

Research Article

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Financial Openness and Income Inequality in Sub-Saharan Africa: The Moderating Roles of Development Level and Land Access

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Abstract: *This study investigates the relationship between financial openness and income inequality in Sub-Saharan Africa, emphasizing the moderating roles of development level and access to land. While the literature provides mixed evidence on whether financial openness exacerbates or mitigates inequality, limited attention has been given to the transmission channels through which these effects operate, particularly in developing regions. Using a panel dataset of 38 Sub-Saharan African countries over the period 2010–2019, this study employs the system Generalized Method of Moments (GMM) to address endogeneity concerns and capture dynamic effects. The findings reveal a dual and asymmetric impact of financial openness. De facto financial openness—capturing actual cross-border financial flows—significantly reduces income inequality, whereas de jure openness—reflecting policy-based financial liberalization—tends to increase inequality. Importantly, the results demonstrate that access to land mitigates the inequality-enhancing effect of de jure openness, suggesting that land distribution plays a crucial redistributive role. Furthermore, the level of economic development amplifies the inequality-reducing impact of de facto openness, indicating that structural conditions shape the inclusiveness of financial integration. These findings contribute to the literature by integrating structural and resource-based channels into the financial openness–inequality nexus. From a policy perspective, the results highlight that financial liberalization alone is insufficient to ensure equitable outcomes; complementary policies promoting inclusive access to productive assets, particularly land, are essential. Strengthening institutional frameworks and addressing structural inequalities are therefore critical to maximizing the distributive benefits of financial openness in Sub-Saharan Africa.*

Keywords: *Financial openness, Income inequality, Land access, Sub-Saharan Africa.*

Introduction

Over the past four decades, the global economy has undergone profound transformations driven by financial liberalization and increasing cross-border capital mobility. Since the seminal contributions of McKinnon (1973) and Shaw (1973), financial openness has been widely promoted as a key driver of economic efficiency, investment, and growth. By facilitating the free movement of capital across borders, financial openness is expected to enhance resource allocation, improve access to credit, and stimulate economic development. However, despite these anticipated benefits, the distributive consequences of financial openness remain highly contested, particularly in developing regions such as Sub-Saharan Africa.

Income inequality has emerged as one of the most pressing socio-economic challenges globally. While globalization and financial integration have contributed to economic growth, their benefits have not been evenly distributed across populations. Empirical evidence shows that technological progress, capital accumulation, and financial development have disproportionately benefited higher-income groups, thereby widening income disparities (Piketty, 2014; Atkinson, 2015). In developing countries, where institutional frameworks are often weak and access to financial resources is uneven, these disparities may be even more pronounced.

The relationship between financial openness and income inequality is theoretically ambiguous and empirically inconclusive. On the one hand, financial openness can reduce inequality by relaxing credit

constraints, enabling broader access to financial services, and fostering inclusive economic growth. Improved financial integration allows firms and households to access external financing, which can enhance productivity and income opportunities. On the other hand, financial openness may exacerbate inequality by disproportionately benefiting capital owners and high-skilled workers, thereby reinforcing existing structural inequalities (Galor & Zeira, 1993). In addition, financial liberalization can increase macroeconomic volatility and exposure to financial crises, which tend to disproportionately affect vulnerable populations.

Empirical studies provide mixed evidence on this relationship. Some research suggests that financial openness reduces income inequality by improving financial development and access to credit (Beck et al., 2007). In contrast, other studies find that financial liberalization increases inequality, particularly in countries with weak institutions and underdeveloped financial systems (Furceri & Loungani, 2018). Recent cross-country analyses further indicate that the impact of financial openness depends critically on country-specific characteristics, including institutional quality, financial depth, and economic structure.

An important distinction in the literature concerns the measurement of financial openness. *De jure* financial openness reflects policy-based measures, such as capital account liberalization, while *de facto* openness captures actual financial integration through cross-border capital flows and asset holdings. These two dimensions may have different implications for income distribution. *De jure* reforms may not translate into effective financial integration if institutional capacity is limited, whereas *de facto* openness reflects the realized outcomes of financial globalization. Recent studies highlight that *de facto* openness may be more closely associated with economic outcomes than *de jure* measures, particularly in developing economies.

In the context of Sub-Saharan Africa, the relationship between financial openness and income inequality is further complicated by structural constraints and institutional weaknesses. The region is characterized by limited financial inclusion, high levels of informality, and significant disparities in access to productive resources. While financial liberalization has been promoted as part of broader economic reforms, its benefits have often been unevenly distributed. As a result, understanding the channels through which financial openness affects income inequality in this context is of critical importance.

A growing strand of the literature emphasizes the importance of transmission channels in explaining the impact of financial openness on income inequality. Rather than focusing solely on the direct effects of financial liberalization, recent studies examine how financial openness interacts with other structural factors, such as financial development, institutional quality, and human capital. For example, Bumann and Lensink (2016) show that financial openness reduces inequality only in countries with sufficiently developed financial systems. Similarly, other studies highlight the role of institutions in mediating the effects of financial integration.

Despite these advances, important gaps remain in the literature. In particular, limited attention has been given to the role of access to productive assets—such as land—in shaping the distributional effects of financial openness. In many Sub-Saharan African countries, land remains a critical determinant of income and economic opportunity, especially in rural areas where agriculture is the primary source of livelihood. Unequal access to land can exacerbate income disparities and limit the ability of households to benefit from economic growth.

Recent evidence suggests that access to land can play a significant role in reducing income inequality. Households with access to arable land tend to have higher and more stable incomes compared to landless households, who often rely on low-wage labor. Moreover, equitable land distribution can enhance rural

productivity and reduce the income gap between urban and rural areas. However, the interaction between financial openness and land access has received little attention in the empirical literature.

Another important factor influencing the relationship between financial openness and inequality is the level of economic development. The Kuznets hypothesis suggests that inequality may initially increase during the early stages of economic development before declining as economies mature. In the context of financial openness, the level of development may determine the extent to which countries can harness the benefits of financial integration. More developed economies are likely to have stronger institutions, better financial systems, and greater capacity to manage risks, thereby enhancing the inclusiveness of financial openness.

In Sub-Saharan Africa, heterogeneity in development levels is substantial, with significant differences in income, infrastructure, and institutional capacity across countries. These differences may influence how financial openness affects income distribution. For instance, in countries with higher levels of development, financial openness may facilitate inclusive growth by improving access to financial services and investment opportunities. In contrast, in less developed countries, financial openness may exacerbate inequality due to limited access to financial resources and weak institutional frameworks.

Against this background, this study seeks to contribute to the literature by examining the relationship between financial openness and income inequality in Sub-Saharan Africa, with a particular focus on the moderating roles of access to land and level of development. By integrating these factors into the analysis, the study provides a more comprehensive understanding of the channels through which financial openness affects income distribution.

Specifically, this study addresses three key research questions. First, what is the impact of financial openness—both *de facto* and *de jure*—on income inequality in Sub-Saharan Africa? Second, how does access to land influence this relationship? Third, how does the level of economic development moderate the effects of financial openness on income inequality?

To answer these questions, the study employs a dynamic panel data approach using the system Generalized Method of Moments (GMM), which allows for controlling endogeneity and capturing dynamic effects. The analysis is based on a sample of 38 Sub-Saharan African countries over the period 2010–2019.

The contribution of this study is threefold. First, it provides new empirical evidence on the differential effects of *de facto* and *de jure* financial openness on income inequality. Second, it introduces access to land as a novel transmission channel in the financial openness–inequality nexus. Third, it highlights the moderating role of economic development, thereby offering insights into the conditions under which financial openness can promote inclusive growth.

From a policy perspective, the findings of this study have important implications. While financial openness can contribute to economic growth, it does not automatically lead to equitable outcomes. Policymakers must therefore implement complementary policies aimed at improving access to productive assets, strengthening institutions, and enhancing financial inclusion. In particular, land reforms and policies that promote equitable access to land may play a crucial role in reducing income inequality in Sub-Saharan Africa.

In summary, this study advances the understanding of the complex relationship between financial openness and income inequality by incorporating structural and contextual factors that have been largely overlooked in the literature. By doing so, it provides a more nuanced and policy-relevant perspective on the role of financial integration in shaping income distribution in developing economies.

Method

To examine the impact of financial openness on income inequality in Sub-Saharan Africa, this study adopts a dynamic panel data framework following prior empirical literature on financial integration and inequality. The baseline model is specified as follows:

$$GINI_{it} = \alpha GINI_{it-1} + \beta_1 FINOPEN_{it} + \beta_2 X_{it} + \mu_i + \varepsilon_{it}$$

where $GINI_{it}$ represents income inequality in country i at time t , measured by the Gini index. $FINOPEN_{it}$ captures financial openness, considered under two dimensions: de facto openness (actual financial integration) and de jure openness (policy-based liberalization). X_{it} denotes a vector of control variables, including GDP per capita (economic development), urbanization, corruption control, and land per capita. μ_i captures unobserved country-specific effects, and ε_{it} is the idiosyncratic error term.

To explore transmission channels, the model is extended by incorporating interaction terms. First, the interaction between financial openness and development level is specified to assess whether the impact of openness varies with economic development:

$$GINI_{it} = \alpha GINI_{it-1} + \beta_1 FINOPEN_{it} + \beta_2 (FINOPEN_{it} \times GDPPCTA_{it}) + \beta_3 X_{it} + \mu_i + \varepsilon_{it}$$

Second, to capture the role of access to productive assets, the interaction between financial openness and land per capita is introduced:

$$GINI_{it} = \alpha GINI_{it-1} + \beta_1 FINOPEN_{it} + \beta_2 (FINOPEN_{it} \times LANDPCTA_{it}) + \beta_3 X_{it} + \mu_i + \varepsilon_{it}$$

These specifications allow us to evaluate both the direct and conditional effects of financial openness on income inequality.

Given the dynamic nature of the model and potential endogeneity issues—arising from reverse causality, omitted variables, and measurement errors—the study employs the system Generalized Method of Moments (System GMM) estimator developed by Arellano and Bover (1995) and Blundell and Bond (1998). This method is particularly suitable for panel datasets with a large cross-sectional dimension and relatively short time periods, as is the case in this study.

System GMM combines equations in first differences and levels, using lagged values of the variables as instruments. This approach improves estimation efficiency and addresses potential biases associated with fixed effects and endogenous regressors. The validity of the instruments is assessed using the Hansen J-test of overidentifying restrictions, while the Arellano-Bond tests for first-order [AR(1)] and second-order [AR(2)] serial correlation are used to verify model consistency.

The analysis is based on a panel dataset of 38 Sub-Saharan African countries covering the period 2010–2019. Data are primarily sourced from the World Bank's World Development Indicators (WDI), Worldwide Governance Indicators (WGI), and the KOF Financial Globalization Index.

Income inequality is measured using the Gini coefficient. Financial openness is captured through both de facto and de jure indicators derived from the financial globalization index. Control variables include GDP per capita (proxy for development level), urbanization rate, corruption control index, and land per capita, which reflects access to productive agricultural resources.

This combination of variables allows for a comprehensive assessment of both the direct and indirect channels through which financial openness influences income inequality.

Results and Discussion

Descriptive Analysis and Preliminary Insights

The descriptive statistics provide an initial overview of the structural characteristics of Sub-Saharan African economies. The average Gini coefficient indicates moderate inequality across the sample; however, the wide dispersion between minimum and maximum values highlights substantial heterogeneity among countries. This suggests that inequality dynamics are not uniform across the region and are likely influenced by country-specific structural conditions.

Financial openness indicators show that Sub-Saharan African countries are moderately integrated into the global financial system, both in *de jure* and *de facto* terms. However, the gap between these two measures indicates that policy liberalization does not always translate into effective financial integration. This discrepancy is particularly relevant for understanding the differentiated impacts of financial openness on income inequality.

Urbanization levels remain relatively low but are increasing steadily, reflecting structural transformation processes. Meanwhile, land per capita exhibits significant variation, underscoring disparities in access to productive resources—an important factor in predominantly agrarian economies.

Baseline Results: Financial Openness and Income Inequality

The baseline estimation results (Columns 1 and 2) reveal a clear asymmetry in the effects of financial openness on income inequality. *De facto* financial openness is found to have a statistically significant negative effect on income inequality, indicating that actual financial integration contributes to reducing income disparities. In contrast, *de jure* financial openness exhibits a positive and significant effect, suggesting that policy-driven liberalization tends to exacerbate inequality.

This divergence between *de facto* and *de jure* openness is consistent with the argument that the mere adoption of liberalization policies does not guarantee inclusive outcomes. *De jure* reforms may benefit economically advantaged groups who are better positioned to exploit new financial opportunities, thereby widening inequality. Conversely, *de facto* openness reflects realized capital flows and financial interactions, which may facilitate broader access to resources and support income redistribution mechanisms.

These findings align with recent empirical studies showing that financial openness has heterogeneous effects depending on how it is measured and implemented. In contexts where financial systems are underdeveloped, policy liberalization alone may increase inequality by reinforcing existing structural advantages.

The Role of Economic Development

The interaction between financial openness and economic development (Columns 3 and 4) provides further insights into the conditional effects of financial integration. The results indicate that GDP per capita significantly moderates the relationship between financial openness and income inequality.

Specifically, the interaction between *de facto* openness and GDP per capita is positive and significant in reducing inequality. This suggests that higher levels of economic development enhance the capacity of financial openness to generate inclusive outcomes. In more developed economies, better institutional quality, stronger financial systems, and improved human capital enable a broader segment of the population to benefit from financial integration.

In contrast, the interaction between *de jure* openness and GDP per capita indicates that policy

liberalization may amplify inequality in contexts where economic development is insufficient to support inclusive participation. This finding highlights the importance of structural readiness in determining the distributive effects of financial reforms.

These results can be interpreted within the framework of the Kuznets hypothesis, which posits that inequality may increase in the early stages of development before declining as economies mature. In Sub-Saharan Africa, many countries are still in the early phases of structural transformation, where inequality tends to rise as labor shifts from low-productivity agriculture to higher-productivity sectors.

The Role of Land Access

One of the key contributions of this study lies in incorporating access to land as a transmission channel. The results (Columns 5 and 6) show that land per capita plays a significant role in shaping the relationship between financial openness and income inequality.

The interaction between de jure openness and land access is negative and statistically significant, indicating that access to land mitigates the inequality-enhancing effect of policy-based financial liberalization. This finding suggests that land distribution acts as a redistributive mechanism, enabling broader participation in economic activities and reducing income disparities.

In agrarian economies, land is a critical productive asset that directly influences income generation. Households with access to land are better positioned to benefit from economic opportunities, including those arising from financial openness. Conversely, unequal land distribution can limit the ability of marginalized groups to participate in economic growth, thereby exacerbating inequality.

The interaction between de facto openness and land access, although positive, is not consistently significant, indicating that the redistributive role of land is more pronounced in the context of policy-driven reforms. This underscores the importance of complementary structural policies in enhancing the inclusiveness of financial liberalization.

Control Variables and Structural Dynamics

The analysis of control variables provides additional insights into the structural determinants of income inequality in Sub-Saharan Africa.

a. Economic Development (GDP per capita)

The coefficient of GDP per capita is generally positive and significant in several specifications, indicating that higher income levels are associated with increased inequality. This result reflects the structural transformation process, where income gains are unevenly distributed across sectors and population groups. As labor shifts toward higher-productivity sectors, income disparities may widen during the transition phase.

b. Urbanization

Urbanization consistently exhibits a negative and significant effect on income inequality, suggesting that urban development contributes to reducing disparities. This may be attributed to improved access to employment opportunities, infrastructure, and social services in urban areas. Additionally, remittance flows from urban to rural areas may help reduce income gaps.

c. Corruption Control

Interestingly, the control of corruption is found to increase income inequality in some specifications. This counterintuitive result may reflect the complex role of informal institutions in developing economies. In contexts characterized by bureaucratic inefficiencies, corruption may act as a mechanism

for resource allocation, albeit inefficient and inequitable in the long run. This finding highlights the need for a nuanced understanding of institutional dynamics in the region.

Robustness and Model Diagnostics

The validity of the estimation results is supported by several diagnostic tests. The Arellano-Bond tests indicate the presence of first-order serial correlation (AR(1)) but no evidence of second-order serial correlation (AR(2)), confirming the consistency of the GMM estimator. Additionally, the Hansen J-test fails to reject the null hypothesis of instrument validity, suggesting that the instruments used in the model are appropriate.

These diagnostic results provide confidence in the robustness of the findings and the reliability of the estimation strategy.

Synthesis and Policy Implications

The overall findings highlight the multidimensional nature of the relationship between financial openness and income inequality. The results demonstrate that financial openness is not inherently inclusive or exclusive; rather, its distributive effects depend on structural conditions and complementary factors.

Three key insights emerge from the analysis:

1. Asymmetric Effects of Financial Openness

The distinction between de facto and de jure openness is crucial. While actual financial integration tends to reduce inequality, policy liberalization alone may exacerbate disparities.

2. Importance of Structural Conditions

Economic development and access to land significantly influence the impact of financial openness. Countries with stronger structural foundations are better positioned to harness the benefits of financial integration.

3. Role of Complementary Policies

Financial openness must be accompanied by policies that promote equitable access to resources, particularly land, and strengthen institutional frameworks.

From a policy perspective, these findings suggest that governments should adopt a holistic approach to financial liberalization. Rather than focusing solely on opening financial markets, policymakers should prioritize inclusive development strategies that address structural inequalities.

In particular, land reforms and policies aimed at improving access to productive assets can play a critical role in reducing income inequality. Additionally, investments in education, infrastructure, and financial inclusion are essential to ensure that the benefits of financial openness are widely shared.

Conclusion

This study examined the relationship between financial openness and income inequality in Sub-Saharan Africa, with particular emphasis on the moderating roles of economic development and access to land. Using a dynamic panel framework estimated through the system Generalized Method of Moments (GMM), the findings provide robust evidence of the heterogeneous and conditional nature of the financial openness–inequality nexus.

The results reveal a clear asymmetry between de facto and de jure financial openness. While de facto financial openness—capturing actual financial integration through cross-border capital flows—

significantly reduces income inequality, *de jure* openness—reflecting policy-driven financial liberalization—tends to exacerbate inequality. This divergence underscores the critical distinction between formal policy reforms and their effective implementation. In contexts where institutional capacity is limited, financial liberalization may disproportionately benefit already advantaged groups, thereby reinforcing existing inequalities.

Importantly, the study highlights the role of structural factors in shaping the distributive effects of financial openness. The findings show that economic development enhances the inequality-reducing impact of *de facto* openness, suggesting that stronger economic structures and institutional frameworks enable broader participation in financial opportunities. Conversely, in less developed contexts, financial openness may fail to deliver inclusive outcomes due to limited access to financial resources and weak absorptive capacity.

A key contribution of this study is the identification of land access as a critical transmission channel. The results demonstrate that access to land mitigates the inequality-enhancing effect of *de jure* financial openness, indicating that equitable distribution of productive assets can serve as an effective redistributive mechanism. In agrarian economies such as those in Sub-Saharan Africa, land remains a fundamental determinant of income generation and economic inclusion.

From a theoretical perspective, the findings support the view that financial openness alone is insufficient to ensure equitable income distribution. Instead, its impact is contingent upon complementary structural and institutional conditions. This underscores the importance of integrating financial reforms with broader development strategies.

From a policy standpoint, the study suggests that governments should move beyond a narrow focus on financial liberalization and adopt a more comprehensive approach to economic reform. Policies aimed at improving access to productive assets—particularly land—should be prioritized to enhance the inclusiveness of financial openness. In addition, strengthening institutional quality, promoting financial inclusion, and investing in human capital are essential to maximize the benefits of financial integration.

In conclusion, financial openness can contribute to reducing income inequality in Sub-Saharan Africa, but only when supported by favorable structural conditions and inclusive policies. Future research should extend this analysis by incorporating additional channels—such as financial inclusion, education, and institutional quality—and by exploring country-specific dynamics to provide more targeted policy recommendations.

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