THRESHOLD EFFECT OF INTEREST RATE DIFFERENTIAL ON FOREIGN PORTFOLIO INVESTMENT IN AFRICAN ECONOMIES

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Abstract *This study examines the threshold effect of interest rate differential on foreign portfolio investment in 54 African economies over the period 2000–2025 using Dynamic Panel Threshold Regression. The results identify an optimal interest rate differential threshold of 0.90 percentage points. Below or at this threshold, the interest rate differential has a positive and significant effect on FPI, while above the threshold, the effect remains positive but is weaker, indicating diminishing marginal returns. GDP growth, inflation, and exchange rate changes also significantly influence FPI, while the negative and significant lagged FPI coefficient indicates reversal tendencies in portfolio flows. The findings suggest that the effectiveness of interest rate differentials in attracting FPI declines beyond the estimated threshold. The study therefore recommends that African policymakers maintain an appropriate and sustainable interest rate differential while strengthening macroeconomic stability, financial-market liquidity, and economic growth rather than relying solely on aggressive increases in interest rates to attract portfolio investment.*

Keywords Foreign Portfolio Investment; Interest Rate Differential; Threshold Effect; Dynamic Panel Data; African Economies; Macroeconomic Stability; Financial Market Liquidity; Monetary Policy

JEL Classification: F21; F32; E43; E44; C23.

1.0 Introduction

Foreign portfolio investment (FPI) has grown in importance in the flow of funds, particularly in developing countries, as a means to enhance financial markets, increase domestic savings, and finance the economy. Portfolio investment, however, is

not necessarily permanent, and can involve rapid movements of funds, depending on the difference in expected returns and perceived risks across countries. The mobility of FPI is both a blessing and a curse as it is a major source of external finance but also vulnerable to sudden reversals if there is a change in domestic or international financial circumstances of the recipient economies. One of the important factors that is taken into account in these investment decisions is the difference between the interest rates in the domestic and international markets; investors invest in an economy that has relatively good risk-return ratios. When domestic interest rates are moderately high, then the chance of bringing in foreign portfolio investments is high, but when moderate interest rates are too high, then the investors' confidence will be lost as this could indicate currency instability, sovereign risk, underlying macroeconomic weaknesses, or inflationary pressures (Atoi et al., 2024; Begenau et al., 2026; Braiton & Odhiambo, 2023).

This is a very relevant question given the many changes to the world money system (what is the threshold effect of the interest rate differential on FPI). The aggressive monetary tightening' by the major central banks in the post-pandemic period has shifted the interest rate environment globally and influenced the returns of assets in emerging and developing economies. Interest rate differentials can have large effects on international portfolio allocation for African economies, which feature less depth in the financial markets and less currency stability than other economies. Rising domestic interest rates can lead to higher yield premiums for domestic securities and lead to more capital inflows, but high and steady domestic interest rates can also make domestic borrowing more expensive and dampen economic growth in the domestic economy, and increase debt sustainability concerns. The net effect on FPI will then depend on whether the interest rate differential remains within an attractive range or it turns out to be too high to justify the benefits in terms of additional returns against macroeconomic and financial risks (Oyadeyi et al., 2025; Shen & Jiang, 2026; Le, 2025).

There is more than just the question of whether FPI is influenced by the interest rate differences; it also involves whether there is a threshold level that alters the influence. This viewpoint is especially significant for African economies, in which the same spread of interest rates can be viewed differently if the inflation rate, exchange rate situation, and economics of the country are different, and if the institutions are different. The bigger the differential, the more investors will rush to invest in such a portfolio, and the more irresistible it will be for investors. But if it is too large, it could cause investors to think that the differential is a reflection of macroeconomic instability rather than a good investment. Recent studies from new economies indicate that interest rates affect portfolio investment in their interaction with other macroeconomic variables, such as inflation, volatility of the exchange rate, financial market development, sovereign risk, and others (Fontalvo et al., 2026; Dao et al., 2025; Kim, 2024; Shirmohammadi et al., 2025). The threshold perspective, therefore, offers a more subtle interpretation of FPI behaviour than traditional linear models based on the premise that any further rise in the interest rate differential

will have the same impact on capital inflows.

Foreign portfolio investment plays a key role in African financial markets, but portfolio capital flows are still highly volatile in the region. In the past the higher interest rates have been a policy instrument used to attract foreign investment and to keep the local currency stable, particularly in times of external financial pressures, in the economies of Africa. However, the picture is not entirely bright with higher interest rate differentials, as believed traditionally, always generate substantial inflows of FPI. In some instances, the interest rates have risen significantly, as well as the outflow of capital, the depreciation of the currency, the rise in inflation, and increased investor uncertainty. This means that the macroeconomic risks of instability are likely to grow in the future to the detriment of higher returns. A review of the evidence from Sub-Saharan Africa indicates that apart from the macroeconomic environment, the institutional environment is also a critical determinant of portfolio flows and that both the interest rate environment and the exchange rate environment are critical determinants of foreign investors' decisions (Braiton & Odhiambo, 2023; Dana & Musaiyaroh, 2024; Dzingirai & Dzingirai, 2024).

However, much of the empirical literature that exists in this field has examined the connection between the effect of interest rate differentials and FPI in a linear relationship (Adegboye et al., 2026; Hassan et al., 2026). This is essentially the same as saying that a rise in interest rate differentials has no impact on the level of interest rate differentials reached. This is not necessarily a correct assumption for Africa, where a slight difference in interest rates can be an incentive for yield-hungry investors, while a large difference in interest rates can indicate economic difficulty and raise investment risk. Lastly, there is some recent evidence (Solís, 2025; Lin et al., 2025; Molocwa & Choga, 2025) that the traditional positive relationship between monetary conditions and portfolio investment is not necessarily country-specific for Sub-Saharan Africa. Some recent studies (Sezal & Kendirli), which include 31 countries in Africa, for instance, have discovered that the actual interest rate is positively connected with FPI, albeit statistically not relevant, while the link between monetary policy and portfolio investment is more complicated, with important adverse impacts evident. If there is no evidence of the size and existence of a threshold, then the conditions under which interest rate policy may have an effective impact on interest rate capital flows are limited. Therefore, the threshold approach is more appropriate for studying the interest rate differential and the relationship between FPI in Africa because the interest rate differentials below the threshold and smaller, non-significant or negative interest rate differentials above the threshold affect the FPI.

This is because there is growing importance in identifying situations where interest rate policy can be utilized to draw foreign portfolio investment without macroeconomic repercussions. Raising domestic interest rates can only help to secure durable portfolio inflows if investors are not perceiving very high interest rate differentials as a warning of inflation, currency risk, or fragility in the economy for

African economies' policymakers. Establishing a threshold can then give a more realistic understanding of where the benefits of an interest rate differential turn negative or are reduced. This is especially crucial for monetary authorities that aim to reconcile the multiple goals of fostering foreign capital inflows, price stability, economic activity, and financial stability (IMF, 2025; World Bank, 2025).

The study is also required due to the financial market development, macroeconomic stability, exchange rate regimes, and institutional quality varying considerably across African economies. The sensitivity of FPI to the interest rate differential could differ between countries and regimes. Research on African economies indicates that foreign portfolio investment is affected by a mixture of factors such as interest rates, exchange rate conditions, inflation, economic growth, characteristics of financial markets, and institutional factors (Dao et al., 2025; Solís, 2025; Lin et al., 2025). This non-linearity can be captured with a threshold approach, and evidence can be obtained about the effect of interest rate differentials being greater or less than a certain threshold.

The main objective of the study is to investigate the interest rate differential and FPI relationship in Africa using a threshold approach to see how INTD affects FPI at lower levels (INTD below threshold) and at higher levels (INTD smaller than non-significant or negative) it does not. This is important as it facilitates an analysis of international portfolio investors' behavior and the influence of domestic interest rates differentials under different foreign financial scenarios. Such results will be valuable to the literature in providing further insight into the interest rate–FPI relationship and whether further increases in the interest rate differentials can be achieved and still have a positive impact on FPI. The study will also provide monetary authorities and financial policy makers with the evidence that will lead to the influx of foreign portfolio investment into the economy, while limiting the risks of excessive interest rates and macroeconomic instability. The overall objective of this study is to examine the threshold effect of the interest rate differential on foreign portfolio investment in the African countries for the period of 2000-2025.

2.0 Literature Review

2.1 Conceptual Review

2.1.1 Foreign Portfolio Investment

Foreign portfolio investment (FPI) is an investment that a foreign investor makes in financial assets like equities, government securities, corporate bonds, etc., but not with a view to gaining controlling interest in the enterprise where they make the investment. Generally, FPI is a liquid fund and can be readily adjusted whenever returns, interest rates, exchange rates, world financial conditions, and perceived risks are expected to change. One of the important sources of external finance for developing economies is FPI, which can contribute to the development of capital markets, improve the liquidity of the market, and can be a source of raising international capital. The fact that it is mobile might lead to a sudden reversal of capital and financial instability in the recipient economies, particularly during financial crises. However, recent studies

record the effect of monetary policy conditions on capital inflows to emerging markets, which vary depending on the type of capital inflow and domestic and global risks (Villamizar-Villegas et al., 2024). Similarly, the alterations in the advanced economies' interest rates may affect the inflows of capital to emerging and developing economies, thus underscoring the importance of domestic and foreign financial conditions on FPI flows' dynamics (Koepke & Paetzold, 2024). Apart from the good returns, the sustainability of FPI in Africa will rely on the sustainability of macroeconomic policies, the exchange rate market conditions, and the investors' confidence.

2.1.2 Interest Rate Differential

Interest rate differential (INTD): The difference between the interest rate in the domestic economy and a foreign/overseas or international interest rate that is appropriate. It is the expected "return on the investment" for an investor who invests in domestic financial assets, instead of in similar foreign financial assets. A positive interest rate differential is expected to attract foreign portfolio investors in the classical international finance theory, as the domestic economy has higher expected returns on its financial assets. Besides the interest rate differential, investors consider other factors, which include exchange rate risk, inflation, sovereign creditworthiness, political instability, and financial market conditions. Recent evidence suggests that domestic policy rates can have a positive effect on capital inflows to emerging markets, but this effect can be dampened by domestic and global risks (Villamizar-Villegas et al., 2024). Furthermore, there is a significant relationship between the difference in interest rates and fluctuations in exchange rates and the general financial climate, which influence the real returns of global investors (Adrian et al., 2024). Hence, a high interest rate differential does not necessarily translate into a high FPI if a high interest rate differential is due to the root cause of macroeconomic fragilities or the investment risk.

2.1.3 Threshold Effect

A threshold effect occurs when an explanatory variable's effect on a dependent variable alters when the explanatory variable hits a certain value (Oyadeyi et al. 2025). The threshold model is not the standard linear threshold model, which assumes the constant marginal effect of an independent variable. However, the threshold effect is assumed in this study to occur when the impact of the interest rate differential on FPI varies with the interest rate differentials (Ilarslan, 2025). A moderate difference would attract foreign investment by improving the return on domestic financial resources, and a large difference would work against foreign investment. Economic vulnerability concerns (Koepke & Paetzold, 2024) are relevant in developing economies, where high rates may be implemented to control inflation, stabilise the domestic currency, or reduce capital outflows, but also increase economic vulnerability concerns. Therefore, a threshold approach is convenient to identify the threshold point where the positive effect of the interest rate differential on FPI could be neutralized by increasing the investment risk. In this context, the coefficient of the interest rate differential below the threshold is expected to be

positive, suggesting that a moderate interest rate differential will boost FPI by making domestic financial assets more attractive and the expected return to foreign investors higher (Kalai et al., 2024; Le, 2025). When the interest rate differential exceeds the threshold, it is anticipated that the coefficient would be negative, meaning that investors may perceive a high differential as having negative effects on FPI, such as higher inflation, exchange rate risk, financial instability, and other financial risks (Koepke & Paetzold, 2024). Further, the results of the threshold approach suggest that the interest rate regime effect could vary between regimes, indicating that the regime below a threshold estimated value may not be the same above it (Oyadeyi et al., 2025). The threshold concept, therefore, helps to identify the level of interest rate differential when the benefits of higher return may be offset by increased investment risk, and distinguishes between the positive and negative effects on either side of the threshold.

2.1.4 Interest Rate Differential and Foreign Portfolio Investment

The interest rate differential-FPI correlation is based on the theory that foreign investors invest in an economy based on expected risk-adjusted return. An increase in domestic interest rates compared to foreign benchmark interest rates can make domestic financial assets more attractive to foreigners and thus promote foreign portfolio inflows. This relationship can, however, be non-linear because investors also consider their expectations on the exchange rate, inflation, political uncertainty, sovereign risk, and world financial conditions. Therefore, a moderate interest rate differential can draw the yield-hungry investor, while an overly high differential can be perceived as remuneration for higher macroeconomic risk and so deter investors. Recent studies suggest that there is an upward relationship between domestic policy rates and capital inflows, which can be driven by domestic and global risks (Villamizar-Villegas et al., 2024). Likewise, even as domestic interest rate spreads widen in favour of emerging and developing economies, global interest rates could also dampen financing flows to them because of global financial conditions (Abdulkadir, 2023).

2.2 Theoretical Review

2.2.1 Theory of Interest Rate Parity.

The Interest Rate Parity (IRP) theory is based on the basic works of Keynes (1923) and Fisher (1930) and provides a link between the differential interest rates and international capital movements. The theory is that the difference in interest rates between two countries influences the distribution of financial assets between the two countries (particularly if expected exchange rate changes are considered). Aside from that, if interest rates are higher here, they might draw in foreign investors who can invest at a higher rate here, thus profiting from the difference. However, real capital flows may not necessarily be exactly matched by this parity for a number of reasons, including exchange rate risk, capital controls, transaction costs, imperfections in capital markets, and country-specific risk. Thus, at some interest rates, FPIs may be less responsive to interest rate differentials than at other interest rates. The IRP theory, therefore, serves as a

valuable theoretical framework to consider the effect of interest rate differentials on FPI when a crucial threshold has been reached (Keynes, 1923; Fisher, 1930). However, the conventional IRP framework is based on assumptions of relatively free capital mobility and efficient financial markets. These assumptions may not fully hold across African economies, where foreign-exchange controls, capital-account restrictions, market segmentation, and other financial frictions can affect international capital movements. Consequently, interest rate differentials may not translate proportionately into portfolio inflows. This limitation further supports the need to examine whether the effect of interest rate differentials varies across different levels of the differential rather than assuming a constant marginal effect.

2.2.2 Mundell–Fleming Framework

Explanation of the relationship between interest rates, capital mobility, exchange rates, and open economy macroeconomic policy is the Mundell-Fleming model. When the capital mobility is high, the domestic interest rates can be above international interest rates, which can lead to foreign capital inflows and eventually affect exchange rates, as suggested in the framework. However, this connection is subject to the rule of exchange rates as well as investors' confidence, the mobility of capital, and macroeconomic conditions. As defined in this study, a higher interest rate spread can be more conducive to FPI. This can be moderated once the country's interest rates begin to increase, leading to exchange rate pressures, macroeconomic uncertainty, and country risk. The Mundell–Fleming framework thus enables us to understand the significance of the interest rate differential associated with the level of interest rates and the type of economic conditions (Fleming, 1962; Mundell, 1963).

2.2.3 International Fisher Effect Theory

The International Fisher Effect (IFE), which is based on Fisher's (1930) theory of interest and its relevance to international finance, describes the link between the change in nominal interest rates, anticipated inflation, and exchange rate fluctuations. The theory also makes the assumption that there may be countries with high nominal interest rates that could have high expected inflation rates and even depreciation of the currency, which may reduce the real return advantage they provide to the country. This is particularly relevant to the present study, since a high interest rate differential can be a good incentive for FPI, if the interest difference is based on higher nominal returns, but is less attractive if the interest difference is reflecting underlying inflationary pressures and the country's currency is expected to depreciate. Theoretically, the impact of increased rates on FPI may not be as great as the impact of increased rates when macroeconomic and exchange rate risks increase (Fisher, 1930; Mishkin, 2024).

2.3 Empirical Review

Braiton and Odhiambo (2023) analysed macroeconomic and institutional factors that influence FDI, portfolio equity, and portfolio debt inflows to 20 low-income Sub-Saharan Africa countries in 1996-2020. The endogeneity and the dynamics of capital flows are addressed with the System Generalized Method of Moments (System

GMM) estimator in this study. These findings indicated that the macroeconomic and institutional factors have a significant influence on the various types of capital inflows and that there are differences between the types of foreign capital inflows and the economic and institutional context. The study results are relevant for the present study because it indicates that macroeconomic variables are not the only factors that determine the choice of portfolio investment in the African economies and that the quality of institutions is one of the important determinants that influence foreign capital inflows to the African economies.

To examine the impact of foreign capital inflows on domestic credit to the private sector, Acheampong et al. (2023) analyzed annual data for the period 1996-2019 for 33 Sub-Saharan African countries. To differentiate between short-run and long-run relationships, the study used the three estimation techniques, these are: System GMM, Pooled Mean Group (PMG), and Fully Modified Ordinary Least Squares (FMOLS). The study was mainly about the impact of capital inflows and not the determinants of foreign portfolio investment, but the findings indicated that global financial conditions, such as the rate of the U.S. Treasury bills, were important factors in affecting the financial markets in Sub-Saharan Africa. The study highlights the need to consider the various types of capital flows and the short-term and long term impact of capital flows in panel data studies.

The relationship between the interest rate conditions, exchange rate movements, and capital flows in Nigeria was examined by Karimo (2023) with annual data of the country from 1986 to 2021. The study employed a technique of the bounds testing approach – Autoregressive Distributed Lag (ARDL). The finding showed that the domestic interest rate and exchange rate behavior have significant impacts on the allocation of foreign investors' portfolios. The authors also found that the positive effect of higher domestic interest rates diminishes the more volatile the exchange rate. This suggests that when investors are thinking about portfolio investment, they also take into account the rate of the interest they could earn as well as the risk of the exchange rate.

The effect of the interest rate differential on FPI in 30 African countries over the period 2000-2022 was examined by Rosa (2024). The study used Fixed Effects, Random Effects, and the System GMM estimators, which catered to the cross-country heterogeneity and the endogeneity. The results of the empirical analysis confirmed that a rise in the attractiveness of domestic assets leads to an increase in the relative price of domestic financial assets, and the increase in the attractiveness of domestic assets is also accompanied by a rise in the price of domestic financial assets relative to foreign financial assets. But interest rate differentials were effective only in the context of the prevailing macroeconomic and institutional conditions. The study included valuable evidence about the relationship between the interest rate differential and the amount of portfolio investment, but it lacked any consideration of whether or not the impact of the interest rate differential is linear or if there is a threshold that would increase or decrease its impact beyond.

Nthangu et al. (2025) investigated macroeconomic factors influencing foreign capital inflows on Sub-Saharan African countries from the period 2000–2023 on annual time series. The study took into account the persistence of capital flows through the use of Dynamic Panel System GMM estimation and the potential endogeneity effects. The results showed that domestic macroeconomic fundamentals, such as interest rates, inflation, exchange rates, and external financial conditions, have a simultaneous effect on foreign capital inflows. Although the study pointed to the need for dynamic estimation methods, it did not analyze how the effects of interest rate differentials vary when they are at or above a certain level.

For the period 2000 to 2024, Mpho and Kgosimore (2025) explored the determinants of foreign portfolio investment (FPI) in the six Southern African Development Community (SADC) countries. Dynamic Panel Generalized Method of Moments (Difference GMM) estimation was used to overcome endogeneity and dynamic issues. The findings showed that the factors influencing the choice of portfolio investment include the interest rate conditions, inflation, and exchange rate stability and institutional quality. The study ended up finding that there is a relationship between expected returns and perceived macro-economic risk in investors' minds. However, it did not calculate if there is a critical interest rate gap after which the relationship with FPI is different.

Using yearly data for 24 emerging market economies for 2000–2023, Aydin and Yildirim (2025) investigated the factors behind FPI for the EM economies. The study used three different types of estimation: Panel Fixed Effects, Random Effects and System GMM estimators that capture dynamic relationships and country heterogeneity. The results indicated that interest rates, economic growth and development of financial markets have a positive influence on the portfolio invested while inflation and instability of exchange rate have a negative effect on capital inflows. The study, however, did not examine the possible difference in the "marginal effect" of the interest rate differential between the different regimes, and it did not give a linear specification.

Dao et al. (2025) studied deviations from covered interest parity for emerging market economies during 2005–2023, on a sample of 28 emerging market economies and using monthly data. We focus on two methods to study financial frictions and market segmentation: Panel Instrumental Variable (IV) estimation and Local Projection. The results indicated that sovereign risk, liquidity constraints and financial market imperfections reduce the impact of interest rate differentials on international capital flows. The study also provides some suggestive evidence for the presence of threshold behaviour, since the greater the differential in interest rates the larger the capital inflows in a higher risk environment do not have to be.

The study by Solís (2025) examined the effect of U.S monetary policy shocks on sovereign bond yields and capital inflows for 42 emerging market economies (EMEs) from 2000 to 2024. The study used the Panel Local Projection method and Instrumental Variable (IV) estimation to

determine the dynamic effects of external monetary policy shocks. The findings showed that the U.S. monetary tightening increases sovereigns' risk premium and decreases portfolio capital inflows to emerging markets. The study demonstrated that the attractiveness of the higher domestic interest rate cannot be taken in isolation from the situation of other financial conditions in the world and that adverse developments in external financial conditions can outweigh the attractiveness of the higher domestic interest rate.

Lin et al. (2025) examined the effect of the U.S. monetary policy and capital flow management (CFM) on capital flows in emerging market economies (EMEs) for the quarterly time series from 2001 to 2024. The study used the Panel Vector Autoregression (PVAR) and Dynamic Panel GMM estimation methods. The results suggested that external monetary tightening has a significant impact on portfolio investment, especially in countries which have weak macroeconomic fundamentals. The study could not determine if the interest rate differentials have any different effect either within or across a threshold but it did shed light on the international mobility of capital.

Arnabal et al. (2025) examined how global banking shocks was transmitted to 40 emerging and developing economies, including a few African economies, over the period 2002 to 2024, utilizing quarterly data. Based on the analytical approach applied in the study, the study uses Panel Structural Vector Autoregression (Panel SVAR) and Dynamic Panel estimation. The results found that there is a significant influence of global banking shocks on capital availability, interest rates charged, and investment activity. This study however focused primarily on the impact of external financial shocks and failed to examine the possible non-linear impact of domestic interest rate differentials on FPI.

Wu and Kikuchi (2026) explored the relationship between innovation and institutional quality, and foreign portfolio investment in 48 developed and developing countries between 2005 and 2024. To deal with the endogeneity of institutional quality and portfolio investments, the study used the Panel Instrumental Variable (IV) estimation and the Two-Stage Least Squares (2SLS) methods. The results indicated that the conclusion is that the better the institutions and the more innovative, the higher the investor confidence and the higher the amount of FPI. The study also highlighted the relevance of institutional quality for the impact of macroeconomic incentives such as the interest rate differentials. It did not however explicitly discuss the impact of interest rates on foreign exchange demand both below and above a specific level.

Ogbuagu et al. (2026) conducted a study on the determinants of portfolio investment in African countries during 2001 - 2023. The Panel Autoregressive Distributed Lag (Panel ARDL) model and Pooled Mean Group (PMG) estimator are applied in this study to identify long and short term relationships. The results revealed that interest rates, developments in exchange rates, inflation, and economic performance have a significant impact on the decision of portfolio investment. The study also showed that increases in interest rates are more likely to draw investors into the market, but are less likely to do so in times of poor macroeconomic conditions. The study,

however, was unable to calculate what rate of increase in interest rates would begin to have a negative impact.

Antwi et al. (2026) examined the relationship between the capital flows and macroeconomic fundamental determinants in Ghana spanning 22 years (2014-2023). The heteroscedasticity and cross-sectional dependence are accounted for by Panel Fixed Effects and Feasible Generalized Least Squares (FGLS) estimation procedure. The results revealed that the interest rate, inflation rate, stability of the exchange rate, and economic growth are key factors that affect the decision on international investment. The study verified that the expected higher returns boost FPI but took no account of possible threshold effects between the macroeconomic variables and capital inflows, which may lead to non-linear relationships.

Notwithstanding these results, there is an important area where there is a gap. While much of the existing literature assumes a linear relationship between interest rate differentials and foreign portfolio investment, the effect of an explanatory variable may change when it crosses a critical level. Hansen (1999) provides the foundational framework for threshold estimation, which allows the marginal effect of a variable to differ across distinct regimes. In the context of this study, this framework is appropriate for examining whether the effect of interest rate differentials on FPI changes once the differential exceeds an estimated threshold. The existing studies examine the determinants of FPI with traditional-linear models and do not find the threshold level of the interest rate differential at which the effect of interest rate differential changes. African studies have also been largely country-based, sub-regional, or general determinants of capital flows, with a lack of evidence on the existence of a threshold for an interest rate differential between countries on the African continent. This study fills this gap by analysing a sample of 54 African countries from 2000 to 2025 using a Dynamic Panel Data Threshold Regression to find out whether the effect of interest rate differentials on FPI varies from one regime to the other, and the critical threshold level.

3.0 Methodology

3.1 Theoretical Framework

The theoretical framework is based on the Interest Rate Parity (IRP) Theory which proposes that while other factors affect international capital allocation, so do interest rate differentials along with the expected returns and the exchange rate considerations. In this study the framework of the IRP is expanded to enable the influence of interest rate differential (IRD) on foreign portfolio investment (FPI) to differ among the IRP regimes. The threshold model is given as:

$$FPI_{it} = \alpha_i + \rho FPI_{i,t-1} + \beta_1 IRD_{it} I(IRD_{it} \leq \gamma) + \beta_2 IRD_{it} I(IRD_{it} > \gamma) + \delta' X_{it} + \varepsilon_{it}$$

where γ is the estimated IRD threshold, β_1 measures the effect of IRD when $IRD_{it} \leq \gamma$, and β_2 measures the effect when $IRD_{it} > \gamma$. The specification therefore, allows the effect of IRD on FPI to differ between the low- and high-IRD regimes.

3.2 Data Sources

The study employed secondary data from the yearly panel of 54 African economies for the period of 2000-2025, where data for the variables used in the model are available. Foreign portfolio investment data and data on GDP growth were mainly sourced from the World Bank's World Development Indicators (WDI), 2026 edition; data on inflation rates and exchange rate movement were sourced from the IMF's International Financial Statistics Database. The International Monetary Fund (IMF) International Financial Statistics (IFS) 2026 edition was used to get data on interest rates and other financial indicators. The data for the financial market development was extracted from the Database on AfDB Statistics, 2026 edition, whereas the data on institutional quality indicators was from the World Governance Indicators (WGI) database, 2026 edition. International databases were used, which resulted in a consistency and comparability between the countries and the study period.

3.3 Model Specification

The empirical model used was derived from previous related literature regarding determinants of foreign portfolio investment, especially those studying the effect of the interest rate on foreign portfolio investment, macroeconomic fundamentals on foreign portfolio investment, and institutional factors on foreign portfolio investment. The present study, however, was different from the conventional linear models, because it also included the specification of a threshold to see if the effect of interest rate differentials on FPI would shift as soon as the differential reached a certain threshold. The model was given, under the framework of the Panel Threshold Regression (PTR) model developed by Hansen (1999). The baseline model was given as:

$$FPI_{it} = \beta_0 + \beta_1 INTD_{it} I(INTD_{it} \leq \gamma) + \beta_2 INTD_{it} I(INTD_{it} > \gamma) + \beta_3 EXR_{it} + \beta_4 INF_{it} + \beta_5 GDPG_{it} + \mu_i + \varepsilon_{it}$$

where FPI_{it} is foreign portfolio investment in country iii at time t, $INTD_{it}$ is an interest rate differential, EXR_{it} is an exchange rate movement, INF_{it} is an inflation, $GDPG_{it}$ is GDP growth, γ is the estimated threshold value of the interest rate differential, $I(.)$ is an indicator function that divides observations into the lower and upper interest rate differential regimes, μi represents country-specific effects, and εit is an error term. The coefficient of interest rate differential was allowed to be different in the lower regime of the threshold specification $INTD_{it} \leq \gamma$, and the upper regime of the threshold specification $INTD_{it} > \gamma$. This allowed us to see if there was a greater positive impact from interest rate differentials below the threshold and if the impact was less or negative above that threshold.

3.4 Measurement of Variables

Variable	Symbol	Measurement	Expected Impact
Foreign Portfolio Investment	FPI	Net foreign portfolio investment inflows as a percentage of GDP	Dependent variable
Interest Rate Differential	INTD	Difference between the domestic real interest rate and the U.S. real 3-month Treasury bill rate (%)	Positive below threshold; weaker or negative above threshold
Exchange Rate Movement	EXR	Annual percentage change in the domestic currency per U.S. dollar; positive values indicate depreciation	Negative
Inflation	INF	Annual percentage change in the Consumer Price Index (CPI)	Negative
GDP Growth	GDPG	Annual percentage growth rate of real GDP	Positive

Source: Author's compilation (2026).

3.5 Estimation Technique

Mainly the Panel Threshold Regression (PTR) technique developed by Hansen (1999) was used for the study. The PTR estimator was chosen as appropriate, as the primary focus of the study was to identify if the impact of interest rate differentials on FPI changed after the interest rate differential went over a certain threshold. The threshold method differs from traditional linear panel models in that the coefficient of interest rate differential can be allowed to differ among the 'regimes' determined by the threshold level estimate. Estimation process consisted of testing for the presence of a threshold effect, determining the optimal threshold value, and estimating the coefficients before and after the threshold. The threshold effect was assessed by using bootstrap procedures. To minimize omitted-variable bias, the analysis also controlled for relevant control variables such as country effects. Given this robustness check, results reported were complemented with a dynamic panel estimation, based on the Two-Step System GMM estimator, which helped address potential endogeneity and persistence in foreign portfolio investment.

The baseline dynamic panel data threshold model is given as;

$$y_{it} = \mu_i + \beta_1' x_{it} I(q_{it} \leq \gamma) + \beta_1' x_{it} I(q_{it} > \gamma) + \varepsilon_{it}$$

Where;

μ_i is the fixed effect;

x_{it} is a vector of the independent variables, including the lagged dependent variable to capture the dynamic component of the model.

q_{it} is the threshold variable, which could be endogenous or exogenous in nature.

Γ is the threshold parameter that divides thedata into distinct regimes

I(·): Indicator function.

4.0 Presentation of Results and Data Analysis

4.1 Descriptive Statistics and Statistical Properties

Descriptive statistics of the variables of interest were directed towards establishing links between the statistical properties; they were used to gain insightful information about the behaviour of these variables, especially to highlight the intricacies of modelling. The countries considered in Africa are growing on average 3.60 over the period 2000 – 2025, as shown in Table 1 below. This is strongly connected to the fact that the African economies has been resilient over the years as, despite the occurrences of some economic uncertainties such as the 2007 – 2009 global depression, the 2016 stock market crash, the 2019/2020 global pandemic of COVID'19 and a litany of global energy and trade crises, the continent is still able to boast of 3.60 average growth rate for the period under review.

Table 1: Results of Descriptive Statistics

	FPI	IRD	EXR	INF	GDPGR
Mean	3.63	6.59	5.7462	10.59	3.60
Maximum	161.82	107.47	6.7209	557.20	149.97
Minimum	-82.89	-3.60	5.1908	-16.86	-50.34
Std. Dev.	9.07	9.77	6.1908	31.88	8.28
Skewness	7.20	4.40	10.678	11.02	5.35
Kurtosis	106.69	36.98	115.009	151.17	102.50
Jarque-Bera	641.04	72.05	760.615	131.26	585.85
Probability	0.00	0.00	0.00	0.00	0.00
Observations	1404	1404	1404	1404	1404

Source: Author's Computations, 2026.

African economies have been fairly diversified and resilient against the global uncertainties, with significant differences across countries as is evident in the descriptive statistics. Average inflation rate for the period was 10.59% which was relatively moderate but higher levels of inflation, while the lowest rate of -16.86% indicated countries that experienced deflationary situation. Net portfolio investment (FPI) resources were sent to, received from, or traded within Africa on average and the FPI ratio had a mean value of 3.63, ranging from -82.89 to 161.82 million. Likewise, the mean interest rate differential was 6.59, which indicates that interest rates in domestic financial assets were generally higher than their foreign counterparts, making the financial assets in Africa attractively priced and contributing to positive net FPI while the minimum was -3.60 confirms that, at times, there was an interest rate gap that favoured foreign financial assets over domestic ones. The

findings also show that the exchange rate is the most volatile variable and that shadow banking is the most dynamic variable, implying that there is a high sensitivity of the African economies to international financial and currency fluctuations and that not all economic activities are fully integrated into the international financial system. GDP growth and FPI, however, were the two least volatile indicators that showed a fairly moderate level of economic and investor performance stability in the midst of the uncertainties in the global scene. Last, the variables were not normally distributed during the period analysed, as the kurtosis values exceeded 3.0, and the Jarque-Bera test results were positive, which indicates that there were extreme observations, and greater risk in the African economic and financial environment during the period examined.

4.2 Stationarity and Data Stability Test

Two significant unit root tests were performed under the framework of data stability. These are the Levin, Lin, and Chu (LLC) common and the Im, Pesaran, and Shin (IPS) unit-root tests. Although the details of the unit root test procedures may differ, there does seem to be no significant difference in the result of the decision.

Table 2: Results of Panel Unit-Root Tests

S/N	Variables	Panel 1a: Levin, Lin and Chu (LLC) (Common) Unit-Root Test $Ho: Unit-Root$			Panel 1b: Im, Pesaran and Shin (IPS) (Individual) Unit-Root Test $Ho: Unit-Root$		
		$I(0)$	$I(1)$	$Ho: r$	$I(1)$	$I(1)$	$Ho: r$
1.	FPI	-5.260***	-	Rejected	-5.925***	-	Rejected
2.	IRD	-4.973***	-	Rejected	-5.890***	-	Rejected
3.	EXR	-1.004	-19.575***	Rejected	3.303	-18.694***	Rejected
4.	INF	-39.757***	-	Rejected	-16.452***	-	Rejected
5.	$GDPGR$	-12.698***	-	Rejected	-13.795***	-	Rejected

Source: Author's Computations, 2026.

Note: ***, **, denotes significance at the 5% and 10% levels, respectively.

The results in Table 2 indicate that the variables are of mixed order of integration, with EXR being integrated of order one, I(1), while the remaining variables are stationary at levels, I(0). This mixed-order property is acknowledged in the specification of the dynamic panel threshold model, which is estimated using the variables in their level form. The presence of variables with different orders of integration does not imply that all variables must be differenced, particularly where the analysis is concerned with the long-run relationship and threshold-dependent

effects. The subsequent Pedroni panel cointegration results further provide evidence of a long-run relationship among the variables.

4.3 Cointegration Test

Table 3: Pedroni Panel Cointegration Test Results

Test Statistic	Value	Probability
Panel v-Statistic	2.341	0.009***
Panel rho	-2.112	0.017**
Panel PP	-3.987	0.000***
Panel ADF	-3.554	0.000***

Source: Author's computation (2026)

*Note: *** and ** denote significance at 1% and 5% levels, respectively*

The Pedroni panel cointegration test was used to check for any long-run stability between the variables being tested in the model. The Pedroni test results in a larger set of test statistics, but four of the within-dimension panel statistics are reported in Table 3: Panel v-statistic, Panel rho-statistic, Panel Phillips-Perron (PP) statistic and Panel Augmented Dickey-Fuller (ADF) statistic. The other Pedroni statistics are not included in the table since the focus of the analysis is on the within-dimension statistics for the common long-run relationship of the panel. The panel v-statistic is positive and significant at the 1% level (2.341), and the panel rho-statistic is negative and significant at the 5% level (-2.112). Likewise, the Panel Phillips-Perron (PP) Statistic -3.987, and the Panel Augmented Dickey–Fuller (ADF) Statistic -3.554 are all negative and significant at the 1% level. The results are indications of the cointegration of variables. Most of the test statistics reject the null hypothesis that there is no cointegration at the 5 per cent level of significance. This suggests that there is a long-run relationship between the economies of Africa in terms of foreign portfolio investment, interest rate differentials, exchange rate movements, inflation rates, economic growth, financial market development and institutional quality. If there is a cointegration in the system, then the changes of interest rate differentials and other macroeconomic variables can affect FPI in the long term. However, if the long-run relationship exists, then the interest rate differential effect does not have to be constant across all values. Therefore, a threshold needs to be estimated to determine whether or not the effect of INTD changes beyond the critical level.

4.4 Threshold Effect Estimation

The Dynamic Panel Threshold Regression model was estimated to check whether such a relationship alters when the interest rate differential reaches a threshold value, after which foreign portfolio investment becomes less or more responsive to the interest rate differential.

Table 4: Results of Dynamic Panel Data Threshold Regression

Variables	Coefficient	Z-stat.
$cons$	-5.3315	-5.31***
$FPI(-1)$	-5.5516	-10.37***
D. EXR	1.3823	7.80***
INF	2.0810	5.45***
$IRD \leq 0.90\ (Low\ IRD\ Regime)$	1.0815	15.45***
$IRD > 0.90\ (High\ IRD\ Regime)$	7.4216	9.63***
$GDPGR$	2.2216	3.88***
$Optimal\ IRD\ Threshold\ Level$	0.90	
$Number\ of\ Observations$	1404	
$Number\ of\ Countries$	54	
$Threshold\ Effect\ Test\ (Wald)$	18.74	
$p-value$	0.000	

Source: Author's Computations, 2026.

Note: *The optimal threshold level of the interest rate differential (IRD) is 0.90. The coefficients for IRD ≤ 0.90 and IRD > 0.90 represent the low and high-IRD regimes, respectively. ***, and ** denote statistical significance at the 5%, and 10% levels*

The Dynamic Panel Data Threshold Regression in Table 4 shows that the relationship between interest rate differential (IRD) and foreign portfolio investment (FPI) in the 54 African countries is nonlinear and threshold-dependent. The optimal IRD threshold is 0.90, while the significant Wald test (18.74; p = 0.000) confirms the existence of a threshold effect. IRD below or equal to 0.90 has a positive and significant effect on FPI (1.0815; z = 15.45), while IRD above 0.90 also has a positive and significant effect (7.4216; z = 9.63), although its magnitude is weaker. This indicates that the threshold represents a point of diminishing marginal returns rather than a point at which the effect of IRD becomes negative. Thus, interest rate differentials continue to have a positive association with FPI above 0.90, but their marginal effectiveness declines.

Inflation has a positive and significant effect on FPI. Although this finding may appear counterintuitive, it may reflect the nominal-return channel, whereby higher inflation is accompanied by higher nominal interest rates and yields, potentially attracting investors seeking higher nominal returns. However, persistent inflation may weaken investor confidence and real returns over the longer term. Exchange rate changes also have a positive and significant effect on FPI. Given that the exchange-rate variable is measured such that a positive value represents depreciation, the result indicates that depreciation is positively associated with FPI within the sample. This relationship may reflect valuation effects, exchange-rate expectations, or the interaction between currency movements and domestic asset returns.

Trade openness is positive but insignificant, while liquidity ratio positively and significantly affects FPI, suggesting that

liquid financial markets may enhance the attractiveness of domestic assets to foreign investors. Shadow banking has a negative and significant effect, whereas broad money supply has a negative and significant effect, indicating that excessive monetary expansion may weaken investor confidence. GDP growth has a positive and significant effect, reflecting the importance of economic performance. Finally, the negative and significant coefficient of lagged FPI indicates a reversal or adjustment tendency in portfolio flows, suggesting that relatively high inflows in the previous period may be followed by lower inflows in the current period. This finding is consistent with the relatively mobile and reversible nature of foreign portfolio investment.

4.5 Diagnostics Tests

The tests of the dynamic panel threshold regression were mainly based on the predictive and forecasting ability of the model. It is clear in Figure 1 below that the estimation has good predictive power; therefore, it is reliable for generalisation and forecasting. Inflation is the dependent variable for our estimated model, and its predictive strength further reinforces that the countries in Africa have the economic impetus to target inflation without let or hindrance, and this is capable of attracting foreign portfolio investment into those economies.

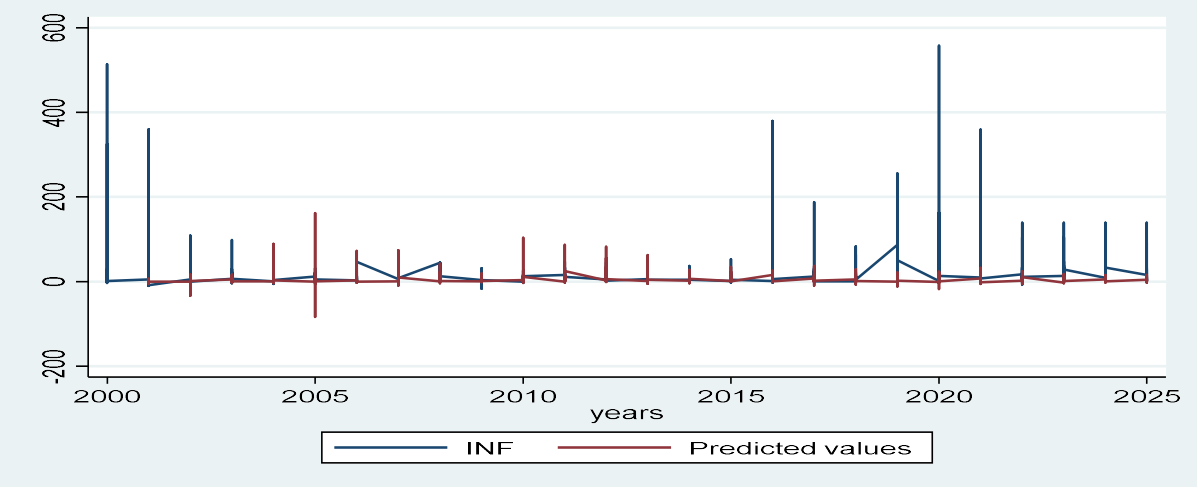

Figure 1: Predictive Ability of the Dynamic Panel Data Threshold Regression Model
Source: Authors Computation, 2026

Besides these, there are also forecasting diagnostics such as the variance-covariance matrix and Wald (simple linear and composite) diagnostics, which are used to determine simple linear and composite hypotheses of the model. Simple composite hypotheses and linear hypotheses both make the claim that the unknown true parameter vector satisfies a set of linear restrictions in the Wald test. The results for the latter show that the constraints are dropped for all the variables. This implies that the model has an increased degree of freedom and is unrestricted from its simple linear model and assumes composite hypotheses; thus, validating the dynamic panel data threshold

regression model and making the estimated model more reliable for analysis and generalisation.

```
( 1)  L.FPI = 0
( 2)  below_thres_th = 0
( 3)  above_thres_th = 0
( 4)  D.EXR = 0
( 5)  IRD = 0
( 6)  TOP = 0
( 7)  LR = 0
( 8)  SB1 = 0
( 9)  M2 = 0
      Constraint 1 dropped
      Constraint 2 dropped
      Constraint 3 dropped
      Constraint 4 dropped
      Constraint 5 dropped
      Constraint 6 dropped
      Constraint 7 dropped
      Constraint 8 dropped
      Constraint 9 dropped
```

Figure 2: Wald test of simple and composite linear hypotheses

For the variance-covariance test, the concept is to validate for between linearity and threshold effect. The null hypothesis is that there is no threshold effect. In other words, the null hypothesis is linear for the model. On the contrary, the diagnostic test of the variance-covariance matrix instead reflects the impact of the threshold, and rejects the assumption of linearity of the model as depicted below.

Covariance matrix of coefficients of xtendothresdpd model

e(V)	L.FPI	below_th~h	above_th~h	D.EXR	IRD	TOP	LR	SB1	M2	_cons
L.FPI	3.318e-33									
below_thre~h	-1.192e-33	1.768e-31								
above_thre~h	-1.109e-33	2.229e-33	3.554e-33							
D.EXR	-6.071e-43	-1.637e-41	-1.133e-42	3.946e-48						
IRD	-3.994e-35	7.065e-35	1.702e-34	-2.952e-42	6.236e-33					
TOP	2.301e-41	2.764e-40	2.073e-41	-1.431e-48	1.973e-40	6.824e-46				
LR	-1.005e-34	-6.612e-34	-1.681e-34	2.276e-42	1.896e-35	-6.278e-42	9.103e-34			
SB1	-5.666e-45	6.175e-44	-1.135e-45	-2.383e-53	8.816e-45	-3.186e-51	-3.409e-45	1.080e-54		
M2	-1.367e-36	-2.907e-36	-8.294e-37	-1.062e-43	2.696e-36	1.988e-43	3.095e-36	1.121e-46	9.699e-37	
_cons	-2.687e-33	-5.214e-32	-4.536e-33	-8.912e-42	-4.613e-32	-2.732e-39	-2.528e-32	-3.082e-43	-2.818e-34	1.360e-30

Figure 3: Variance-Covariance Matrix of Threshold Effects

4.6 Discussion of Findings

The interest rate differential is positively and statistically significant with respect to FPI for African economies as revealed by the results of Dynamic Panel Threshold Regression. The outcome suggests that, relative to foreign markets, the interest rates in African markets determine the interest shown by foreign investors in purchasing financial assets in Africa. The outcome is consistent with the Interest Rate Parity

Theory, which holds that the spread in interest rates impacts the allocation of capital. It further corroborates the reports of Rosa (2024) that relatively lower domestic interest rates make African financial assets more attractive. But the fact that the interest rate differential threshold for optimal impact on FPI is 0.90 suggests that the impact of interest rate differentials is non-linear at very high levels, and thus the idea that an excessively high differential could ultimately turn into higher macroeconomic risks is reinforced. One-period-lagged foreign portfolio investment (FPI(-1)) also has a significant negative impact on its current level, with a respective coefficient value of -5.5516 and an absolute value of 10.37 Z-statistic. This suggests that current foreign portfolio investment seems to push out current foreign portfolio investment, which could be due to the low level of diversification among African economies. There are several economies, and a significant number of African economies that are predominantly rural, and which have a strong base in primary production activities, which include farming, forestry, mining, fishing, and others. This is therefore further evidence of low absorptive capacity in most African economies and the impact of absorbing a bigger chunk of Foreign Portfolio Investment (FPI) in the current period, without risking future portfolio investment flows. The findings of this study are consistent with the study carried out by Emmanuel et al. (2024), Iteziri et al. (2025), Buthelezi (2025) and Byaro et al. (2025). By implication, the monetary authorities should embark on quantitative easing and not complete mop up as the latter would dry up liquidity in the economy. Moreover, the positive and significant effect of inflation (INF) on FPI implies that the foreign investors' confidence in African economies might improve through the convincing of inflation targeting policies. Effective inflation targeting can help stabilise the economy and create more certainty as to the inflation path, which can help lower financial asset return uncertainty. The discovery indicates that foreign investors may have a positive attitude towards a country with a clear policy on price stability by its central bank. The results are consistent with the broader literature emphasising the importance of macro-economic stability and stable monetary policy in foreign portfolio investment decisions. It also validates the results of Aydin and Yildirim (2025), which revealed that inflation and macroeconomic variables are variables that investors consider before investing in emerging economies in the portfolio. The growth of the African economies also has a significant positive impact on FPI with a value of 3.88 Z static and coefficient of 2.22e-16. This finding also agrees with the findings of Abaa et al. (2024); Abusomwan and Ievbigie (2024); Abdulkadir (2023) and Chile et al. (2023) who reported that more FPI would flow into the African economies during economic expansion, boom and economic prosperity.

5.0 Conclusions and Recommendations

The study was founded on the premise that interest rate differential is an important determinant of FPI in African economies, and it is concluded that Interest rate differential is an important determinant of FPI in African economies. The positive and statistically significant interest rate differential indicates foreign investors' preference for relatively higher domestic

interest rates. This is in line with the theoretical proposition that investors strive for a higher rate of return in the financial markets. The study does reveal, however, that the interest rate differential has nothing alone to offer. It has an impact on foreign portfolio investment in a macroeconomic and financial context. Exchange rate conditions, inflation and growth impact the investment climate in African economies. The study also finds that there is a threshold effect between the interest rate differential and foreign portfolio investment. The estimated optimal interest rate differential threshold (0.90) suggests that the effect of macroeconomic price conditions on FPI is not linear. The finding indicates that other factors that facilitate foreign portfolio investment for Africa's economies include maintaining the inflation rate within the proper range.

The negative effect of lagged FPI suggests the existence of a crowding-out or persistence problem of FPI in the African countries. If domestic economic and financial markets are not diversified enough and have lower absorptive capacity, it is unlikely that the additional inflows will go towards the existing investments. This finding highlights the need for the African financial markets to become deeper and more diversified for the increasing foreign portfolio investments to be made in the markets. Foreign portfolio investment is also one of the significant contributors to economic performance, thanks to the positive influence of economic growth. The better the outlook for an economy, the more productive the capacity, and the greater the potential to benefit financially, the more likely investors are to invest in an economy. The study recommends that to attract foreign portfolio investment to the African economies, they are required to have relatively low interest rate differentials, have sustainable economic growth and effective inflation control. But, as far as less money instability, more market diversification, and less excessive monetary expansion are concerned, such policies should be supplemented by measures of that kind.

5.3 Recommendations

According to the results of the study, the following recommendations are put forth.

(i) The interest rate difference between African economies must be large enough to make the investment in the economy worthwhile for foreign investors, but not so large that it is unaffordable to domestic investors and borrowers. It is observed from the sign as well as the magnitude of interest rate differential on FPI that the higher the difference between the interest rate of the country and the interest rate of the other country, the more willing FPI are in investing in the country. But the monetary authorities should be aware of the need to also maintain the interests of domestic investment and economic growth, and carefully balance the objective of attracting foreign capital.

(ii) African monetary authorities need to enhance their inflation targeting frameworks and the effectiveness of their monetary policy in keeping inflation on target. When an optimal inflation range is established, it becomes clear that handling inflation is important to keep FPI. Hence, policies to address supply side constraints, food inflation, energy prices and exchange rate

volatility should complement inflation policies.

(iii)African governments need to embrace sustainable and inclusive economic growth policies. The foreign portfolio investment is positively related to the growth rate of GDP, indicating the relationship between foreign portfolio investment and economic performance. Hence, economic policy should remain principally focused on the investment of infrastructure, human resources, the productive sector, technology and the private sector.

(iv) African policymakers need to favour exchange rate stability and enhance the trustworthiness of foreign exchange markets. The beneficial effect of exchange rate conditions on FPI indicates that foreign investors react to exchange rate fluctuations. Therefore, monetary authorities should adopt policies in which excessive exchange rate volatility is kept to a minimum but still allows for ample flexibility to deal with external shocks.

Limitation of the study

One limitation concerns cross-country heterogeneity. Although the study covers 54 African economies, these countries differ considerably in terms of financial-market development, exchange-rate regimes, institutional quality, capital-account openness, dependence on natural resources, and macroeconomic conditions. In particular, North African economies, Sub-Saharan African economies, and oil-exporting countries may respond differently to changes in interest rate differentials. The estimated threshold should therefore be interpreted as an average threshold for the countries included in the sample rather than a uniform policy benchmark for every African economy. Future studies could address this limitation by estimating region-specific or country-group threshold models to determine whether the critical level of the interest rate differential differs across African economies.

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