforcement are all brought on by political instability, which encourage capital holders to move assets abroad in search of safety. On the other hand, political stability boost confidence and decrease capital outflows. Therefore, it is anticipated that political stability expected to exert a negative effect on capital flight. The functional form becomes:

$$KF_{it} = f(EDST_{it}, KF_{it-1}, GDPG_{it}, PS_{it}) \quad (7)$$

The econometric form is updated as:

$$KF_{it} = \alpha_0 + \alpha_1 EDST_{it} + \alpha_2 KF_{it-1} + \alpha_3 GDPG_{it} + \alpha_4 PS_{it} + \varepsilon_{it} \quad (8)$$

Lastly, the role of domestic financial system is captured by incorporating financial development. By expanding loan availability, boosting investment opportunities and enhancing confidence in domestic financial intermediation, a more efficient financial sector can lessen capital flight. However, residents are encouraged to look for safer and more diversified assets abroad due to poor financial systems. Financial development is therefore a crucial control variable in explaining capital flight behavior. The model's final functional form is described as follows:

$$KF_{it} = f(EDST_{it}, KF_{it-1}, GDPG_{it}, PS_{it}, FD_{it}) \quad (9)$$

Accordingly, the final econometric specification is given as:

$$KF_{it} = \alpha_0 + \alpha_1 EDST_{it} + \alpha_2 KF_{it-1} + \alpha_3 GDPG_{it} + \alpha_4 PS_{it} + \alpha_5 FD_{it} + \varepsilon_{it} \quad (10)$$

The study employs the panel dataset of 78 developing countries over the period 2000 to 2024. Although, there are 129 developing nations globally, the final sample is restricted to 78 nations due to data unavailability and missing observations. The selected sample therefore reflects countries for which sufficiently reliable and continuous data are available for empirical analysis. The description of the variables and data sources are presented in Table 2.

Table 2: Description of Variables and Data Sources

Variables	Code	Unit of Measurement	Data Source
Capital Flight	KF	% of GDP	World Bank
External Debt	EDST	% of GDP	
Gross Domestic Product	GDPG	Annual %	
Political Stability	PS	Index	Polity 2 data series from the Polity IV database under
Financial Development	FD	% of GDP	World Bank

This study adopts a rigorous panel econometric methodology to examine the relationships among external debt, capital flight. Given the multidimensional nature of the analysis and the presence of cross-country heterogeneity, cross-sectional dependence and potential non-stationarity, the empirical strategy proceeds through a sequence of diagnostic and estimation steps. These steps ensure the validity, robustness and reliability of the empirical results.

Results and Discussion

In order to achieve the objectives of the study, this section presents the empirical results and provide discussion on the key finding, focusing on the relationship between core variables and the robustness of the econometric evidence.

Summary Statistics and Correlation Analysis

In this section, there are presented the summary statistics and correlation analysis. The key variables used in this study have the summary statistics as given in table 3. The summary statistics indicate that the mean of KF, which is a percentage of capital flight divided by the GDP, is 2.040 and the median is 1.858. This means that the mean rate of capital flight in the developing countries is quite close to the mean and hence the trend around the mean value is quite balanced. The capital flight differs significantly with the glimpse of maximum of 26.601 per cent and minimum of -26.858. The negative values can reflect capitals reversal or net capital inflows of some economies. The standard deviation of 9.259 supports the significance of the dispersion: it means that the capital flight is very volatile in time and by country. The kurtosis of 3.350 is marginally above the standard benchmark of 3, indicating mild leptokurtosis with somewhat thicker tails than a normal distribution. The skewness value of -0.043 is near zero showing that the distribution is nearly normal. The null hypothesis of normality is rejected at the 5% level by the Jarque-Bera statistics of 8.478 with the probability value of 0.014, indicating that capital flight does not exactly follow a normal distribution.

EDST represents external debt as a percentage of GDP. The statistics show that external debt levels are generally high throughout the sample, with a mean value of 55.716 and a median of 43.354. However, the mean exceeding the median suggest that some countries have exceptionally high debt burdens which raise the average. The data shows wide range of debt exposure with the maximum external debt ratio reaching 610.452 and the lowest being 1.761. The standard deviation pf 51.060 is nearly equal to the mean indicates that external debt is unstable and highly dispersed. A strongly right skewed distribution is shown by the skewness value of 4.256 which means that most countries have relatively moderate debt ratios while small number show extremely high external indebtedness. A strongly leptokurtic distribution with heavy tails and extreme outliers is indicated by the kurtosis value of 30.964 which is significantly higher than 3. A strong asymmetry

and extreme values suggest that the debt series is not normally distributed as indicated by the Jarque-Bera value.

Table 3: Summary Statistics

	KF	EDST	GDPG	PS	FD
Mean	2.04	55.716	4.011	3.163	32.498
Median	1.858	43.354	4.217	6	26.388
Maximum	26.601	610.452	58.078	10	194.166
Minimum	-26.858	1.761	-36.657	-10	0.449
Std. Dev.	9.259	51.06	5.348	5.801	25.382
Skewness	-0.043	4.256	0.008	-0.68	1.787
Kurtosis	3.35	30.964	20.811	1.977	8.215
Jarque-Bera	8.478	68107.75	25708.2	102.33	3102.724
Probability	0.014	0	0	0	0

GDPG represents the annual GDP growth rate. The descriptive statistics indicate that economic growth is generally moderate and moderately concentrated around its central tendency with a mean value of 4.011 and a median of 4.217. The sample contains both period of rapid expansion and severe recession as seen by the maximum GDP growth ratee of 58.078 and the minimum GDP growth rate of -36.657. Growth performance varies moderately as seen by the 5.348 standard deviation. The distribution is almost symmetric as indicated by the skewness value of 0.008 but the kurtosis value of 20.811 is very high indicating the presence of heavy tails and sharp peaks indicating that extreme growth shocks occur more frequently than would be predicted under a normal distribution. Strong non-normality is confirmed by the Jarque-Bera statistics.

PS measures political stability on a scale from -10 to +10 has a mean of 3.163 and a median of 6.000. The statistics indicate that political stability is generally positive in the sample but the lower mean indicates that periods of political instability still lower the average. The data range is extremely in stable and unstable regimes is confirmed by the maximum of 10 and minimum of -10. The 5.801 standard deviation suggests that political situations vary significantly between nations and over time. A moderately left-skewed distribution is suggested by the skewness of -0.680 which indicates that more observations are concentrated in higher stability values but fewer cases exhibit severe instability that extends the left tail. A flat distribution with fewer extreme tail outcomes than a normal distribution is shown by the kurtosis value of 1.977 which is less than 3. According to Jarque-Bera statistics political stability does not follow a normal distribution in the sample.

FD represents financial development measured through bank credit to the private sector as a percentage of GDP. It records a mean of 32.498 and a median of 26.388 indicates that private sector credit is generally moderately developed, although some high credit economies raise the main above the median. There is significant difference in the depth of financial systems between nations as seen by the greatest value of 194.166 and minimum of 0.449. The standard deviation of 25.382 confirms high dispersion in financial development levels. A strong right skewness is indicated by the skewness value of 1.787 which means that only a few numbers of economies show extremely significant financial deepening while the majority of data fall below the mean. The kurtosis of 8.215 indicates severe observations and hefty tails suggesting that financial development varies significantly in certain situations. Normality is strongly rejected by the Jarque-Bera statistics.

The pairwise correlation matrix between capital flight and the explanatory variables is shown in Table 4. In general, the coefficients show the intensity and direction of a linear relationship between variables; positive values suggest that two variables move in same direction while negative value suggest the opposite. The majority of the correlation are generally low to moderate in strength. This indicates that although variables are related, there is no indication of extremely high linear dependence that would typically raise serious multicollinearity concern at the descriptive stage.

Table 4: Correlation Analysis

	KF	EDST	GDPG	PS	FD
KF	1.000				
EDST	0.177	1.000			
GDPG	-0.153	-0.083	1.000		
PS	0.147	0.077	-0.212	1.000	
FD	0.156	0.128	-0.203	0.326	1.000

Capital flight (KF) is negatively correlated with GDP growth (GDPG). It is positively correlated with external debt (EDST), political stability (PS), financial development (FD). External debt (EDST) shows a weak negative correlation with GDP growth (GDPG). It has a weakly positive correlation with financial development (FD) and political stability (PS).

Cross Sectional Dependence Test

The results of the cross-sectional dependence test are presented in this section. The study used CD test proposed by Pesaran (2004) that is applied in panel dataset to examine whether cross-sectional units are independent or influenced by common shocks. The results are shown in Table 5. The results confirm the existence of cross-sectional dependence for all variables suggesting that each variable is linked across nations rather than being solely influenced by domestic conditions. This outcome is expected in macroeconomic panel dataset as nations are exposed to common regional and global factors such as international financial conditions, trade connections, policy diffusion and external shocks.

Table 5: Cross-Sectional Dependence Test

Variables	CD-Test
KF	11.703***
EDST	47.192***
GDPG	81.360***
PS	9.006***
FD	108.345***

*** p<0.01, ** p<0.05, * p<0.1

In practical terms, the findings imply that common underlying factors influence capital flight, external debt, economic growth, political stability and financial development. As a result, ignoring cross-sectional dependence may result in biased estimates and misleading inference. This supports the use of second-generation panel method in later analyses since they are made to manage cross-sectional interdependence and yield more reliable empirical conclusions.

Panel Unit Root Tests

The results of the panel unit root tests are presented in this section. The findings of the second-generation panel unit root tests namely the Pesaran (2007) Cross-sectionally Augmented IPS test (CIPS) and the Maddala and Wu (1999) Fisher-type test (MW) are shown in Table 6. These tests are appropriate for this study since first generation unit root tests would not be reliable due to earlier cross-sectional dependence results confirming the interrelatedness of the panel units. The result assesses whether each variable is stationary (I(0)) or has a unit root (non-stationary) both with and without trend and with lag chosen to account for serial correlation.

The findings indicate that most variables seem to reject the unit root hypothesis under Maddala and Wu (1999) tests indicating stationarity for many series under both trend specifications. The Pesaran (2007) CIPS test on the other hand shows mixed integration properties across variables depending on whether trend is included and offer a more reliable interpretation under cross-sectional dependence. Specifically, the results indicate that a number of variables are stable under CIPS test but a smaller fraction exhibits non-stationarity under certain model specifications suggesting that the dataset contains both I(0) and I(1) processes. Macroeconomic panel datasets frequently exhibit this trend which validates the necessity of cointegration testing prior to estimate the long-run relationship.

The MW and CIPS tests for capital flight (KF), external debt (EDST) and GDP growth (GDPG), are stationary in levels generally reject the unit root hypothesis under both with and without trend specifications. This suggest that these series typically exhibit mean-reverting behavior following shocks and vary around a stable long-run path indicating that temporary disturbance do not permanently shift their trajectories over time. This supports the idea that these macroeconomic indicators adjust back toward equilibrium conditions and can be modeled without requiring differencing as a first step.

On the other hand, some variables have non-stationary or mixed stationarity behavior especially when deterministic trends are included and cross-sectional dependence is controlled using the CIPS test. Political stability (PS) and financial development (FD) are some of these.

Table 6: Results of Second-Generation Panel Unit Root

	Maddala and Wu (1999) Panel Unit Root test (MW)				Pesaran (2007) Panel Unit Root test (CIPS)			
	Without Trend		With Trend		Without Trend		With Trend	
Variables	**Lags**	**Zt Statistics**	**Lags**	**Zt Statistics**	**Lags**	**Zt Statistics**	**Lags**	**Zt Statistics**
KF	0	576.382***	0	509.081***	0	-11.686***	0	-8.102***
EDST	0	93.485***	0	60.027***	0	-5.864***	0	-9.294***
GDPG	0	1288.270***	0	1179.676***	0	-19.042***	0	-16.537***
PS	1	3.756	1	2.327	1	1.962	1	-1.644*
FD	1	199.959**	1	200.922***	1	-3.205***	1	1.762

Note: *** p<0.01, ** p<0.05, * p<0.1

This pattern implies that these variables might have long-term gradual trends across nations, structural changes or persistent fluctuations that keep them from rapidly returning to a constant mean. Econometrically, the existence of such non-stationary behavior suggests that panel cointegration techniques should be used to examine long-run relationship among the variables as

traditional regressions in level may result in misleading inference if these persistent properties re ignored.

Slope Homogeneity Tests

The results of the slope homogeneity tests are presented in this section. The study used two tests namely Delta test by Pesaran and Yamagata (2008) and HAC robust adjusted Delta test by Blomquist and Westerlund (2013). These tests determine whether the slope coefficients are the same across nations of differ among cross-sectional units. The results are shown in Table 7. the results show clear evidence that slope homogeneity is rejected across suggesting that the relationship between the variables are not same across nations. This demonstrated that the panel exhibits significant structural and behavioral heterogeneity which means that the effects' magnitude varies according on factors unique to each nation such s institutional quality, macroeconomic conditions and financial structure.

Table 7: Slope Homogeneity Tests

Model	(Pesaran and Yamagata, 2008)		(Blomquist and Westerlund, 2013)	
	Adjusted	Unadjusted	Adjusted	Unadjusted
1	14.382***	12.910***	1.638*	1.470

*** p<0.01, ** p<0.05, * p<0.1

The study does not use traditional panel estimators that impose a shared average impact because of this evidence of heterogenous slopes. The study uses the Method of Moments Quantile Regression (MM-QR) and Bootstrap Quantile Regression (BS-QR) approaches which are more suitable for capturing heterogeneity across the conditional distribution and for generating robust inference under cross-sectional dependence, non-normality and asymmetric effects.

Panel Cointegration Tests

The results of the panel cointegration tests are provided in this section. The panel cointegration tests are used to determine whether the variables included in the estimated model have a stable long-run equilibrium relationship. The results are shown in Table 8. Cointegration testing is necessary to make sure that the estimated relationships are no spurious and that the variables coverage toward a common long-run path over time since previous findings showed cross-sectional dependence and mixed order or integration. The study employs three popular panel cointegration tests to increase the robustness of inference: the Pedroni heterogeneous panel cointegration test (Pedroni, 1999; Pedroni, 2004), the Kao residual-based test (Kao, 1999) and the Westerlund error-correction based test (Westerlund, 2007).

Based on the group-mean statistics and panel statistics consistency reject the null hypothesis that there is not cointegration, the Westerlund test results provide strong evidence of cointegration. This supports the error-correction process highlighted by Westerlund (2007) and shows that the variables are linked through a long-run relationship and that deviation from equilibrium re corrected over time.

The Pedroni test also confirms cointegration where the statistics reject the null hypothesis of no cointegration that is consistent with the framework that allows for heterogeneity in cointegrating relationship across countries (Pedroni, 1999; Pedroni, 2004).

Table 8: Panel Cointegration Tests

Westerlund Test	**Gt**	**Ga**		**Pt**	**Pa**
	-1.380***	-2.028***		-12.281***	-1.986***
Kao Test	**Modified Dickey-Fuller**	**Dickey-Fuller**	**Augmented Dickey-Fuller**	**Unadjusted Modified Dickey**	**Unadjusted Dickey-Fuller**
	-16.199***	-20.700***	-10.602***	-42.958***	-28.093***
Pedroni Test	**Modified Phillips-Perron**		**Phillips-Perron**	**Augmented Dickey-Fuller**	
	-19.007***		-27.761***	-3.481***	

*** p<0.01, ** p<0.05, * p<0.1

MM-QR Analysis

The results of the MM-QR analysis are provided in this section. The MM-QR estimates of capital flight and external borrowing at various points of its conditional distribution that is the first objective of the study are reported in Table 9. This means that the findings explain how the effects differ for nations or eras with low capital flight (lower quantiles) vs large capital flight (higher quantiles). KF_{it-1} has a positive sign and remains highly statistically significant across all quantiles. This confirms the strong persistence in capital flight behavior throughout the conditional distribution. The coefficient's magnitude is highest at the lower quantile (Q0.10) and progressively decreases toward the upper quantile (Q0.90).

This suggests that historical capital flight is more significant when capital flight is initially low to moderate but its persistence weakens slightly when capital flight becomes extreme. This persistent relationship can be explained by several mechanisms. First, expectations and reputation effects are frequently the driving forces behind capital flight. Initial outflows indicate political or economic instability and create a perception that the domestic environment is dangerous for preserving wealth which sets of further outflows in a self-confirming cycle (Liew, Mansor & Puah, 2016). Once money is transferred overseas investors typically maintain it offshore for portfolio reallocation and risk-hedging reasons particularly when domestic assets are though to entail more risk of inflation, depreciation or confiscation (Fedderke & Liu, 2002).

Capital flight can weaken the domestic financial base by shrinking liquidity, lowering credit availability and increasing exchange rate pressures which further amplifies capital escape incentives as confidence in domestic financial stability deteriorates (Forson et al., 2017). Once offshore routes are established, it becomes challenging to reverse capital flight du to regulatory loopholes, inadequate financial flow monitoring and inadequate accounting systems. This is because institutional shortcomings and lack enforcement power enhance persistence (Anetor, 2019). This pattern of persistence is quite compatible with the previous findings by (Fedderke & Liu, 2002; Liew et al., 2016; Forson et al., 2017; Anetor, 2019; Heydari et al., 2024; Abbas et al., 2025).

External debt stock is taken as a proxy to measure the external borrowing which shows a positive relationship with capital flight and its effect becomes stronger and statistically more significant at the upper quantiles. This indicates that external borrowing is particularly influential when capital flight is already high. In terms of magnitude, the coefficient is weak and statistically insignificant in the lower quantiles but gradually rises toward the median and upper quantiles. It indicates that in extreme capital flight conditions the debt-capital flight relationship becomes stronger. This can be explained in several deeper channels.

When residents anticipate that the government may experience repayment stress, they proactively transfer capital outside to protect against the devaluation of domestic assets. This is because increasing foreign debt raises concern about debt sustainability and potential default (Otieno et al., 2022). Increased external debt frequently raises expectations for upcoming economic changes including tax increases, spending cuts and austerity measures aimed to restore debt sustainability. Individuals and firms may transfer cash offshore ahead of time to minimize the expected impact because these adjustments lower disposable income and profitability in domestic economy (Ampah et al., 2018).

Shocks to external debt often increase the strain on foreign exchange reserves and raise the possibility of currency depreciation. In order to maintain purchasing power, citizens convert domestic currency assets into foreign currency and transfer funds abroad when they expected devaluation which speeds up capital flight (Ampah & Kiss, 2019). When markets believe that debt accumulation is unrelated to profitable investment, increased external borrowing raises uncertainty and weakens the credibility of macroeconomic policy. This reinforcing the incentive to hold wealth is safer foreign markets which raises risk premium and deters domestic investment (Anetor, 2019). External debt shocks may associate with corruption and misallocation in developing economies with weak governance as borrowed funds are transferred into private offshore accounts rather than being utilized for growth. In such cases, capital flight may be indirectly financed by external borrowing which is compatible with the "revolving door" mechanism in which loan inflows and private outflows take place simultaneously (Abbas et al., 2025). This debt effect is consistent with the finding of these studies (Ampah et al., 2018; Anetor, 2019; Otieno et al., 2022; Abbas et al., 2025).

GDP growth has negative sign throughout all quantiles and at the higher quantiles its effect becomes more pronounced and statistically significant. This suggests that better economic growth reduces capital flight especially when the economy is under extreme outflow pressures. Growth improvement are most important in high capital flight regimes as indicated by the coefficient's becomes increasingly negative value toward the higher quantiles. Various processes can used to understand this relationship. Stronger incentives for households and firms to retain their savings and assets domestically rather than transferring wealth abroad result from increased GDP growth which enhance domestic investment opportunities and raises projected returns inside the local economy (Orji et al., 2020).

Strong economic growth improved government revenues, reduces fiscal pressure and boosts the performance of external section, all of which contribute to macroeconomic stability. Investors perceive less risk when the economy seems to be growing and stable which lessens the precautionary incentives for capital flight (Lawal et al., 2017). Economic growth boosts confidence in the future value of the home currency by supporting foreign exchange reserves. Residents are less motivated to transfer money abroad and exchange domestic assets into foreign currency as deprecation concerns diminish (Ndiaye, 2014).

Sustained growth indicates better economic management and policy credibility which lowers the likelihood of unexpected policy shocks, crises or financial instability. The perceived need to protect wealth through offshore holding is diminished by this credibility effect (Uzoma & Godday, 2019). Growth improves access to credit and financial services by deepening and liquidating the domestic financial system as employment and income level rise. This further discourages capital flight by lowering liquidity constrains and improving the appeal of domestic markets (Abbas et al., 2025). This growth-driven stability effect is generally consistent with the following studies (Ndiaye, 2014; Lawal et al., 2017; Orji et al., 2020; Abbas et al., 2025).

Political stability maintains a negative sign throughout the quantiles. This implies that improved political stability lowers capital flight. But it is only weakly significant in the lower middle quantile while remaining statistically insignificant elsewhere. The magnitude is comparatively bigger in the lower quantiles and decreases toward the upper quantile. This indicates that political stability is more important when capital flight is moderate but during extreme capital flight, financial and macroeconomic pressures dominate. This trend can be explained by several reasons. Political stability boosts investor confidence and reduces the need to protect capital through offshore transfers by reducing uncertainty about government continuity, policy direction and private proper security. Firms and households are more willing to hold assets locally when political conditions are predictable because they see fewer risk of abrupt regime change, expropriation or disruptive policy changes (Le & Zak, 2006).

Political stability reduces the incentive for people especially wealthy groups to transfer money abroad as a precaution by enhancing institutional trust and contract enforcement. There are fewer incentives for capital flight in politically stable contexts since there is less chance of informal rent-seeking, unfair taxation and politically motivated redistribution (Lensink et al., 2000).

Political stability supports better macroeconomic governance because stable regimes are sable to establish uniform monetary, fiscal and regulatory frameworks. This discourages the externalization of capital by lowering policy instability and increasing the attractiveness of domestic economy to investors. On the other hand, instability frequently results in contradictory economic policies, insufficient investor protection and postponed reforms. All of which raise capital flight pressure (Geda & Yimer, 2016).

Political stability is only marginally significant at the lower middle quantiles since investors still give political conditions a lot of weight when determining whether to keep money domestically or move it outside in moderate capital flight scenarios. It servs as a crucial confidence anchor at this point, therefore increases in stability can significantly lower the likelihood of capital outflows (Liew et al., 2016).

The declining magnitude and lack of statistically significant at the upper quantiles suggest that when capital flight become extreme, it is driven less by institutional perceptions and more by power macroeconomic financial forces such as severe external debt pressure, exchange rate expectations, inflation risk, banking fragility and liquidity shocks. Even increased political stability might not be enough to stop outflows in current high capital flight conditions since investors prioritize immediate financial survival and wealth protection ahead of more general political considerations (Mawutor & Adjasi, 2025). The political risk channel is consistent with the following studies (Lensink et al., 2000; Le & Zak, 2006; Geda & Yimer, 2016; Liew et al., 2016; Mawutor & Adjasi, 2025).

Table 9: MM-QR Estimates of External Borrowing and Capital Flight

Variable	Location	Scale	Q(0.10)	Q(0.25)	Q(0.50)	Q(0.75)	Q(0.90)
KF_{it-1}	0.476***	0.0257	0.515***	0.495***	0.476***	0.456***	0.432***
	(0.0392)	(0.0256)	(0.0570)	(0.0447)	(0.0392)	(0.0429)	(0.0572)
EDST	0.0415**	0.0266**	0.000386	0.0211	0.0416**	0.0615***	0.0867***
	(0.0175)	(0.0114)	(0.0255)	(0.0200)	(0.0175)	(0.0192)	(0.0257)
GDPG	-0.153*	-0.0468	-0.0808	-0.117	-0.153*	-0.188**	-0.233*
	(0.0864)	(0.0563)	(0.126)	(0.0984)	(0.0864)	(0.0944)	(0.126)
PS	-0.0979	-0.0301	-0.144	-0.121*	-0.0979	-0.0753	-0.0468
	(0.0643)	(0.0419)	(0.0934)	(0.0732)	(0.0643)	(0.0703)	(0.0937)
FD	-0.0754**	-0.0495*	-0.160**	-0.107**	-0.0728*	-0.0372	0.00184
	(0.0384)	(0.0270)	(0.0679)	(0.0457)	(0.0380)	(0.0390)	(0.0497)
Constant	-0.794	5.137***	-8.743***	-4.742***	-0.792	3.064**	7.924***
	(1.198)	(0.781)	(1.762)	(1.380)	(1.206)	(1.327)	(1.792)

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The relationship between financial development and capital flight is primarily negative and it is statistically significant in the lower and middle quantiles. However, at the highest quantile where the coefficient approaches to zero, the effect weakens and becomes insignificant. Financial development can deter capital flight while outflows are relatively low to moderate, but it loses effectiveness in extreme capital flight situations, according to the magnitude which is largest in the lower quantiles and gradually falls toward higher quantile. Numerous arguments can be used to explain this phenomenon. Financial development makes formal financial services more accessible and enhances the availability of domestic credit, allowing consumers and firms to invest locally instead of externalizing income because there are fewer domestic financial options (Mawutor et al., 2022).

Investors can hedge ad allocate portfolios domestically without depending on offshore assets as a replacement for financial stability because deeper financial markets offer a wider variety of tools for risk management and saving (Liew et al., 2016). A stronger financial institution improves financial flow monitoring, transparency and regulatory control which raises the cost of illegal of speculative transfers abroad and deters capital flight through better compliance measures (Forson et al., 2017).

Financial liberalization may not be able to stop outflows during high capital flight episodes due to the weakening impact at upper quantiles. This is because panic driven behavior is often triggered by crises and even relatively developed financial sectors can become channels that facilitate rapid externalization of funds if confidence collapses (Abbas et al., 2025). Therefore, the observed stabilization function of financial development aligns with the following studies (Liew et al., 2016; Forson et al., 2017; Mawutor et al., 2022; Abbas et al., 2025).

BS-QR Analysis

To check the robustness of the MM-QR estimates, the study applied BS-QR method. The results of the BS-QR estimates are presented in this section. Table 10 presents the BS-QR estimate over the conditional distribution of capital flight in order to assess the robustness of thee MM-QR. The quantile pattern variability and directional effects seen in the MM -QR estimates are generally confirmed by the BS-QR results, strengthening confidence in the reliability of the main results. Starting at KF_{it-1}, the coefficient is positive and highly significant at every quantile, indicating that

capital flight behavior is strongly persistent across all quantiles. According to the size effect which is greatest at the lower quantiles and progressively decreases toward the upper quantiles. This lagged capital flight was likewise positive, significant and decreasing in magnitude at higher quantiles in MM-QR which is consistent with this pattern.

Table 10: BS-QR Estimates of External Borrowing and Capital Flight

Variables	Q(0.10)	Q(0.25)	Q(0.50)	Q(0.75)	Q(0.90)
KF_{it-1}	0.569***	0.560***	0.545***	0.478***	0.463***
	(0.0774)	(0.0425)	(0.0626)	(0.0854)	(0.105)
EDST	0.0198	0.0141	0.0361*	0.0603***	0.126***
	(0.0368)	(0.0217)	(0.0199)	(0.0209)	(0.0305)
GDPG	-0.00392***	-0.00468***	-0.00485***	-0.00499***	-0.00440***
	(0.00133)	(0.00112)	(0.00123)	(0.000880)	(0.000742)
PS	-0.00422	-0.0106	-0.00681	-0.0171**	-0.0139
	(0.0178)	(0.00963)	(0.00706)	(0.00844)	(0.0133)
FD	-0.00291***	-0.00220***	-0.00171*	-0.000408	-0.000642
	(0.000683)	(0.000497)	(0.000914)	(0.000515)	(0.000437)
Constant	-8.126***	-4.753***	-0.615	3.647**	6.426**
	(2.636)	(1.330)	(0.906)	(1.665)	(2.935)

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Although the coefficient for external debt stock is positive across quantiles, statistical significance is strongest at the median and becomes highly significant at the upper quantiles. External debt has a more pronounced impact in high capital flight conditions, as evidenced by its clear increase as the quantiles rise. This is completely consistent with MM-QR, where external debt shows an increasing influence at the higher quantiles and a strengthening effect toward the upper quantile.
Higher economic growth continuously lowers capital flight regardless of the capital flight regime. According to the results, which reveal a negative and highly statistically significant coefficient for GDPG at all quantiles. Compared to MM-QR, the sign remains the same, but BS-QR shows stronger statistical consistency across all quantiles, whereas MM-QR is only significant in the median and upper quantiles. An additional robustness check on the stabilising impact of economic performance is provided by the fact that the magnitude of BS-QR is largely constant across quantiles, suggesting the growth effect is generally uniform across the distribution.
Political stability is linked with lower capital flight. Since the coefficient stays negative across all quantiles. However, it is significant only at the upper-middle quantiles and insignificant at the remaining quantiles. This is in line with the MM-QR result, which showed weak, inconsistent significance and a negative sign. In terms of magnitude, the BS-QR impact is comparatively stronger around the middle quantile but does not show consistent impacts throughout the entire distribution. This indicates that capital flight is not primarily driven by political stability under all regimes.
Lastly, financial development remains negative across quantiles with statistically significant concentration in the lower and middle quantiles, while becoming insignificant at the upper quantiles. As quantiles increase, the magnitudes decrease and approach near-zero values at the upper quantiles. This pattern closely resembles MM-QR, demonstrating that financial

development mostly reduces capital flight in low-to-moderate capital flight conditions, but its impact diminishes in extreme capital flight regimes.

Conclusion and Policy Implications

This study examined the complex, interrelated dynamics between external borrowing and capital flight in developing economies. The objective of the study is to examine the relationship between external debt and capital flight across developing economies. The empirical findings provide strong and consistent evidence that external debt accumulation is a significant driver of capital flight. Across the distribution of capital flight, higher levels of external debt are associated with increased capital outflows, confirming the debt-driven capital flight hypothesis. This result suggests that external borrowing in developing countries often generates expectations of future macroeconomic instability, higher taxation, inflationary pressures, or debt distress, prompting domestic residents to move assets abroad as a precautionary response.

The inclusion of lagged capital flight further reveals the persistence of capital outflows, indicating that capital flight is not a transitory phenomenon but a self-reinforcing process. Once capital flight begins, it tends to persist, reflecting entrenched confidence deficits, institutional weaknesses, and concerns about policy credibility. Macroeconomic controls such as GDP growth and financial development reduce capital flight, while political instability amplifies it, underscoring the importance of stable economic and institutional environments in containing capital outflows.

The findings demonstrate that external debt is not merely a passive financing tool but a central factor influencing private capital behaviour. When external borrowing is poorly managed or perceived as unsustainable, it accelerates capital flight, thereby undermining domestic resource mobilisation. This conclusion directly addresses the literature gap, in which external debt has often been treated as a secondary control variable rather than a core determinant of capital flight.

This section presents the policy implications based on the study's findings. The policy recommendations are given as:

The findings indicate that external debt stock significantly increases capital flight across developing countries. Therefore, policymakers should adopt prudent external borrowing strategies by prioritising concessional loans, strengthening debt sustainability frameworks and ensuring that borrowed funds are directed toward productive and growth-enhancing sectors to reduce incentives for capital outflows.

- The strong persistence of capital flight suggests that once capital outflows begin, they tend to continue over time. This implies that early policy intervention is crucial. Governments should strengthen institutional credibility, improve macroeconomic management and enhance policy transparency to break the self-reinforcing cycle of capital flight.
- Economic growth is found to reduce capital flight. Hence, policymakers should focus on growth-oriented policies that expand domestic investment opportunities, improve infrastructure, and promote private-sector development, thereby increasing the attractiveness of domestic asset holding.
- Political stability plays a key role in reducing capital flight. Governments are therefore encouraged to strengthen political institutions, ensure policy continuity, protect property rights and reduce political uncertainty to restore investor confidence and discourage capital outflows.
- Financial development contributes to lowering capital flight by improving access to credit and strengthening domestic financial markets. Policymakers should deepen financial sector reforms, promote inclusive banking and enhance financial regulation to provide safe and attractive domestic investment alternatives.

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