

CAPITAL MOBILITY AND TRADE PERFORMANCE IN SUB-SAHARA AFRICAN COUNTRIES

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Abstract

This paper examines the nexus between capital mobility and trade performance in 30 sub-Saharan African (SSA) countries from 2000 to 2022. Capital mobility is measured using the de jure KOF Financial Globalisation Index and de facto indicators (FDI, ODA, and remittances). Employing the Panel Corrected Standard Error (PCSE) model to address heteroscedasticity, autocorrelation, and cross-sectional dependence, the study finds that financial globalisation and foreign direct investment (FDI) significantly improve trade performance, suggesting that capital mobility fosters trade. In contrast, Official Development Assistance (ODA) and remittances exhibit significant negative effects. Robustness checks using the two-step System Generalised Method of Moments (GMM) confirm the persistence of trade performance and support the core findings. The study underscores the need for policies that promote FDI and calls for a reassessment of aid and remittance utilisation strategies in the region.

Keywords: Capital Mobility, Generalised Method of Moment, International Trade, Sub-Saharan Africa.

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Introduction

Trade has long been acknowledged as a pivotal driver of economic growth and development, particularly in Sub-Saharan African (SSA) countries (Pangestu, 2021; IFC, 2016). These studies underscore the consistent and significant role of trade in development across time. However, the precise impact of capital mobility on trade performance in the region remains a subject of debate and ongoing research.

In the first quarter of 2024, global trade trends turned positive, with the value of trade in goods increasing by approximately 1% quarter-over-quarter and services by about 1.5%. This growth was primarily driven by rising exports from China (9%), India (7%), and the US (3%). In contrast, Europe's exports stagnated, while Africa's exports declined by 5% (IMF, 2008; Ganic & Novalic, 2023). This downturn in African trade highlights the unique challenges faced by the continent and underscores the need to examine the underlying factors influencing trade performance.

One key challenge is the constraint posed by the availability of production factors, which manifests differently across nations depending on their developmental stage. Capital constraints are prevalent in countries with underdeveloped financial markets and limited access to international capital, such as Malawi, Burundi, and the Central African Republic. Meanwhile, labor constraints arise in nations with shortages of skilled workers or mismatches between labor skills and economic needs, as seen in Botswana, Mauritius, and Namibia. These factor allocation constraints hinder capital accumulation, impede investment, and limit macroeconomic output—factors that may further feedback into trade performance. This dynamic underscores the necessity of regional integration, a process facilitated by globalization, which has undergone significant structural and configurational changes over time (IMF, 2008; Ganic & Novalic, 2023).

Globalisation refers to the growing interconnectedness and interdependence of the global economy, driven by the cross-border exchange of goods and services, capital flows, and the rapid diffusion of technologies (Shangquan, 2000). Beyond trade, globalization encompasses the movement of labor and knowledge (technology), offering solutions to factor allocation constraints and reshaping economic structures. Two critical dimensions of globalization are trade integration (goods and services) and capital mobility (financial flows). Although these aspects are deeply intertwined in practice, studies have identified distinct differences between them (Sharif, 2019; Frankel, 1995). While trade integration focuses on product markets, capital mobility involves financial market integration, encompassing not only asset movements but also the ease with which funds traverse borders.

Several studies highlight the potential benefits of capital inflows for trade performance (Egbetunde & Akinlo, 2015; Aizenman & Sushko, 2011). For instance, private investment in SSA countries could enhance manufacturing capacity, thereby improving trade competitiveness. However, other research emphasizes structural barriers—such as weak infrastructure, limited technological capabilities, and exchange rate volatility—that may hinder SSA nations from translating capital inflows into trade gains (Alley & Poloamina, 2015). The heterogeneous nature of SSA economies further complicates this relationship. As noted in World Bank (2016) analyses, the impact of capital flows varies significantly depending on a country's income level, developmental stage, and policy environment, necessitating nuanced research to account for these contextual factors.

Recent initiatives like the African Continental Free Trade Area (AfCFTA) aim to boost intra-African trade and integrate SSA into global markets (African Union Commission, 2015). This raises critical questions about how capital mobility interacts with such efforts to shape trade outcomes. The relationship between trade agreements and capital flows is complex, presenting both synergies and challenges (Estevadeordal et al., 2020). On one hand, trade agreements can attract capital inflows, fostering investment in export-oriented industries and enhancing competitiveness (Singh, 2019). On the other hand, they may expose economies to volatile capital movements, necessitating robust policy frameworks (World Bank, 2010).

Capital flows and trade performance exhibit a bidirectional relationship: capital inflows can enhance trade, while strong trade performance may attract further investment (Egbetunde & Akinlo, 2015). Capital mobility can improve trade balances through multiple channels. For example, foreign multinational affiliates operating in SSA may reduce reliance on imports by producing locally (Aizenman & Sushko, 2011). Additionally, FDI-driven technology transfers can enhance productivity and export capacity over time, though such benefits often materialize gradually (Min, 2003; Sun et al., 2020; Alley & Poloamina, 2015).

Existing research has explored how capital mobility influences economic performance, including savings optimisation, economic growth stabilisation, and macroeconomic policy efficacy (Ajisafe & Okunade, 2020; Padawassou, 2012; Murthy, 2005; Reisen & Soto, 2000). Given trade's central role in economic development, understanding the determinants of trade performance remains critical. Yet, empirical studies specifically examining the link between capital mobility and trade performance in SSA remain scarce. This study seeks to address this gap by investigating this relationship in depth.

Literature Review

Theoretical framework

The study facilitates an investigation into the relationship between capital mobility and trade performance by employing the Feldstein-Horioka model in conjunction with the Comparative Advantage framework. In contrast to the comparative advantage hypothesis (which posits that trade patterns are determined by the relative efficiency of production across countries), the Feldstein-Horioka model examines the correlation between domestic savings and investment as an indicator of capital mobility.

Both models incorporate the concept of the Production Possibility Frontier (PPF), which delineates the potential combinations of goods that a country can produce given its available resources, such as capital (either as a flow or stock) and labour. A nation tends to specialise in the production of goods in which

it holds a comparative advantage, as determined by opportunity costs. This specialisation enhances its export potential.

Net exports (NX), calculated as exports (X) minus imports (M), reflect a country's trade balance or trade performance. Trade flows and net exports are influenced by factors such as foreign demand and comparative advantage.

Among the four measures of capital mobility identified in the literature (the Feldstein-Horioka approach, real interest rate parity, uncovered interest parity, and covered interest rate parity), the Feldstein-Horioka measure is the most commonly used method for assessing the degree of capital mobility.

In the Feldstein-Horioka model, domestic savings (S) and investment (I) are influenced by various factors, including interest rates, income levels, and government policies.

$$\left(\frac{I}{Y}\right)_{it} = \alpha_0 + \alpha_1 \left(\frac{S}{Y}\right)_{it} + \varepsilon_{it} \quad (1)$$

The correlation between investment and savings is quantified by the savings retention coefficient (α_1), where $\alpha_1 < 1$ indicates a degree of capital mobility, meaning savings can flow across borders (with lower values reflecting greater mobility). Conversely, $\alpha_1 = 1$ suggests no capital mobility, as all savings are retained and invested domestically.

The difference between domestic investment and savings, adjusted by the savings retention coefficient, determines the volume of capital flows between countries. A higher savings retention coefficient (α_1) implies lower capital mobility, as a larger proportion of savings remains reinvested within the country. This establishes an inverse relationship between the savings retention coefficient (α_1) and capital mobility, which can be expressed mathematically as:

$$CM = 1 - \alpha_1 \quad (2)$$

The degree of capital mobility (particularly in the context of the saving-investment relationship) is commonly assessed using the Feldstein-Horioka (FH) approach, also known as the Feldstein-Horioka puzzle.

This study aims to investigate the extent of capital mobility in Sub-Saharan African countries using the Feldstein-Horioka framework.

Empirical literature

The review of various studies on trade performance reveals a diverse range of findings that vary across regions and economic contexts. These results highlight relationships that can be positive, negative, significant, or even non-significant.

Several studies report similar conclusions. For instance, Sugiharti, Esquivias, and Setyorani (2020), as well as Musila and Al-Zyoud (2012), find a significant and negative relationship between exchange rate volatility and trade performance. Their findings emphasize that fluctuations in exchange rates hinder trade flows and undermine economic stability across different regions. Similarly, Nthangu and Bokana (2022) identify a notable connection between output performance and selected macroeconomic variables. Their research shows that foreign capital inflows, trade openness, and inflation positively influence output performance and national productivity. In contrast, exchange rates and interest rates negatively affect output performance.

Jawaid, Raza, and Afzal (2016) similarly observe a strong positive association between foreign capital inflows [particularly foreign direct investment (FDI)] and trade performance, suggesting that such inflows promote export growth and enhance overall trade productivity. These findings are consistent

with those of Ganic and Novalic (2023), who investigate the impact of trade openness and legal investor protections on the relationship between trade bloc membership and capital mobility across four regional trade agreements: the Eurasian Economic Union (EAEU), the Central American-Dominican Republic Free Trade Agreement (CAFTA-DR), the Central European Free Trade Agreement (CEFTA), and the Pacific Alliance. Their study reveals that membership in a trade bloc generally enhances capital mobility (most notably within the EAEU) while showing lower to moderate levels of capital mobility in the Pacific Alliance and CAFTA-DR. Importantly, legal protections alone do not necessarily improve capital mobility unless accompanied by actual investment. Moreover, increased trade openness does not always translate into higher capital mobility within these regions.

Studies by Mlambo (2021) and Cali and Velde (2010) converge on the view that infrastructure plays a crucial role in enhancing trade performance. Mlambo's focus on port efficiency complements Cali and Velde's emphasis on aid directed toward economic infrastructure, with both underscoring how improved infrastructure networks strengthen trade outcomes. Additionally, Olakunle (2023) and Opeyemi, Adegbite, and Ayadi (2019) concur on the importance of technology and robust regulatory frameworks as facilitators of trade. Both studies indicate that regulatory improvements positively influence trade performance, with Olakunle highlighting the role of ICT imports and Opeyemi emphasizing regulatory quality as key enablers of trade potential.

However, contradictory findings also emerge, particularly concerning foreign capital inflows. While Nthangu and Bokana (2022) find that foreign capital inflows positively impact productivity in Sub-Saharan Africa, Mohanty and Sethi (2019) report a negative long-term effect of FDI on exports in India, especially in certain sectors. This discrepancy suggests that the impact of FDI on trade may be context-specific, varying by region or sector. Furthermore, while Saka et al. (2023) observe a negative relationship between mobile phone subscriptions and trade performance, Olakunle (2023) finds that ICT goods imports (including mobile technologies) enhance trade performance in Sub-Saharan Africa. Such divergence likely reflects differences in technological development, regional conditions, or the stage of digital adoption. Another example of conflicting evidence is found between Musila and Al-Zyoud (2012) and Yuksel and Zengin's study in Brazil and Mexico. While the former confirms an adverse link between exchange rate volatility and trade volume in Sub-Saharan Africa, the latter reports inconsistent relationships between imports, exports, and growth, possibly due to differing regional economic structures.

Studies that show both converging and diverging findings further enrich this analysis. For example, Sugiharti, Esquivias, and Setyorani (2020), as well as Tan, Gopalan, and Sharma (2019), agree on the negative impact of exchange rate volatility on exports. However, Tan et al. add that regional competitiveness can significantly boost trade, implying that highly competitive regions may partially offset the detrimental effects of exchange rate instability. Similarly, Olakunle (2023) and Cali and Velde (2010) both identify positive contributions of infrastructure and technology to trade performance, though they differ in focus: Olakunle emphasizes digital technology, while Cali and Velde examine aid for trade-related infrastructure, pointing to complementary drivers of trade enhancement.

Further comparisons include Jawaid et al. (2016) and Mohanty and Sethi (2019). While the former finds a positive influence of FDI on exports, the latter identifies a negative long-term effect. Nevertheless, both studies acknowledge that the impact of FDI may depend on specific timeframes or industrial contexts. Likewise, Opeyemi et al. (2019) and Olakunle (2023) both affirm the beneficial role of strong regulatory frameworks in promoting trade. Yet their areas of focus differ: Opeyemi explores the impact of renewable energy policies on trade, whereas Olakunle centers on digital technology. This illustrates how regulatory reforms can benefit multiple sectors across the economy.

In summary, several factors consistently exhibit positive and significant impacts on trade performance. These include infrastructure development (Cali et al. 2010), information and communication technology (ICT)/digital innovation (Olakunle), capital inflows in Sub-Saharan Africa (Nthangu & Bokana; Jawaid et al.), and strong regulatory frameworks (Opeyemi; Olakunle). Conversely, exchange rate volatility (Sugiharti et al.; Musila & Al-Zyoud; Tan et al.) consistently shows negative effects on

trade performance across different regions. Contradictory findings regarding FDI (Jawaid et al. vs. Mohanty & Sethi) and the role of technology in trade (positive in Olakunle, negative in Saka et al.) underscore the context-specific nature of factors influencing capital mobility and trade performance.

Methodology

To explore the relationship between capital mobility and trade performance in Sub-Saharan Africa, this study employs the Panel Corrected Standard Error (PCSE) model. The PCSE method is particularly effective as it accounts for common issues in panel data such as autocorrelation, cross-sectional dependence, and heteroscedasticity, thereby improving the efficiency of parameter estimates (Chen et al., 2010; Doku et al., 2019; Adamson et al., 2022).

While the Ordinary Least Squares (OLS) estimator is optimal under classical error assumptions) such as homoscedasticity and no serial correlation (these conditions are rarely met in practice. In panel data settings, heteroscedasticity and contemporaneous correlation often occur, where the variance of the error terms differs across units, and errors are correlated across units at the same point in time. These issues can lead to inefficient OLS estimates and biased standard errors (Reed & Ye, 2011; Adamson et al., 2023).

The PCSE approach, introduced by Beck and Katz (1995), addresses these challenges by retaining the OLS parameter estimates while replacing the standard errors with corrected ones. Their Monte Carlo simulations demonstrate that the PCSE method is robust and enhances the accuracy of standard error estimation. Furthermore, the PCSE method is well-suited for addressing endogeneity and capturing the dynamic nature of the relationship between capital mobility and trade performance.

This study adopts the static model developed by Samsubar and Tri (2010) to examine the static relationship between capital mobility and trade performance in Sub-Saharan Africa.

The model is therefore expressed as:

$$TRD = f(CM) \quad (3)$$

Therefore, equation 3 can be expressed in econometric form as:

$$TRD_{it} = \alpha_0 + \alpha_1 KOF_{it} + \alpha_5 GDP_{it} + \alpha_6 INF_{it} + \alpha_7 EXC_{it} + \epsilon_{it} \quad (4)$$

$$TRD_{it} = \alpha_0 + \alpha_2 FDI_{it} + \alpha_5 GDP_{it} + \alpha_6 INF_{it} + \alpha_7 EXC_{it} + \epsilon_{it} \quad (5)$$

$$TRD_{it} = \alpha_0 + \alpha_3 ODA_{it} + \alpha_5 GDP_{it} + \alpha_6 INF_{it} + \alpha_7 EXC_{it} + \epsilon_{it} \quad (6)$$

$$TRD_{it} = \alpha_0 + \alpha_4 REM_{it} + \alpha_5 GDP_{it} + \alpha_6 INF_{it} + \alpha_7 EXC_{it} + \epsilon_{it} \quad (7)$$

Where:

TRD denotes trade performance, KOF represents the Financial Globalisation index, FDI is Foreign Direct Investment, ODA refers to Official Development Assistance, REM stands for Remittances, GDP is Gross Domestic Product, INF is the inflation rate, and EXC indicates the exchange rate. α_0 , α_1 , α_2 , α_3 , α_4 , α_5 , α_6 , and α_7 are the coefficients to be estimated, and ϵ_{it} represents the error term of the model.

In Equation (3), trade performance is characterised by a stochastic term, which may introduce an endogeneity issue into the model. To address potential endogeneity and account for the dynamic nature of trade performance, a robustness check was conducted using the System Generalized Method of Moments (System GMM). This approach corrects for simultaneity bias, omitted variable bias, and unobserved heterogeneity by utilising internal instruments derived from lagged levels and differences of the endogenous regressors (Ajide, Adamson & Fatai, 2024; Ogunsanya & Adamson, 2024).

Therefore, to address potential endogeneity among the variables, this study employs the System Generalised Method of Moments (System GMM). The dynamic form of the model is specified as follows:

$$TRD_{it} = \beta_0 + \beta_1 TRD_{it-1} + \beta_2 CM_{it} + \gamma' \chi_{it} + \theta_t + \vartheta_i + \varepsilon_{it} \quad (8)$$

Where TRD_{it-1} is the lag one of trade performance, χ it is the vector of control variables, ε_{it} is the error term, ϑ_i is unobserved country-specific features, and θ_t is period-specific effects.

Data sources and measurements

This study examines data from 30 Sub-Saharan African (SSA) countries (*see appendix for the list*), representing approximately 75 per cent of all countries in the region, to investigate the extent to which capital mobility influences trade performance. The panel data used in this analysis spans the period from 2000 to 2022, a timeframe marked by significant capital inflows and major global economic events, including the 2007–2009 financial crises. Data for the variables used in this study were sourced from the World Bank Development Indicators database. The selection of this time period and the number of SSA countries included in the analysis were guided primarily by data availability.

The results of the descriptive statistics and correlation matrix are presented in Tables 1 and 2, respectively. The descriptive statistics highlight notable disparities and structural differences across economies in Sub-Saharan Africa. On average, the region demonstrates moderate progress toward financial globalization, as measured by the KOF index; however, this masks significant variation among countries. While a few economies have successfully integrated into global financial markets, others remain largely excluded due to institutional weaknesses or policy constraints.

Foreign Direct Investment (FDI) flows are generally modest across the region but highly uneven. Some countries attract substantial investment (often driven by natural resource endowments), while others experience capital flight or struggle to attract investor confidence due to political instability or macroeconomic challenges. Similarly, Official Development Assistance (ODA) continues to play a crucial role, especially for low-income economies, reflecting ongoing reliance on external support for budgetary and development purposes. Remittances, though smaller in magnitude, serve as a vital source of household income in several countries, helping to sustain consumption and mitigate poverty in the absence of strong domestic economic growth.

GDP figures reveal a highly uneven economic landscape, with a few large economies (such as Nigeria and South Africa) significantly raising the regional average. Inflation patterns are particularly concerning, with extreme cases like Sudan experiencing hyperinflation, which undermines macroeconomic stability and erodes purchasing power. Exchange rate trends further reflect this instability, with widespread currency devaluations and high volatility indicating fragile external positions and vulnerability to global shocks.

Overall, the data distributions are positively skewed, suggesting that most countries fall below the average, with a few outliers distorting the overall picture. This pattern underscores persistent inequalities in economic performance, investment flows, and policy outcomes across the region.

The correlation matrix, on the other hand, reveals no evidence of multicollinearity among the variables.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Median	Std. Dev.	Min	Max	Skew.	Kurt.	J.B
KOF	690	43.83	40.26	14.87	17.58	79.73	0.47	2.23	42.22***
FDI	690	3.26	2.15	4.91	-17.29	56.26	3.76	31.58	25000***
ODA	690	19.96	20.23	1.33	15.62	23.22	-0.75	3.18	65.11***
REM	690	2.82	1.61	3.56	0.00	28.14	2.60	13.39	3882***
GDP	690	23.13	23.18	1.56	19.68	27.08	0.20	2.86	5.297**
INF	690	201.26	103.49	1601.88	2.91	38796.56	21.79	504.47	7300000***
EXC	690	737.22	493.76	1297.92	0.54	9565.08	4.14	23.72	14000***

Source: Authors' Compilation (2025).

Table 2: Correlation Matrix

	TRD	KOF	FDI	ODA	REM	GDP	INF	EXC
TRD	1.00							
KOF	0.10	1.00						
FDI	0.46	0.06	1.00					
ODA	-0.56	-0.03	-0.16	1.00				
REM	-0.21	0.05	-0.01	-0.09	1.00			
GDP	-0.19	0.18	-0.15	0.63	-0.27	1.00		
INF	-0.09	0.10	-0.03	0.07	0.00	0.06	1.00	
EXC	-0.06	-0.17	-0.02	0.17	-0.07	-0.01	0.00	1.00

Source: Authors' Compilation (2025)

Discussion of findings

Table 3 presents the estimated relationship between capital mobility and trade performance in Sub-Saharan Africa (SSA), using the Panel Corrected Standard Error (PCSE) approach. The PCSE models account for the sensitivity of individual country attributes, regional interconnectivity, and cross-sectional dependence, making them well-suited for this analysis. Overall, the results confirm that the models are appropriate for examining the impact of capital mobility on trade performance in Sub-Saharan Africa.

The PCSE estimates reveal that the KOF Financial Globalization Index, a de jure indicator of capital mobility, is positively and significantly related to trade performance. This suggests that financial globalization plays a key role in determining trade performance (TRD) in the selected SSA countries. Specifically, the coefficient on the KOF index is 0.21 and statistically significant at the 1 per cent level, indicating a strong positive association.

The empirical findings on the relationship between foreign direct investment (FDI) (a de facto measure of capital mobility) and trade performance show a positive and statistically significant relationship. This supports the prior expectation of a positive link between FDI and trade. It implies that FDI directly enhances trade performance in the region. This result aligns with the idea that multinational corporations (MNCs) often establish production facilities in host countries, either exporting goods back to their home countries or using the host country as a base for global exports. Moreover, FDI can contribute to infrastructure development, enhance production capacity, and ultimately boost trade.

In contrast, the study finds that Official Development Assistance (ODA) (also a de facto capital mobility indicator) has a negative and significant effect on trade performance, contrary to a priori expectations. An increase in ODA is associated with a decline in trade performance in SSA. This suggests that ODA may not be contributing positively to trade outcomes in the region. Possible explanations include the crowding out of private investment or the distortion of trade due to inefficient allocation of resources. The negative coefficient indicates that a one percentage point increase in ODA leads to a substantial reduction in trade performance. This finding may reflect aid dependency in many SSA countries, which could lead to lower economic productivity and reduced trade activity. These results contradict those of Massimiliano and Mohammad (2013), who found a positive relationship between ODA and trade performance in SSA.

Remittances, another de facto indicator of capital mobility, also exhibit a negative and significant relationship with trade performance. The results suggest that a 1% increase in remittances is associated with a 1.91% decrease in trade performance in SSA. This outcome can be explained by the fact that remittances in the region are typically used for consumption rather than productive investment. As a result, they may lead to higher imports of consumer goods without a corresponding increase in exports, thereby worsening the trade balance.

The study further reveals a negative and significant relationship between GDP and trade performance in SSA. This result is somewhat counterintuitive, as larger economies are generally expected to engage

in more trade. However, it suggests that as domestic economies grow, they may increasingly rely on internal consumption rather than external trade. This highlights potential structural issues in the region's economic model.

Regarding macroeconomic stability, the study finds an insignificant but negative relationship between inflation (INF) and trade performance. While the relationship is not statistically significant, the negative sign aligns with theoretical expectations: high inflation is often linked to economic instability, which can hinder trade. A stable macroeconomic environment is essential for fostering trade performance. The lack of such stability in many SSA economies may help explain the generally low levels of trade performance in the region.

Finally, the empirical results show a positive and significant relationship between financial development and trade performance in SSA. This supports the hypothesis that financial development enhances trade outcomes. By improving access to credit and facilitating the development of trade-related infrastructure, financial systems play a crucial role in promoting trade.

Table 3: Panel-Corrected Standard Errors (PCSE) Regressions

Dependent variable: TRD

Variables	KOF	FDI	ODA	REM
KOF/FDI/ODA/REM	0.2150*** (2.36)	1.7438*** (4.14)	-13.2010*** (-10.24)	-1.9159*** (-10.58)
GDP	-7.3203*** (-24.73)	-6.2208*** (-14.69)	0.8314 (0.89)	-8.3137*** (-21.76)
INF	-0.0001 (-0.17)	-0.0002 (-0.57)	-0.0001 (-0.31)	-0.0004 (-0.11)
EXC	-0.0010 (-1.13)	-0.0006 (-0.78)	0.0007 (1.12)	-0.0014* (-1.69)
FD	0.6673*** (25.72)	0.6859*** (32.23)	0.3183*** (6.52)	0.6208*** (29.25)
GCF	2.2478*** (9.41)	1.7890*** (7.60)	1.8461*** (9.98)	2.1782*** (10.26)
CONST	174.2089*** (24.03)	152.8272*** (15.22)	263.234*** (28.59)	205.9014*** (22.78)

Source: Authors' compilation, 2025

Note: *, **, *** indicate significance at 10, 5, and 1 % levels, respectively. t-statistics are in parentheses.

Table 4 presents the results of the two-step system GMM estimation. The lagged trade variable (L.trd) was treated as endogenous and instrumented using its first lag [Lag(1 1)], which was collapsed to limit instrument proliferation. Other covariates were included as standard instruments under the assumption of exogeneity.

As a robustness check, the System GMM approach supports the core findings of the baseline PCSE model. The lagged dependent variable (L.trd) is positive and statistically significant, confirming the presence of trade persistence in Sub-Saharan Africa.

Consistent with the baseline PCSE results, the Financial Globalisation Index (KOF), Foreign Direct Investment (FDI), Financial Development (FD), and Gross Capital Formation (GCF) remain strong and positive determinants of trade performance. On the other hand, Official Development Assistance (ODA), Remittances (REM), and Gross Domestic Product (GDP) exhibit negative effects on trade performance in SSA.

While there are minor differences in coefficient magnitudes and levels of significance, these variations reflect the sensitivity of the results to the choice of estimator and assumptions regarding endogeneity. Nevertheless, the overall consistency in the direction of the effects reinforces confidence in the robustness of the main findings.

Table 4: System GMM Estimates (Robustness Check)

Variables	KOF	FDI	ODA	REM
TRD (lagged)	0.8096*** (36.07)	0.7489*** (24.89)	0.7952*** (35.78)	0.7908*** (34.81)
KOF/FDI/ODA/REM	1.0241*** (2.96)	0.5730*** (19.04)	-0.0064 (-0.01)	-0.1920*** (-2.65)
GDP	-1.4255*** (-3.86)	-1.4949*** (-3.94)	-1.4108*** (-3.24)	-1.6524*** (-4.34)
INF	0.0002 (1.19)	-8.8106 (-0.89)	0.0005*** (5.52)	0.0005*** (4.71)
EXC	0.0004* (1.73)	0.0003* (1.68)	0.0002 (0.93)	0.0001 (0.69)
FD	0.1534*** (6.30)	0.2013*** (7.93)	0.1656*** (7.10)	0.1654*** (8.49)
GCF	0.4481*** (7.33)	0.4271*** (7.71)	0.4715*** (6.99)	0.4687*** (7.07)
CONST	30.6176 (3.29)	35.1608*** (3.74)	31.4916*** (3.94)	37.9284*** (4.06)
AR(1)/P-value	0.001	0.001	0.011	0.005
AR(2)/P-value	0.251	0.258	0.266	0.276
Wald test (χ^2)	418711.17***	413059.83***	242803.51***	247000.19***
Hansen test/P-value	0.555	0.390	0.572	0.584
No. of instruments	29	29	29	29
No. of group	30	30	30	30

Source: Authors' compilation, 2025. *, **, *** denote significant at 10%, 5% and 1% respectively.

Conclusion and Recommendations

This study examines the relationship between capital mobility and trade performance in Sub-Saharan Africa (SSA). It highlights that the financial globalisation index (KOF), a de jure indicator of capital mobility, foreign direct investment (FDI) (a de facto indicator of capital mobility), financial development, and capital formation are positively and significantly associated with trade performance in the selected SSA countries.

In contrast, Official Development Assistance (ODA) and remittances (both de facto indicators of capital mobility) and GDP exhibit an adverse and statistically significant relationship with trade performance. Meanwhile, the effects of inflation and exchange rate fluctuations on trade performance are found to be statistically insignificant.

Based on these findings, the following policy recommendations are proposed for governments and policymakers in Sub-Saharan Africa. Thus, given that foreign direct investment (FDI) has a positive and significant impact on trade performance, governments should work to create a more conducive investment climate to attract FDI. This includes improving infrastructure, strengthening legal and institutional frameworks, enhancing transparency, and reducing bureaucratic barriers. Such measures would make SSA countries more attractive to multinational corporations (MNCs) and encourage greater integration into global value chains.

The negative impact of ODA on trade performance suggests that governments and donor agencies should re-evaluate how aid is allocated and utilised in the region. Aid should be directed toward trade-enhancing sectors such as infrastructure, agriculture, manufacturing, and export promotion rather than being channelled primarily into consumption-based programmes. Additionally, institutional capacity must be strengthened to ensure that ODA is used efficiently and effectively. This requires robust monitoring and evaluation systems to ensure that aid contributes to long-term trade development and sustainable economic growth.

Furthermore, SSA governments should aim to gradually reduce reliance on external aid by promoting self-sustaining economic growth and trade-led development strategies. This can be achieved through improved governance, stronger public-private partnerships, and efforts to diversify export bases and

boost competitiveness in regional and global markets. Although remittances (considered a de facto component of capital mobility) provide essential income to households, their negative impact on trade performance suggests that governments should encourage the productive use of these funds. This can be achieved by offering incentives for remittance recipients to invest in trade-related activities such as small businesses, manufacturing, and agriculture, rather than using them primarily for consumption.

In addition, appropriate monitoring frameworks should be established to track remittance flows and assess their broader economic impact. Such systems would enable policymakers to refine strategies aimed at maximizing the trade-enhancing potential of remittances. Moreover, the positive and statistically significant influence of both financial development and capital formation indicates that strengthening domestic financial markets can contribute to improved trade performance in Sub-Saharan Africa (SSA). Therefore, policymakers in the region should implement measures that promote deeper financial sector development, thereby enhancing gross capital formation and supporting sustainable trade growth.

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Appendix: List of countries

1. Angola	16. Madagascar
2. Benin	17. Mali
3. Botswana	18. Mauritius
4. Burkina Faso	19. Namibia
5. Burundi	20. Niger
6. Cameroon	21. Nigeria
7. Comoros	22. Rwanda
8. Congo, democratic republic	23. Senegal
9. Congo, republic	24. Seychelles
10. Cote d'ivoire	25. Sierra Leone
11. Gambia	26. South Africa
12. Ghana	27. Sudan
13. Guinea	28. Tanzania
14. Guinea-Bissau	29. Togo
15. Kenya	30. Uganda

Source: authors' compilation