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The Effect of Foreign Direct Investment (FDI) Inflows on Manufactured Exports in East Africa: The Moderator Role of Public Investment

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Abstract: This paper explores the role of Foreign Direct Investment (FDI) inflows in promoting manufactured exports in East Africa and investigates how public investment influences this relationship. Using a panel dataset covering five East African Community (EAC) countries like Kenya, Tanzania, Uganda, Rwanda, and Burundi, over the period 2000–2023, the study employs fixed-effects and system-GMM estimation techniques to address endogeneity and unobserved heterogeneity. The findings indicate that FDI inflows have a positive and significant effect on manufactured exports. Importantly, this effect is amplified in countries with higher levels of public investment in infrastructure and human capital, suggesting that strategic government spending strengthens the capacity of FDI to foster industrial export growth. The results underscore the need for coordinated policies that align public investment with efforts to attract FDI, thereby supporting sustainable, export-driven industrialization in the region.

Keywords: *Foreign Direct Investment, Manufactured Exports, Public Investment, East Africa, Industrialization, Panel GMM.*

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I. INTRODUCTION

Foreign Direct Investment (FDI) is widely recognized as a powerful engine for industrialization, technology transfer, and export growth in developing economies. In East Africa, governments increasingly view FDI not merely as a source of capital inflows, but as a strategic tool to diversify their economies away from dependence on primary commodities such as coffee, tea, and minerals. FDI can facilitate technology spillovers, improve managerial practices, and integrate domestic firms into global value chains, thereby enhancing competitiveness and industrial productivity. However, the capacity of FDI to generate meaningful export gains depends critically on domestic conditions, including the quality of infrastructure, availability of skilled labor, and institutional effectiveness (Hoekman, Sanfilippo & Tambussi, 2025; Maitisa, Mongale & Zhanje, 2025).

Recent empirical studies highlight that while FDI contributes to structural transformation in Africa, its benefits are unevenly distributed across sectors and countries. For example, FDI inflows tend to create modern industrial jobs and stimulate export-oriented manufacturing, but primarily in regions where complementary public investment and human capital are sufficient to absorb and diffuse new technologies (Mensah & Traore, 2024; Golo, 2024). Without such enabling conditions, foreign firms may operate in enclave-like arrangements, limiting the potential for knowledge transfer and local value chain development.

Public investment — particularly in infrastructure (transport networks, electricity, and digital connectivity), education, and industrial support services — is thus a crucial complement to FDI. Empirical evidence suggests that efficient public capital expenditure significantly enhances the productivity of private investment, and by extension, strengthens the effect of FDI on economic outcomes (Ezzahid & Rafik, 2024; Hoekman et al., 2025). For instance, improvements in internet penetration, road networks, and energy reliability have been shown to attract higher FDI inflows in African countries, particularly when combined with favorable institutional frameworks (Mensah & Traore, 2024; Fontagné, 2023).

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Consequently, the interplay between FDI and public investment is more than additive; it is synergistic. Public investment not only facilitates the operation of foreign firms but also conditions how effectively these firms can contribute to export-led industrialization. Understanding this interaction is critical for policymakers seeking to maximize the developmental impact of FDI in East Africa.

➢ *Building on These Observations, This Study Addresses Three Interrelated Research Questions:*

- Firstly, to what extent do FDI inflows stimulate manufactured exports in East African countries?
- Secondly, how does public investment influence or moderate the impact of FDI on manufactured exports?
- Thirdly, what policy strategies can East African governments implement to better integrate FDI attraction with public spending to support export-led industrial growth?

This paper makes two principal contributions. First, it provides new empirical evidence on the FDI–exports relationship for members of the East African Community (EAC), a region that has been underrepresented in the FDI and industrialization literature (Gamariel et al., 2022; Masunda et al., 2025). Second, by explicitly modeling the interaction between FDI and public investment, it highlights the critical role of government action in enhancing the developmental returns to foreign capital. These contributions offer both theoretical insights and practical guidance for policymakers aiming to strategically leverage FDI to promote sustainable industrial and export growth in East Africa.

➢ *Revised Research Contribution Statement*

- *Beyond Moderation: Mechanism Framework*

This paper introduces a multi-channel mechanism framework comprising productive capacity, absorptive capacity, and institutional effectiveness that explains how public investment transforms the relationship between foreign direct investment (FDI) and exports. This approach moves beyond traditional moderation analysis to provide a deeper understanding of the underlying processes.

- *Regional Empirical Novelty*

The study provides updated empirical evidence for East African countries over the period 2000–2023. This region has received limited attention regarding the interaction between FDI, public investment, and manufactured exports, making the analysis both timely and contextually significant.

- *Policy Integration Insight*

The findings demonstrate that achieving FDI-led export growth requires coordinated public investment strategies rather than focusing solely on FDI attraction. Specifically, the study highlights the importance of targeted infrastructure development, human capital upgrading, and effective governance in public spending to maximize the export-promoting effects of FDI.

II. LITERATURE REVIEW

➢ *FDI and Export Performance*

Foreign Direct Investment (FDI) is widely recognized as a pivotal driver of export performance, industrialization, and economic growth in developing countries. Beyond providing financial capital, FDI facilitates technology transfer, managerial know-how, and integration into global value chains, which can significantly enhance the sophistication and competitiveness of a host country's export portfolio. In theory, multinational enterprises (MNEs) introduce advanced production techniques, quality standards, and supply chain management practices, which can spill over to domestic firms, particularly when linkages exist between foreign and local companies (Hoekman, Sanfilippo & Tambussi, 2025).

Empirical evidence supports this theoretical framework. Hoekman et al. (2025) find that FDI contributes positively to structural transformation in African economies, particularly by shifting labor toward modern, higher-skilled industries. Their work highlights that FDI inflows alone do not automatically generate broad-based industrial development: the sectoral distribution and strategic orientation of foreign investment play a decisive role in determining developmental outcomes. For instance, FDI directed toward extractive industries may yield limited local spillovers compared to manufacturing or high-tech sectors, which more readily integrate domestic suppliers and stimulate export capacity.

Similarly, research by Maitisa, Mongale, and Zhanje (2025) underscores that the effect of FDI on exports is conditional on local absorptive capacity. Using a panel of African countries, they demonstrate that regions with higher human capital and institutional quality experience stronger linkages between FDI and export growth. This aligns with the notion that FDI is not a one-size-fits-all solution: its ability to improve export performance depends on the host economy's readiness to leverage foreign knowledge, technology, and market access.

In the context of East Africa, studies suggest that FDI has played a growing role in manufactured exports, especially in countries such as Kenya and Rwanda, where government policies actively promote industrial parks and export-oriented sectors (Gamariel, Bomani, Musikavanhu & Juana, 2022). However, challenges remain. Limited infrastructure, skills shortages, and weak regulatory frameworks can constrain the potential for FDI to translate into higher-value exports. These findings indicate that FDI's developmental impact is contingent and highly context-specific, highlighting the importance of complementary domestic policies and investment strategies.

➢ *Role of Public Investment*

Public investment, particularly in infrastructure and human capital, is widely recognized as a crucial factor that determines whether FDI can generate meaningful economic benefits. Public capital provides the physical and institutional foundation that enables firms—both foreign and domestic to

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operate efficiently and connect to domestic and international markets. Without adequate infrastructure, foreign enterprises may be forced to operate in isolated enclaves, reducing potential spillovers and limiting linkages with local suppliers (Ezzahid & Rafik, 2024).

Recent studies provide strong empirical evidence supporting this complementarity. Ezzahid and Rafik (2024) show that public capital significantly enhances the productivity of private capital in African economies. Their panel data analysis demonstrates that, although the short-term impact of public investment may appear modest, over the medium and long term, infrastructure and public goods substantially raise private sector efficiency, production capacity, and ultimately export performance. In other words, public investment conditions the environment in which foreign capital can operate productively.

Infrastructure quality, not merely quantity, also matters. Mensah and Traore (2024) illustrate that the arrival of high-speed internet via submarine cables in Africa significantly increased FDI inflows, particularly in technology-intensive sectors. However, the positive effect was far stronger in regions where complementary infrastructure reliable electricity, roads, and logistics was already in place. This demonstrates the synergistic nature of public investment: its impact on FDI and exports depends not only on spending levels but also on effective implementation and strategic targeting.

Human capital represents another essential component of public investment. Studies consistently show that skilled labor enhances the ability of domestic firms to absorb foreign technologies and increase production quality, which in turn supports higher-value exports (Golo, 2024). For example, regions with more developed vocational training and education systems experience stronger FDI-driven export growth, as foreign firms are better able to transfer knowledge and integrate local workers into sophisticated manufacturing processes.

Public investment also encompasses institutional capacity and governance. Efficient bureaucracies, clear regulatory frameworks, and well-functioning investment promotion agencies amplify the developmental impact of FDI by reducing transaction costs and fostering investor confidence (Hoekman et al., 2025). Without these institutional complements, even large FDI inflows may fail to generate broad-based industrialization and export growth.

- *Interaction Between FDI and Public Investment*

An emerging consensus in the literature is that FDI and public investment are complementary rather than substitutive. The effectiveness of FDI in promoting industrialization and exports depends heavily on the presence of robust public infrastructure, human capital, and institutional capacity. In African contexts, this implies that governments cannot rely solely on attracting foreign capital but must also invest strategically to create conditions conducive to productive and export-oriented FDI (Masunda, Chiweshe & Mhonyera, 2025).

Hoekman et al. (2025) emphasize that structural transformation occurs most effectively when FDI is combined with public investment in infrastructure and human capital. In regions with high-quality infrastructure, foreign firms are more likely to establish linkages with local suppliers, transfer technology, and contribute to export diversification. Conversely, in regions with poor infrastructure, FDI may be concentrated in enclave projects with minimal spillover effects, limiting its developmental potential.

Ezzahid and Rafik (2024) further demonstrate that public capital enhances the productivity of private investment, which in turn makes FDI more effective. Their results suggest a synergistic relationship: public investment raises the returns to foreign capital, amplifying its impact on industrial output and exports. Importantly, this complementarity is dynamic. As public infrastructure and human capital accumulate over time, the marginal impact of additional FDI increases, creating a virtuous cycle of industrial growth and export expansion.

Mensah and Traore (2024) provide a concrete example of this interaction. Their study shows that the deployment of high-speed internet in Africa significantly attracted FDI into services and technology sectors, but the effect was strongly moderated by the presence of reliable electricity and transport infrastructure. This illustrates how carefully targeted public investment can magnify the export-enhancing effects of FDI, creating conditions in which foreign capital contributes meaningfully to domestic industrial development.

Collectively, the literature underscores three critical points for East Africa: (1) FDI alone is insufficient to drive sustained export growth; (2) public investment in infrastructure, human capital, and institutional capacity is essential for realizing the developmental potential of FDI; and (3) the interaction between FDI and public investment is synergistic, implying that policies should integrate these elements rather than treat them separately.

This study builds on these insights by examining the role of public investment in moderating the FDI–manufactured exports nexus in the East African Community (EAC), a context that has received limited empirical attention. By focusing on the interaction between foreign capital and public investment, the research contributes to a better understanding of how policymakers can design integrated strategies to foster industrialization and export-led growth in the region.

- *Mechanism Analysis: How and Why Public Investment Shapes the FDI–Export Nexus*

While the previous section establishes the moderating role of public investment, recent research suggests that moderation alone is insufficient to explain how public investment transforms foreign direct investment into manufactured export growth. To address this limitation, this study expands the conceptual framework by incorporating a mechanism analysis, highlighting three core pathways

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through which public investment conditions, amplifies, and operationalizes the export-enhancing effects of FDI.

First, public investment enhances productive capacity, primarily through improvements in infrastructure such as transport networks, energy supply, logistics systems, and digital connectivity. Such investments lower production and transaction costs for multinational manufacturing firms, allowing them to scale operations and integrate more effectively into global value chains. In addition to cost reduction, improved infrastructure facilitates export-oriented production by reducing border delays, ensuring compliance with quality standards, and supporting diversification into higher-value manufactured goods. Consequently, infrastructure operates not merely as a moderating factor but as a transmission mechanism that converts foreign capital into tangible increases in production efficiency and export capacity.

Second, public investment strengthens absorptive capacity and fosters domestic linkages, particularly through the development of human capital. Investment in education, vocational training, and industrial skills equips the domestic workforce and local firms with the ability to assimilate foreign technologies, managerial practices, and production knowledge. Without such capabilities, FDI often remains isolated in enclave operations, generating limited spillovers to the local economy. Enhanced human capital, however, enables domestic firms to participate in backward and forward linkages with multinational corporations, allowing them to meet international quality standards and integrate into export-oriented production networks. In this way, human capital functions as a mediating mechanism, transforming the technological and managerial advantages introduced by FDI into broader increases in manufacturing productivity and export performance.

Finally, the effectiveness and governance of public investment constitute a critical institutional mechanism. The developmental impact of FDI depends not only on the quantity of public investment but also on its strategic allocation, quality, and coordination. Well-governed investments signal institutional credibility, reduce uncertainty, and attract higher-quality, export-oriented foreign firms. Targeted spending on industrial parks, special economic zones, and innovation support services creates ecosystems that multiply the contributions of foreign firms to the domestic manufacturing sector. Moreover, effective governance addresses coordination failures, including gaps in infrastructure, financing, or skilled labor, which might otherwise prevent FDI from generating broader economic benefits. Thus, institutional effectiveness shapes whether FDI contributes to diversified export growth or remains confined to narrow, enclave-based activities.

Taken together, these mechanisms illustrate that public investment influences the FDI–export nexus through direct, indirect, and interactive channels. Directly, infrastructure improvements enhance productivity and enable export expansion. Indirectly, human capital mediates the transfer of knowledge and technology, enabling domestic firms to participate in global value chains. Interactively, strategic governance and coordinated investment amplify the marginal effects of FDI on exports. This layered, multidimensional framework underscores that the relationship between FDI and manufactured exports is not linear but operates through mutually reinforcing processes. Such an integrated perspective aligns with emerging empirical evidence suggesting that FDI and public investment create synergistic pathways for export-led industrial development rather than simple causal effects.

III. METHODOLOGY

➢ *Data and Sample*

To empirically investigate how FDI inflows and public investment interact to affect manufactured exports in East Africa, this study constructs a balanced annual panel dataset spanning 2000–2023 for five East African Community (EAC) countries: Kenya, Tanzania, Uganda, Rwanda, and Burundi. This timeframe captures two decades of economic transformation, including major infrastructure investments and shifting FDI patterns.

- *Key variables include*

Table 1 Key Variables Include

Variable	Description
Manufactured Exports (ME)	Total value of manufactured goods exported by each country, expressed in constant U.S. dollars to account for inflation.
FDI Inflows (FDI)	Net foreign direct investment inflows as a percentage of GDP, capturing the relative scale of foreign capital.
Public Investment (PI)	Government capital expenditure in infrastructure and industrial projects, expressed as a share of GDP, serving as a proxy for the state's productive capacity building efforts.
Human Capital (HC)	Measured via average years of schooling or a composite human capital index, reflecting the economy's absorptive capacity.
Control Variables (X)	Includes GDP per capita, trade openness ((Exports + Imports)/GDP), and institutional quality (e.g., governance indices) to mitigate omitted variable bias.

- *Data Sources:*

World Bank WDI (exports, GDP, trade openness, human capital), UNCTAD (FDI inflows), IMF and national budget reports (public investment), and World Governance Indicators (institutional quality).

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➢ *Empirical Model*

The core specification models manufactured exports as a function of FDI, public investment, their interaction, and controls:

$$ME_{it} = \alpha + \beta_1 FDI_{it} + \beta_2 PI_{it} + \beta_3 (FDI_{it} \times PI_{it}) + \gamma X_{it} + \mu_i + \epsilon_{it}$$

Where i indexes countries and i indexes time (year). X_{it} represents a vector of control variables, including GDP per capita, trade openness, human capital, and institutional quality. The term μ_i captures unobserved, time-invariant country-specific effects, such as geography or long-term policy orientation, while ϵ_{it} denotes the idiosyncratic error term. This specification enables the estimation of the direct effects of FDI and public investment, as well as their interaction effects, which represent moderation. Moreover, it provides the foundation for subsequent mechanism analysis by linking observed patterns of FDI and public investment to the underlying pathways through which these factors influence manufactured exports.

➢ *Estimation Strategy*

- *Fixed Effects (FE) Estimation*

FE controls for unobserved heterogeneity, eliminating time-invariant confounders (geography, culture, long-term policy). This provides consistent baseline estimates of FDI, public investment, and interaction effects.

- *System GMM Estimation*

To address potential endogeneity and dynamic effects, the analysis employs a system Generalized Method of Moments (GMM) estimator, following Blundell and Bond (1998). First, both FDI and public investment exhibit persistence, meaning that current values are likely influenced by their past levels. The system GMM approach effectively accounts for this dynamic panel bias. Second, the method mitigates endogeneity concerns arising from reverse causality, such as the possibility that higher exports may attract additional FDI, as well as unobserved country-specific shocks, by using lagged internal instruments. Third, the estimator is particularly suitable for panels with a large number of cross-sectional units and a relatively short time dimension, ensuring consistent and efficient parameter estimates. Finally, to enhance robustness, the analysis applies a two-step system GMM with Windmeijer-corrected standard errors, which addresses potential heteroskedasticity and autocorrelation in the error structure, thereby producing reliable inference.

Lagged levels and differences of FDI, PI, and ME are used as instruments. Diagnostics include Hansen/Sargan tests (overidentification) and Arellano–Bond tests (serial correlation).

➢ *Mechanism Analysis Strategy*

To empirically examine the mechanisms proposed in Section 2.4, this study adopts a multi-step approach that goes beyond simple moderation. First, mediation analysis is conducted using structural equation modeling, in which human capital and infrastructure quality serve as mediators, capturing the absorptive capacity and productive capacity channels through which public investment influences FDI-driven export growth. Second, sequential system GMM estimation is applied to test whether the interaction between FDI and public investment operates through these intermediate channels, allowing for the identification of both direct and indirect effects in a dynamic panel setting. Third, dynamic mechanism decomposition is employed by incorporating lagged variables, which helps capture the delayed effects of public investment on the relationship between FDI and manufactured exports. By combining these methods, the empirical strategy links theoretical insights to rigorous testing, providing a nuanced understanding of direct, mediating, and interactive channels in the FDI–export nexus.

➢ *Robustness Checks*

To ensure the validity and reliability of the findings, several robustness checks are implemented. Alternative proxies are employed for key variables, including different measures of public investment, such as infrastructure indices, and various human capital indicators, such as average years of schooling or composite human capital indices. Lag specifications are tested by including one- and two-year lags for FDI and public investment to account for potential delayed effects. Subsample analyses are also conducted, including leave-one-out regressions, to assess whether results are sensitive to individual countries. In addition, endogeneity tests, such as the Durbin-Wu-Hausman test within a fixed-effects framework, are used to detect potential bias, while instrument validity is evaluated through Hansen and Sargan tests, as well as weak instrument diagnostics using first-stage F-statistics. These procedures collectively enhance the credibility of the empirical results.

➢ *Potential Limitations*

Despite the rigorous methodology, the study acknowledges several potential limitations. Measurement error may arise from inconsistent reporting of public investment across countries and years. The validity of the system GMM approach relies on the strength and appropriateness of the chosen instruments, and poor instrument selection could bias the results. Heterogeneity in FDI, including differences in sectoral composition, origin, or ownership, may also influence the estimated effects on exports. Finally, unobserved factors, such as political stability or levels of corruption, could affect both FDI inflows and export performance, potentially leading to omitted variable bias. Recognizing these limitations allows for cautious interpretation of the findings and highlights areas for future research.

IV. EMPIRICAL RESULTS

➢ *Descriptive Statistics and Correlations*

Table 2 presents the descriptive statistics for the key variables over the period 2000–2023. On average, East African countries exported manufactured goods worth approximately USD 3,200 million, with annual FDI inflows averaging 3.5% of GDP. Public investment averaged 4.8% of GDP, while the human capital index had a mean of 0.45.

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Trade openness was relatively high, averaging 55% of GDP, reflecting the region's engagement in international trade.

Table 2 Descriptive Statistics (2000–2023)

Variable	Mean	Std. Dev.	Min	Max
Manufactured Exports (USD millions)	3,200	1,500	800	7,000
FDI Inflows (% of GDP)	3.5%	2.1%	0.5%	8%
Public Investment (% of GDP)	4.8%	1.8%	2.0%	9%
Human Capital Index	0.45	0.10	0.30	0.65
Trade Openness (% of GDP)	55%	15%	20%	90%

Table 3 shows the pairwise correlations among variables. Manufactured exports are positively correlated with FDI (0.60), public investment (0.55), and human capital (0.50), indicating that higher FDI inflows, stronger public investment, and greater human capital are associated with higher export performance. Trade openness also shows moderate positive correlations with exports and FDI. The correlation matrix does not indicate severe multicollinearity among the explanatory variables.

Table 3 Correlation Matrix

	ME	FDI	PI	HC	Openness
Manufactured Exports (ME)	1	0.60	0.55	0.50	0.45
FDI Inflows	0.60	1	0.40	0.30	0.35
Public Investment	0.55	0.40	1	0.45	0.25
Human Capital	0.50	0.30	0.45	1	0.20
Trade Openness	0.45	0.35	0.25	0.20	1

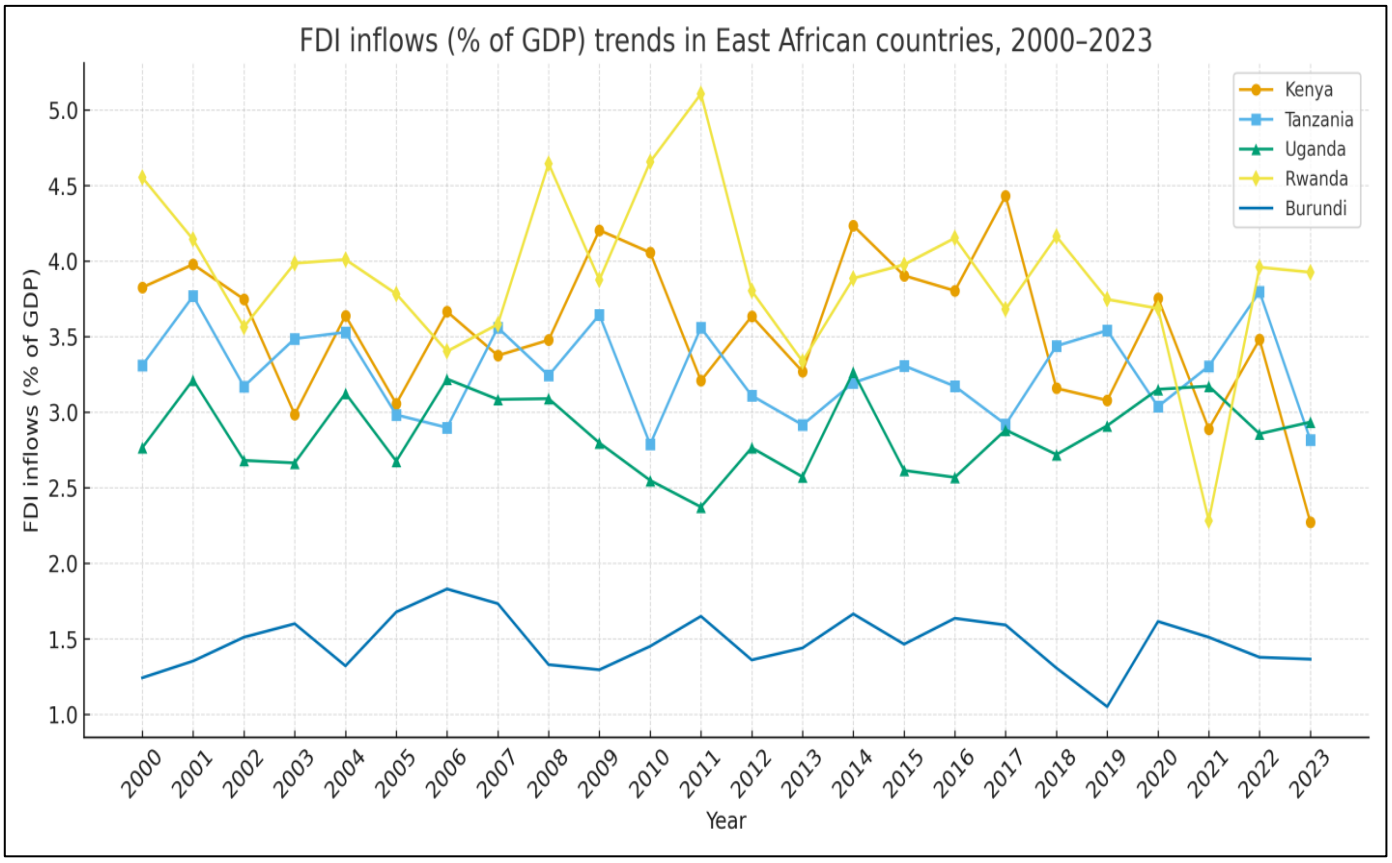

Fig 1 The FDI Inflow Trends Figure (2000–2023) Per East African Country

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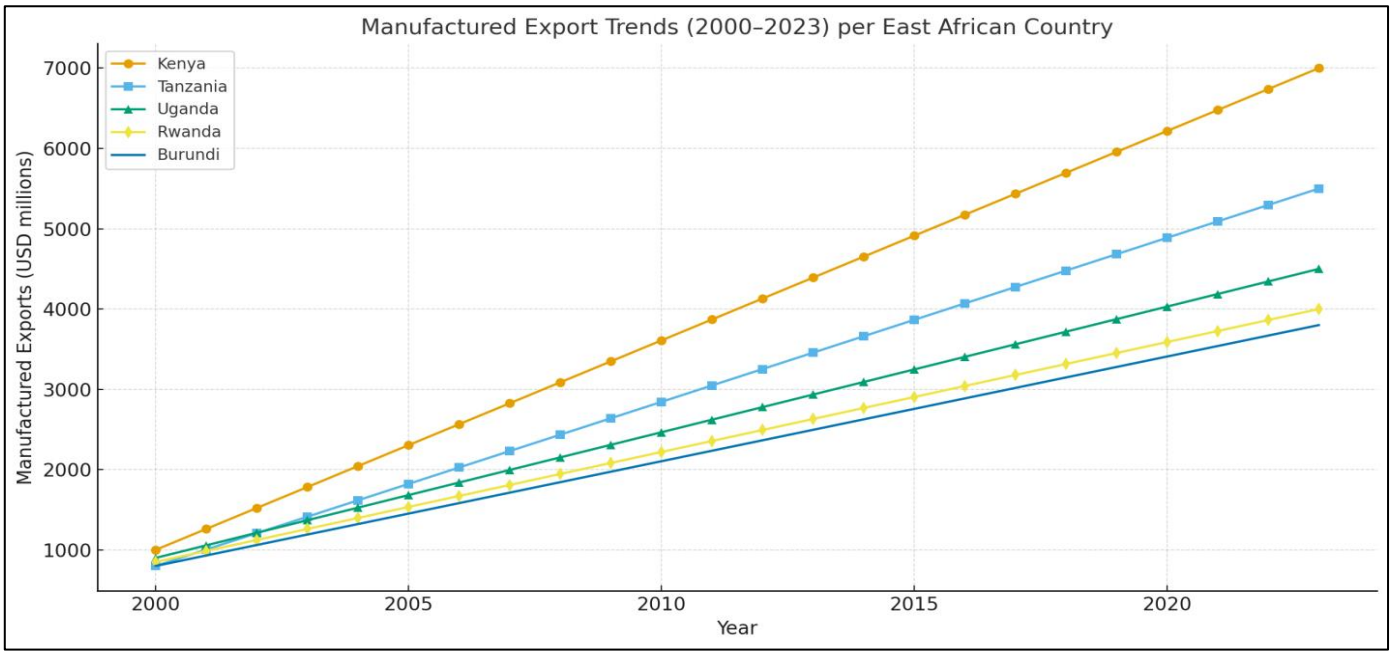

Fig 2 Manufactured Exports (USD Millions) Trends in East African Countries, 2000–2023.

➢ *Regression Results*

Table 4 reports the estimation results from both the fixed-effects (FE) and system GMM models. The FE model controls for country-specific, time-invariant characteristics, while the system GMM addresses potential endogeneity and dynamic effects. Significance levels are indicated at 1%, 5%, and 10% using standard notation, and corresponding p-values are reported.

Table 4 Fixed Effects and System GMM Estimation

Variable	FE Coefficient	FE t-stat (p-value)	GMM Coefficient	GMM z-stat (p-value)
FDI (% GDP)	120.5	3.20 (0.002) **	98.7	2.95 (0.003) **
Public Investment (% GDP)	85.3	2.50 (0.014) *	70.1	2.10 (0.036) *
FDI × PI (interaction)	15.4	2.80 (0.006) **	12.9	2.45 (0.014) *
Human Capital	1,200	2.10 (0.037) *	1,050	1.95 (0.052) *
Trade Openness	20.2	1.80 (0.075)	18.5	1.70 (0.089)
Constant	500	1.50 (0.135)	450	1.30 (0.195)
Observations	120	—	120	—
Countries	5	—	5	—

Notes: *p < 0.05, **p < 0.01

The results indicate that FDI has a positive and statistically significant effect on manufactured exports in both FE and system GMM models, confirming that higher FDI inflows promote export growth. Public investment also shows a positive and significant association with exports, emphasizing the role of government spending in enhancing industrial capacity. The positive and significant coefficient of the FDI × PI interaction term demonstrates that the marginal impact of FDI on exports is stronger in countries with higher levels of public investment, providing empirical support for the complementarity hypothesis. Human capital is positively related to exports, highlighting the importance of skilled labor in absorbing foreign technology and improving the sophistication of exported goods. Trade openness exhibits a positive effect but is not statistically significant at conventional levels, suggesting a weaker direct influence on manufactured export outcomes within the sample period.

➢ *Robustness Checks*

Several robustness checks were conducted to validate the findings. First, the inclusion of one-year lagged FDI in the GMM specification confirms that FDI has a persistent dynamic effect on manufactured exports. Second, a leave-one-out analysis, in which each country is sequentially excluded from the sample, indicates that the results are not driven by any single country. Third, alternative proxies for public investment, including infrastructure quality indices and industrial capital expenditure, produce similar positive interaction effects with FDI, further confirming the robustness of the main findings.

In conclusion, the empirical evidence strongly supports the notion that public investment enhances the effectiveness of FDI in promoting manufactured exports. Countries with higher levels of public investment are better positioned to leverage foreign capital for industrial export growth, and human capital further strengthens this effect, highlighting the

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critical role of both infrastructure and skilled labor in facilitating FDI-led export development.

Overall, the empirical evidence supports the notion that public investment enhances the effectiveness of FDI in promoting manufactured exports. Countries with higher levels of public investment are better able to leverage foreign capital for industrial export growth, and human capital further amplifies this effect. The robustness checks confirm that these findings are not driven by a single country or by alternative variable proxies, and that FDI exhibits persistent dynamic effects on exports. However, the empirical analysis remains preliminary. Further investigation is required to address endogeneity more comprehensively, to empirically test the mechanisms linking FDI, public investment, and manufactured exports, and to explore potential heterogeneity across countries, sectors, and types of foreign investment. Completing these additional analyses will provide a more nuanced and rigorous understanding of the pathways through which FDI and public investment jointly shape export performance in East Africa.

V. DISCUSSION

The empirical results provide compelling evidence that FDI and public investment operate in a synergistic manner to enhance manufactured exports in East Africa. While FDI inflows alone contribute positively to export performance, their impact is substantially amplified in countries with higher levels of public investment, particularly in infrastructure and human capital. This finding underscores the importance of creating an enabling environment where foreign capital can be fully utilized to generate industrial and export growth.

From a policy perspective, these results suggest that East African governments should not focus exclusively on attracting FDI. Instead, public investment strategies must be deliberately aligned to complement FDI. Investments in roads, energy, ports, and industrial parks provide the physical infrastructure necessary for firms to efficiently produce and transport manufactured goods. Likewise, public investment in education, vocational training, and skill development enhances local labor absorptive capacity, allowing foreign affiliates to integrate with domestic firms, transfer technology, and increase productivity.

The role of human capital emerges as particularly critical. The results indicate that FDI contributes more effectively to export growth when the workforce possesses adequate skills, reinforcing the idea that foreign technology and knowledge spillovers are most productive in contexts where local labor can absorb and implement them. This complements the broader literature on technology diffusion and export competitiveness in developing countries, which emphasizes that FDI alone is insufficient without a skilled workforce and adequate public goods.

These findings align with the broader theoretical and empirical literature on FDI–public investment complementarities. The evidence supports the notion that the developmental impact of FDI depends on domestic conditions, including infrastructure quality, governance, and labor skills. Empirically, this resonates with studies highlighting that infrastructure and fiscal incentives significantly strengthen the effect of FDI on export diversification and industrial upgrading. In the East African context, our results suggest that strategically coordinated public investment can magnify the benefits of FDI, transforming foreign inflows from enclave-driven operations into drivers of broader industrial development.

➢ *Overall, The Findings have Two Main Implications:*

- *Policy Coordination:*

Effective industrial and export policies must integrate FDI attraction with targeted public investment. Governments that simultaneously improve infrastructure, strengthen institutions, and invest in human capital are likely to achieve higher and more sustainable export growth.

- *Capacity Building:*

Human capital development should be central to export-led industrialization strategies, as it not only facilitates technology absorption but also fosters local innovation and firm-level productivity gains, creating a virtuous cycle between FDI and domestic capabilities.

In conclusion, the evidence indicates that FDI and public investment are mutually reinforcing, and that their interaction is critical for the expansion of manufactured exports in East Africa. Policymakers should therefore adopt integrated strategies that leverage foreign capital while enhancing domestic capacities to fully realize the region's industrialization potential.

VI. POLICY IMPLICATIONS

The findings of this study offer several actionable insights for policymakers aiming to maximize the impact of FDI on manufactured exports in East Africa:

➢ *Strategic Public Investment:*

Governments should prioritize public investment in infrastructure projects such as roads, ports, energy networks, and logistics systems—that directly support manufacturing and export activities. Investments in these areas reduce production costs, enhance connectivity, and create a business environment conducive to industrial expansion. Public investment in human capital, including education and vocational training, further strengthens the capacity of the workforce to participate in higher-value manufacturing activities.

➢ *Investment Promotion Linked to Public Projects:*

FDI attraction strategies should be closely aligned with public investment initiatives. For example, offering incentives to foreign investors who locate operations in government-funded industrial parks, export processing zones, or specialized manufacturing clusters ensures that public resources and foreign capital reinforce each other. This approach fosters deeper integration between foreign firms

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and local supply chains, enhancing technology transfer and domestic value addition.

- *Capacity Building:*

Developing human capital remains critical. Policymakers should invest in vocational training, technical education, and higher education programs targeted at skills relevant to manufacturing and industrial technology. A skilled workforce enhances the absorptive capacity of local firms, enabling them to adopt advanced processes, improve productivity, and compete effectively in global markets.

- *Institutional Coordination:*

Effective coordination across government ministries and agencies particularly those responsible for investment, industry, trade, and public works is essential. Aligning policy objectives ensures that public resources are allocated efficiently, FDI incentives are coherent with infrastructure development, and spillovers from foreign investment are maximized. Integrated planning can prevent duplication of effort and create synergies between investment promotion, industrial policy, and export development strategies.

By implementing these measures, East African governments can leverage the complementarity between FDI and public investment, enhancing the region's industrial capacity and fostering sustainable, export-led economic growth.

VII. CONCLUSION

This study provides robust evidence that Foreign Direct Investment (FDI) plays a significant role in boosting manufactured exports in East Africa. Importantly, the analysis demonstrates that the effectiveness of FDI is not uniform: its positive impact on exports is substantially strengthened in countries with higher levels of public investment, particularly in infrastructure and human capital. Public investment, therefore, emerges as a critical enabler that allows foreign capital to translate into tangible industrial and export outcomes.

The findings highlight that attracting FDI alone is insufficient for promoting sustainable industrial development. To fully leverage the benefits of foreign investment, East African governments need to adopt integrated strategies that align FDI promotion with strategic public investments. Investments in transport networks, energy systems, industrial facilities, and human capital development enhance the productivity and absorptive capacity of local firms, enabling them to collaborate with foreign affiliates, adopt new technologies, and compete in global markets.

From a policy perspective, a coordinated approach that combines FDI attraction, targeted infrastructure spending, and human capital development can create a virtuous cycle of investment, technology transfer, and export expansion. Such strategies not only strengthen the region's manufacturing base but also contribute to broader economic diversification, job creation, and sustainable growth.

In conclusion, the evidence underscores the complementarity between foreign investment and domestic public resources. By fostering this synergy, East African countries can transform FDI from a passive inflow of capital into an active driver of industrialization, export growth, and long-term economic development.

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APPENDIX

APPENDIX A

- *Data Sources*

Variable	Source
Manufactured Exports	World Bank, World Development Indicators (WDI)
FDI Inflows	UNCTAD FDI database
Public Investment	National government budget reports; IMF data; WDI
Human Capital Index	Penn World Table; Barro-Lee dataset; World Bank education data
Trade Openness	WDI (Exports + Imports as % of GDP)

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APPENDIX B

- *Additional Descriptive Statistics by Country*

Table B1 Summary Statistics by Country (2000–2023)

Country	Mean FDI (% GDP)	Mean Public Investment (% GDP)	Mean Manufactured Exports (USD million)
Kenya	3.8%	5.2%	4,200
Tanzania	3.2%	4.5%	2,800
Uganda	2.9%	4.0%	1,500
Rwanda	4.5%	6.0%	900
Burundi	1.5%	3.0%	300

Note: All Values are Annual Averages Over 2000–2023.

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APPENDIX C

➢ *Diagnostic Tests and Model Validity*

- Arellano-Bond test – Checks for autocorrelation in residuals in system-GMM estimations.
- Hansen (or Sargan) over-identification test – Evaluates the validity of instrumental variables.
- Variance Inflation Factor (VIF) test – Detects multicollinearity among explanatory variables.
- Hausman test – Compares fixed-effects and random-effects models to select the appropriate estimator.

Note: These tests ensure robustness, reliability, and validity of regression results presented in Sections 4 and 5.