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Keywords: International Trade; Local Financial Market; Inclusive Growth; Sub-Saharan Africa.

JEL Classification: F13; G20; O16; O43

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I. INTRODUCTION

Trade is generally viewed as an instrument for improving the living standard of people. It is also a channel through which economic agents can gain access to a variety of goods and services at comparatively low costs, regardless of their home country's human resources, natural resources, and technology endowment (Asamoah et al. 2019; Bajo-Rubio 2022). Support for this assertion can be inferred from the policy directions of some nations and regional and economic groupings. An example is the African Union's long-term development strategy, dubbed "Agenda 2063: The Africa We Want," which makes trade the core of its four flagships programs—the Integrated High-Speed Train Network, the African Commodities Strategy, the African Continental Free Trade Area, and African Passport and Free Movement of People—all aimed at achieving inclusive socioeconomic development (AUC and AUDA-NEPAD 2022). The African Continental Free Trade Area, with a population of 1.3 billion from 55 states and an estimated gross domestic product (GDP) of more than US$3.4 trillion, has an enormous opportunity to reduce extreme poverty for 30 million people (Maliszewska et al. 2020).

Africa has recorded impressive economic growth at an annual rate of 4.5% over the last few decades (World Bank 2023). Has this growth translated to significant welfare improvements? Has it increased income and reduced the poverty of households? Have national economies achieved proportionate benefits from growth or did growth come at the expense of rising inequality? Nations with the highest GDP per capita are not necessarily nations with the highest United Nations Human Development Index scores. This reality raises concerns about the significance of, or the overreliance on, GDP per capita values in the measurement of improvement in living standards, and it seems to have solidified the position held by Bluszcz (2018) that, although necessary, strong sustained GDP growth is not sufficient to improve lives. The same view is held by many other researchers, including Ranieri and Ramos (2013), who stated that increased economic growth, if not inclusive, would not alone translate to increased wealth and improved living standards. However, growth, according to Bourguignon (2000), has remained the best tool for poverty reduction, accounting for about 70% of the variations in poverty values in the short run. Thus, the rate and direction of growth matter in poverty reduction and in a fair distribution of income (UNCTAD 2023). Critical to development is a renewed focus on the concept of "inclusive growth"—growth that prioritizes both a sustainable, equal, and non-discriminating opportunity for participation in economic activities and the benefits of that participation. The inclusive growth concept is linked to the work of Kakwani and Pernia (2000), who introduced pro-poor growth as a departure from the "trickle-down" phenomenon of growth.

Trade and growth have been strongly correlated over the years, but trade's impact on inclusive growth depends on the absorptive capacity of trading nations to benefit from the larger market that trade openness offers (Lederman 2013). Growth can be inclusive only if trade policies are aimed directly at social objectives like women's empowerment, improved income distribution, and poverty reduction (Arndt 1983). Achieving these social objectives and building absorptive capacity require both funding and an efficient financing infrastructure for the seamless movement of funds, which Garg (2021) and Zahra et al. (2023) believe are part of the solution to increasing indigene's participation in trade and to improving trade's significantly positive impact on inclusive growth. In the case of less developed nations, where getting access to international funding for firms has been difficult, the local financial market is cited as a more impactful growth promotor (Levine and

Renelt 1992; Aregbeshola 2016). Therefore, the contribution of local financial markets to the link between inclusive growth and international trade needs to be established and evaluated to help inform policies, particularly in an era in which trade policies are seemingly open and in which trade between Africa and the world has become increasingly reciprocal.

A few studies (Bacchetta et al. 2021; Lederman 2013; Ranieri and Ramos 2013) have adopted the inclusive growth concept to examine the effect of trade on living standards. These studies paid little attention to gender inequality indicators in the construction of their inclusive growth composite indexes, which could lead to a misleading result, particularly for Sub-Saharan Africa, where the majority, about 50.2%, are female (World Bank, 2022). Furthermore, Zahra et al. (2023), Bacchetta et al. (2021), Garg (2021), Lederman (2013), and Sarpong and Nketiah-Amponsah (2022) paid little attention to the sustainability part of growth by not including environmental indicators in constructing their inclusive growth composite indexes.

Development is a multidimensional concept in which economy, society, and environment are overlapping spheres (Cobbinah et al. 2011). Improving people's lives while protecting the environment is the only way to experience sustainable growth (UNCTAD 2023; Bluszcz 2018). The few studies that have adopted the inclusive growth concept have failed to explore how local financial markets can moderate international trade to impact inclusive growth in Sub-Saharan Africa.

This paper seeks to fill this gap by empirically examining the international trade and inclusive growth nexus. It makes three significant contributions to the literature. First, it examines the impact of local financial markets on international trade in Sub-Saharan Africa. Second, it explores the effect of international trade and financial markets on inclusive growth. Finally, it examines the moderating role of financial markets in the relationship between international trade and inclusive growth, providing a comprehensive measure of inclusive growth.

The rest of the paper is structured as follows: Section 2 presents the literature review, Section 3 discusses the methods and data, Section 4 presents results and discussion, and Section 5 presents the conclusion and policy implications.

2. LITERATURE REVIEW

2.1 Theoretical Underpinnings

2.1.1 Inclusive Growth Concept

The inclusive growth concept started with attempts to explain how economic activities or growth could benefit society as a whole, particularly in improving the living standard or well-being of people. The trickle-down concept, which was dominant before the 1970s, explained the impact of economic growth on well-being through the mechanism of open market forces (Kakwani and Pernia, 2 2000). It was understood that, because productive resources were owned by a privileged few, reliance on market forces to distribute proceeds from economic activities made the rich richer. However, proponents believed that the poor would indirectly benefit from growth through economic interactions with the rich. Kakwani and Pernia (2000) and Dollar and Kraay (2002) suggested that high growth translates into an increase in well-being, provided the government avoids inflation and maintains fiscal discipline. Dollar and Kraay (2002) concluded that the income of the poor

rises one-for-one with overall growth. However, the work of Dollar and Kray is problematic due to the nonuniformity in the measurement of income, inequality and poverty, and the general unacceptability of the trickle-down concept. Moreover, individual nations' experience varies significantly; hence, cross-country empirical work that used average values (including the work of Dollar and Kray) could not establish a conclusive link between growth and well-being. These issues led Kakwani and Pernia (2000) to propose the concept of pro-poor growth.

Pro-poor growth was thought of as growth that enables the poor to actively participate in and benefit from economic activities (Bakker and Mpesserli, 2017). Thus, whether the concept is viewed in relative terms, as espoused by Kakwani and Pernia (2000), or in absolute terms, as espoused by Ravallion (2004) as cited in Gyamfi et al. (2022a), it aims to improve the well-being of the poor. Critics of the concept argue that strategies geared to improving only the lives of the poor give rise to distortions in the economy due to the perceived trade-off between efficiency and equity.

According to Ali and Son (2007), growth becomes inclusive when it offers equal access to opportunities irrespective of individual situations. Thus, inclusive growth increases the social opportunity function, a concept based on the general welfare function by Bergson (1948) and Samuelson (1947) as cited by Son (2011), which made "average opportunity available to the community" and "how these opportunities are shared" the two parameters for the function. They found that growth in itself is insufficient to be inclusive. To be inclusive, growth should be sustainable and increase employment opportunities. How does opportunity translate to inclusiveness of growth? And how do opportunities for growth affect everybody? These questions were answered by Ali et al. (2007): creating an environment of opportunity and social inclusion enhances the chances of well-being and the acquisition of high status while excluding no one. Failure on the part of some individuals to take advantage of opportunity does not narrow growth's inclusivity. Holding a view similar to that of Ali and Son (2007), Ali et al., and Zhuang (2007) argue that inclusive growth goes beyond income redistribution to feature the employment avenues created by growth. Thus, they suggested four major policy components for attaining inclusive growth: high and sustainable growth, social inclusion, capacity, and social safety.

In the view of earlier proponents of inclusive growth as growth that promotes non-discriminatory access to beneficial opportunities, the United Nations, in its *SDG Pulse* report series (United Nations 2022), introduced environmental protection to make growth sustainable and inclusive. While agreeing to a large extent with Ali and Son (2007) and Ali and Zhuang et al. (2007), the United Nations asserted that the sustainability of increased growth was also important for continuous employment and the inclusiveness of growth. This view led the United Nations to include the environment in the inclusive growth framework that it used to construct its own inclusive growth composite index (see Appendix A).

2.2 Empirical Literature

The ease with which firms can access financial capital to settle extra costs associated with trading across borders affects decisions of firms regarding export business entry and operations, hence the international trade (export) pattern of nations (Foley and Manova, 2015). According to Foley and Manova (2015), most multinational activities have relatively long turnover ratios, locking up capital for relatively long periods and, hence, the need for financial markets to support the financing needs of most locals venturing into trade across borders, thereby allowing them to be competitive. Even though the findings from their review aligned with findings from many other studies, including

Guiso et al. (2002) and, Ma and Cheng (2005), their work focused on corporate finance, which may have little bearing on the livelihood of ordinary people and, hence, little impact on inclusive growth and inequality reduction. Financial friction and the development of local financial environments affect multinationals' decisions about production plant siting, integration, and the corporate governance strategies.

In a study similar to that of Foley and Manova (2015), Aregbeshola (2016) employed panel data for three subregions in Africa—Northern Africa, Southern Africa, and Western Africa—and concluded that local financial markets have a significant effect on the growth of the African continent. Three findings: (1) the effect of local financial markets is greater in Northern Africa and Western Africa than in Southern Africa, (2) the Aregbeshola (2016) equity market aids trade and growth most in Western Africa while a developed banking sector potentially stimulates economic growth most in Northern Africa, and (3)Aregbeshola (2016) economic growth and financial market development exhibit a cyclical causality because economic growth is a strong catalyst for financial market development, which positively impacts economic growth.

Beck (2002) also posits a significant positive link between financial market development and trade. But Bilas et al. (2017) and Yucel (2009) have shown a negative link between financial development and trade or economic growth. Hence, the literature on the relationship between finance and growth is inconclusive.

Finance has been duly acknowledged for its significant impact on growth (Afolabi, 2020; Cournède et al., 2015; Gyamfi et al., 2022a). Its effect is felt at all levels of the economy, particularly the micro economy, where disposal income has a significant positive effect on livelihoods, educational attainment, healthcare accessibility, and so on. Thus, any framework designed to facilitate easy and low-cost access to funds promote growth. But do financial development and its indicators, beyond their seemingly positive impact on economic growth figures, reduce inequality and promote fair income distribution? Gyamfi et al. (2022b) showed how critical the institutional setup of financial development is to inclusive growth. According to Gyamfi et al. (2022b), weak institutional setups negatively affected inclusive growth and lent credence to the view espoused by Cournède et al. (2015) and others that the stock market is a better channel for financing to promote inclusive growth because of its strong institutional setup and regulation. Cournède et al. (2015) actually asserted that unregulated domestic credit in any form undermines inclusive growth because it may be channelled to unproductive sectors or to higher-income earners, thereby deepening inequality. In a Olarewaju (2020) study of the financial inclusion aspect of financial development in the Nigerian economy, Olarewaju (2020) came to a conclusion similar to that of Cournède et al. (2015) and Gyastartmfi et al. (2022b). In a Guiso et al. (2002) Guiso et al. (2002) study to determine whether local financial markets really matter in this era of high financial market integration with relatively easy cross-border fund mobility, Guiso et al. (2002) revealed that these markets impact the economic activities and growth of small firms the most. They explained that, because small firms have no capacity to source funds from the international market, they rely mainly on local markets. This explains the inclusivity of growth potential of well-regulated local financial markets in an environment of fairness and equity.

In Sub-Saharan Africa, where the depth and incidence of poverty are most severe (Anyanwu, 2 2013) , the effects of trade openness on economic growth and its inclusiveness reflect nations' use of their comparative advantage (Osabohien et al., et al. 2021). In many developing countries in

Sub-Saharan Africa, trade has little to no impact on poverty reduction and equitable distribution of employment opportunities (Anyanwu, 2 2013). This finding corroborates the findings of Aekapol (2020) in a study of Southeast Asian nations that suggested that trade openness without conscious income redistribution policies would have no significant effect on inequality reduction, a critical determinant of inclusive growth. Therefore, the work of Aekapol (2020) on a more developed region and the work of Anyanwu (2013) and, Arabiyat et al. (2020) on developing nations indicate that trade needs income parity to make a greater impact on income growth.

Notably, the export part of trade tends to mitigate inequality, whereas the import part increases inequality in Southeast Asia, as captured by Aekapol (2020). Excesses in production of non-extractive raw materials (agricultural products) for export by developing nations could mean the engagement of more unskilled labour, thereby providing employment opportunities to many and closing the inequality gap. This assertion by Aekapol (2020) is aligned with the findings of Osabohien et al. (2021) on the influence of agricultural trade and foreign direct investment on inclusive growth in developing countries in West Africa. Their findings also affirmed and gave credence to the inclusive growth definition of providing equal employment opportunity to all by Ali and Son (2007). Contrary to the popular assertion made by many other papers that the impact of trade on inclusive growth is insignificant unless other moderating factors are considered, Osabohien et al. (2021) found that, in West African countries where the agricultural sector employs a clear majority of the population, agricultural trade has a positive and significant impact on inclusive growth even when little attention is paid to critical moderating factors.

Although the strength of the link between trade openness and inclusive growth remains unclear, the positive nature of that link is largely settled—hence the surge in studies examining the effects of the link's moderators or mediators. Agyei and Idan (2022), After examining the impact of institutions on trade-inclusive growth, Agyei and Idan (2022) recommended that Sub-Saharan African economies pursue policies to improve government effectiveness, reduce corruption, enhance regulatory quality, abide by the rule of law, and allow voice and accountability. This recommendation was proffered based on findings Agyei and Idan (2022) suggesting that institutions strengthened the positive relationship between trade openness and inclusive growth. Therefore, the literature suggests that trade has a positive relationship with inclusive growth, though its significance can vary due to political, social, and economic factors.

3.DATA AND METHODS

3.1 Empirical Model

This study examines the moderating role of local financial markets in the relationship between international trade and inclusive growth. It adopts an export performance model like the models used by Beck (2002) and Paudel and Alharthi (2021) to develop a panel data model shown below. The bedrock of this model is the gravity modelling approach, which recognizes origin, destination, and some degree of impedance to the free movement of goods as the main influencers of trade (Kepaptsoglou et al., 2010).

$$\boldsymbol{F_{it}} = \theta_1 \boldsymbol{F_{it-1}} + \theta_2 \boldsymbol{F_{it-2}} + \theta_3 \boldsymbol{Fin_{it}} + \theta_4 WA_{it} + \theta_5 FDI_{it} + \theta_6 In\,GDPp_{it} + \boldsymbol{\theta_7 CO_{it}} + \vartheta_i + \rho_t + \epsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

To explore the extent to which local financial markets and international trade impact inclusive growth and how local financial markets influence the relationship between international trade and inclusive growth in Sub-Saharan Africa, the study was guided by the economic growth model developed by Knight et al. (1993) and employed by many other researchers, including Barro (1996) and Durlauf et al. (2005). The Knight et al. (1993) model is rooted in the augmented Solow-Swan model through Mankiw et al. (1992), as shown below:

$$In\,[\frac{Y_t}{L_t}] = \alpha_0 - \alpha_1 In\ (\dot{n}) + \alpha_2 In\,(s_k) + \alpha_3 In(s_h) + \alpha_4 In\,F_t + \alpha_5 In\,P_t + \varepsilon_t \ldots. (2)$$

This study modifies equation (2) in three ways:

1. It uses inclusive growth instead of GDP growth because it is better proxy for well-being than GDP per capita. As captured by theory, sustained economic growth and inequality reduction aimed at poverty reduction are the main influencers of inclusive growth (Ali et al., 2007; Ali and Son, 2 2007).

2. It introduces local financial market development indicators. Studies have identified financial development as a key determinant of growth/inclusive growth because it helps mobilize and efficiently allocate resources to more productive areas. Adjasi et al. (2012) and Gyamfi et al. (2022b) established positive links between financial development and growth.

3. It added other control variables, such as regulatory quality, inflation, and polity index, to deal with the omission of relevant variables biases on parameter estimates.

Therefore, the new models for this study using panel data regression are re-written as follows:

$$\boldsymbol{IG_{it}} = \alpha_1 IG_{i\,t-1} + \alpha_2 IG_{i\,t-2} + \alpha_3 n^*_{it} + \alpha_4 s_{k\,it} + \alpha_5 s_{h\,it} + \alpha_6 F_{it} + \alpha_7 P_{it} + \boldsymbol{\alpha_8 Fin_{it}} + \boldsymbol{\alpha_9 C_{it}} + \delta_i + \pi_t + \varepsilon_{it} \ldots\ldots (3)$$

Where equation (3) seeks to explore the effect of local financial market indicators and international trade on inclusive growth.

$$\boldsymbol{IG_{it}} = \beta_1 IG_{i\,t-1} + \beta_2 IG_{i\,t-2} + \beta_3 n^*_{it} + \beta_4 s_{k\,it} + \beta_5 s_{h\,it} + \boldsymbol{\beta_6}\, F_{it} + \beta_7 P_{it} + \beta_8 (F_{it} * Fin_{it}) + \boldsymbol{\beta_9 Fin_{it}} + \boldsymbol{\beta_{10} C_{it}} + \omega_i + \gamma_t + \mu_{it} \ldots\ldots (4)$$

Equation (4) seeks to explore the moderating effect of local financial market indicators on inclusive growth and international trade nexus.

In equation (1) $\mathbf{F_{it}}$ represents one of the trade variables (either total trade to GDP or export to GDP), $\mathbf{F_{it-1}}$ represents the first lag of trade variables, $\mathbf{F_{it-2}}$ represents the second lag of trade variables, $\mathbf{WA_{it}}$ represents working-age population ratio, $\mathbf{FDI_{it}}$ is net foreign direct investment. $\mathbf{GDPp_{it}}$ is natural log of GDP, $\mathbf{CO_{it}}$ and represents a 14 * 4 matrix of other control variables.

In equations (3) and (4) $\mathbf{IG_{it}}$ represents **inclusive growth**, $\mathbf{IG_{it-1}}$ is the lag of inclusive growth, $\mathbf{IG_{it-2}}$ is the second lag of inclusive growth, $\mathbf{n^*_{it}}$ represents **population growth** rate, $\mathbf{S_{K\,it}}$ represents

rate of savings for physical capital proxied by **non-current investment to GDP**, $S_{h\,it}$ represents **rate of savings for human capital** proxied **by secondary school enrolment**, F_{it} represents **one of trade variables (either total trade to GDP or export to GDP)**, P_{it} is **government's expenditure to GDP**, Fin_{it} is a **14 *3** matrix of financial market variables, and C_{it} is a **14 * 4** matrix of other control variables.

3.2 Estimation Technique

The models were estimated within the panel data framework to account for unobserved individual heterogeneities associated with sourcing data from units across time. Given the problem of endogeneity, particularly with dynamic models, the traditional panel data estimation techniques (fixed effects and random effects) that are usually used to explore the cross-sectional behavior of a panel dataset are not used. The endogeneity problem is accentuated due to the dataset's shorter period of time (T) and much larger sample size of countries (N). Even less well-known is the violation of strict exogeneity resulting from feedback effects from the response variable to the regressors. This dynamic model endogeneity problem is also present because shocks that affect the dependent variable would probably affect any determinants of these regressors in subsequent periods (Barros et al.,et al. 2020). Other causes of endogeneity may be omitted variables and measurement errors that find their way into the error term.

To sidestep these problems of endogeneity, possible heteroskedasticity, and serial correlation, this study employs the Blundell and Bond (1998) two-step Generalized Method of Moments (GMM) Blundell & Bond (1998) estimation technique. Specific lags (or temporal differences or both) of the original regressors are used as instrumental variables, assuming zero correlation between the instruments and the models' errors (that is, sequential exogeneity), to estimate models. The study settled on the two-step GMM estimation technique because of its strength in correctly estimating unbalanced panel data and because of its theoretically proven efficiency.

To ensure this study's models are correctly specified and properly estimated, serial correlation and instrument validity diagnostic tests were carried out. Arellano and Bond (1991) serial correlation tests AR (1) and AR (2) were performed to check for the presence of first-order serial correlation and second-order correlation, and a Sargan (1958) and Hansen (1982) test were performed to check the validity of instruments. It is expected that, aside from AR (1), none of the null hypotheses of these tests is rejected. The study also employed the Wald (1943) test to ensure that the dependent variable is adequately explained by the collective variations in the explanatory variables. The null hypothesis that all independent variables have zero coefficients is expected to be rejected.

3.3 Data Source

The study employed empirical analysis using data from the World Development Indicators (WDI) for 27 Sub-Saharan Africa countries that do not produce oil in commercial quantities. The study develops comprehensive panel data for these economies from 2008 to 2021. This time frame offers favourable economic conditions. The countries were sampled based on the availability of data on a wide range of variables.

3.3.1 Variable Descriptions and Measurement

Trade openness (F_{it}) measures the degree to which a country maintains its outward orientation to trade (Fujii, 2019). This study employs two proxies for trade openness, particularly in cross-country data analysis. It exclusively uses these proxies in separate regressions: (1) total exports to GDP (%) and (2) total trade to GDP (%).

Local financial market variables define the system or market that offers opportunities for trade in funds. This study concentrates on only three indicators to measure the development of local financial markets. The ratio of domestic credit to the private sector to GDP—PC/GDP (%)—is a proxy to measure the relative depth of intermediation. The ratio of broad money (M2) to GDP as measure market size, and the ratio of domestic credit to the private sector to broad money (DC/M2) to measure the efficiency of the market. This proxy reflects the perception that the financial systems most involved in the performance of their core mandates are those that channel most funds to the private sector.

The working-age population is the proportion of the total population aged 15 to 60. It captures the effect of workforce strength or capacity on growth. Beck (2002) and Paudel and Alharthi (2021) used a similar variable as a control variable. Savings define output that is reserved for investment. Like Adjasi et al. (2012), Agbloyor et al. (2016), and many other growth studies, this study adopted the ratio of gross domestic savings to GDP (%) as the proxy for the savings variable.

Human capital represents the economic value of workers' abilities and capabilities and is proxied by the school enrolment rate (secondary education enrolment rate). Government consumption captures the impact that government spending on public goods has on inclusive growth. This study adopted the proxy of government expenditure to GDP (%) used by many growth researchers, including Mankiw et al. (1992), Adjasi et al. (2012), Agbloyor et al. (2016), and Lederman (2013b). Foreign direct investment indicates how attractive foreigners perceive other countries to be as investment destinations. It is measured by net inflows of investment to acquire a lasting management interest (10% or more of voting stock) in an enterprise operating in an economy other than that of the investor. This study adopted net inflows (% of GDP) as a proxy, as did Adjasi et al. (2012) and Paudel and Alharthi (2021).

This study's other control variables are largely institutional quality and worldwide development indicators that reflect fairness, equitable distribution of resources, and economic performance, which are core to achieving inclusive growth, according to Agbloyor et al. (2016) and North (1990). These variables are polity index (institutionalized democracy index), control of corruption index, inflation, and regulatory quality.

3.3.2 Measurement of Inclusive Growth

This study's inclusive growth index is informed by Saisana et al. (2008) and by the inclusive growth composite index framework published in SDG Pulse 2022 (United Nations, 2 2022). The study used only 17 of 27 indicators, as shown in Appendix A.

4. Empirical Results

4.1 Descriptive Statistics

Table 1 shows inclusive growth's overall variation of 0.51; the variation among countries is 0.495 while the variation within countries is only 0.1381. This means that the levels/differences in living standards of people at any point in time were highly dependent on the country in which people found themselves. Thus, even though the living standard of people on average changed over time, both policy differences among countries and nation-specific conditions played key roles in the lives of people in Sub-Saharan Africa.

Table 1. Results of panel data descriptive analysis

Variable		Mean	Std. Dev.	Min	Max	Observations
Export/GDP (%)	overall	27.0524	13.01729	4.54932	62.19971	N = 378
	between		12.29367	7.308789	53.2628	n = 27
	within		4.85046	12.07788	43.44666	T = 14
Trade/GDP (%)	overall	64.61161	23.27649	22.24029	125.783	N = 378
	between		21.42779	34.15319	105.8918	n = 27
	within		9.923595	31.02979	109.9986	T = 14
Domestic credit (DC) (%)	overall	24.90929	26.20573	0.0047693	128.8384	N = 358
	between		26.39971	0.0061241	120.5308	n = 27
	within		4.194012	-2.454257	40.48763	T-bar = 13.2593
M2/GDP (%)	overall	33.66153	20.90438	0.0230385	159.9491	N = 377
	between		20.06074	9.969174	110.5745	n = 27
	within		6.918797	15.85384	83.03606	T-bar = 13.963
Ratio of DC to M2 (%)	overall	66.76965	31.51401	0.023969	197.4893	N = 358
	between		30.52658	11.40964	177.6378	n = 27
	within		9.703529	21.99479	95.75865	T-bar = 13.2593
IG	overall	0.0559012	0.5064531	-0.8040402	2.02029	N = 378
	between		0.4958893	-0.6970026	1.422325	n = 27
	within		0.1380873	-0.6724076	0.6538663	T = 14

Source: Author's computation.

Overall variations are mainly attributable to variations among countries, suggesting that countries had taken no major steps to bridge the performance gap between themselves and other nations. With respect to the ratio of exports to GDP (%), the overall variation was 13.02, the variation among countries was 12.29, and the variation within countries was 4.85, suggesting huge gaps among selected nations in terms of their production and export capabilities at any point in time but little improvements or add-ons to each country's production capacity over time. On average, the ratio of Sub-Saharan African exports to GDP (%) accounted for only 41.87% of the ratio of total trade to GDP (%). This is the statistical evidence of the negative trade balances for which Sub-Saharan Africa is known. Unfortunately, Africa's imports have been dominated by consumables like luxury automobiles, personal IT products, clothing and fashion accessories, and pharmaceuticals rather than by capital goods, which could explain, in part, Sub-Saharan Africa's relatively high unemployment. With respect to international trade, the overall variation in the ratio of trade to GDP (%) was 23.28, a 78.8 % higher than the overall variation of the export-to-GDP (%) ratio. Its variation among countries was 21.42, a 74.3% higher than the export-to-GDP ratio variation among countries. This finding suggests that import volatility was the major contributor to the overall variation and the variation among countries in trade values, though export volatility was also a significant influencer. With respect to variations within countries, the data show a 104.6% increase, on average, in variations in the ratio of exports to total trade. This finding clearly speaks to inconsistencies in local production to meet local demand and, hence, changes in import volumes to fill the demand gap.

4.2 Regression Results

The study presents and discusses its regression results by examining (1) the effect of local financial markets on international trade, (2) the effect of both local financial markets and international trade on inclusive growth, and (3) the moderating role of financial markets on the relationship between international trade and inclusive growth.

Interpretation of Diagnostics Test

At a 5% significance level, the p-values of AR (1) for all the simulations/submodels from all the result tables show rejections of the null hypothesis; p-values indicate no rejection of the null hypotheses in the AR (2) test. The combined effect of the p-values of AR (1) and AR (2) is that the estimated models are free of autocorrelation. The p-values of the Wald tests show a rejection of the null hypothesis that claims zero coefficients of all independent variables simultaneously. Hence, the collective variations in the independent variables adequately explain the dependent variables. All the p-values of the Sargan tests and Hansen tests are not significant at 5% or 10%, implying the null hypothesis in not rejected and confirming the validity of all the instrumental variables.

Effects of Local Financial Markets on Inclusive Growth

Results from Table 2, submodel 1(a), indicate that, among finance variables, only the broad money-to-GDP ratio had a significant impact on the export-to-GDP ratio at a 5% significance level. Other significant predictors of the export-to-GDP ratio were net foreign direct investment, the adult (15+) population-to-total population ratio, the domestic savings-to-GDP ratio, and the government expenditure-to-GDP ratio. The positive impact of broad money affirms the assertion that an increase

in money supply leads to an increase in exports because exports become cheaper through the rise in exchange rate (Hailu, 2010) and the assertion by Dormusch (2019) that money supply is the dominant factor in the trend of the exchange rate in the short run. A similar argument could be extended to submodel 1(c), which also shows the broad money-to-GDP ratio as the only significant finance variable on trade at a 1% significance level. The impact of the total trade-to-GDP ratio is nearly twice the impact that broad money had on the export-to-GDP ratio. Thus, beyond money supply's impact on exports through the exchange rate mechanism, the volume of imports into Africa does not decrease significantly, which is largely attributed to Africa's overreliance on other continents due to inadequate productive/processing capacity to meet Africa's demands. This finding aligns with the assertion by Hailu (2010) that the price-inelastic nature of Africa's main imports (pharmaceuticals, energy, and so on) is a major contributing factor.

Results from Table 2, model 1(b) and 1(d), show that the domestic credit to the private sector-to-broad money ratio—a proxy for the efficiency of the financial system—poses a significant impact on the export-to-GDP ratio at the 5% significance level and to the trade-to-GDP ratio at the 10% significance level. These results are in line with the findings of Adjasi et al. (2012), Gyamfi et al. (2022b), and Svirydzenka (2016), who explored the importance of financial sector development and intermediation on output and growth. They asserted that the financial sector function of mobilizing resources and directing saved funds to viable projects promotes growth through efficient productivity and production increases for both domestic consumption and trade. Thus, an increase in the efficiency ratio means an increase in the proportion of money in circulation that has been channelled to the private sector for production. The importance of efficiency in financial sector performance was also captured by Olannye et al. (2023), which found that inefficiency in funds allocations and the inadequacy of domestic credit hinder the ability of nations to produce at full capacity.

Finally, the impacts of domestic credit on exports and the total trade-to-GDP ratio were negative and insignificant. In most developing states, the lion's shares of funds to the private sector are channelled to local consumption-driven sectors and low-risk areas. This reality may be the result of banks' profit and loan recovery motives, but states themselves sometimes consciously implement policies that promote the establishment of import substitution enterprises, hence reducing trade. Paudel and Alharthi (2021) suggested that the insignificant impact of Nepal's financial sector on exports was due to banks' prioritization of real estate, wholesale and retail trade, building and construction, hospitals and educational institutes, and other import-aligned activities.

Table 2. Effects of local financial markets on international trade

	Model 1(a) (Export%GDP)	**Model 1(b) (Export%GDP)**	**Model 1(c) (Trade%GDP)**	**Model 1(d) (Trade%GDP)**
L1.	0.757***	0.744***	0.767***	0.756***
	(0.0556)	(0.0605)	(0.0659)	(0.0678)
L2.	-0.047	-0.043	0.0241	0.027
	(0.0738)	(0.0753)	(0.0769)	(0.0791)
Domestic Credit	-0.040		-0.061	
	(0.0281)		(0.0482)	
m3/GDP	0.037**		0.063***	
	(0.0177)		(0.0228)	
Dc/M3		0.032**		0.047*
		(0.0161)		(0.0282)
NFI/GDP	0.087*	0.079*	0.475***	0.473***
	(0.0527)	(0.0534)	(0.1259)	(0.1118)
Log of GDP	-0.523	-0.165	-0.875	-0.423
	(1.1159)	(1.1321)	(1.6865)	(1.6812)
Popul. (A/T)	0.428***	0.456***	0.434*	0.483**
	(0.1545)	(0.1470)	(0.2362)	(0.1977)
Regul. Quality	-0.738	-0.458	0.479	0.986
	(0.7387)	(0.7509)	(0.9097)	(1.0006)
DS/GDP	0.187***	0.185***	0.089	0.082
	(0.0518)	(0.0537)	(0.0603)	(0.0591)
Inflation (CPI)	-0.0003	-0.0005**	-0.0002	-0.0005*
	(0.0002)	(0.0002)	(0.0003)	(0.0002)
Gov. Exp/GDP	0.152**	0.182**	0.210**	0.265**
	(0.0768)	(0.0762)	(0.1061)	(0.1143)
Polity Index	-0.051	-0.084	-0.018	-0.056
	(0.0853)	(0.0941)	(0.1268)	(0.1504)

	Model 1(a) (Export%GDP)	**Model 1(b) (Export%GDP)**	**Model 1(c) (Trade%GDP)**	**Model 1(d) (Trade%GDP)**
Diagnostics				
Year dummies	Yes	Yes	Yes	Yes
Wald Chi2	218932.21	71867.34	178584.91	114978.79
P(Wald)	(0.00)	(0.00)	(0.00)	(0.00)
AR (1)	-3.01	-3.02	-2.7	-2.72
P-values	(0.003)	(0.003)	(0.007)	(0.007)
AR (2)	-0.2	-0.18	0.4	0.41
P-values	(0.843)	(0.855)	(0.693)	(0.68)
Sargan Chi2	1.24	1.32	2.13	2.17
P (Sargan)	(0.265)	(0.251)	(0.145)	(0.141)
Hansen Chi2	1.29	1.62	1.23	1.31
P (Hansen)	(0.255)	(0.203)	(0.268)	(0.253)
No. of Groups	27	27	27	27
No. of Instruments	25	24	25	24
No. of Observations	311	311	311	311

Source: Author.

Notes: L1 and L2 represent the first and second lags of the dependent variables, domestic credit represents the ratio of domestic credit to the private sector to GDP, m3/GDP represents M3 to GDP, Dc/M3 represents the ratio of credit to m3GDP, NFI/GDP represents net foreign direct investment to GDP, log of GDP represents the natural log of goss domestic product, Popul. (A/T) represents the ratio of adult population to total population, DS/GDP represents domestic savings to GDP, inflation (CPI) represents the consumer price index, Gov.exp/GDP represents government expenditure to GDP. ***, **, * represent statistical significance at 1%, 5%, and 10%, respectively. Parenthetical values under the estimated coefficients are corresponding standard errors; parenthetical values under the diagnosis are P-values.

Effects of Financial Markets and International Trade on Inclusive Growth

Table 3 shows how local financial markets and international trade independently affect inclusive growth.

Table 3. Effects of local financial sector variables and international trade on inclusive growth

	Model 2(a)	**Model 2(b)**	**Model 2(c)**	**Model 2(d)**
L1.	0.788***	0.834***	0.811***	0.849***
	(0.0962)	(0.0828)	(0.0957)	(0.0842)
L2.	0.058	0.069	0.053	0.061
	(0.0666)	(0.0672)	(0.0706)	(0.0710)
Trade/GDP			0.0007**	0.0007**
			(0.0003)	(0.0003)
Export/GDP	0.002**	0.002***		
	(0.0007)	(0.0006)		
Domestic Credit	-0.00003		-0.00007	
	(0.0003)		(0.0003)	
m3/GDP	0.0013		0.001	
	(0.0008)		(0.0008)	
Dc/M3		-0.00004		-0.00004
		(0.0001)		(0.0002)
DS/GDP	-0.00009	-0.0002	0.0006	0.0005
	(0.0009)	(0.0008)	(0.0007)	(0.0006)
Popugrowthrate	-0.013**	-0.014**	-0.018*	-0.018**
	(0.0121)	(0.0113)	(0.0122)	(0.0111)
Secschenrol	0.0004	0.0004	0.0004	0.0004
	(0.0005)	(0.0004)	(0.0005)	(0.0004)
Gov. Exp/GDP	-0.0004	-0.0004	-0.0003	-0.0004
	(0.0012)	(0.0010)	(0.0012)	(0.0011)
Polity Index	-0.001	0.0002	-0.0006	0.0004
	(0.0019)	(0.0013)	(0.0018)	(0.0013)

	Model 2(a)	**Model 2(b)**	**Model 2(c)**	**Model 2(d)**
Contr. of Corr	-0.001	-0.019	-0.004	-0.019
	(0.0240)	0.039424	(0.0222)	(0.0136)
Reg. Quality	0.068*	0.072**	0.063*	0.0675
	(0.0389)	(0.0325)	(0.0375)	(0.0319)
Inflation (CPI)	-0.002**	-0.002*	-0.015**	-0.003*
	(0.0002)	(0.0001)	(0.0002)	(0.0001)
Diagnostics				
Year dummies	Yes	Yes	Yes	Yes
Wald Chi2	263015.31	124852	153341	119246
P (Wald)	(0.000)	(0.000)	(0.000)	(0.000)
AR (1)	-3.79	-3.83	-3.68	-3.79
P-values	(0.000)	(0.000)	(0.000)	(0.000)
AR (2)	0.39	0.42	0.48	0.52
P-values	(0.700)	(0.677)	(0.633)	(0.601)
Sargan Chi2	0.48	0.37	0.63	0.42
P (Sargan)	(0.487)	(0.542)	(0.426)	(0.517)
Hansen Chi2	0.38	0.41	0.59	0.50
P (Hansen)	(0.536)	(0.520)	(0.443)	(0.480)
No. of Groups	27	27	27	27
No. of Instruments	26	25	26	26
No. of Observations	259	259	259	259

Source: Author.

Note: L1 and L2 represent the first and second lags of the dependent variables, trade/GDP represents total trade as a percentage of GDP, export/GDP represents exports as a percentage of GDP, domestic credit represents the domestic credit to the private sector-to-GDP ratio, m3/GDP represents M3 to GDP, Dc/M3 represents the credit-to-m3GDP ratio, Ds/GDP represents the domestic savings-to-GDP ratio, popugrowthrate represents population growth rate, secschenrol represents the secondary school enrolment rate, inflation (CPI) represents the consumer price index, Gov. Exp/GDP represents the government expenditure-to-GDP ratio, and the polity index measures the level of democratic governance. ***, **, * are statistical significance at 1%, 5%, and 10%, respectively. Parenthetical values under the estimated coefficients are corresponding standard errors; parenthetical values under the diagnosis are P-values.

Table 3 shows that at a 5% significance level, trade as a percent of GDP has a positive and significant effect on inclusive growth. This finding indicates that an increase in trade will lead to an improvement in inclusive growth. This finding is consistent with Arabiyat et al. (2020), who find that trade openness has a significant and positive impact on inclusive growth.

The exports-to-GDP ratio, as shown under models 2(a) and 2(b), is also significant at 5% and 1%. This finding aligns with the findings of Aekapol (2020) and Osabohien et al. (2021), suggesting that because most developing nations are agrarian, promoting exports could mean the engagement of more unskilled labour and, hence, employment for more vulnerable people and a narrowed inequality gap. However, the finding appears inconsistent with the assertion of Irwin (2015), who viewed trade as a threat to domestic jobs, firms' productive capacity, and income growth in developing economies.

Adjasi et al. (2012), Aregbeshola (2016), and Foley and Manova (2015), asserted a positive and significant impact of finance of growth. But results presented in Table 4 show the insignificant impact of finance on inclusive growth, which aligns with the findings of Sarpong and Nketiah-Amponsah (2022b), Cournède et al. (2015), and others who asserted such an impact in the absence of strong regulation and institutions. These findings suggest that the financial market reallocated funds to the few who owned most of the productive resources in the subregion, hence widening the inequality gap; funds that trickled down to households were not used in business, lending credence to the assertion of Cournède et al. (2015) about the composition and use of finance. Compounding the problem is the huge yearly repatriation that hits Africa every year because the majority of the few that own these productive resources are not indigenes. This study's findings align with the definition of inclusive growth as growth that includes a reduction in inequality (Kakwani and Pernia (2000); Ali and Son (2007)).

Other significant predictors of inclusive growth, as indicated, are the population growth rate, regulatory quality, and inflation. Regulatory quality exhibited a positive impact, corroborating the findings of Agyei and Idan (2022), who recommended strengthening regulatory quality to improve well-being. Population growth and inflation pose negative effects, signifying the economic and social pressure exerted when the economic growth rate is not proportionate to the population growth rate and the widening of the inequality gap as inflation increases.

The Moderating Effect of Local Financial Markets on the Relationship Between International Trade and Inclusive Growth

Table 4 presents the moderating effect of local financial markets on the relationship between international trade and inclusive growth.

Table 4. Moderating effect of local financial markets on the relationship between international trade and inclusive growth

	Model 3(a)	Model 3(b)	Model 3(c)	Model 3(d)	Model 3(e)	Model 3(f)
L1.	0.801***	0.791***	0.835***	0.804***	0.815***	0.841***
	(0.0889)	(0.0908)	(0.0837)	(0.0797)	(0.0893)	(0.0824)
L2.	0.066	0.036	0.068	0.075	0.038	0.075
	(0.0909)	(0.1083)	(0.0654)	(0.0688)	(0.0965)	(0.0671)
Export/GDP	0.001**	-0.00003	0.002**			
	(0.0008)	(0.0011)	(0.0013)			
Trade/GDP				0.00003**	-0.0004*	0.0002
				(0.0014)	(0.0005)	(0.0005)
Domestic Credit	-0.001***	0.0002		-0.002*	0.0002	
	(0.0004)	(0.0004)		(0.0037)	(0.0003)	
M3/GDP	0.001	-0.001		0.001	-0.002*	
	(0.0009)			(0.0006)	(0.0009)	
Dc/M3			-0.0001			-0.0005
			(0.0004)			(0.0004)
(Export * Dc)	0.00004**					
	(0.00002)					
(Export *M3)		0.0001**				
		(0.00002)				
(Export* Dc/ M3)			0.00002			
			(0.00002)			
(Trade * Dc)				0.00002		
				(0.00004)		
(Trade * M3)					0.00003***	
					(0.00001)	
(Trade * Dc/ M3)						0.00001
						(0.000008)

	Model 3(a)	Model 3(b)	Model 3(c)	Model 3(d)	Model 3(e)	Model 3(f)
DS/GDP	0.0001	0.0001	-0.0002	0.0007	0.0007	0.0004
	(0.0008)	(0.0009)	(0 .0008)	(0.0007)	(0.0006)	(0.0005)
Popugrowthrate	-0.009**	-0.007**	-.0140**	-0.0118*	-0.0137**	-0.0167*
	(0.0108)	(0.0119)	(0.0109)	(0.0145)	(0.0116)	(0.0098)
Secschenrol	0.0005	0.0008	0.0004	0.0006	0.0008	0.0004
	(0.0005)	(0.0006)	(0.0004)	(0.0009)	(0.0005)	(0.0004)
Gov. Exp/GDP	0.0001	0.0006	-0.0004	0.0002	0.0006	-0.0005
	(0.0011)	(0.0013)	(0.0010)	(0.0015)	(0.0013)	(0.0009)
Polity Index	-0.0013	-0.0024	0.0003	-0.0010	-0.0014	0.0005
	(0.0021)	(0.0030)	(0.0013)	(0.0017)	(0.0022)	(0.0012)
Contr. of corr	-0.0040	-0.0020	-0.0189	-0.0032	-0.0064	-0.0201*
	(0.0209)	(0.0269)	(0.0136)	(0.0152)	(0.0219)	(0.0121)
Regul. Quality	0.055*	0.058*	0.073**	0.045**	0.053*	0.065**
	(0.03204)	(0.0311)	(0 .0311)	(0.0320)	(0.0306)	(0.0268)
Inflation (CPI)	0.0002	0.0003	-.00002	0.0002	0.0001	-0.00001
	(0.0002)	(0.00023)	(0.0001)	(0.0001)	(0.0002)	(0.0001)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Wald Chi2	152463.05	277325.32	138243	700966.97	152435.52	317236.84
P (Wald)	(0.000)	(0.000)	(0.000)	(0.00)	(0.00)	(0.00)
AR (1)	-4.00	-3.93	-3.83	-3.83	-3.90	-3.83
P-values	(0.003)	(0.009)	(0.004)	(0.023)	(0.021)	(0.031)
AR (2)	0.33	0.63	0.42	0.17	0.55	0.31
P-values	(0.523)	(0.532)	(0.673)	(0.859)	(0.579)	(0.753)
Sargan Chi2	1.24	1.83	0.34	0.421	0.352	0.18
P (Sargan)	(0.193)	(0.253)	(0.562)	(0.234)	(0.252)	(0.185)

	Model 3(a)	Model 3(b)	Model 3(c)	Model 3(d)	Model 3(e)	Model 3(f)
Hansen Chi2	1.31	2.01	0.41	0.43	0.46	0.24
P (Hansen)	(0.251)	(0.311)	(0.524)	(0.294)	(0.301)	(0.241)
No. of Groups	26	26	26	26	26	26
No. of Instruments	24	24	25	24	24	24
No. of Observations	259	259	259	259	259	259

Source: Author's construct.

Note: L1 and L2 represent the first and second lags of the dependent variables, trade/GDP represents total trade as a percentage of GDP, export/GDP represents exports as a percentage of GDP, domestic credit represents the domestic credit to the private sector-to-GDP ratio, m3/GDP represents M3 to GDP, Dc/M3 represents the credit-to-m3GDP ratio, Ds/GDP represents the domestic savings-to-GDP ratio, popugrowthrate represents population growth rate, secschenrol represents the secondary school enrolment rate, inflation (CPI) represents the consumer price index, Gov. Exp/GDP represents the government expenditure-to-GDP ratio, and the polity index measures the level of democratic governance. ***, **, * are statistical significance at 1%, 5%, and 10%, respectively. Parenthetical values under the estimated coefficients are corresponding standard errors; parenthetical values under the diagnosis are P-values.

In Table 4, the main variable of interest is the interaction term between international trade and local financial markets. That term in models 3(a), (b) and (e) is positive and significant at 5% and 1%. This finding indicates that increases in the flow of funds in local financial markets significantly impact the relationship between international trade and inclusive growth. Thus, inclusive growth improves with increases in local financial market activities. This result is at odds with the finding of Jammeh (2022) that local financial markets negatively affect inclusive growth.

Table 4 shows that population had a negative impact on inclusive growth and is significant at 5%. This finding indicates that, as the population increases, the impact of inclusive growth decreases. The reason is that, as population increases, the dependency ratio rises, which reduces the opportunity to improve the well-being of people. This finding is consistent with that of van Niekerk (2022).

Table 4 shows that regulation has a significant and positive effect on inclusive growth. This finding indicates that improving regulatory institutions and efficiencies enhances inclusive growth. This finding is consistent with that of Ofori and Asongu (2024).

5. Conclusion and Policy Implications

This period of ever-changing technological advancement with integration on all fronts due to globalization calls for reassessment of trade impacts and policy directions. This paper examined the role of local financial markets in the international trade and inclusive growth nexus. The study used the system Generalized Method of Moments to analyse panel data for 27 African countries from 2008 to 2021. It significantly contributes to the literature in multiple ways. First, it examines the impact of financial markets on international trade in Sub-Saharan Africa. Second, it explores the effect of international trade and financial markets on inclusive growth. Third, it examines the moderating effect of financial markets on the relationship between international trade and inclusive

growth, providing a comprehensive measure of inclusive growth. The study finds that local financial market and sector variables have different effects on exports and total trade. Broad money supply has a significant impact on exports and trade. The composition of trade on the continent is key for inclusive growth, given that Sub-Saharan African exports are predominantly raw materials. The study also reveals that exports and trade significantly impact inclusive growth. Interestingly, advancing domestic credit to the private sector without proper regulations has no significant effect on inclusive growth. Finally, local financial markets have a significant impact on the relationship between international trade and inclusive growth.

The implications of the findings are that government and other stakeholders of African economies should take advantage of the African Continental Free Trade Area to increase trade and reform financial markets. Because of high levels of inequality in Sub-Saharan Africa, domestic credit advancement to the private sector should not be left to a free-market mechanism to allocate. Rather, it should be targeted to specific industries and sectors, with less stringent access requirements, to improve living standards. Even though an increase in money supply promotes exports, the overreliance of Sub-Saharan Africa on some price-inelastic imports increase inflation that further widens the inequality gap. Consequently, money supply should not be used as a tool to promote exports.

Appendix A: IGI Construction Indicators

	Economy (Pillar 1)	**Living Conditions (Pillar 2)**	**Equality (Pillar 3)**	**Environment (Pillar 4)**
1.	GDP per capita[a]	Fixed Internet broadband subscriptions per 100 people[b]	Income concentration ratio (Gini index)[c]	CO2 emissions[b]
2.	Adjusted net national income per capita[a]	Under-five mortality rate (deaths per 1.000 live births) [a]	Ratio of female to male employment rate[a]	Energy intensity level of primary energy[b]
3.	GDP per person employed[a]	People using at least basic drinking water services[a]	Ratio of youth to adult employment rate[d]	Efficiency of water use (water productivity)[b]
4.	Employment to population ratio (15+)[a]		Gender parity in the number of seats held by women and men in national parliaments[b]	Terrestrial protected areas (% of total land area)[b]
5.			Ratio of female to male labour force participation rate[a]	
6.			Wage and salaried workers in women's employment compared with men's employment[a]	

Source: United Nations.

[a] World Development Indicators.
[b] Sustainable Development Goals Global Database.
[c] World Income Inequality Database.
[d] World Development Indicators and ILOSTAT (database of the International Labour Organization).

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