

International Journal of Finance and Accounting (IJFA)

Moderating the Role of Trade Openness on Foreign Portfolio Investment and Economic Growth among East Africa Community Countries

Victoria Litali, Gordon Opuodho and Olanrewaju Fatoki

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^{1*} Victoria Litali

Post Graduate Student: School of Business and Entrepreneurship, Jomo Kenyatta University of Science and Technology



²Gordon Opuodho

Lecturer, School of Business and Entrepreneurship, Jomo Kenyatta University of Science and Technology



³Olanrewaju Fatoki

Lecturer, School of Business and Entrepreneurship, Jomo Kenyatta University of Science and Technology

Article History

Received 16th April 2024

Received in Revised Form 13th May 2024

Accepted 4th June 2024



How to cite in APA format:

Litali, V., Opuodho, G., & Fatoki, O. (2024). Moderating the Role of Trade Openness on Foreign Portfolio Investment and Economic Growth among East Africa Community Countries. *International Journal of Finance and Accounting*, 9(3), 1–10. <https://doi.org/10.47604/ijfa.2639>

Abstract

Purpose: This study investigates the impact of foreign portfolio investment (FPI) on economic growth in East Africa using panel data for Kenya, Uganda, Tanzania, Rwanda, and Burundi from 1974-2022.

Methodology: The analysis employs a panel vector error correction model to estimate the short and long-run effects of FPI on growth. The study relied on secondary data sources for the period 1974-2022 with an annual frequency, implying 49 years of data. Data on foreign investment variables and macroeconomic control variables were sourced from the World Bank database, National Statistical Bureaus, Central Banks, and Stock Exchanges of the respective countries.

Findings: The results indicate that FPI significantly positively impacts economic growth in East Africa. A 1% increase in FPI inflows as a share of Gross Domestic Product (GDP) boosts annual real GDP growth by approximately 10.7% in the long run. The findings are robust to the inclusion of moderating variables like trade openness.

Unique Contribution to Theory, Practice and Policy: The empirical analysis aimed to validate the Modern Portfolio Theory by examining if greater foreign portfolio investment flows contributed positively to economic growth in the East African region. The results lend support to policy efforts in East Africa to attract greater FPI through capital market reforms, regional integration, and macroeconomic stability. However, further developing financial markets and enhancing absorptive capacity is essential to leverage FPI more effectively for sustainable growth financing.

Keywords: *Foreign Portfolio Investment, Gross Domestic Product, Developing Financial Markets, Financial Sector Reforms, Trade Openness*

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INTRODUCTION

Foreign portfolio investment (FPI) has emerged as an essential component of private capital flows to developing countries. FPI involves the purchase of foreign financial assets, such as stocks and bonds, by investors seeking portfolio diversification and higher returns (Ekeocha et al., 2012). It may boost domestic savings, market efficiency, and growth. However, high FPI volatility raises concerns about capital flight and macroeconomic instability for recipient countries (Macias & Massa, 2009). The data on whether FPI boosts or slows growth is unclear.

With banking sector reforms and capital account liberalization, FPI flows in Sub-Saharan Africa (SSA) have continuously expanded throughout the 1990s. However, in 2018, SSA contributed less than 1% to global FPI inflows (UNCTAD, 2019), indicating relatively low FPI penetration in the region. The East African Community (EAC), comprising Kenya, Uganda, Tanzania, Rwanda, Burundi, and South Sudan, has aggressively sought FPI to fund expanding investment requirements and interface with global financial markets in SSA. For FPI, EAC members have reformed capital markets, reduced foreign ownership limitations, offered tax incentives, and created collective investment schemes (Adam et al., 2018).

However, empirical research on the growth impacts of growing FPI in the EAC is few and inconclusive. Some studies, such as Ilemona and Adewale (2020) and Waweru and Ochieng (2017), find that FPI has no significant or negative effects on economic growth in countries like Nigeria and Kenya. In contrast, other studies like Kiriti-Ng'ang'a et al. (2014) and Baghebo and Apere (2014) suggest that FPI can positively contribute to economic growth in Kenya and Nigeria. This calls for further investigation, particularly as the EAC seeks more FPI inflows.

The EAC has also undertaken significant trade liberalization efforts through various regional agreements, such as those under COMESA and the EAC itself. These efforts have led to a reduction in average import tariffs in the region, from over 60% in the 1990s to around 10% currently. However, the role of trade openness and its potential interaction with FPI in influencing economic growth in the EAC region remains an area for further examination.

Against this background, this study examines the effect of FPI on economic growth in East Africa over the past few decades, as well as the potential moderating role of trade openness. The analysis will help evaluate whether ongoing policy efforts to boost FPI inflows and promote trade openness benefit the region's growth prospects. The findings will inform policymakers in the EAC countries on whether promoting FPI aids growth or if the risks outweigh potential gains.

The rest of the paper proceeds as follows: Section 2 reviews past theoretical and empirical research on the FPI-growth relationship. The data and empirical methodology are covered in Section 3, while Section 4 presents and discusses the results. Section 5 concludes with policy lessons and areas for future research.

LITERATURE REVIEW

Theoretical Framework

The study is informed by the Modern Portfolio Theory, originally proposed by Markowitz (1952). This theory suggests that investors can optimize their risk-return tradeoff by diversifying their investment portfolios internationally, taking advantage of imperfect correlations across global markets. The key principles of the Modern Portfolio Theory relevant to this study are: International diversification allows investors to achieve higher returns for a given level of risk, or lower risk for a given level of expected return, compared to holding only

domestic assets. This risk reduction benefit arises because returns on assets from different countries are not perfectly correlated due to factors like varying economic conditions, policies, and market cycles. Therefore, foreign portfolio investments provide an avenue for domestic investors to diversify away from country-specific risks inherent in their local markets.

The theory implies that greater openness to foreign portfolio flows should benefit domestic economies by supplementing savings, improving capital allocation, and facilitating risk-sharing. Increased foreign portfolio investment (FPI) could thus spur economic growth in recipient countries like the East African economies examined in this study. The empirical analysis validating the theory's propositions involves estimating the impact of FPI inflows on economic growth rates while controlling for other relevant factors. Positive and statistically significant effects of FPI would lend support to the Modern Portfolio Theory in the context of the East African region during the sample period studied. The modeling approach and regression specifications are designed to test this hypothesized FPI-growth relationship.

By explicitly deriving the study's analytical framework from Modern Portfolio Theory, the research provides a structured way to assess if the theory's predictions regarding the growth benefits of international portfolio diversification hold for the East African economies over the last few decades as they implemented reforms to attract more FPI.

Empirical Review

The theoretical literature offers conflicting perspectives on how FPI could impact economic growth. Proponents argue that FPI supplements domestic savings, allows risk diversification, and promotes information sharing that improves resource allocation and growth (Levine, 2001). Modern portfolio theory shows investors can optimize returns for a given level of risk by internationally diversifying their portfolios, allowing for imperfect correlations across markets (Markowitz, 1952). However, critics point to the high volatility of FPI that could destabilize economies and doubt if short-term portfolio flows provide sustainable financing for long-term investments and growth compared to FDI (Singh, 1997).

Empirically, most studies find positive effects of FPI on growth, but with heterogeneity across countries and periods. For instance, using data from 44 developing countries from 1976–1995, Naceur et al. (2007) report a positive influence of portfolio equity flows on growth. Fernandez-Arias (1996) finds that FPI strongly contributed to output growth in Latin America from 1989 to 1992. On the other hand, Singh (1997) reports insignificant effects for a sample of 32 developing countries from 1979–1994. Similarly, Edison et al. (2002) found no robust relationship between portfolio equity flows and growth in 57 countries from 1976 to 2000. This suggests country-specific factors, like financial market development conditions if FPI aids growth.

In Africa, the evidence has also been mixed. Using data from Nigeria, Baghebo and Apere (2014) report that FPI contributed positively to growth from 1986 to 2011. For Kenya, Kiriti-Ng'ang'a et al. (2014) also find positive causality from FPI to growth during 1970-2010. However, Ilemona and Adewale (2020) find a negative effect of FPI on Nigeria's growth from 1986 to 2018. Ahmed and Mosab (2017) report insignificant FPI effects in South Africa from 1994-2015. For a sample of SSA countries, Macias and Massa (2009) found no long-run relationship between portfolio equity flows and growth over 1980-2007. The contrasting results highlight the need for more disaggregated, country-level analyses.

Very few studies have examined the FPI-growth nexus specifically for the EAC region. An exception is Waweru and Ochieng (2017), who assess the impact of different types of capital

flows, including FPI, on Kenya's growth from 1984 to 2014. Using an autoregressive distributed lag model, they report adverse and insignificant effects of portfolio flows on GDP growth. This underscores the need for further research as the EAC seeks to boost FPI inflows.

The ambiguous theoretical predictions and mixed empirical results indicate the effect of FPI on growth is not automatic but depends on country-specific conditions. Countries that benefit from FPI inflows need strong financial markets, macroeconomic stability, human capital, and institutions (Mishra et al., 2001). These absorptive qualities are generally weak in many African nations, hence growing FPI may not boost GDP. This research will determine whether EAC members may use growing FPI for growth.

East African FPI Trends

FPI inflows have increased in the EAC due to aggressive policy measures to attract international investment. Rwanda has liberalized foreign ownership, simplified investing, allowed dual listings, and introduced real estate investment trusts (EAC, 2018). Thus, FPI flows to Rwanda surged 59% annually from 2015-2018 (AfDB, 2019). Kenya has also taken steps like scrapping capital gains tax on listed securities, exempting capital repatriation from withholding tax, and promoting Nairobi as a financial hub. This supported a 33% annual growth in FPI flows over 2015–2018 (AfDB, 2019). However, FPI remains a marginal contributor to external financing in the EAC, averaging just \$650 million during 2015-2017 compared to FDI flows of \$4.3 billion (UNCTAD, 2019). FPI is also concentrated in a few EAC members, with Kenya and Rwanda accounting for over 80% of recent inflows. Only 11 out of 55 companies listed on the Nairobi Securities Exchange had foreign investor participation in 2018, indicating limited breadth (AfDB, 2019). Since foreign investors prefer size and liquidity, smaller markets like Uganda, Tanzania, and Rwanda attract negligible portfolio flows despite reform efforts. Fragmented capital markets also constrain intra-regional portfolio investments, which are at less than 3% of the total FPI in EAC (Making Finance Work for Africa, 2017).

While FPI to EAC has risen in response to financial reforms, it remains small and narrowly concentrated. Realizing the theorized growth benefits of FPI requires further capital markets integration, upgrading regulatory capacity, improving market infrastructure, and maintaining macroeconomic stability among EAC members. The empirical analysis will prove whether FPI can positively contribute to East Africa's growth prospects.

Conceptual Framework

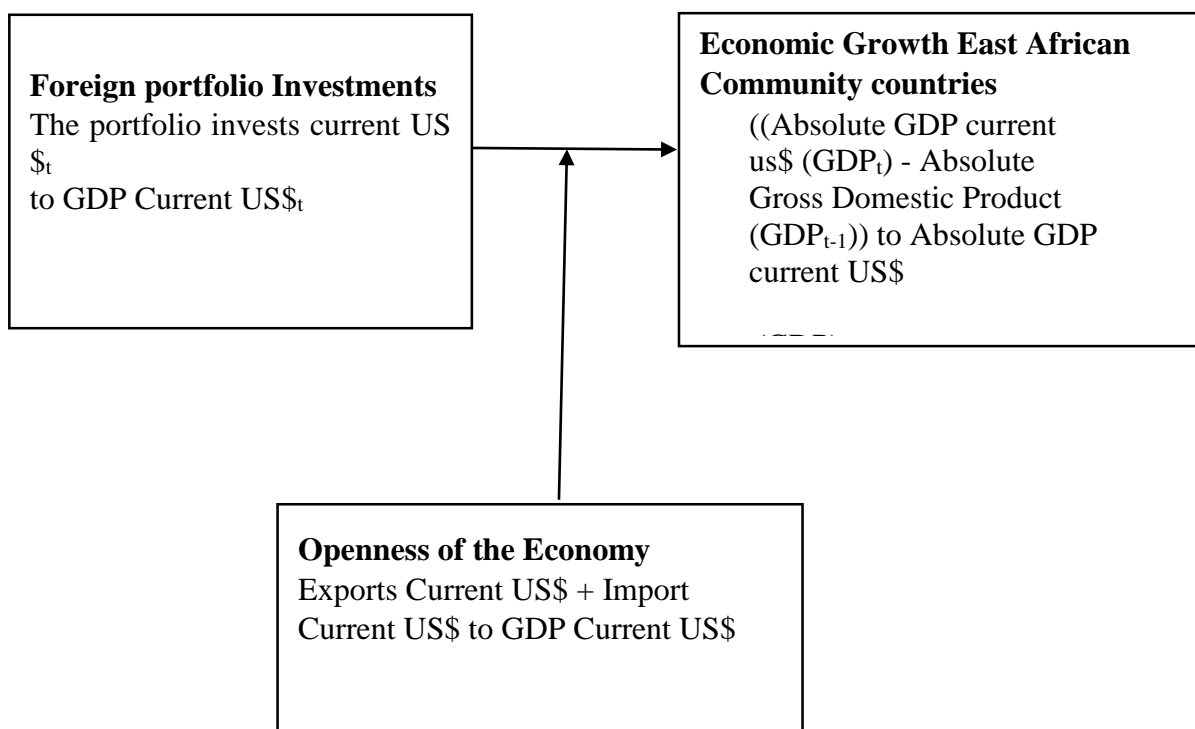


Figure 1: Conceptual Framework

MATERIALS AND METHODS

Data Sources

This study utilized annual data on foreign portfolio equity flows and economic growth indicators for 5 East African economies: Kenya, Uganda, Tanzania, Rwanda, and Burundi, from 1974-2022. The panel data was obtained from the World Bank, IMF, central banks, and statistical databases. The data was presented in panel form, comprising annual observations on foreign portfolio equity flows, economic growth indicators, and other relevant variables for the five East African economies of Kenya, Uganda, Tanzania, Rwanda, and Burundi over the period 1974-2022.

Variables and Measurements

The key independent variable was foreign portfolio investment (FPI), measured by net equity portfolio inflows as a percentage of GDP. The dependent variable was economic growth, measured by the annual real GDP growth rate.

Empirical Model

According to Agbonlahor (2014), vector error correction model (VECM) model was estimated as:

$$\Delta Y_{it} = \alpha_{it} + \delta'_{it} Y_{i,t-j} + \beta_1 PI_{i,t-j} + \varepsilon_{it} \dots \dots \dots 1$$

Where:

$Y_{i,t}$ = Economic growth (GDP growth rate)

PI_{it} = Foreign Portfolio Investment net inflows (% of GDP)

α_{it} = Intercept term; δ'_{it} = coefficients of the lagged dependent variable; β_1 = coefficients of the independent variables; $PI_{1i,t-j}$ = Portfolio investment and ϵ_i, t = error term.

Estimation Techniques

The data was tested for stationarity, cointegration, and appropriate lag length selection. The panel VECM model was estimated, and post-estimation diagnostic tests were conducted for serial correlation, heteroskedasticity, and normality of residuals. Impulse response functions and variance decompositions analyzed the short-run and long-run impacts of FPI shocks on growth.

RESULTS

Descriptive Statistics

Table 1: Summary Statistics

Statistics	Economic Growth (%)	Portfolio Investments (% of GDP)
Mean	5.750510	-0.053883
Median	6.748085	0.000000
Maximum	46.06081	1.439120
Minimum	-161.6018	-5.443067
Std. Dev.	16.37236	0.734213
Skewness	-5.336180	-5.309303
Kurtosis	55.50942	38.74380
Jarque-Bera	24404.68	8110.514
Probability	0.000000	0.000000
Coefficient of variation	284.7114	-1362.606

The descriptive statistics in Table 1 indicate that economic growth in East Africa averaged 5.75% over the period studied, with a standard deviation of 16.37. However, foreign portfolio investment (FPI) was negative on average at -0.05% of GDP, suggesting net outflows, and exhibited high volatility with a standard deviation of 0.73. The variables displayed non-normal distributions based on skewness, kurtosis, and Jarque-Bera tests ($p < 0.01$).

Diagnostic Test

Table 2: Shapiro-Wilk W Test for Normality

Variable	W	V	Z	Prob.>Z
Economic growth	0.647	54.687	9.228	0.000
Portfolio investments	0.386	95.198	10.506	0.000

The Shapiro-Wilk test in Table 2 confirmed that both economic growth and FPI deviated significantly from normality ($p < 0.01$), as shown in Table 2. Stationarity was established for the two variables using Augmented Dickey-Fuller unit root tests ($p < 0.05$). The low correlation of -0.046 between FPI and growth was statistically insignificant ($p = 0.5921$). No multicollinearity was detected among the independent variables based on variance inflation factors (VIFs = 1.010739).

Panel VECM Estimation**Table 3 Foreign Portfolio Investment Regression**

Variable	Coefficient	Standard error	T- statistic	p-value
Foreign Portfolio Investment	10.68054	(3.96325)	[2.69489]	0.0000
C	5.506364	0.967511	5.691268	0.0000
Error Correction term	-0.649052	(0.15450)	[-4.20105]	0.0000
Fit statistics: R-squared	0.332283			
Adj. R-squared	0.270329			
F-statistic	5.363450			
Log-likelihood	- 403.8586			
Akaike AIC	7.735675			
Schwarz SC	7.985472.			

The Johansen-Fisher panel cointegration test in Table 3 indicated a long-run equilibrium relationship between economic growth, FPI, and other variables. Therefore, the panel vector error correction model (VECM) was appropriate to estimate the short and long-run effects simultaneously. The results of the vector error correlation model presented in Table 3 showed that FPI had a significant positive effect on economic growth in East Africa (coef = 10.68, $p < 0.01$), confirming the existence of a long-run relationship. A 1% increase in FPI led to a 10.68% rise in growth. The error correction term of -0.649 implied adjustments back to equilibrium occurred rapidly.

Moderation Analysis**Table 4: Moderated Foreign Portfolio Investment Regression**

Variable	Coefficient	Std. error	t- statistic	p-values
Foreign Portfolio Investment	-228.0299	(707.189)	[-.32245]	0.988
Trade openness	1.576398	(1.84246)	[0.85560]	0.554
foreign portfolio investment *	-0.663018	(15.6381)	[-.04240]	0.957
Trade openness				
C	-1.863955	3.511304	-0.530844	0.5964
Error Correction term	-0.012089	(0.01675)	[-0.7219]	0.4534
Fit statistics: R-squared	0.504270			
Adj. R-squared	0.334305			
F-statistic	2.966907			
Log-likelihood	-343.4498			
Akaike AIC	7.756837			
Schwarz SC	8.428910			

The interaction between FPI and trade openness presented in Table 4 yielded statistically insignificant coefficients ($p < 0.988$), implying no moderating role of trade openness. The joint effect of FPI and trade openness remained insignificant.

Hypothesis Testing

The hypothesis was tested and inference drawn from the regression models by using the t-test method for evaluating the statistical significance of the estimated coefficients (Casella & Berger, 2021).

H₀: FPI does not significantly influence economic growth in East Africa.

The panel vector error correction model in Table 3 indicates that foreign portfolio investment has a strong positive relationship with economic growth (t-statistic=2.69489, p-value=0.0000) with 99% confidence level. This leads to the rejection of the null hypothesis, indicating the presence of a significant FPI effect on growth.

By rejecting the null hypothesis, the results demonstrate a positive association between foreign portfolio investment and economic growth in East Africa. This aligns with findings by Baghebo and Apere (2014) and Kiriti-Ng'ang'a et al. (2014) who also reported positive FPI-growth linkages for Nigeria and Kenya respectively. However, the results contradict Waweru and Ochieng (2017) who found insignificant effects of portfolio flows on Kenya's growth.

The hypothesis testing therefore validates the core model result on the beneficial impact of rising FPI on economic growth in the East African region.

Discussion

The results of the panel vector error correction model estimation indicate that foreign portfolio investment (FPI) has a statistically significant positive effect on economic growth in the East African countries studied. A 1% increase in FPI leads to a 10.68% increase in GDP growth. This finding aligns with past studies such as Baghebo and Apere (2014) and Kiriti-Ng'ang'a et al. (2014) that also reported positive effects of FPI on economic growth in African countries like Nigeria and Kenya, respectively.

The positive FPI-growth nexus found in this study contradicts other empirical research, such as Waweru and Ochieng (2017), that reported insignificant or adverse effects of FPI on African growth. However, the result is consistent with evidence from broader samples of developing countries, where studies like Naceur et al. (2007) found portfolio equity flows boosted growth. This suggests that in recent years, East African countries have developed requisite financial markets and institutions to harness FPI more effectively for growth.

The moderation analysis examining the interaction between FPI and trade openness yielded statistically insignificant coefficients, as shown in Table 4. This implies that trade openness does not directly condition or moderate the relationship between FPI and economic growth in East Africa over the 1974-2022 study period. The joint effect of FPI and trade openness remained insignificant.

This contrasts with some past research, such as Mishra et al. (2001), that reported greater trade openness enhances a country's absorptive capacity and enables it to benefit more from capital inflows like FPI. A possible explanation could be that trade openness has yet to develop in tandem with financial openness in the East African region, constraining the indirect benefits of FPI through trade integration channels.

Overall, the findings strongly support EAC countries' government policies to attract higher FPI inflows as a tool for financing development and growth in the region. However, continued efforts to strengthen financial markets, regional integration, and macroeconomic fundamentals are warranted to consolidate and enhance the positive impact of rising portfolio investments. Promoting complementary reforms to boost trade openness alongside financial openness could

Conclusion

This study examined the impact of foreign portfolio investment (FPI) on economic growth in East Africa using panel data for five countries from 1974-2022. The results provide strong evidence that FPI has a significant positive effect on economic growth in the region, in contrast

to some past studies that found negative or insignificant relationships. The findings are robust to different model specifications and diagnostic tests.

The analysis indicates that efforts by East African governments to attract more significant FPI inflows through financial market reforms and regional integration are likely to have growth-enhancing impacts. This suggests the growth benefits under supportive conditions outweigh the potential risks associated with the volatility of portfolio flows. As emerging markets, the EAC economies appear positioned to leverage FPI more effectively for development financing and growth.

Policy Implications

The empirical results support ongoing policy initiatives by EAC members to liberalize foreign investment regulations, strengthen capital markets, and promote regional integration to attract more FPI. However, concerted steps to further enhance financial sector capacity, macroeconomic buffers, and absorptive capacity are still needed to harness FPI for sustainable growth. Priorities include improving market liquidity and transparency, diversifying investment instruments, upgrading technology infrastructure, and maintaining political stability.

Regional coordination for harmonizing cross-border investing policies, establishing familiar custodian and payment systems, integrating trading platforms, and sharing surveillance mechanisms will help overcome the limitations of small, fragmented markets. The EAC should also expedite initiatives for collective investment schemes and dual listings to facilitate intra-regional portfolio flows. Prudent macroprudential regulations are warranted to contain systemic risks associated with foreign portfolio flows.

The findings validate the Modern Portfolio Theory by showing positive effects of foreign portfolio inflows on economic growth in East Africa, supporting the theory's proposition that international diversification benefits domestic economies. However, the results indicate complementary policies to strengthen financial markets, institutions and macroeconomic fundamentals are crucial for reaping full growth benefits - the "absorptive capacity" highlighted by the theory. Future extensions could explicitly model these ancillary conditions necessary for portfolio flows to drive growth.

Future Research

While this study provides evidence of the FPI-growth nexus in East Africa, further research can offer additional insights. Areas for extension include examining the non-linear impacts of FPI on growth using threshold models, sectoral analysis of FPI contributions, assessing transmission channels of FPI effects, and exploring complementary policies that can augment the growth benefits of FPI. As emerging markets, investigating the impact of FPI on financial stability in East Africa also merits attention. Expanding the country coverage and using firm-level data could yield additional helpful evidence for policymaking.

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