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Understanding Trade Dynamics in Sub-Saharan Africa

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February 2025

ABSTRACT: This paper explores export and import dynamics in sub-Saharan Africa (SSA), both regionally and across various country groups. The findings underscore the significant associations that domestic demand and exports have with import changes, albeit the magnitude of these associations varies across countries. Variations in consumption and investment are highly correlated with changes in imports across the region and in nearly all country groups. Changes in exports are also associated with increased import growth, with this link being most notable in resource-intensive countries. Furthermore, an appreciation of the real effective exchange rate is correlated with reduced import growth in East African countries, while resource-intensive countries experience a less pronounced correlation. Exports, on the other hand, show a strong sensitivity to global economic cycles, reflecting the region's reliance on commodities. Finally, the correlation between exchange rates and exports exhibits considerable heterogeneity across countries.

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WORKING PAPERS

Understanding Trade Dynamics in Sub-Saharan Africa

Hany Abdel-Latif, Khushboo Khandelwal, Longmei Zhang[1]

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Understanding Trade Dynamics in Sub-Saharan Africa[☆]

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Abstract

This paper explores export and import dynamics in sub-Saharan Africa (SSA), both regionally and across various country groups. The findings underscore the significant associations that domestic demand and exports have with import changes, albeit the magnitude of these associations varies across countries. Variations in consumption and investment are highly correlated with changes in imports across the region and in nearly all country groups. Changes in exports are also associated with increased import growth, with this link being most notable in resource-intensive countries. Furthermore, an appreciation of the real effective exchange rate is correlated with reduced import growth in East African countries, while resource-intensive countries experience a less pronounced correlation. Exports, on the other hand, show a strong sensitivity to global economic cycles, reflecting the region's reliance on commodities. Finally, the correlation between exchange rates and exports exhibits considerable heterogeneity across countries.

Keywords: Import demand, Export determinants, Sub-Saharan Africa, AfCFTA

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1. Introduction

International trade has been a vital engine for economic growth and development, exerting significant influence on capital accumulation, employment, technological progress. Trade increases access to a variety of goods and services and contributes to the well-being of nations by enabling efficient resource allocation and productivity improvement. Since 1990, international trade volume has more than quadrupled, which helped lift millions of people out of poverty. For developing regions such as sub-Saharan Africa (SSA), it is hence critical to understand trade dynamics and related impact on long-term economic convergence.

Understanding trade dynamics is also crucial for macroeconomic management and policy formulation. The SSA region has been grappling with chronic current account deficits, with the regional average of 5-6 percent and non-resource-intensive countries experiencing even larger deficits (Figure 1). In 2022, approximately half of the SSA countries faced current account deficits surpassing 5 percent of their GDP, mostly driven by

[☆] The views expressed here are those of the authors and do not necessarily represent the views of the IMF, its Executive Board, or IMF management.

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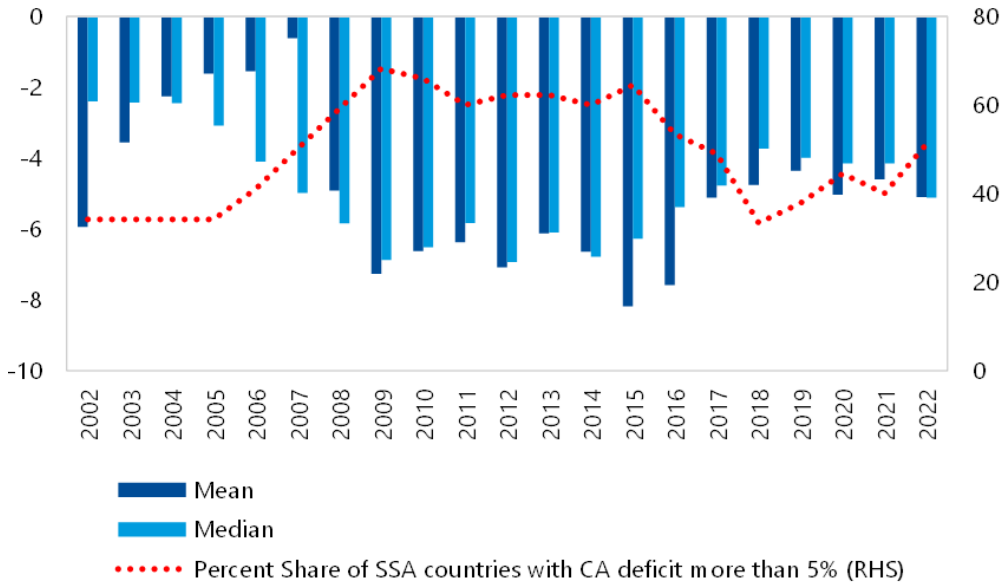
the trade balance on goods and services. This heightened deficit posed significant challenges, particularly in the context of tight global financial conditions, where major central banks in advanced economies responded to inflationary pressures by raising interest rates.

To ensure external sustainability, SSA countries need to adopt prudent policy adjustments to moderate import demand, considering the existing financing constraints. Simultaneously, it becomes crucial to build substantial foreign exchange (FX) reserve buffers to safeguard against potential funding risks. In this context, a conventional metric for reserve adequacy is to attain 3-4 months of import coverage, a key policy objective frequently observed in IMF lending programs. It is therefore important to understand the evolution of trade dynamics and set the appropriate reserve target based on that. By basing reserve targets on a comprehensive understanding of trade dynamics, SSA countries can bolster their resilience in the face of global economic uncertainties and foster long-term economic stability.

Figure 1: Sub-Saharan Africa Current Account Deficit, 2002-2022

(*Percent of GDP*)



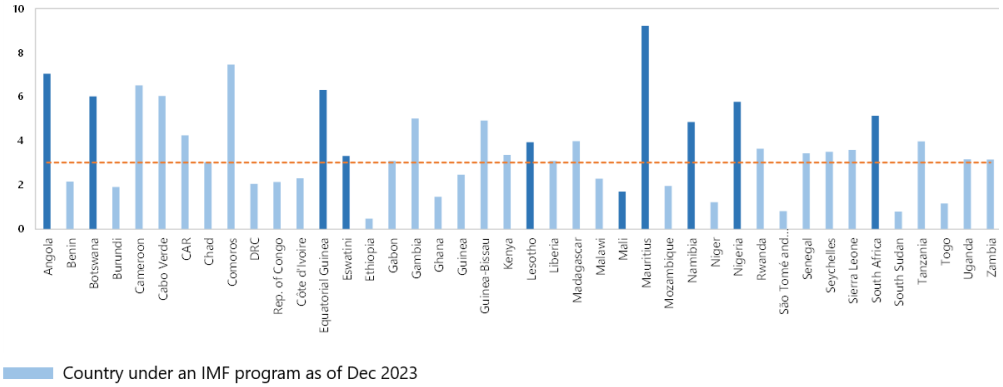
Source: IMF, WEO database and IMF staff calculations.

Exchange rate flexibility serves as a critical mechanism for external adjustment. In economies facing a current account deficit, a depreciation of the domestic currency can play a significant role in enhancing external balance. This is achieved by bolstering the competitiveness of exports and concurrently reducing residents purchasing power when it comes to imports. Nevertheless, recent studies have demonstrated that the effectiveness of exchange rate adjustments is contingent upon various factors, including the currency in which trade transactions are invoiced and the characteristics of the FX market, among others. Gopinath et al.

(2020) and Adler et al. (2020) document that with dominant currency pricing, exchange rate depreciation is associated with a cutback in imports but no significant increase in exports in the short term. Hence, empirical understanding of the transmission of exchange rate changes to trade dynamics is critical, especially in SSA economies. These economies heavily rely on commodity-based exports, with a large share of dollar pricing, potentially dampening the impact of exchange rate adjustments.

Figure 2: Sub-Saharan Africa Total Reserves, 2023

(*in months of next years imports*)



Source: IMF, WEO database and IMF staff calculations.
Notes: The dotted orange line shows 3 months of reserve coverage - the minimum level required in the reserve adequacy matrix. Burkina Faso and Zimbabwe are not included due to data unavailability.

The importance of understanding trade determinants becomes even more pronounced and urgent in the context of the African Continental Free Trade Area (AfCFTA). Despite some progress, regional trade integration in SSA remains the lowest in the world, with intra-regional trade accounting for less than 20 percent of total trade.[1] As one of the worlds largest free trade areas, the AfCFTA presents an unprecedented opportunity for SSA economies to foster regional integration, boost intra-African trade, and accelerate economic growth and development. With the potential to create a market of over 1.3 billion people and a combined GDP exceeding US$3.4 trillion, the AfCFTA holds the promise of transforming SSAs economic landscape El-Ganainy et al. (2023). Thus, understanding trade dynamics within SSA is crucial for the successful implementation and optimization of the AfCFTAs potential benefits.

This paper aims to contribute to the existing literature on the determinants of exports and imports by focusing specifically on SSA, a region that has emerged as an increasingly important player in global trade but remains underrepresented in academic research. The study primarily investigates the role of factors such as domestic demand, global growth, and exchange rates in explaining trade flows in SSA. By analyzing

[1] Intra-regional trade in SSA, measured as a percentage of total goods trade, is among the lowest in the world, surpassed only by Latin America (see Parente and Moreau (2024)).

the correlation between these factors with both exports and imports, the paper seeks to shed light on how they may shape trade facilitation and trade patterns in the region.

The paper is organized as follows. Section 2 provides a summary of the trade landscape in SSA, focusing specifically on import and export dynamics within the region. Section 3 provides a succinct review of related literature. Section 4 presents the empirical methodology and describes the data used for analysis. Section 5 provides a summary of the research findings, while Section 6 presents the robustness chekcs. Finally, Section 7 concludes and discusses policy implications.

2. Sub-Saharan Africa's Trade Landscape

2.1. Trade Openness

The degree of trade openness in SSA is generally lower compared to other regions (Figure 3). This likely reflects the lack of domestic production capacity and limited integration into the global value chain. Figure 3 also illustrates the varying distribution patterns of the trade-to-GDP ratio among different SSA country groups. Oil exporting countries exhibit the highest median trade-to-GDP ratio, indicating more trade openness among these nations on average in contrast to other SSA countries. Trade openness variability is lower among other resource intensive countries. This is compared with the higher variability noted in non-resource intensive countries, pointing to a more diverse range in their trade openness. Seychelles and Lesotho stand out as outliers, exhibiting significantly higher trade-to-GDP ratios compared to the rest of SSA. This evidence alludes to an interesting distinction in trade dynamics among resource-intensive and non-resource-intensive countries in the SSA region. While resource-intensive nations display a steadier pattern of trade openness, non-resource-intensive countries demonstrate a more varied range, implying different factors may be influencing their trade policies and strategies.

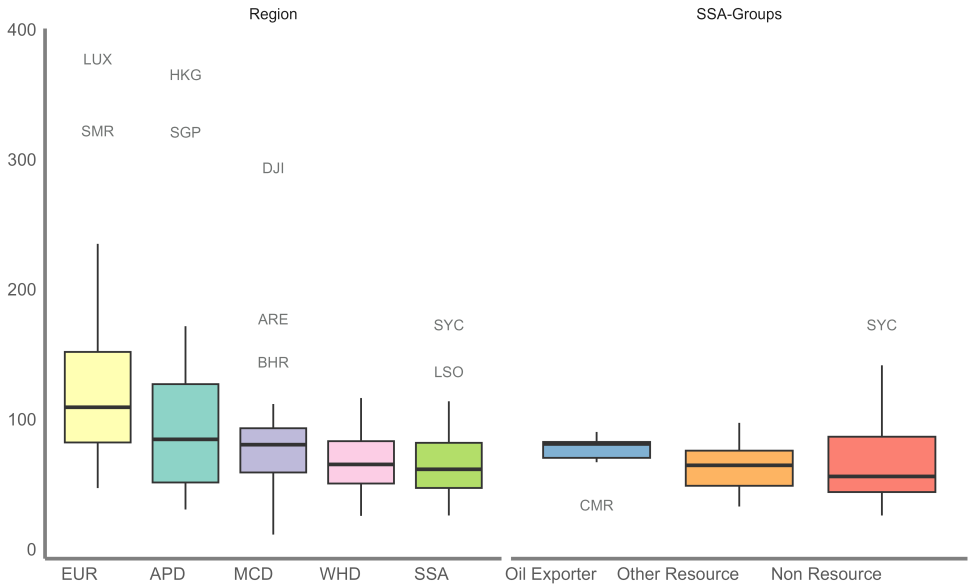
2.2. SSA Imports:

Imports provide an important source of raw materials for local producers and expand domestic consumption beyond domestic output. SSA is heavily dependent on imports from the outside world due to limited industrialization and infrastructure challenges, among other reasons. The limited industrial capacity of many SSA countries restricts the variety of goods they can produce domestically. As such, these countries depend on imports for essential items, machinery, advanced technology, and consumer goods (Figure 4).

Infrastructure challenges, such as inadequate transport networks and unreliable power supply, also play a role. These issues can impede local production, making it more cost-effective to import goods from developed countries with robust infrastructure. Furthermore, developed nations, with their advanced technology and innovation capabilities, can produce high-quality, sophisticated goods. As a result, SSA

Figure 3: Trade Opennes by Region, 2018-2023

(*trade to GDP ratio, average*)



Source: World Bank data and IMF staff calculations.
Notes: Figure shows the distribution of trade openness (trade-to-GDP ratio) by region and SSA country groups. The box represents the middle 50 percent of the data, with the line inside indicating the median. The whiskers extend to the minimum and maximum values within a typical range, and individual points mark outliers, signifying countries with particularly high ratios.

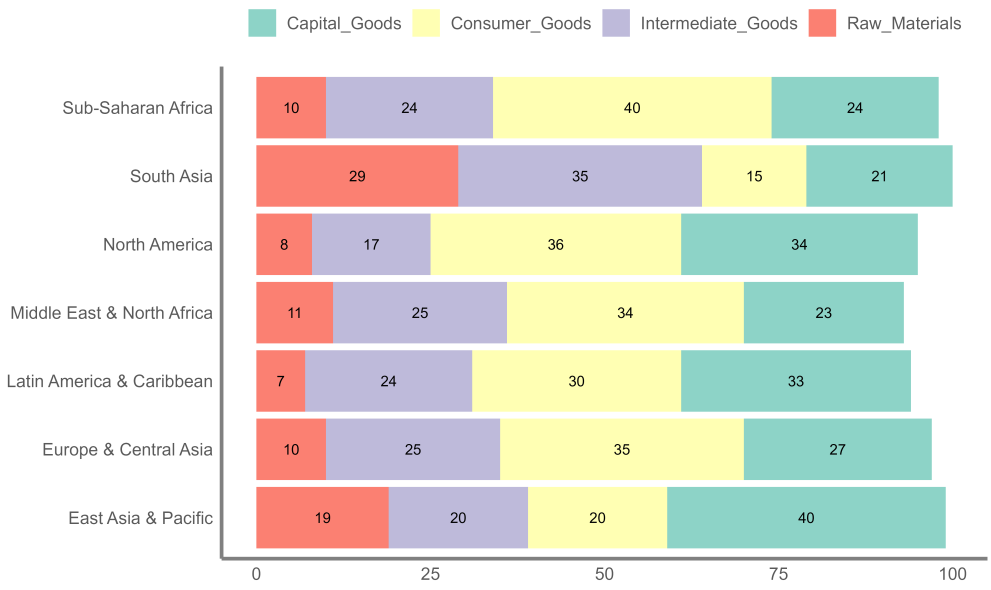
countries often import these products to access cutting-edge technology and bolster their domestic industries. However, while imports facilitate access to essential goods and technology, an over-reliance on them can pose risks. It can make SSA economies vulnerable to external shocks and inhibit the development of a diversified domestic economy. Therefore, understanding the balance between import reliance and domestic capability is crucial for sustainable growth.

Considering the top 10 imported goods in the SSA region, the high import rate of machinery and electronics, which account for 20 percent of all imports, underscores SSAs reliance on foreign technology and industrial goods. This reliance is likely due to the regions limited manufacturing capacity, thus suggesting opportunities for increasing domestic manufacturing and technological capacity. The substantial 14 percent import of fuels may seem counterintuitive given SSAs significant oil reserves, but it may be indicative of insufficient domestic refining capabilities. Imports of chemicals likely represent dependency on foreign inputs for agriculture, healthcare, and manufacturing sectors, while imports of metals and vegetables could point to necessities in the industrial and agricultural sectors, respectively.

Over the past two decades, SSAs major import partners have shifted from advanced economies to emerging

Figure 4: Imports Product Groups and Share by Region, 2021

(*Percent*)



Source: WITS database and IMF staff calculations.

economies. The share of imports from advanced economies has steadily declined from 50 percent in 2000 to 29 percent in 2020, and the share of imports from U.S. also halved from 9 percent to 5 percent. In contrast, imports from emerging markets and other low-income countries outside of SSA have increased, with its share surging from 18 percent to 30 percent. Notably, China has been emerging as a major trade partner for SSA in the past two decades, with its share in SSAs imports has increased from 4 percent in 2000 to around 20 percent in 2020. Nigeria, South Africa, Ghana, and Kenya were the African countries that imported the most goods from China in 2022. Combined, their imports made up more than half of all imports of Chinese goods to Africa last year.

2.3. SSA Exports:

Considering its constrained production capacity, SSA exports predominantly revolve around commodities, underscoring a significant reliance on natural resources for the regions economic activities. In SSA region, commodities account for more than 50 percent of total exports. Given the nature of these key exported products, SSA countries can be classified into three distinct sub-groups: 1) oil exporters, 2) other resource intensive countries (mainly mineral, ore and metal), and 3) non-resource intensive countries (see Figure **??**) .

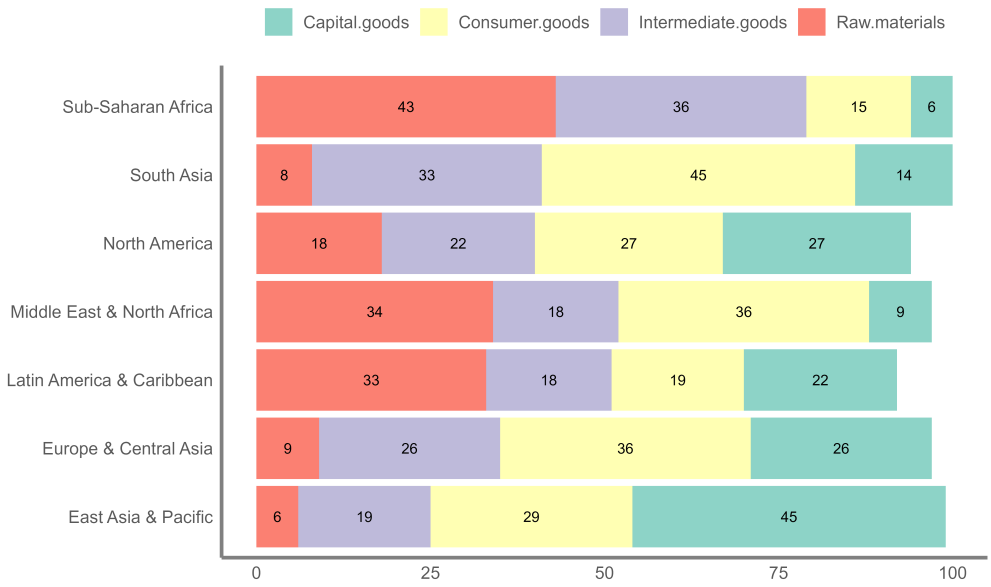
SSA export data for 2020, presented in Figure 5, provides a nuanced view of the regions economic

patterns and resource utilization. The predominance of raw material and commodity exports in SSA economies further underscores their vulnerabilities to external demand and financial conditions. In fact, these economies often lack the means to convert these resources into finished goods, necessitating the import of value-added products from countries with more advanced manufacturing sectors. Moreover, the predominance of fuel exports, constituting 22 percent of total exports, signifies the critical role of the regions energy sector, particularly oil-exporting countries. Stone and glass exports, accounting for 18 percent of total exports, suggest an abundance of these resources and, potentially, growth opportunities in gemstones, construction materials, and artisanal crafts. Similarly, the export of metals (14 percent) and minerals (10 percent) underscores the importance of the mining sector in the SSA economy. Meanwhile, vegetable exports (8 percent) reflect the regions agricultural capacity, albeit their relatively lower share may imply issues related to agricultural productivity, post-harvest losses, and market access.

Regarding trading partners, SSA's main export destinations include both emerging economies like China and India, as well as developed economies like the United States, Switzerland, and Germany. These diverse export relationships reflect SSA's global integration and its strategic economic interactions across different markets. The presence of South Africa among the top export partners further highlights intra-African trade dynamics.

Figure 5: Exports Product Groups and Share by Region, 2021

(*Percent*)



Source: WITS database and IMF staff calculations.

Overall, as El-Ganainy et al. (2023) demonstrate, Africas cross-border trade has experienced modest growth

over recent decades, characterized by a stagnant share of services trade and limited growth in merchandise trade. The continents exports to the global market are predominantly commodities, while trade within the region exhibits a more diversified portfolio, including processed goods. This further indicates Africas limited integration into global value chains (GVCs), impeded by a fragmented trade policy landscape, structural impediments, and inefficient trade facilitation measures. These factors underscore the necessity for a comprehensive analysis of the drivers influencing Africas trade dynamics.

3. Literature Review

While extensive literature explores trade determinants in various regions, fewer studies focus specifically on SSA, a region characterized by distinct economic, political, and social conditions, as well as its increasing importance in global trade. Existing studies indicate that variables such as GDP, its sub-components, exchange rates, and global demand are critical determinants of trade flows. For instance, the economic size of a country, gauged by its GDP, is deemed a primary determinant of trade as larger economies typically possess more diverse production and consumption bases, stimulating both exports and imports. IMF (2016), for example, finds that weak economic activity, particularly investment, accounts for about three-fourths of the dramatic slowdown in the volume of trade since 2012. Moreover, the volatility of exchange rates is another critical determinant, with several empirical studies finding an inverse relationship between exchange rate volatility and trade flows. Kang and Liao (2016) find that investment in China has much higher import intensity compared to domestic consumption, hence as China rebalances from investment to consumption-driven growth, overall import intensity has declined. Bussière et al. (2013) asserted that the composition of demand is central in shaping trade dynamics, attributing this to significant fluctuations within the most import-intensive expenditure categories.

Specific studies on SSA offer more granular insights. Asaana and Sakyi (2021) found that expenditure components, relative import prices, and foreign exchange reserves primarily drive SSA import demand. Ngouhouo et al. (2021) demonstrated that domestic institutions significantly influence SSA trade openness. Additionally, Sekkat and Varoudakis (2000) concluded that exchange rate management influences the performance of manufactured exports in SSA. In contract, Alege and Osabuohien (2015) noted that export and import are inelastic to changes in exchange rates in SSA, implying that currency depreciation may not yield expected results due to the structure of the economies and export compositions. Moreover, Meniago and Eita (2017) identified a positive relationship between exchange rate changes and imports in SSA, although the degree of responsiveness was extraordinarily low, suggesting that many African countries heavily dependent on imports tend to be resilient to exchange rate fluctuations.

This study aims to address a noted gap in the existing literature by providing a comprehensive empirical examination of trade dynamics, both imports and exports, across SSA. Recognizing the heterogeneity of

economies within the region, it goes beyond traditional aggregated analyses and dissects the region into distinct country groups, namely oil exporters, other resource-intensive countries, and non-resource-intensive countries. The study also investigates these trade dynamics across several regional economic blocs. This nuanced approach allows for a more granular understanding of trade patterns within these diverse economic contexts. By doing so, it contributes to the existing body of knowledge in two significant ways. Firstly, this study offers an in-depth examination of trade dynamics within SSA, a region that has often been overlooked despite its increasing relevance in global trade. Secondly, it expands on the current understanding of how trade dynamics vary across different economic structures within SSA, thus providing insights that could potentially inform tailored economic and trade policies to optimize the trade performance of these distinct groups.

4. Data and Methodology

The dataset utilized in this research covers a period from 1990 to 2022 and includes 44 countries in sub-Saharan Africa (SSA). The data is sourced from the IMF World Economic Outlook (WEO) and the United Nations Conference on Trade and Development (UNCTAD) database. The dependent variables in this study are the logarithmic changes in the total volume of exports and imports of goods and services. This transformation allows for ease of interpretation and addresses potential heteroscedasticity. The drivers of imports include aggregate demand components such as consumption and investment, exports, along with the real effective exchange rate (REER) to reflect relative prices of domestically produced goods vs foreign goods (i.e., price competitiveness). For exports, in addition to the REER, the world real GDP is included as a proxy for global demand along with foreign direct investment (FDI). All variables are expressed in real terms and logarithmic changes.

Given the panel nature of the data, three estimation methods are employed: fixed effects, random effects, and Arellano-Bond models. The fixed effects model can be represented as follows: [2]

$$y_{it} = \alpha + \beta X_{it} + \mu_i + u_{it} \tag{1}$$

where y_{it} denotes the dependent variable (imports or exports) for country i in year t, X_{it} represents a set of regressors including the real effective exchange rate (REER), consumption, investment, and exports (for the import demand equation), and global demand (for the export equation). The term μ_i captures country-specific time-invariant characteristics, while u_{it} represents the error term. To estimate this model, the within-group estimator is obtained by regressing the demeaned variables, which eliminates the μ_i term, or by using $N - 1$ country dummy variables. The within-group estimator is then estimated using ordinary

[2] We also estimate pooled ordinary least squares (pooled-OLS) which are reported in Annex II for comparison. Section 6 reports additional results based on the Mean-Group (MG) estimator.

least squares (OLS), while accounting for the degrees of freedom correction.

On the other hand, the random effects model allows for different intercept terms for each country, which arise from a common intercept α, in addition to a random variable E_i that varies cross-sectionally but remains constant over time. The random effects model is formulated as follows:

$$y_{it} = \alpha + \beta X_{it} + \omega_{it}, \quad \omega_{it} = E_i + V_{it} \tag{2}$$

Here, E_i represents the random deviation of each countrys intercept term from the global intercept term α, and V_{it} denotes the white-noise error term. The general least squares (GLS) procedure is typically employed to estimate this model, involving subtracting a weighted mean of y_{it} over time.

To address potential endogeneity concerns, a dynamic panel data model is also estimated using the system Generalized Method of Moments (GMM) estimator. Specifically, the Arellano and Bover (1995) and Blundell and Bond (1998) system GMM estimator is employed, utilizing lagged differences as instruments for the level equations and lagged levels as instruments for the difference equations. This approach is particularly suitable for our dataset, which exhibits a relatively short time dimension but a large cross-sectional dimension. To ensure the validity of the model, the two-step system GMM estimator is utilized with Windmeijer (2005) robust standard errors. Furthermore, the Hansen test is conducted to evaluate over-identifying restrictions, and the Arellano-Bond test is employed to examine second-order autocorrelation.[3]

5. Empirical Results

As discussed earlier, we estimate a set of panel data models to examine the determinants of SSA trade flows (imports and exports), considering various country groups and regional classifications. These groups included oil exporters, other resource-intensive countries, non-resource-intensive countries, and fragile states as well as regional blocs such as the East African Community (EAC), Central African Economic and Monetary Community (CEMAC), West African Economic and Monetary Union (WAEMU). [4]

5.1. Determinants of SSA Imports

The results from the regression analysis indicate that SSA imports are highly correlated with domestic demand, exports, and fluctuations in the exchange rate. The estimated coefficients for the SSA region have been found to be statistically significant, demonstrating robustness across various econometric models, as

[3] The results of these tests are summarized in Appendix Table B.13. They demonstrate the absence of second-order serial correlation, which is essential for GMM validity, indicating that the instrument sets are valid and that overidentification is not a significant concern.

[4] See Annex I for country classification.

shown in Table 1. The estimated import demand elasticities are quantified to be approximately 0.9 for consumption, 0.3 for investment, 0.5 for exports, and 0.1 for the REER, signifying the responsiveness of import quantities to changes in these underlying determinants. This implies that a one percent increase in consumption is associated with 0.9 percent increase in imports, reflecting the high proportion of consumer products in SSA imports, while a one percent increase in investment could boost import growth by 0.3 percent. In addition, a one percent increase in exports is associated with 0.5 percent increase in imports, reflecting the imported components of exports. The results also suggest a one percent appreciation of the REER is associated with imports growth by 0.1 percent. Nonetheless, these findings conceal considerable heterogeneity across the region, as the correlation of the variables under consideration and SSA imports fluctuates substantially among different country groupings and regional blocs, as evidenced in Tables 2 and 3.

Table 1: Sub-Saharan Africa Aggregate Imports of Goods

	Dependent variable: Real imports		
	Fixed Effects	Random Effects	Arellano Bond
Imports (Lag)			-0.04**
			(0.02)
Consumption	0.90***	0.89***	0.98***
	(0.04)	(0.04)	(0.04)
Investment	0.27***	0.27***	0.32***
	(0.02)	(0.02)	(0.02)
Exports	0.41***	0.42***	0.43***
	(0.02)	(0.02)	(0.02)
REER	0.09**	0.09***	0.05
	(0.03)	(0.03)	(0.04)
Constant	-0.01***	-0.01***	-0.02***
	(0.00)	(0.00)	(0.00)
Observations	1,498	1,498	1,424
R-squared	0.49	0.49	
Number of country_code	42	42	42

Note: Standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

For the change in consumption, the estimated coefficients were positive and statistically significant across all estimated models and country groups. These positive coefficients indicate that an increase in consumption in SSA is associated with higher imports for all the groups considered. However, the magnitudes of the coefficients differ across the groups. Among the commodity groups, the estimated coefficient for oil exporters is 0.8, suggesting that a one percent increase in consumption is associated with an approximate 0.8 percent increase in imports. Similarly, other resource-intensive and non-resource-intensive countries exhibit similar patterns with coefficients ranging from 0.87 to 0.99. These results imply that an increase in consumption expenditure could have a positive and significant effect on imports, indicating a strong link between domestic consumption and import demand. Moreover, the regional classifications also yield interesting results. For instance, the EAC, CEMAC, and WAEMU exhibit similar estimated coefficients

ranging from 0.84 to 1.27. This suggests that changes in consumption have a comparable correlation with imports across these regional blocs, indicating some level of harmonization in trade dynamics within these regions.

Overall, these results underscore the importance of changes in consumption as a crucial factor for SSA imports. The positive and significant coefficients indicate that an increase in domestic consumption expenditure is associated with higher import demand across all the country groups and regional classifications considered. These findings have implications for policymakers, highlighting the need to carefully consider the impact of domestic consumption patterns, including public consumption, on import dynamics and formulate appropriate policies to ensure a sustainable balance of trade for these countries and regions.

Regarding investment changes, the estimated coefficients were also positive and statistically significant. The results indicate that changes in investment have a positive correlation with imports across all the country groups, albeit with varying magnitudes. A one percent increase in investment corresponds to an approximate increase in imports ranging from 0.2 percent to 0.4 percent for the different country groups. Among the country groups, oil exporters exhibit the highest estimated coefficient of 0.4, implying a relatively stronger relationship between investment and import flows. Similarly, other resource-intensive countries also demonstrate a relatively high coefficient of 0.3, indicating a positive relationship between investment and imports in these countries, although with a somewhat smaller magnitude. These findings suggest that investment is a crucial factor in driving import demand in countries that heavily rely on resource-intensive sectors. Turning to regional blocs, the coefficients are also statistically significant, and ranged between 0.2 and 0.4, with the highest response appears for CEMAC.

These results highlight the positive relationship between changes in investment and import dynamics in SSA. The varying magnitudes of the estimated coefficients across the different country groups emphasize the importance of considering the specific characteristics and economic structures of each group. Policymakers should consider the influence of investment on import demand when formulating policies, especially in resource-intensive countries (oil exporters and other resource intensive countries) where investment may have a stronger effect on import flows.

Moving to discuss the relationship between exports and import flows, the results indicate a positive link between changes in exports and import flows across all the groups, although with varying magnitudes. A one percent increase in exports corresponds to an approximate increase in imports ranging from 0.2 percent to 0.8 percent for the different groups. Oil exporters and other resource-intensive countries exhibit higher coefficients, suggesting a stronger correlation between exports and imports demand. More specifically, among the country groups, oil exporters exhibit the highest estimated coefficient of 0.8. Other

resource-intensive countries also show a relatively high coefficient of 0.4, while non- resource intensive countries exhibit lower coefficients of 0.3. The correaltion between changes in exports and import demand is relatively smaller when considering blocs (between 0.2 and 0.5), with larger estimated coefficients in the case of EAC.

Turning to the impact of exchange rate, the regression results indicate that REER changes are highly correlated with imports in non-resource intensive countries, with a one percent appreciation could boost import growth by 0.15 percent (FE model), while the impacts in other country groupings are smaller and statistically insignificant. In terms of regional blocs, the role of the exchange rate seems to be most pronounced in the EAC countries, with one percent appreciation associated with a about 0.3 percent increase in imports, while for CEMAC and WAEMU, the coefficients are quantitatively smaller and statistically insignificant. Overall, the results suggest limited pass-through of exchange rate on imports except for non-resource intensive countries, which are mostly in EAC.

These findings emphasize the importance of factors such as consumption, investment, exports, and the REER in explaining trade flows in SSA. Policymakers should consider the specific characteristics and economic structures of each country group when formulating trade policies. Factors beyond resource intensity, such as sector-specific dynamics, market access, and trade facilitation, should also be considered to promote sustainable trade and economic growth in the region.

Table 2: Sub-Saharan Africa Imports of Goods by Commodity Exports and Fragility Groups

	Oil Exporters			Other Resource-Intensive			Non Resource-Intensive			Fragile States		
	FE	RE	AB	FE	RE	AB	FE	RE	AB	FE	RE	AB
Imports (Lag)			-0.02			-0.14***			-0.03			-0.09***
			(0.04)			(0.03)			(0.03)			(0.03)
Consumption	0.86***	0.83***	0.85***	0.89***	0.87***	0.93***	0.94***	0.95***	0.99***	1.09***	1.08***	1.10***
	(0.08)	(0.08)	(0.07)	(0.08)	(0.08)	(0.08)	(0.07)	(0.06)	(0.07)	(0.06)	(0.06)	(0.07)
Investment	0.39***	0.39***	0.40***	0.27***	0.27***	0.30***	0.24***	0.24***	0.27***	0.27***	0.28***	0.28***
	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Exports	0.67***	0.67***	0.68***	0.40***	0.41***	0.38***	0.28***	0.28***	0.29***	0.24***	0.25***	0.25***
	(0.05)	(0.05)	(0.05)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)
REER	-0.01	0.01	-0.01	0.09	0.09	0.07	0.15***	0.14***	0.13***	0.04	0.03	0.05
	(0.09)	(0.09)	(0.09)	(0.06)	(0.06)	(0.07)	(0.04)	(0.04)	(0.05)	(0.06)	(0.06)	(0.06)
Constant	-0.03**	-0.03**	-0.03**	-0.01	-0.01	-0.00	-0.01*	-0.01*	-0.01*	-0.00	-0.01	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
Observations	247	247	234	503	503	478	748	748	712	607	607	577
R-squared	0.64	0.64		0.43	0.43		0.46	0.46		0.48	0.48	
Num. of countries	7	7	7	14	14	14	21	21	21	17	17	17

Note: Standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1
FE: Fixed Effects, RE: Random Effects, AB: Arellano Bond

Table 3: Sub-Saharan Africa: Imports of Goods by Regional Groups

	CEMAC			WAEMU			EAC			SACU		
	FE	RE	AB	FE	RE	AB	FE	RE	AB	FE	RE	AB
Imports (Lag)			-0.11***			-0.11**			-0.05			0.03
			(0.04)			(0.05)			(0.05)			(0.06)
Consumption	0.85***	0.84***	0.85***	0.93***	0.91***	0.88***	1.21***	1.13***	1.27***	0.94***	0.90***	0.95***
	(0.07)	(0.07)	(0.07)	(0.12)	(0.12)	(0.13)	(0.12)	(0.12)	(0.12)	(0.12)	(0.11)	(0.12)
Investment	0.35***	0.35***	0.36***	0.19***	0.19***	0.20***	0.24***	0.24***	0.24***	0.27***	0.26***	0.26***
	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Exports	0.21***	0.20***	0.23***	0.23***	0.22***	0.23***	0.47***	0.49***	0.46***	0.20***	0.20***	0.21***
	(0.07)	(0.06)	(0.07)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.05)	(0.05)	(0.05)
REER	0.19	0.20	0.17	0.06	0.07	0.11	0.29***	0.29***	0.29***	0.01	0.01	-0.02
	(0.14)	(0.14)	(0.14)	(0.07)	(0.07)	(0.08)	(0.10)	(0.10)	(0.10)	(0.06)	(0.06)	(0.06)
Constant	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.02	-0.02	-0.01**	-0.01*	-0.01**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Observations	227	227	216	299	299	285	220	220	209	182	182	173
R-squared	0.62	0.62		0.36	0.36		0.42	0.42		0.47	0.47	
Num. of countries	6	6	6	8	8	8	6	6	6	5	5	5

Note: Standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1
FE: Fixed Effects, RE: Random Effects, AB: Arellano Bond
CEMAC: Central African Economic and Monetary Community, WAEMU: West African Economic and Monetary Union, EAC: East African Community, SACU: Southern African Customs Union

5.2. Determinants of SSA Exports

Our regression analysis of SSA export determinants focuses on the importance of changes in the world real GDP, REER and FDI to SSA exports. Overall, both variables are found to be statistically significant, and the results are robust across model specifications (Table 4). Regarding changes in the world real GDP, we found positive coefficients for the region as well as for all country groups, indicating that an increase in global demand is associated with higher export levels for all the groups considered. On average, a one percent increase in global growth could boost export growth by 2.6 percent in the region, with the strongest correlation found for non-resource-intensive countries, at 3.7 percent, and somewhat lower for other country groupings, at around 1.6 percent (Table 5). In terms of regional blocs, EAC countries show the highest export sensitivity to global growth, with a coefficient of 2.3, while for CEMAC and WAEMU, the correlation is much smaller and statistically insignificant (Table 6).

Table 4: Sub-Saharan Africa Aggregate Exports of Goods
Dependent variable: Real exports

	Fixed Effects	Random Effects	Arellano Bond
Exports (Lag)			-0.11***
			(0.03)
Real World GDP	2.67***	2.65***	2.75***
	(0.40)	(0.40)	(0.36)
REER	-0.28***	-0.27***	-0.35***
	(0.06)	(0.06)	(0.06)
FDI	0.00	0.00	0.00
	(0.01)	(0.01)	(0.01)
Constant	-0.03*	-0.02	-0.03*
	(0.01)	(0.02)	(0.01)
Observations	1,182	1,182	1,087
R-squared	0.06	0.06	
Number of country_code	42	42	42

Note: Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Turning to changes in the REER on exports, the coefficients varied across the country groups. On average, a one percent in REER depreciation could increase exports by 0.2-0.5 percent in the SSA region, with the coefficient at 0.2 for non-resource countries, 0.3 for oil exporters, and 0.5 for non-oil commodity exporters (Table 5). In terms of regional blocs, EAC countries show the strongest pass-through of exchange rate, with one percent depreciation increases exports by 0.5 percent, followed by WAEMU, where the coefficient is lower at 0.2-0.3 percent. For CEMAC countries, the impact of REER is not significant (Table 6), likely reflecting the fixed exchange rate regime in these countries, and hence limited movement in the REER.

In summary, our analysis highlights the importance of global demand and exchange rates in explaining exports in SSA. Moreover, the correlation between these variables and exports flows varies across country groups, depending on factors such as the countrys resource intensity, exchange rate regime, and other trade-related dynamics. It should be noted that the overall R2 for the export regression is much lower compared to the import regression, suggesting other factors, such as trade policy and structural changes, may have significant impact on exports, which are not captured in the analysis.

Table 5: Sub-Saharan Africa Exports of Goods by Commodity Exports and Fragility Groups

	Oil Exporters			Other Resource-Intensive			Non Resource-Intensive			Fragile States		
	FE	RE	AB	FE	RE	AB	FE	RE	AB	FE	RE	AB
Exports (Lag)	0.08					-0.17***			-0.10***			-0.13***
	(0.06)					(0.05)			(0.04)			(0.04)
Real World GDP	1.58	1.37	0.88	1.67**	1.70**	1.64**	3.70***	3.68***	3.67***	2.51***	2.54***	2.40***
	(1.49)	(1.64)	(1.06)	(0.69)	(0.69)	(0.69)	(0.40)	(0.40)	(0.38)	(0.68)	(0.68)	(0.68)
REER	-0.09	0.05	-0.27**	-0.52***	-0.53***	-0.51***	-0.20***	-0.21***	-0.21***	-0.42***	-0.43***	-0.41***
	(0.18)	(0.20)	(0.13)	(0.11)	(0.11)	(0.11)	(0.07)	(0.07)	(0.07)	(0.10)	(0.10)	(0.11)
FDI	-0.01	-0.01	0.00	-0.00	-0.00	-0.01	0.01**	0.02**	0.02**	0.00	0.00	0.00
	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Constant	0.04	0.06	0.03	0.00	0.00	0.02	-0.07***	-0.07***	-0.06***	-0.03	-0.03	-0.02
	(0.06)	(0.07)	(0.04)	(0.04)	(0.03)	(0.03)	(0.02)	(0.02)	(0.01)	(0.03)	(0.03)	(0.03)
Observations	193	193	173	403	403	374	586	586	540	482	482	444
R-squared	0.01	0.01		0.07	0.07		0.16	0.16		0.07	0.07	
Num. of countries	7	7	7	15	15	15	20	20	20	17	17	17

Note: Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

FE: Fixed Effects, RE: Random Effects, AB: Arellano Bond

Table 6: Sub-Saharan Africa Exports of Goods by Regional Groups

	CEMAC			WAEMU			EAC			SACU		
	FE	RE	AB	FE	RE	AB	FE	RE	AB	FE	RE	AB
Exports (Lag)	0.14*					-0.08			-0.17**			-0.01
	(0.08)					(0.08)			(0.07)			(0.08)
Real World GDP	0.95	0.84	1.04	-0.49	-0.45	-0.51	2.09**	2.14**	1.56*	2.87***	2.84***	2.98***
	(0.90)	(0.91)	(0.88)	(0.57)	(0.56)	(0.53)	(0.86)	(0.86)	(0.84)	(0.60)	(0.60)	(0.54)
REER	0.15	0.14	0.12	-0.46***	-0.45***	-0.50***	-0.49***	-0.52***	-0.48***	-0.23**	-0.24**	-0.23***
	(0.19)	(0.19)	(0.19)	(0.15)	(0.15)	(0.16)	(0.12)	(0.12)	(0.12)	(0.10)	(0.10)	(0.09)
FDI	0.00	0.00	0.00	-0.00	-0.00	-0.00	0.02	0.01	0.01	0.01	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Constant	0.01	0.01	-0.00	0.07***	0.07***	0.07***	0.02	0.01	0.05	-0.06**	-0.05**	-0.06***
	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)
Observations	185	185	168	183	183	162	184	184	171	157	157	143
R-squared	0.01	0.01		0.05	0.05		0.14	0.14		0.16	0.16	
Num. of countries	6	6	6	7	7	7	6	6	6	5	5	5

Note: Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

FE: Fixed Effects, RE: Random Effects, AB: Arellano Bond

CEMAC: Central African Economic and Monetary Community, WAEMU: West African Economic and Monetary Union, EAC: East African Community, SACU: Southern African Customs Union

6. Robustness Checks

While the previous section presents results from three models (Fixed Effects, Random Effects, and GMM AB) regarding the main drivers of SSA imports and exports, it is important to emphasize that this paper does not primarily focus on causality. Instead, we concentrate on the likely correlations between macroeconomic variables. The Arellano-Bond model was implemented, along with several diagnostic checks, primarily as a robustness check to address potential endogeneity concerns. GMM AB test statistics are provided in Appendix Table B.13.

The results presented in Table B.13 indicate that the GMM AB model is generally well-specified for the majority of our estimations. The AR(1) test confirms the presence of first-order autocorrelation (as expected in differenced GMM), while the AR(2) test fails to reject the null hypothesis in all cases, suggesting no second-order serial correlation—a key requirement for GMM validity. The Sargan and Hansen tests largely indicate valid instrument sets, with p-values above 0.10, suggesting that overidentification is not a major

concern. Overall, these results support the reliability of the estimates.[5]

However, there are obvious limitations to our GMM AB estimation, particularly concerning the sample size characteristics, noting that N may not be sufficiently larger than T, especially when conducting regressions on different sub-samples. This limitation could lead to biased and inefficient estimates. To address these legitimate concerns, this section extends our results using the Pooled Mean Group (MG) estimator, as described by Pesaran et al. (1999). This estimator allows intercepts, short-run coefficients, and error variances to differ freely across groups while restricting long-run coefficients to be equal. Additionally, it accommodates varying numbers of time series observations across groups. These additional results are reported in Tables 7 and 8. Overall, the MG results are broadly consistent across all estimated models and align with the findings reported in the previous section based on FE, RE, and GMM AB estimations.

Table 7: Pooled Mean Group Estimation Results - Imports

	Dependent variable:								
	Real Imports								
	SSA	Oil Exporter	Other Resource	Non Resource	Fragile	CEMAC	WAEMU	SACU	EAC
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Consumption	1.103***	0.923***	1.194***	1.106***	1.137***	0.789***	1.152***	0.818***	1.511***
	(0.090)	(0.141)	(0.204)	(0.116)	(0.162)	(0.149)	(0.262)	(0.126)	(0.267)
Investment	0.337***	0.483***	0.326***	0.298***	0.335***	0.480***	0.259***	0.295***	0.403***
	(0.032)	(0.047)	(0.055)	(0.046)	(0.064)	(0.063)	(0.060)	(0.058)	(0.125)
Exports	0.410***	0.602***	0.461***	0.319***	0.371***	0.466***	0.366***	0.276***	0.424***
	(0.040)	(0.142)	(0.067)	(0.040)	(0.069)	(0.132)	(0.061)	(0.088)	(0.101)
REER	0.088	0.252	0.039	0.065	−0.023	0.278	0.036	−0.039	0.203**
	(0.060)	(0.255)	(0.093)	(0.066)	(0.095)	(0.300)	(0.131)	(0.099)	(0.089)
Constant	−0.027***	−0.033***	−0.031**	−0.023***	−0.018***	−0.018	−0.031**	−0.013***	−0.032
	(0.005)	(0.011)	(0.012)	(0.007)	(0.007)	(0.011)	(0.015)	(0.005)	(0.026)
Observations	1,498	247	473	778	548	227	299	182	220
R^2	0.680	0.777	0.586	0.641	0.604	0.670	0.551	0.496	0.558

Note: *p<0.1; **p<0.05; ***p<0.01

[5] However, non-resource-intensive economies exhibit a high Hansen p-value, indicating potential weak instrument issues. Additionally, the East African Community (EAC) sample shows a marginally insignificant AR(1) test, which may suggest weak identification.

Table 8: Pooled Mean Group Estimation Results - Exports

	Dependent variable:								
	Real Exports								
	SSA	Oil Exporter	Other Resource	Non Resource	Fragile	CEMAC	WAEMU	SACU	EAC
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
World_GDP	2.476***	1.498	1.446	3.488***	1.679*	0.744	−0.234	2.713***	2.568***
	(0.534)	(1.012)	(1.056)	(0.694)	(0.974)	(0.813)	(0.852)	(0.763)	(0.313)
REER	−0.201*	−0.263	−0.271**	−0.133	−0.425**	−0.025	−0.237	−0.263**	−0.260*
	(0.105)	(0.332)	(0.136)	(0.160)	(0.171)	(0.217)	(0.303)	(0.127)	(0.138)
FDI	−0.001	−0.066	0.025*	0.004	0.016	0.013	0.002	0.013	0.024
	(0.015)	(0.078)	(0.014)	(0.013)	(0.017)	(0.011)	(0.018)	(0.009)	(0.032)
Constant	−0.003	0.146	0.012	−0.062**	0.001	0.011	0.064***	−0.050	−0.00005
	(0.031)	(0.137)	(0.040)	(0.027)	(0.039)	(0.026)	(0.024)	(0.032)	(0.018)
Observations	1,182	193	377	612	422	185	183	157	184
R^2	0.261	0.342	0.219	0.180	0.124	0.018	0.164	0.144	0.152

Note: *p<0.1; **p<0.05; ***p<0.01

7. Conclusion and Policy Implications

International trade has proven to be a potent catalyst for economic growth and poverty alleviation in recent decades. In the context of sub-Saharan Africa (SSA), sustaining trade integration is imperative for fostering long-term growth. Moreover, trade issues are integral to external sustainability, given that chronic trade deficits and the associated current account deficits could accentuate economic vulnerabilities and potentially catalyze a crisis. Consequently, understanding trade dynamicsincluding both the export and import facetsis essential for informed macroeconomic policy management.

This paper contributes to the existing literature by examining the determinants of trade dynamics in the SSA region, different country groups and regional blocs. The study finds that domestic demand and exports are highly correlated with SSA imports. Specifically, a one percent increase in consumption, investment, and exports correlates with a 0.9, 0.3, and 0.5 percent increase in imports, respectively. Translating these empirical findings into the standard import intensity measures, shows that about 20-40 percent of consumption, 60 percent of investment are linked to imports. These effects, however, exhibit substantial variance across different country classifications. Notably, imports demand in oil-exporting countries is markedly more responsive to exports and investment compared to other countries.

Exchange rates are also found to be an important factor in explaining import dynamics in the region, with

a one percent appreciation of the real effective exchange rate (REER) is associated with bolstering import growth by 0.1 percent. However, this relationship primarily reflects the trends in East African Community (EAC) or non-resource-intensive countries. The importance of exchange rates in explaining imports appears less pronounced for resource-intensive countries. The prevalence of fixed exchange rate regimes among a considerable number of countries, especially those with resource-intensive economies, may hinder the role of exchange rates as a mechanism for economic adjustment. This limitation contributes to the insignificant findings for these groups of countries, as well as for monetary unions such as the Economic and Monetary Community of Central Africa (CEMAC).

SSAs exports display a high sensitivity to the global environment. A one percent surge in global growth correlates with a 2.6 percent growth in the regions exports. This correlation is most potent for non-resource-intensive countries, reflected in a 3.7 percent growth, compared to less than 2 percent for other country groupings. Exchange rate fluctuations also correlate with exports, although this link is quantitatively small, with a one percent depreciation is associated with boosting exports in the region by 0.2 percent. However, the exchange rate pass-through is only significant for non-resource-intensive (mostly in the EAC) and other resource-intensive countries. For oil exporters, exchange rate depreciation does not seem to influence exports, likely due to the global determination of oil prices and pricing in U.S. dollars, rendering local currency depreciation ineffective in enhancing the competitiveness of oil exports.

The findings discussed suggest that SSA imports demonstrate a greater sensitivity to fluctuations in consumption rather than to variations in investment. This outcome is surprising, given that investment activities are commonly believed to be more deeply connected to trade than consumption, particularly due to the significant input intensity of investment. Notably, consumption goods constitute a more considerable portion of the import basket in SSA, averaging about 40 percent, in contrast to 30 percent in other emerging economies. Moreover, our analysis is concentrated on the components of final demand, without considering the demand for intermediate inputs. While African nations are typically less integrated into global value chains, future studies could enhance our understanding by refining the analysis of final demand components to clearly distinguish between final and intermediate components.

The identified factors highly correlated with trade dynamics hold profound implications for policy makers in SSA. As the study illustrates, the importance of these factors and their correlation with exports and imports vary across countries, contingent on the economic structure, underscoring the necessity to factor country-specific elements into policy formulation. For instance, currency depreciation might be less effective in restoring trade balance for commodity exporters but could be a significant leverage for non-resource-intensive countries where policies to promote exchange rate flexibility would be instrumental. Furthermore, countries whose exports are more vulnerable to global fluctuations may benefit from robust countercyclical macroeconomic

policies. These strategies can help mitigate the impact of global changes on the domestic economy, ensuring stability and resilience. The observed correlation between imports and domestic demand highlights the potential for policy adjustments such as fiscal consolidation to restore external balance. Additionally, maintaining adequate foreign exchange reserve levels will safeguard against unforeseen spikes in import demand.

In summary, the complex trade dynamics in the SSA region require a nuanced policy approach. This papers findings are fundamental to shaping responsive and robust trade policies that align with the regions long-term growth and sustainability aims, unlocking the full potential of international trade to enhance prosperity and resilience in a globally interconnected economy.

References

Adler, G., Casas, C., Cubeddu, M. L. M., Gopinath, M. G., Li, M. N., Meleshchuk, S., Buitron, M. C. O., Puy, M. D. and Timmer, M. Y. (2020), *Dominant currencies and external adjustment*, International Monetary Fund.

Alege, P. O. and Osabuohien, E. S. (2015), 'Trade-exchange rate nexus in sub-saharan african countries: Evidence from panel cointegration analysis', *Foreign Trade Review* **50**(3), 151–167.

Arellano, M. and Bover, O. (1995), 'Another look at the instrumental variable estimation of error-components models', *Journal of econometrics* **68**(1), 29–51.

Asaana, C. A. and Sakyi, D. (2021), 'Empirical analysis of demand for imports in sub-saharan africa', *The International Trade Journal* **35**(4), 360–382.

Blundell, R. and Bond, S. (1998), 'Initial conditions and moment restrictions in dynamic panel data models', *Journal of econometrics* **87**(1), 115–143.

Bussière, M., Callegari, G., Ghironi, F., Sestieri, G. and Yamano, N. (2013), 'Estimating trade elasticities: demand composition and the trade collapse of 2008–2009', *American economic Journal: macroeconomics* **5**(3), 118–151.

El-Ganainy, A., Hakobyan, S., Liu, F., Weisfeld, H., Allard, C., Balima, H., Bteish, C., Giri, R., Kanda, D., Meleshchuk, S. et al. (2023), 'Trade integration in africa: Unleashing the continent's potential in a changing world (no. 2023/003). international monetary fund'.

Gopinath, G., Boz, E., Casas, C., Díez, F. J., Gourinchas, P.-O. and Plagborg-Møller, M. (2020), 'Dominant currency paradigm', *American Economic Review* **110**(3), 677–719.

IMF (2016), 'Global trade: Whats behind the slowdown?'.

Kang, M. J. S. and Liao, W. (2016), *Chinese imports: Whats behind the slowdown?*, International Monetary Fund.

Meniago, C. and Eita, J. H. (2017), 'The effects of exchange rate changes on sub-saharan africa trade', *International Journal of Sustainable Economy* **9**(3), 213–230.

Ngouhouo, I., Nchofoung, T. and Njamen Kengdo, A. A. (2021), 'Determinants of trade openness in sub-saharan africa: do institutions matter?', *International Economic Journal* **35**(1), 96–119.

Parente, R. M. and Moreau, F. (2024), The dynamics of trade integration and fragmentation in lac, Technical report, International Monetary Fund.

Pesaran, M. H., Shin, Y. and Smith, R. P. (1999), 'Pooled mean group estimation of dynamic heterogeneous panels', *Journal of the American statistical Association* **94**(446), 621–634.

Sekkat, K. and Varoudakis, A. (2000), 'Exchange rate management and manufactured exports in sub-saharan africa', *Journal of Development Economics* **61**(1), 237–253.

Windmeijer, F. (2005), 'A finite sample correction for the variance of linear efficient two-step gmm estimators', *Journal of econometrics* **126**(1), 25–51.

Appendix A. The Dataset

Table A.9: Sub-Saharan Africa: Country Classification by Commodity Exports Groups

Oil exporters	Other resource-intensive countries	Non-resource intensive countries
Angola	Botswana	Benin
Cameroon	Burkina Faso	Burundi
Chad	Central African Republic	Cabo Verde
Congo, Rep. of	Congo, Dem. Rep. of	Comoros
Equatorial Guinea	Eritrea	Cte d'Ivoire
Gabon	Ghana	Eswatini
Nigeria	Guinea	Ethiopia
South Sudan	Liberia	Gambia, The
	Mali	Guinea-Bissau
	Namibia	Kenya
	Niger	Lesotho
	Sierra Leone	Madagascar
	South Africa	Malawi
	Tanzania	Mauritius
	Zambia	Mozambique
	Zimbabwe	Rwanda
		S£o Tom and Prncipe
		Senegal
		Seychelles
		Togo
		Uganda

Source: IMF

Table A.10: Sub-Saharan Africa: Country Classification by Regional Groups

EAC	CEMAC	WAEMU
Burundi	Cameroon	Benin
Kenya	Central African Republic	Burkina Faso
Rwanda	Chad	Cte d'Ivoire
South Sudan	Congo, Republic of	Guinea-Bissau
Tanzania	Equatorial Guinea	Mali
Uganda	Gabon	Niger
Democratic Republic of Congo		Senegal
		Togo

Source: IMF

EAC: East African Community, CEMAC: Central African Economic and Monetary Community, WAEMU: West African Economic and Monetary Union

Appendix B. Additional Results

Table B.11: Sub-Saharan Africa: Aggregate Imports of Goods

	Pooled OLS								
	SSA	Oil Exporters	Other Resource-Intensive	Non Resource-Intensive	Fragile States	EAC	CEMAC	WAEMU	SACU
Consumption	0.89***	0.83***	0.87***	0.95***	1.081***	1.13***	0.84***	0.91***	0.90***
	(0.04)	(0.08)	(0.08)	(0.06)	(0.064)	(0.22)	(0.07)	(0.12)	(0.11)
Investment	0.27***	0.39***	0.27***	0.24***	0.278***	0.24***	0.35***	0.19***	0.26***
	(0.02)	(0.04)	(0.03)	(0.02)	(0.024)	(0.08)	(0.04)	(0.03)	(0.03)
Exports	0.42***	0.67***	0.41***	0.28***	0.251***	0.49***	0.20***	0.22***	0.20***
	(0.02)	(0.05)	(0.03)	(0.02)	(0.027)	(0.06)	(0.06)	(0.04)	(0.05)
REER	0.09***	0.01	0.09	0.14***	0.029	0.29***	0.20	0.07	0.01
	(0.03)	(0.09)	(0.10)	(0.04)	(0.058)	(0.10)	(0.14)	(0.07)	(0.06)
Constant	-0.01***	-0.03**	-0.01	-0.01*	-0.006	-0.01	-0.01	-0.01	-0.01*
	(0.00)	(0.01)	(0.01)	(0.01)	(0.007)	(0.02)	(0.01)	(0.01)	(0.01)
Observations	1,498	247	503	748	607	220	227	299	182
R-squared	0.50	0.65	0.43	0.47	0.480	0.41	0.62	0.36	0.47

Note: Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table B.12: Sub-Saharan Africa: Aggregate Exports of Goods

	Pooled OLS								
	SSA	Oil Exporters	Other Resource-Intensive	Non Resource-Intensive	Fragile States	EAC	CEMAC	WAEMU	SACU
Real World GDP	2.60***	1.26	1.70**	3.68***	2.54***	2.14**	0.84	-0.45	2.84***
	(0.42)	(1.72)	(0.69)	(0.40)	(0.68)	(0.86)	(0.91)	(0.56)	(0.60)
REER	-0.23***	0.11	-0.53***	-0.21***	-0.43***	-0.52***	0.14	-0.45***	-0.24**
	(0.07)	(0.20)	(0.11)	(0.07)	(0.10)	(0.12)	(0.19)	(0.15)	(0.10)
FDI	0.00	-0.01	-0.00	0.02**	0.00	0.02	0.00	-0.00	0.01
	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Constant	-0.03	0.05	0.00	-0.07***	-0.03	0.01	0.01	0.07***	-0.05**
	(0.02)	(0.07)	(0.03)	(0.01)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)
Observations	1,182	193	403	586	482	184	185	183	157
R-squared	0.04	0.01	0.07	0.16	0.07	0.14	0.01	0.05	0.15

Note: Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table B.13: GMM AB Test Statistics

Sample	AR(1)		AR(2)		Sargan		Hansen	
	Stat.	p-value	Stat.	p-value	Stat.	p-value	Stat.	p-value
Dependent variable = Imports								
SSA	-3.783	0.000	-1.127	0.260	3.967	0.138	0.861	0.650
Oil Exporters	-1.796	0.073	-0.804	0.422	5.653	0.059	0.666	0.717
Other Resource Intensive	-2.003	0.045	-1.851	0.064	3.367	0.186	4.084	0.130
Non Resource Intensive	-3.194	0.001	0.208	0.835	0.008	0.996	0.002	0.999
Fragile States	-2.287	0.022	0.338	0.735	5.726	0.057	4.955	0.084
EAC	-1.441	0.150	0.638	0.524	1.134	0.567	0.000	1.000
CEMAC	-0.918	0.359	-0.729	0.466	7.953	0.019	0.000	1.000
WAEMU	-2.157	0.031	-0.277	0.781	8.240	0.016	2.292	0.318
SACU	-1.382	0.167	-1.625	0.104	1.430	0.489	0.000	1.000
Dependent variable = Exports								
SSA	-3.522	0.000	-0.913	0.361	2.244	0.134	1.623	0.203
Oil Exporters	-1.992	0.046	-1.274	0.203	0.061	0.804	0.360	0.548
Other Resource Intensive	-2.027	0.043	-0.328	0.743	0.337	0.562	0.484	0.487
Non Resource Intensive	-3.748	0.000	-1.349	0.177	0.079	0.779	0.041	0.840
Fragile States	-2.567	0.010	-0.585	0.559	0.084	0.771	0.140	0.709
EAC	-1.428	0.153	0.181	0.857	0.326	0.568	0.110	0.740
CEMAC	-1.660	0.097	-1.096	0.273	1.248	0.264	1.163	0.281
WAEMU	-2.333	0.020	1.470	0.142	0.587	0.443	0.299	0.585

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