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RESEARCH ARTICLE

Political Stability Moderating Asymmetric Growth Impacts of External Capital Inflows and Exchange Rate Volatility in EAC

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ABSTRACT

Political stability and absence of violence and terrorism remain the weakest institutional governance dimensions across East African Community partner states, despite their crucial role in moderating the growth effects of external capital inflows and exchange rate dynamics. Extant literature largely overlooks these asymmetric relationships by treating institutions as homogeneous factor under monotonic growth effects. This study is motivated by deepening regional integration amid rising political and geopolitical uncertainties, including the Russian-Ukraine war, US-China trade conflicts, and the recent escalating Middle East tensions, that intensified capital flight to safe-haven and intensified instability within the EAC bloc. This paper examines the asymmetric impacts of external capital inflows and exchange rate dynamics on growth under the moderation influence of political stability across six EAC economies from 1996-2023. The analysis employs advanced second-generation econometric techniques, NARDL and DCCE robust to endogeneity, heterogeneity, cross-sectional dependence and structural breaks that have been pervasive in prior studies. Findings show that, under political stability moderation, positive and negative shocks from external debt and FDI promote growth, albeit with weak coefficients, while ODA and exchange rate volatility significantly constrain growth, from weak political conditions. The results suggest that strengthening political institutions, governance quality, and regional stability is essential for enhancing the productive effects of external capital inflows. Policy prescriptions should prioritise institutional reforms, productive integration of ODA with infrastructure, and exchange rates management aligned with macroeconomic fundamentals to sustain long-run economic growth in EAC bloc.

Contribution/Originality: This study uses new estimation methodology with advanced second-generation econometric techniques, NARDL and DCCEs within EAC, to manage cross-sectional dependence, endogeneity, heterogeneity, and structural

breaks. It moderates first external capital inflows with political stability before administering partial decompositions of asymmetric variables, considered by the authors as pre-conditions for external financing.

1. Introduction

External capital transfers encompass movement of financial assets from advanced economies to developing and emerging economies to finance fiscal deficit, investments and exchange gaps. These financial flows subsist in several forms such as external debt (ED), foreign direct investment (FDI), official development assistance (ODA) and foreign aid conveyed under favourable exchange rates (ER). The inflows of external capital to East African Community (EAC) partner states play an important role in supplementing the development budget on infrastructure, cushion revenue deficits and macroeconomic stabilisation on the exchange rate volatilities (Mwakalila & Muba, 2025; Ramos-Herrera, 2025). Since the 2008-09 global financial crisis, external capital flows have faced greater challenges than ever before from multifaceted dynamics and constraints heightened by geopolitical tensions in the Middle East, Russian invasion of Ukraine to global trade tariffs and technological wars (Akpilic, 2025; Alessandria et al., 2025; Hossain et al., 2024). The World Economic Forum pinpoints political instability as one of the most significant threats to global stability due to its widespread economic consequences. These episodes of political instability, exacerbated by COVID-19 pandemic, have triggered massive external capital outflows from EAC bloc in the form of FDI, ODA and foreign aid to advanced economies (Ftiti et al., 2024). At the same vein, the liquidation of FDI, ODA and foreign aid have induced huge external debt accumulation in EAC bloc, some from commercial lending, that drastically erode exchange rate stability (Azolibe, 2022; Mwakalila & Muba, 2025). Political instability adversely hinders economic growth through its propensity to fuel crime, weaken the rule of law, undermine order execution and governance, and foster human rights violations and ineffective state control (Byamungu & Zhang, 2025; Wang et al., 2024). Political instability in the Middle East, Russia-Ukraine conflicts, technological and trade wars to regional tensions between South Sudan and Sudan, Somalia, Democratic Republic of Congo (DRC) with Rwanda, Kenya in June 2024 on finance bills and Tanzania in October 2025 elude external capital inflows (ADB, 2024; Ayaga, 2025; TICGL, 2026). Moreover, these political instabilities have risen costs of living in Kenya due to removal of subsidy, led to internal conflicts towards government policies (ADB, 2024). In Uganda, elevated political instability worsened rule of law and regulatory quality over human rights violations that led to the country losing ODA and foreign aid benefits (ADB, 2024, 2025). Similarly, Tanzania, after the October 29th election, the violence and demonstrations led to suspension of $181million from EU and 86% freeze of USAID programme (TICGL, 2026). Political instability contributed to rising fuel prices, food costs and agricultural input expenses globally, and specifically in EAC bloc (ADB, 2024; Sun & Su, 2024). These geopolitical pressures have disrupted supply chains and elevated transportation costs, thereby constraining the EAC bloc's progress toward achieving SDG 1: no poverty by 2030 (Sohag et al., 2022; Sun & Su, 2024).

The subsequent failures to implement effective measures against political instability in the EAC bloc continues to undermine economic growth (Maher & Zhao, 2022; Wang et al., 2024). This stems from the conversional wisdom that posits external capital inflows with exchange rate volatility is closely tied to political dynamics (Ftiti et al., 2024; Jahan & Ryu, 2026). An evolving strand of literature has increasingly focused on how political

instability conditions the asymmetric impacts of external capital inflows and exchange rate dynamics on economic growth (Ftiti et al., 2024; Jahan & Ryu, 2026). Jahan and Ryu (2026) finds political instability liquidates FDI, ODA and foreign aid and redirects lower middle incomes to accumulate more external debt to supplement their economic growth, while Hossain et al (2024) examine the impacts of political instability and found internal conflicts elude FDI inflows in South east Asian countries. Hossain et al (2024) finds FDI as necessary external capital inflows to cushion exchange rate volatilities and recommends policies and strategies from central banks to manage exchange rate amid political instability. Oriola and Saadaoui (2025) investigates the impact of external debt from IMF and Asian Development Bank, and finds these loans result to appreciation of the local currency, after controlling for institutional quality, and the appreciation shocks are amplified by political instability. Barkat et al (2025) explored the connection between foreign aid and economic growth, and finds in fragile political instability, foreign aid and ODA exacerbate rent-seeking, induce bribery, reduce accountability and substitute for domestic revenue mobilisations (Olaoye et al., 2022). Likewise, Ramos-Herrera (2025) finds political instability compounded by market failures induce huge exchange rate fluctuations from the equilibrium exchange rate.

Extant studies examining the asymmetric impacts from external capital inflows under favourable exchange rate dynamics, moderated by political stability and absence of violence and terrorism, have generated inconclusive findings. Furthermore, empirical evidence on the moderating role of political stability to the asymmetric impacts of external capital inflows in the EAC bloc remains scant, despite the region's heavy dependence on external financing and elevated exposure to external shocks (Jahan & Ryu, 2026). One tenets reveals that they can serve as a catalysts for economic growth by stimulating infrastructure investments and creating an enabling environment that supports the effective absorption of external debt (ED), FDI, ODA under favourable exchange rates (Chikwira & Jahed, 2024; Chowdhury et al., 2024; Kitole, 2025; Patel et al., 2024; Riak & Yak, 2025; Zhu et al., 2026). On the other, external capital inflows can cause financial instability and macroeconomic disequilibrium, often exacerbated by excessive external debt accumulation, that trigger exchange fluctuations, liquidate FDI and ODA inflows, negating economic growth (Abate, 2022b; Belfqih et al., 2022; Gossel, 2025; Hongli & Vitenu-Sackey, 2023; Ibrahim, 2021; Nutassey et al., 2023; Olaoye et al., 2022; Ramos-Herrera, 2025). The last domains report that external capital inflows on economic growth is insignificant or neutral (Adeleye et al., 2022; Akalpler, 2023; Chen et al., 2020; Kirikkaleli et al., 2021; Mouneer et al., 2022; Musse et al., 2024; Yimer, 2023). These inconclusive findings stem from differences in methodologies, endogeneity concerns, governance disparities, heterogeneity, cross-sectional dependence challenges, geographical contexts, variations in macroeconomic variables and dataset formats (Croissant & Millo, 2019; Fonchamnyo et al., 2021; Lau et al., 2019).

A body of empirical literature indicates that stable political environments with absence of violence and terrorism play a fundamental role in cushioning economies against external debt risks associated with diminutions of FDI, ODA and exchange rate instabilities (Groznykh et al., 2020; Khudari et al., 2023; Ramzan et al., 2023). Stability in the political environment with absence of violence can reduce the diversion of external capital resources by politically connected elites and corrupt officials through improved resource allocation toward productive sectors, thereby limiting excessive borrowing (Jahan & Ryu, 2026). Despite the vast empirical evidence on the importance of external capital inflows on economic growth, institutional channels remain inadequately addressed by extant literatures (Abate, 2022a; Lawal et al., 2022; Musse et al., 2024;

Sokhanvar, 2025; Wehncke et al., 2022). Political stability in strengthening the asymmetric impacts of external capital inflows and exchange rate remains essential yet underexplored within the context of EAC bloc. Within existing studies (Asafo-Adjei et al., 2023; Atakpa et al., 2024; Zhu et al., 2026) underscore the paucity of studies examining the asymmetric impacts of external capital inflows and exchange rates moderated by political stability in panel data format. The prevailing empirical evidence predominantly focused on country-specific time series data with limited attention given to institutional qualities that may strengthen the external-capital-growth relationships (Kirikkaleli et al., 2021; Oyadeyi et al., 2025; Rehman et al., 2023). Despite growing interest in external capital inflows and growth, studies examining the moderation impacts of political stability on external debt, FDI, ODA and exchange rates are scant in EAC bloc (Laswai et al., 2026).

To address the existing gaps, this study revolves through the Institutional Growth Theory to examine how asymmetric external capital inflows and exchange rate dynamics influence economic growth in EAC partner states. The study contributes to the literature by employing the Nonlinear Auto Regressive Distributed Lag (NARDL) model as the baseline estimator and the Dynamic Common Correlated Effects (DCCEs) as robustness checks. These advanced econometric techniques provide deeper insights into the asymmetric behaviour of external capital inflows transmitted under political stability and absence of violence and terrorism, due to the dearth of similar studies in EAC partner states (Chaudhry et al., 2024; Shrawan & Dubey, 2025; Sim & Sek, 2025). Contrary to previous studies, this paper first moderates external capital inflows and exchange rate dynamics with political stability before implementing partial sum decompositions to capture asymmetric-synergistic effects associated with governance quality rather than merely the magnitude of its raw decompositions (Kemoe & Lartey, 2022b; Patel et al., 2024). There is dearth of empirical studies that have moderated first regressor variables with political stability and run partial sum decompositions within the EAC context (Jahan & Ryu, 2026; Khudari et al., 2023; Wang et al., 2024). Furthermore, this study employed second-generation panel unit root tests that are robust to inherent challenges from endogeneity, cross-sectional dependence (CSD), heterogeneity, structural breaks and serial correlation (Bellocchi & Travaglini, 2024; Wang et al., 2025). The study focuses on EAC partner states, where persistent political instability continues to constrain progress towards achieving the United Nations Sustainable Development Goal (SDG) of poverty eradication by 2030.

Empirically, this study evaluates whether political stability alters the asymmetric effects of external capital inflows and exchange rate dynamics on economic growth in EAC partner states, thereby extending subsisting literature.

2. Literature Review

2.1. Theoretical Underpinnings from Institutional Growth Theory

Institutional theorist posits that disparities on economic growth among countries with similar resource endowments largely stem from differences in institutional frameworks (Acemoglu et al., 2005b; Bhasin & Garg, 2020a). Patel et al. (2024) describe governance quality as an intangible asset that improves the total factor productivity from physical assets, while Manasseh et al (2022) argues that strong institutions are essential for transforming the physical assets into sustainable growth of the country's economy. Despite of the enrichments from the classical growth models proposed by Solow (1956),

Krugman (1988), and Romer (1990) underscoring capital accumulation and technological progress, they provide limited explanation for the wide variations on economic growth observed across countries over time (Acemoglu et al., 2005a; Bhasin & Garg, 2020b). Consequently, the Institutional Growth Theory emerged as a critical framework for explaining efficient resource allocation in promoting economic growth (Kunawotor et al., 2026).

2.2. Empirical Review

Empirical studies examining the asymmetric impacts from external capital inflows and exchange rates have generated inconsistent findings, suggesting the effects on growth can be linear, nonlinear, positive, negative or insignificant (Adeleye et al., 2022; Akalpler, 2023; Dash, 2023; Fisera, 2024; Kirikkaleli et al., 2021; Musse et al., 2024).

Governance quality plays a fundamental role in determining the effectiveness of external capital inflows and cushion exchange rate volatility within the EAC bloc. Weak governance fosters political instability and institutional inefficiencies that significantly constrain the productive utilisation of external debt, FDI, ODA, and exchange rate dynamics across the bloc (Jahan & Ryu, 2026). Improved political stability can strengthen the efficient utilisation of external capital inflows under favourable exchange rate conditions while enhancing the bloc's economic growth (Kemoe & Lartey, 2022b). Recent studies by Jahan and Ryu (2026) examine political instability and external debt burden in 64 low-income countries from 2000 to 2023 using two-stage least squares (2SLS). The findings uncover elevated political instability induces high external debt burdens, reduces FDI inflows and slow the inflexible official aid. Political instability is associated with reallocation of external financing from FDI and ODA to external debt. As external debt accumulates, risks rise, liquidating FDI towards safer markets, tightening external financing conditions, elevate debt-servicing burdens and exchange rate instability. Likewise, these findings were consistent with Mwakalila and Muba (2025) whose study were executed in Tanzania from 2000 to 2023 using Threshold Vector Auto Regressive (TVAR). They find external debt once exceeded beyond the threshold limit, it becomes a source of macroeconomic instability, marked by rising exchange depreciations and slow GDP growth. However, these findings were challenged by Tee and Teoh (2024) in 117 countries from 2002 to 2017 with the objective of assessing political institutions and the cost of external debt. The study finds cost of external debt is lower in countries with stronger political stability, democratic institutions and smaller government bureaucracies and adhere to the rule of law. On the other hand, Feng et al (2025) find geopolitical shock from political instability significantly increases local government debt risks in 2755 Chinese counties from 2016 to 2023 that had connection with Russia. They find political instability between Russia-Ukraine reshape economic development patterns, weakening fiscal capacity, and rise debt costs in the 2755 Chinese counties used. Study finds risk is higher when the debt ratio is high. Relevant policy insights for managing local government debt risk amid external shocks proposed.

Patel et al (2024) examined the nexus between political stability and inward FDI in India from 1996 to 2021 using the NARDL model. The output results show positive shocks from political stability and absence of violence significantly promoted FDI inflows in India to growth while political instability negated growth. Similarly, Huynh (2021) studies the impact of political stability over FDI in 36 Asian countries over the period 2000-2018 using the Feasible Generalised Least Squares (FGLS) and SGMM. Results demonstrate political stability moderates effectively FDI in reducing the income

inequality in the sample studies. Nevertheless, Kapopoulos et al (2025) examine political instability and FDI in 43 economies from 1985 to 2022 and finds geopolitical risks pose significant obstacles to FDI inflows in the economies. They propose country policy makers to avoid involvement in geopolitical confrontations to support FDI investments in the region.

An empirical study on the impacts of geopolitics and foreign aid is done by Pham (2025) and finds the economic factors of foreign aid allocation being significant, not overridden by geopolitical factors in explaining aid allocation. This study poses an issue to the world of donors driven by geopolitical interests in aid provision to developing countries. Again, Riak and Yak (2025) explored the connection of foreign aid and economic development amid political instability in South Sudan. Findings reveal foreign aid contributes to stability and social economic progress, with challenges of corruption, aid dependency and mismanagement of funds noted. The study recommends the government to strengthen internal revenue to foster sustainable growth. Conversely, Hongli and Vitenu-Sackey (2023) administer a study on the assessment of the effectiveness of foreign aid on the development of Africa using 50 African countries. The analysis uses GMM and granger causality. The findings, with the moderation of political stability on foreign aid turns out to negative on growth. The undermining factors hindering aid-growth is prevalent of political instability, corruption, poverty and low human capital development. The attention is directed to policy makers to focus on technical assistance to create the enabling environment (Yahyaoui & Bouchoucha, 2021).

Studies by Ali et al (2025) on the impact of exchange rate regimes under stable political systems is executed from 2005 to 2023 in developed and developing economies. The findings reveal floating exchange rate under stable political climate promotes growth, with policy relevance on local economic conditions with macroeconomic management. Again, Chikwira and Jahed (2024) analyse exchange rate stability on the economic growth of South Africa from 2000 to 2023. The study used OLS regression method. The findings shows exchange rate promoting GDP growth, but the influence of FDI and political instability is more substantial. Policy prescriptions on sound exchange rate, political stability and efforts to attract FDI advocated.

Literature assessment above acknowledges increasing recognition of the multifaceted asymmetric interplays between external capital inflows and exchange rate in influencing economic growth. Nevertheless, several studies focus exclusively on external debt alone (Agyeman et al., 2022; Mohsin et al., 2021; Musse et al., 2024), others integrate external debt, FDI, and ODA jointly (Awad, 2021; Ayenew, 2022; Sikandar et al., 2021). However, there is a dearth of panel-specific studies that simultaneously examine asymmetric external capital inflows and exchange rate dynamics under political stability moderation exclusively in the EAC bloc (Laswai et al., 2025). Accordingly, this study evaluates whether political stability alters the asymmetric impacts of external capital inflows and exchange rate on economic growth in EAC bloc.

3. Research Methods

3.1. Variables and Data Sources

This study employs secondary panel data for six EAC partner states covering 1996−2023. The data set includes external debt (ED), FDI, ODA, exchange rates (ER), GDP per capita, political stability (PS), gross fixed capital formation (GFCF), and the

human development index (HDI). Data were sourced from the World Bank (2023a), FDI from UNCTAD (2023), and political stability from the World Governance Indicator of World Bank (2023b).

3.2. The Panel NARDL Framework

Shin et al (2014) extended the conventional ARDL framework into the Nonlinear Auto Regressive Distributed Lag (NARDL) model to capture asymmetric and nonlinear responses to economic shocks (Zhu et al., 2026). NARDL methodology is specifically suitable for the EAC bloc, where rising external debt amid political instability weakens FDI and ODA inflows, deteriorates exchange rate performance, and constrains economic growth to exhibit the nonlinear transmission channels. (Jahan & Ryu, 2026; Mwakalila & Muba, 2025). Moreover, the NARDL framework can handle structural breaks associated with macroeconomic and financial shocks and remain robust in the presence of cross-sectional dependence (Shrawan & Dubey, 2025).

3.3. Model Specifications

This study examines how political stability moderates the asymmetric effects of external debt (ED), FDI, ODA, and exchange rate (ER) dynamics on economic growth in the EAC bloc. To assess the role of political stability, the findings are compared with the baseline model excluding political stability. The baseline simplified asymmetric model specification without political stability (PS) is represented by the following equation:

$$ln\,GDP_{it} = \beta_0 + \beta_1 lnGDP_{it-1} + \beta_2 lnED_{it}^{+/-} + \beta_3 lnFDI_{it}^{+/-} + \beta_4 lnODA_{it}^{+/-} + \beta_5 lnER_{it}^{+/-} + \gamma \mathcal{X}_{it} + \mu_i + \varepsilon_{it} \quad (1)$$

Here: $GDP_{i,t}$ is gross domestic product per capita, $ED_{i,t}$ is external debt stock; $FDI_{i,t}$ denotes foreign direct investment; $ODA_{i,t}$ official development assistance and foreign aid; $ER_{i,t}$ exchange rate; $X_{i,t}$ vector of control variables-comprising gross fixed capital formation and human development index (Chaudhry et al., 2024). Furthermore, $\beta_0 \ldots . \beta_5$ captures the estimated coefficients, $\varepsilon_{i,t}$ denotes the error term, μ_i country specific fixed effects *''i''* denote countries and "t" time dimension.

The simplified asymmetric version of equation (1) above is transformed to the actual asymmetry by initially moderating first external debt, FDI, ODA, and exchange rate with PS; then, their partial sum decompositions are computed, observing the methodology proposed by Shin et al. (2014). This approach captures governance quality within the asymmetric variables prior to decomposition, as institutional qualities condition external finance inflows (Aman et al., 2021). Beck and Levine (2025) shows that institutional quality acts as a preconditions for the effective transmission of external capital inflows to developing economies. Moderating first reveals that the combined synergistic effects of the independent variables on growth are principally driven by improvements in governance institutions, rather than by the technical decomposition itself (Beck & Levine, 2025; Kemoe & Lartey, 2022b). This approach incorporates institutional quality into the asymmetric behaviour of external capital inflows, extending beyond the conversional decomposition of shocks. This framework is consistent with the Institutional Growth Theory, which emphasises the fundamental role of institutional governance in shaping the growth effects of asymmetric variables (Kunawotor et al., 2026). Interacting political stability before partial sum decomposition illustrates that

the success of external debt, FDI, ODA, and exchange rate policies are fundamentally grounded on institutional quality.

The Hausman (1978) test formally recommends the pool mean group (PMG) as the most appropriate estimator in modelling the NARDL iterations relative to the mean group (MG) and dynamic fixed effects (DFE) estimators (Espoir et al., 2023). The presence of asymmetric effects in the long run performed using the Wald restriction test, where the null hypothesis H_0: $\beta_i^+ = \beta_i^-$ was tested against the alternative $Ha : \beta_i^+ \neq \beta_i^-$.

Political stability (PS) is interacted to moderate each independent variable as follows:

$$InEDPS_{i,t} = InED_{i,t} * lnPS_{i,t} \quad (2)$$

$$lnFDIPS_{i,t} = InFDI_{i,t} * lnPS_{i,t} \quad (3)$$

$$InODAPS_{i,t} = InODA_{i,t} * lnPS_{i,t} \quad (4)$$

$$InERPS_{i,t} = InER_{i,t} * lnPS_{i,t} \quad (5)$$

Where: $InEDPS_{i,t}$ denotes the natural logarithm of external debt interacted with PS, and similarly for the remaining regressor variables. Natural logarithms were applied to ED, FDI, ODA, and ER in Equations (2)−(5) to reduce dispersion, multicollinearity, and heteroscedasticity while supporting elasticity interpretation (Lin et al., 2023).

The moderated variables on Equations (2)−(5) above are decomposed according to the following expressions:

$$\ln EDPS_{i,t}^+ = \sum_{i=1}^{t} \Delta ln\ EDPS_{i,t}^+ = \sum_{i=1}^{t} \max(\Delta \ln EDPS_{i,t}, 0) \quad (6a)$$

$$\ln EDPS_{i,t}^- = \sum_{i=1}^{t} \Delta ln\ EDPS_{i,t}^- = \sum_{i=1}^{t} \min(\Delta \ln EDPS_{i,t}, 0) \quad (6b)$$

$$\ln FDIPS_{i,t}^+ = \sum_{i=1}^{t} \Delta ln\ FDIPS_{i,t}^+ = \sum_{i=1}^{t} \max(\Delta \ln FDIPS_{i,t}, 0) \quad (7a)$$

$$\ln FDIPS_{i,t}^- = \sum_{i=1}^{t} \Delta ln\ FDIPS_{i,t}^- = \sum_{i=1}^{t} \min(\Delta \ln FDIPS_{i,t}, 0) \quad (7b)$$

$$\ln ODAPS_{i,t}^+ = \sum_{i=1}^{t} \Delta ln\ ODAPS_{i,t}^+ = \sum_{i=1}^{t} \max(\Delta \ln ODAPS_{i,t}, 0) \quad (8a)$$

$$\ln ODAPS_{i,t}^- = \sum_{i=1}^{t} \Delta ln\ ODAPS_{i,t}^- = \sum_{i=1}^{t} \min(\Delta \ln ODAPS_{i,t}, 0) \quad (8b)$$

$$\ln ERPS_{i,t}^+ = \sum_{i=1}^{t} \Delta ln\ ERPS_{i,t}^+ = \sum_{i=1}^{t} \max(\Delta \ln ERPS_{i,t}, 0) \quad (9a)$$

$$\ln ERPS_{i,t}^- = \sum_{i=1}^{t} \Delta ln\ ERPS_{i,t}^- = \sum_{i=1}^{t} \min(\Delta \ln ERPS_{i,t}, 0) \quad (9b)$$

Equation (10) specifies the asymmetric panel NARDL model incorporating gross fixed capital formation (GFCF), and the human development index (HDI) as control variables. Their inclusion strengthens macroeconomic stabilisation, reduces omission bias and spuriousness, and improves robustness of the model (Hünermund & Louw, 2025).

$$\ln GDP_{i,t} = \beta_0 + \beta_1 lnGDP_{i,t-1} + \beta_2^+ ln(EDPS)_{i,t}^+ + \beta_3^- ln(EDPS)_{i,t}^- + \beta_4^+ ln(FDIPS)_{i,t}^+ + \beta_5^- ln(FDIPS)_{i,t}^- + \beta_6^+ ln(ODAPS)_{i,t}^+ + \beta_7^- ln(ODAPS)_{i,t}^- + \beta_8^+ ln(ERPS)_{i,t}^+ + \beta_9^- ln(ERPS)_{i,t}^- + \beta_{10} lnGFCF_{i,t} + \beta_{11} lnHDI_{i,t} + \sum_{j-1}^{N1} \lambda_{ij} \Delta lnGDP_{i,t-1} + \sum_{j-1}^{N2} (\gamma_{ij}\ \Delta^+ ln(EDPS)^+_{i,t-1} + \gamma_{ij} \Delta^- ln(EDPS)^-_{i,t-1}) + \sum_{j-1}^{N3} (\gamma_{ij}\ \Delta^+ ln(FDIPS)^+_{i,t-1} + \gamma_{ij} \Delta^- ln(FDIPS)^-_{i,t-1}) + \sum_{j-1}^{N4} (\rho_{ij} \Delta^+ ln(ODAPS)^+_{i,t-1} + \rho_{ij} \Delta^- ln(ODAPS)^-_{i,t-1}) + \sum_{j-1}^{N5} (\gamma_{ij}\ \Delta^+ ln(ERPS)^+_{i,t-1} + \gamma_{ij} \Delta^- ln(ERPS)^-_{i,t-1}) + \sum_{j-1}^{N6} \theta_{ij} \Delta lnGFCF_{i,t-1} + \sum_{j-1}^{N7} \Psi_{ij} \Delta lnHDI_{i,t-1} + \mu_{it} + \varepsilon_{it} \quad (10)$$

Where: μ_{it} represents country-specific fixed effects, while ε_{it} denotes the error term.

4. Results and Discussion

4.1. Empirical results

Table 1 summarises the descriptive statistics of the variables for the six EAC partner states.

Table 1: Descriptive statistics

Variable	Obs.	Mean	Std. Dev	Min	Max	Skew.	Kurt
GDP	168	582.8954	434.8911	96.31922	2109.563	1.436898	5.012779
ED	168	8520000000	8810000000	434000000	42900000000	1.890742	6.745099
FDI	168	672.1267	748.7008	0.0022	3312.143	1.103909	3.602197
ODA	168	1620000000	1130000000	87100000	7510000000	1.262021	6.522543
ER	168	1127.409	935.2794	0.5018492	3727.069	0.9534491	3.482529
GFCF	168	19.88532	8.279303	2.1	42.82035	0.4370189	3.368241
HDI	168	0.4550952	0.0792444	0.28	0.604	-0.2685743	2.360135
PS	168	26.37112	14.51116	0.343742	52.16183	-0.0219121	1.998255

Source(s): Data (2026).

Descriptive statistics indicate that GDP per capita averaged $582.90, reaching a maximum of $2,109.56 in Kenya and a minimum of $96.32 in the DRC. External debt recorded a mean of $8.52 billion, with a standard deviation of $8.81 billion exceeding the mean, while Kenya reported the highest external debt level at $42.90 billion. FDI averaged $672.13 million with a standard deviation exceeding the mean by $76.57 million, and the DRC registering the highest inflow of $3,312.14 million. ODA report a mean of $1.62 billion, with the DRC receiving the largest inflows amounting to $7.51 billion. The exchange rate recorded a mean of $1,127.41, peaking to $3,727.07 in Uganda. Furthermore, kurtosis values for GDP , external debt, FDI, ODA, exchange rate and GFCF exceeded the normality benchmark of 3.000, indicating asymmetric data distribution (Eberl & Klar, 2024). The skewness reveals data mostly spread to the right tail exceedingly for ED, GDP, ODA and FDI while HDI and PS slightly spread to the left.

Given the bloc's geographical proximity, common trade, cross-border financial linkages, and shared latent factors, the panel dataset is highly susceptible to cross-sectional dependence (CSD) issues (Wang et al., 2025). Testing for CSD is therefore necessary to prevent inconsistent parameter estimates and to inform the selection of appropriate econometric techniques (Ditzen, 2019). Suitably, the presence of CSD was examined using the Pesaran et al. (2008) test alongside the Breusch-Pagan (1980) Lagrange Multiplier test, with the results reported in Table 2.

The results reported in Table 2 indicate presence of substantial cross-sectional dependence (CSD) among the variables across EAC partner states. The existence of CSD necessitates the adoption of second-generation panel unit root tests, since the conventional methods are inadequate for handling CDS amicably (Wang et al., 2025). Consequently, the cross-sectional augmented Dickey-Fuller (CADF) test was applied, as shown in Table 3 below, because of its suitability under CSD conditions, its accuracy in

determining integration orders, and its ability to accommodate heterogeneity in panel data (Sandow et al., 2022).

Table 2: Pesaran and Breusch-Pagan LM CSD Test Results

Series	Pesaran CSD		Breusch-Pagan LM	
	Statistics	P-value	Statistics	P-value
InGDP	19.062	0.000	593.91	0.000
InED	3.242	0.001	1060.62	0.000
InFDI	16.072	0.000	811.89	0.000
InODA	16.209	0.000	492.84	0.000
InER	18.838	0.000	590.49	0.000
InGFCF	13.844	0.000	293.58	0.000
InHDI	19.782	0.000	340.39	0.000

Source(s): Data (2026).

Table 3: CADF Panel Unit Root Tests

Variables	At Levels CADF	First Difference CADF	Inter. Order
lnGDP	-2.734***	-7.626	I (0)
lnED	+3.237	-5.422***	I (1)
lnFDI	-3.925***	-10.48	I (0)
lnODA	-3.934***	-10.451	I (0)
lnER	+2.981	-5.017***	I (1)
lnGFCF	-3.679***	-10.034	I (0)
lnHDI	+0.647	-3.079***	I (1)
Critical Value	1% 5% 10%	1% 5% 10%	
	2.57 -2.33 -2.21	-2.57 -2.33 -2.21	

Source(s): Data (2026), Notes(s): ***, **, * denote 1%, 5%, and 10%, respectively.

The CADF results in Table 3 above indicate lnGDP, lnFDI, lnODA, and lnGFCF are stationary at levels, whereas lnED, lnER, and lnHDI attain stationarity after first differencing, with no variable integrated at I(2). Adopting the methodology similar to Amoh et al (2024), the long-run relationships were examined using the cointegration tests proposed by Kao (1999) and Pedroni (2004) as shown in Table 4 below with significant p-values.

Table 4: Cointegration Tests

	Statistic	P-value
Kao Test		
Modified Dickey-Fuller t	2.4049	0.0081
Dickey-Fuller t	3.3000	0.0005
Augmented Dickey-Fuller t	4.2523	0.0000
Unadjusted modified Dickey-Fuller t	-7.1425	0.0000
Unadjusted Dickey-Fuller t	-4.3807	0.0000
Pedroni Test		
Modified Phillips-Perron t	3.6765	0.0001
Phillips-Perron t	-13.3501	0.0000
Augmented Dickey-Fuller t	-5.5015	0.0000

Source(s): Data (2026).

Cointegration results confirm presence of stable long-run relationships between regressor variables and economic growth. The Hausman (1978) test in Table 5 ruled out the pool mean group (PMG) estimator as more efficient than the mean group (MG) and dynamic fixed effects (DFC) estimators (Espoir et al., 2023). Table 5 below presents the outputs of the baseline asymmetric variables on economic growth without moderation impacts.

Table 5: Iterations of Baseline Asymmetric External Capital Inflows on GDP Growth

Dependent variable: *ln*GDP **Variables**	**Coefficient**	**Std. Error**	***Z*-Stat**
Long run estimates			
$\boldsymbol{lnED^{+}}$	3.409928*	1.839995	1.85
$\boldsymbol{lnED^{-}}$	−0.9944382	0.8381568	−1.19
$\boldsymbol{lnFDI^{+}}$	−0.4247788*	0.2295345	−1.85
$\boldsymbol{lnFDI^{-}}$	1.330452***	0.4546078	2.93
$\boldsymbol{lnODA^{+}}$	1.719261	1.221362	1.41
$\boldsymbol{lnODA^{-}}$	−1.619832	1.131853	−1.43
$\boldsymbol{lnER^{+}}$	−10.57396**	4.788402	−2.21
$\boldsymbol{lnER^{-}}$	−39.6519**	19.40596	−2.04
*ln*GFC*F*	−1.374358*	0.7945564	−1.73
*ln*HDI	3.620236***	1.34667	2.69
Short run estimates			
ECT(-1)	−0.043622***	0.0101194	−4.31
$\boldsymbol{lnED^{+}}$	−0.1928742*	0.0986754	−1.95
$\boldsymbol{lnED^{-}}$	0.250041*	0.133828	1.87
$\boldsymbol{lnFDI^{+}}$	0.0532248	0.0496768	1.07
$\boldsymbol{lnFDI^{-}}$	−0.0226578	0.0163741	−1.38
$\boldsymbol{lnODA^{+}}$	−0.0631559**	0.0283352	−2.23
$\boldsymbol{lnODA^{-}}$	0.0584498	0.0643681	0.91
$\boldsymbol{lnER^{+}}$	0.1738728	0.2256105	0.77
$\boldsymbol{lnER^{-}}$	−2.916973	3.322375	−0.88
*ln*GFC*F*	0.1137797	0.1100056	1.03
*ln*HDI	1.912615	1.835422	1.04
_CONS	0.6140573***	0.1544528	3.98
No. of observations	162		
Number of groups	6		
Log likelihood	248.641		
Hausman Test	0.35		
Prob > chi^2	1.0000		
Mean VIF	1.37		
Post-Structural Break Test	156.55***		
Wooldridge test (correl.)	1.174		
Pesaran Yamagata test	4.068***		

Source(s): Data (2026), Notes(s): ***, **, * denote 1%, 5%, and 10%, respectively.

Table 6 below reports the asymmetric iteration results moderated by political stability, with the findings compared against the baseline estimates in Table 5 and the robustness results in Table 7.

Table 6: Asymmetric External Capital Inflows Moderated by PS on GDP Growth

Dependent variable: *ln*GDP **Variables**	**Coefficient**	**Std. Error**	***Z*-Stat**
Long run estimates			
$\boldsymbol{lnEDPS^{+}}$	0.0200021***	0.0072469	2.76
$\boldsymbol{lnEDPS^{-}}$	0.0318144***	0.207995	2.95
$\boldsymbol{lnFDIPS^{+}}$	0.0105561***	0.0044205	2.39
$\boldsymbol{lnFDIPS^{-}}$	0.014935***	0.0041796	3.57
$\boldsymbol{lnODAPS^{+}}$	−0.0117908**	0.0053372	−2.21
$\boldsymbol{lnODAPS^{-}}$	−0.1356485**	0.0595155	−2.28
$\boldsymbol{lnERPS^{+}}$	−0.0174831	0.0168445	−1.04
$\boldsymbol{lnERPS^{-}}$	−0.0757369**	0.0373714	−2.03
*ln*GFC*F*	1.954722***	0.1020397	19.16
*ln*HDI			
Short run estimates			
ECT(-1)	−0.1131567**	0.0491671	−2.30
$\boldsymbol{lnEDPS^{+}}$	−0.0028782	0.0036415	−0.79
$\boldsymbol{lnEDPS^{-}}$	0.0082787	0.0079749	1.04
$\boldsymbol{lnFDIPS^{+}}$	0.0003707	0.0006793	0.55
$\boldsymbol{lnFDIPS^{-}}$	0.0051034	0.0073383	0.70
$\boldsymbol{lnODAPS^{+}}$	0.0033924	0.0025908	1.31
$\boldsymbol{lnODAPS^{-}}$	−0.0087049	0.0106166	−0.82
$\boldsymbol{lnERPS^{+}}$	−0.0046185	0.0067358	−0.69
$\boldsymbol{lnERPS^{-}}$	−0.0316427	0.0285176	−1.11
*ln*GFC*F*	−0.1208114	0.0806476	−1.50
*ln*HDI			
_CONS	0.0883114***	0.0253198	3.49
No. of observations	162		
Number of groups	6		
Log likelihood	200.4486		

Source(s): Data (2026), Notes(s): ***, **, * denote 1%, 5%, and 10%, respectively.

The empirical findings from the baseline iterations in Table 5 reveals positive shocks from external debt of 1.85% substantially promoted growth of 3.41% at the 10% critical level, while moderate accumulation of debt was insignificant. The moderation with political stability in Table 6 shows both positive and negative shocks from external debt significantly promoted growth with more robust results, albeit with weak coefficient. The impact of slow accumulation of external debt outweighs the positive shocks in Table 6 and perform better than the baseline findings estimated without political stability. The findings indicate that political stability improves the effective mobilisation of external capital towards growth-enhancing investments. This is justified by the positive multiplier effects from infrastructural and both positive and negative FDI shocks on growth in Table 6 (Sokhanvar, 2025). Findings are consistent with (Dawood et al., 2026; Manasseh et al., 2022; Musse et al., 2024; Mwakalila & Muba, 2025; Ojeka et al., 2024) who argue that stable political environments improve the productive use of external debt financing (Byamungu & Zhang, 2025). It is important to note that the coefficient of positive shocks in Table 5 exceeds the corresponding coefficient moderated by political stability, highlighting the extent to which improvements in political stability can amplify economic growth. This calls the bloc to strengthen its political stability from the mediocre scale at 26.37% to above the mean of 50% to significantly promote the growth impact. These findings are consistent with the institutional growth theory, which

emphasises the critical role played with political stability in strengthening the bloc's ability to optimally allocate external debt efficiently while protecting investments transmitted through FDI, ODA and foreign aid (Gossel, 2025; Kitole, 2025; Nutassey et al., 2023). The positive growth impacts were validated by the robustness checks in Table 7 with relatively stronger coefficients but same robustness level of significance. It is noted from both the moderated estimates and the robustness checks in table 7 indicate that moderate external debt accumulation contributes significantly on economic growth, consistent with the findings of Mqolombeni et al (2023) and Abubakar and Mamman (2021) in prior studies. The positive shock estimates under structural breaks corroborate the baseline, moderated and robustness check findings reported in Table 5,6 and 7 by producing comparable coefficients (Comin et al., 2019)

The baseline results in Table 5 indicate that positive FDI shocks exert an inimical impact on economic growth, largely due to frail infrastructure that constrains manufacturing and industrialisation (ADB, 2024; Mwang'onda et al., 2018; Mwinuka & Mwangoka, 2023; Rosenstein-Rodan, 1943). Persistent energy instability within the bloc further discourages quality and productive FDI inflows and reinforces aid dependency with limited contribution to sustainable growth (Barkat et al., 2025; Olaoye et al., 2022; Vu & Pavelková, 2023). Surprisingly, the impact from negative shocks from FDI, as a consequence of few but quality FDI in the bloc contributed substantially on growth, findings consistent with the African Development Bank (2024) report trailing FDI on a declining phase in the bloc and worldwide due to global pessimisms (Azémar & Giroud, 2023; UNCTAD, 2024). Negative shocks from FDI contributed substantially to growth from multiplier effects of positive external debt utilisation and improvements in human capital, which enhanced the capacity to absorb technologies brought with FDI (Table 5). Furthermore, a limited share of quality FDI with forward linkages with local SMEs supported growth amid curtailing excessive profit repatriation by MNCs (Vicard, 2023; Vu & Pavelková, 2023). The moderation effects from political stability both positive and negative shocks from FDI contributed significant on growth, with negative shocks contributing more (Table 6). The positive economic effects stemmed from the multiplier benefits of external debt, particularly through infrastructure investments that enhanced technological absorption, strengthened production and export capacity, ultimately promoted growth. This was contributed by exchange rate depreciations and appreciations that came closer to the market equilibrium compared to the baseline exchange rates (Table 6). FDI moderated by political stability had robust coefficients on growth, indicating that a stable political environment acts as an investment incentive capable of attracting quality FDI multinationals aligned with domestic investment priorities in the bloc (Alam et al., 2024; Dang et al., 2023). Findings align with the Institutional growth Theory, which highlights the central role of political stability in minimising investment uncertainty fuelled by geopolitical risks, while attracting quality FDI capable of supporting productive project implementation(Ftiti et al., 2024; Hossain et al., 2024). The growth impacts were further strengthened by infrastructural development and favourable exchange rate depreciation shocks on growth (Table 6). Studies in tune with these findings came from (Çela & Hysa, 2021; Groznykh et al., 2020; Khudari et al., 2023; Patel et al., 2024) who reveals that the absence of civil conflict in the host economy is a key determinant of FDI attraction and technological diffusion. The positive growth effects from FDI moderated by political stability in Table 6 were validated by the post structural break findings, that gave strong significant coefficients on growth (Shahzad et al., 2022). The positive impacts from external debt positive shocks, FDI shocks, favourable exchange depreciation shocks with human capital skills

post regime change contributed to positive economic growth (Ayoub et al., 2024; Chowdhury et al., 2024).

Findings from the baseline iterations in Table 5 for ODA and foreign aid on growth were insignificant, suggesting that such inflows alone are insufficient to stimulate productive investment in environments characterised by corruption, weak rule of law, regulatory quality and political instability (Barkat et al., 2025; Olaoye et al., 2022). This is noted in Table 5 where official development assistance (ODA) and foreign aid failed to supplement the development budget on infrastructure growth, disguised by volatile exchange rate shocks (ADB, 2024; Barkat et al., 2025; Pham, 2025). The interaction between political stability and ODA with foreign aid in Table 6 reveals that both positive and negative shocks exert significant negative impact on growth. This growth retardation largely stemmed from the lowest levels of political stability indicator existing in the block, which weakened the growth-enhancing linkages of ODA by constraining its effective use in supplementing infrastructure development (Aslan & Altinoz, 2021; Lwesya, 2022; Olaoye et al., 2022). This implies that rising ODA positive shocks under political instability are often misallocated or diverted, fostering aid dependency, fungibility, weaken reforms, and rent-seeking motives by elites (Barkat et al., 2025). Consequently, ODA and foreign aid in Table 5 contributed to a 1.374% decline in infrastructure on economic growth, reflecting the bloc's inability to effectively utilise official development assistance to support the development financing (ADB, 2025; Olaoye et al., 2022). Similar empirical findings were documented by (Barkat et al., 2025; Bethencourt & Perera-Tallo, 2025; Hongli & Vitenu-Sackey, 2023; Lau & Yip, 2023) who highlights the ineffectiveness of ODA/foreign aid on growth. The robustness checks in Table 7 validated the negative shocks from ODA and foreign aid with nearly same coefficients, reflecting the consistency and reliability of the earlier iterations given by NARDL (Comin et al., 2019).

Exchange rate positive and negative shocks from the baseline results in Table 5 were pervasively inimical on economic growth, where exchange depreciation shocks stood at 10.574% and appreciation shocks at 39.652% from equilibrium levels. These substantial deviations reflect thin exchange markets, distressed reserves, shallow financial systems and institutional fragility, further intensified by weak infrastructure investments and positive FDI shocks that failed to translate into significant growth (Aizenman et al., 2024; Ramos-Herrera, 2025). The moderation impacts of political stability with exchange rates resulted into marginal negative impact on growth, but appreciation shocks were significant. The strengthening role of political stability were adept to curb the detrimental impacts stemming from exchange appreciation shocks from 39.652% in the baseline in Table 5 to effectively manageable at 0.0757% at the 5% significance level (Table6). Political stability in Table 6 reduced exchange rate misalignments, eased speculative pressures from black markets, and strengthened investor confidence, leading to significant improvements in positive FDI shocks relative to the deteriorated results in Table 5 after limiting repatriated profits (Kolawole & Seyingbo, 2025; Vu & Pavelková, 2023). Improvement of political climate also enhanced the management of external capital inflows crowding-in quality FDI alongside significant infrastructure contributions (Table 6). However, the marginal significant negative impact on growth hindered export competitiveness by reducing the positive shocks from FDI on growth, by reallocating FDI overseas where cost of production is cheaper while constraining SMEs performance (Ramos-Herrera, 2025; Zhu et al., 2026). These findings were consistent with the Institutional Growth Theory, which emphasises the importance of political stability and absence of conflict in streamlining institutional capacity and

enabling monetary authorities to manage exchange depreciation and appreciation pressures more effectively (Agoba et al., 2019; Nutassey et al., 2023). These findings are in line with prior studies from (Alshubiri, 2022; Chen & Lee, 2023; Oriola & Saadaoui, 2025; Ramos-Herrera, 2025) who reveals exchange appreciation undermines economic growth. The robustness checks in table 7 and the structural break estimates validate both the baseline and the moderated results by confirming that exchange appreciation shocks inimical on growth.

Table 7 presents the robustness results derived from the Dynamic Common Correlated Effects (DCCEs), employed as an alternative advanced econometric technique to validate the reliability of the NARDL model, consistent with the methodology adopted by Chaudhry et al (2024) prior.

Table 7: Robustness Results from Dynamic Common Correlated Effects (DCCEs)

Dependent variable: *ln*GDP **Variables**	**Coefficient**	**Std. Error**	***Z*-Stat**
Long run estim-Mean Group			
$\boldsymbol{ln}$**EDCIQ**$^{+}$	0.2144152***	0.04125	-2.96
$\boldsymbol{ln}$**EDCIQ**$^{-}$	0.410082***	0.14174	2.32
$\boldsymbol{ln}$**FDICIQ**$^{+}$	−0.0233477**	0.03787	2.00
$\boldsymbol{ln}$**FDICIQ**$^{-}$	−0.0670806	0.04791	-1.68
$\boldsymbol{ln}$**ODACIQ**$^{+}$	0.083386**	0.08528	2.25
$\boldsymbol{ln}$**ODACIQ**$^{-}$	−0.1373775*	0.04043	-2.66
$\boldsymbol{ln}$**ERCIQ**$^{+}$	0.6038381*	0.16061	-0.74
$\boldsymbol{ln}$**ERCIQ**$^{-}$	−1.491077**	0.59152	-1.45
*ln*GFCF	0.66991	0.26676	2.51
*ln*HDI	3.90015***	5.43927	0.72
No. of observations	168		
Number of groups	6		
Obs. per group	28		

Source(s): Data (2026), Notes(s): ***, **, * denote 1%, 5%, and 10%, respectively.

5. Conclusion and Policy Recommendations

This study employs the NARDL framework to examine how political stability moderates the asymmetric impacts of external capital inflows and exchange rate dynamics on economic growth in the EAC bloc, relative to the baseline model without political stability. The baseline findings, in the absence of political stability, reveal that positive shocks in external debt, negative shocks in FDI, and improvements in human capital development promoted growth, whereas FDI positive shocks, ODA, exchange rates and infrastructural development significantly hindered growth. The findings highlight the importance of strengthening political stability in determining how external capital inflows and exchange rates influence growth in the bloc, particularly through stronger external debt management, productive FDI aligned with stable exchange rate policies and infrastructure development.

This paper contributes methodologically by employing the NARDL framework of Shin et al (2014) to capture the asymmetric effects of external capital inflows and exchange rates on growth, thereby offering a substantial advancement over extant studies that rely on monotonic and linear specifications. The moderation of the regressors prior to their partial sum decomposition suggests that the growth-enhancing effects of external

capital inflows are not determined solely by their volumes, but more critically by the quality of institutional governance nurtured by political stability. Improved governance structures strengthen the capacity of EAC economies to effectively channel external capital and exchange rates into productive investments.

Policy implications, from the nonlinear shocks developed, highlight the importance of improving political stability governance, and all other institutional governance dimensions from 26.37% to above the mean of 50% to synergistically improve external capital inflows from their baseline iterations to significant growth impact in EAC bloc (Beck & Levine, 2025; Kemoe & Lartey, 2022a). Improvement of political stability, alongside reducing violence and terrorism within the bloc, can strengthen the growth-enhancing effects of external debt and FDI inflows, as evidenced in Table 6, where the coefficients had plummeted from frail political stability. A stable political environment also improves the effectiveness of ODA and foreign aid by facilitating their optimal allocation on productive sectors such as infrastructure, manufacturing, energy and industrialisation (ADB, 2025; Mwang'onda et al., 2018; Mwinuka & Mwangoka, 2023). Fragile governance framework within the bloc led to exchange depreciations and appreciations shocks inimical on growth. The findings recommend relevant policy prescriptions to the Central Banks to adopt a coordinated mix of monetary, fiscal, structural and institutional initiatives aimed at reducing exchange rate volatility and aligning exchange rates more closely with macroeconomic fundamentals.

Ethics Approval and Consent to Participate

The researchers observed the research ethics provided by the Institute of Postgraduate Studies and Research of the Universiti Tunku Abdul Rahman (UTAR).

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