

Decoupling the Impact of Financial Sector Development on Income Inequality in Africa: Further Insights from Geographical Regions and Governance Factors

Biruk Ashenafi (✉ birukb@smail.swufe.edu.cn)

SWUFE: Southwestern University of Finance and Economics <https://orcid.org/0000-0002-7272-4038>

Yan Dong

Southwestern University of Finance and Economics

Research Article

Keywords: Africa, Banking Sector, Income Inequality, Stock Market, Governance, Geography

Posted Date: April 26th, 2022

DOI: <https://doi.org/10.21203/rs.3.rs-1448122/v1>

License:  This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

Abstract

The current literature on the finance-inequality nexus lacks evidence in decoupling the impact of banking and the stock market on income inequality in Africa. Besides, the analysis is limited to the continental level without accounting for geographic regions and governance differences. We offer an answer on how financial sector development affects income inequality in Africa by isolating the impact of the banking, stock market, and composite index. The paper identified the heterogeneous effect by geographical regions and incorporated the role of governance from 1980 to 2017 across 49 African countries. Using a panel data fixed effect regression and two-stage least squared estimation techniques (2sls), we show that the banking, stock market, and the composite development widens income inequality. The relationship corroborates an inverted U shape hypothesis. Besides, corruption and political instability are essential elements in exacerbating income inequality. The geographical region configuration also shows that the continental level effect is highly driven by financial development in the Northern and Southern African countries. The direct implication of our result is that the current financial development in Africa is not inclusive, and the credit is directed to people who already access financial services. We highlight that financial inclusion, digitalization, easing the cost of borrowing money, ensuring good governance, and pro-poor financial development reverses the relationship presented in this paper.

1. Introduction

After a seminal work of Kuznets (1955) on economic growth and income inequality, a bulk of literature presents vital methodological issues in constructing top incomes and the evolution of inequality through time (Forbes, 2000; Atkinson, 2005; Atkinson et al. 2011; Alvaredo et al. 2013; Weil, 2015; Piketty et al. 2019). The issue has been linked to financial development, which claims financial sector development plays a prominent role when countries pass through the economic transition (Greenwood & Jovanovic, 1990). The recent growth trajectories in most African countries become an excellent candidate for testing the hypothesis empirically. Although the continent financial sector development is enormous in recent years, there exists key challenges pertinent to the provision of credit for start-up, resource mobilization, and inclusion. As a result among other factors the continent becomes the second highly unequal continent next to Latin America (Robilliard, 2020). Besides, inequality increases on the North-South gradient showing cross-country differences.

The nexus between finance and inequality is complex and far from conclusion. For most literature, financial access through boosting income reduces income inequality (Clarke et al. 2006; Beck et al. 2007; Bae et al. 2012; Khan et al. 2021). On the other hand, financial development may fuel greater income inequality (Denk & Courmede, 2015; Roberts & Kwon, 2017; Jobarteh & Kaya, 2019). Besides, an inverted U-shape relationship has been exhibited (Tita & Aziakpono, 2016), in contrast others contest the hypothesis (Clarke et al. 2002). Moreover, there are pieces of evidence that confirm other moderating factors on the nexus between finance and inequality, such as governance. In Africa, governance play vital role in catalyzing financial development. Over the past couple of decades, financial sector development has demonstrated significant growth in broadening access to finance, reducing poverty, and boosting economic growth. However, Africa remains the poorest region globally and the second most unequal continent next to Latin America (Robilliard, 2020)

We are motivated by observations from [Figure 1]. The correlation between gini disposable with domestic credit and stock value traded is positive and non-linear. There is also a substantial variation in the correlation coefficients across countries [Panel A & Panel B]. However, the channel in which finance affects income inequality [Panel C & Panel D] moves in the opposite direction. Hence, we ask whether the banking and stock market have a similar effect on income inequality? Is there a heterogeneous effect across geographical regions? What is the impact of governance in moderating the relationship? Past efforts have been focused on either the banking sector indicators (Jung & Cha, 2020) or stock market indicators (Ngare et al. 2014; Twerefou et al. 2019). Only a few studies provide a detailed analysis of the banking and stock market (Kim & Lin, 2011; Zhang & Ben Naceur, 2019). Contrary to the current literature, most African countries are small regarding per capita income. Unless enough financial resources are mobilized to enhance the development of the financial sector, realizing economic development, regional integration, and achieving evenly distributed income becomes challenging (Uzodike, 2010). Moreover, the heterogeneity observed from the correlation coefficients could be driven by governance, regional growth momentum, and institutional factors, where literature is scarce in this regard.

This paper reassesses the finance-inequality nexus by decoupling the financial sector to the banking and stock market and exploits the effect of governance in moderating the relationship. Previous efforts that decompose the financial sector and employ a sub-sample analysis based on the geographic region are scarce. Besides, the impact of governance has been the most underrated topic in the finance inequality literature in Africa. We depart in our definition of the financial market by decomposing the sector development to the banking and stock market and show that the governance factors are important. Our empirical work also uses sub-sample analysis based on five geographical regions and configure the analysis with the governance factors. The approach provides a comprehensive analysis of the finance inequality nexus and suggests opportunities and challenges for the newly operational Continental Free Trade Area (CFTA).

To answer the main questions, we use a panel dataset of 49 African countries from 1981–2017. By employing a panel data fixed effect regression and two-stage least squared (2sls) estimation techniques, the finding shows that the banking, stock market, and composite index for financial sector development widens income inequality. Given the existing heterogeneity across countries, we further attribute the relationship to corruption and political instability estimates. Both indicators exacerbated income inequality. Besides, a sub-sample analysis from the five geographical regions and governance factors offers virtually the same results as the baseline estimates, especially in the Northern and Southern regions. That result implies that policy orientation on utilizing financial development to reduce income inequality should target the existing phenomenon in each region.

The remainder of the paper is organized as follows: Section 2 provides a literature review. Section 3 presents our materials and method, section 4 presents the main findings, section 5 presents a discussion, and section 6 concludes.

2. Literature Review

The relationship between financial sector development and income inequality is not new wisdom. However, a consensus has not been reached concerning the relationship. Differences related to methodological issues, sample countries, and the impact of governance in moderating the relationship make the discussion unsettled. We provide a condensed review on factors that determine the relationship, the direction of the relation, and the impact of corruption and political instability in moderating the effect.

Apart from the historical evolution of inequality, it is imperative to understand the factors that shape the finance inequality nexus. Economic growth is an essential determinant in shaping the effect of financial sector development (Arestis et al. 2001; Andersen et al. 2012; Menyah et al. 2014; Wellen & Van Dijk, 2018; An et al. 2021). A well-functioning financial market is a manifestation of a growing economy. On the other hand, inequality and growth relationship is conditioned by time frame, the stage of economic development, and structural phenomena (Galor and Zeira, 1993; Forbes, 2000). In this regard, structural and institutional factors are key determinants of the relationship. Aryeetey, (2003) finds that without correcting structural and institutional inadequacies, it is challenging to realize the benefit of the financial market in developing countries. Kim et al. (2019) also asserted that the stock market development and banking sector are moderated by democratization. Education, war, and international trade also contribute to the finance-inequality nexus (Hasan et al. 2020).

Three views emerge in the current literature concerning the direction of the relationship. First, finance facilitates credit access to the poor, increases income, and narrows income inequality (Aghion & Bolton, 1997; Clarke et al. 2006; Beck et al. 2007; Demirgüç-Kunt & Levine, 2009; Bae et al. 2012; Zhang & Naceur, 2019; Khan et al. 2021). An important implication in this strand of literature is that finance by widening access to borrowers reduces poverty, raises personal income, and eventually narrows the gap between the rich and the poor. The second view asserted that financial development enhances the services to those already accessing the financial system (high-income earners) and widens inequality (Greenwood & Jovanovic, 1990; Denk & Courneade, 2015; Jobarteh & Kaya, 2019; Kim et al. 2019; Jung & Cha, 2020). This strand of literature identifies financial friction as the leading cause for the established relationship. There also exists a non-linear relationship between financial development and income inequality (Greenwood & Jovanovic, 1990; Kim & Lin, 2011; Tita & Aziakpono, 2016; Bolarinwa & Akinlo, 2021). In this line, a threshold level of financial development is needed to promote growth and reduce inequality.

The other dimension of the literature discusses factors that moderate the relationship. Governance factors are the primary catalyst in Africa that brings the continent's abundant natural resources to societal development. However, corruption and political instability hamper the fruits of financial development not to be reaped by individuals. Corruption has a destructive impact on growth and business operations (Chêne, 2014). It affects the overall business environment, governance quality, and its impact is more pronounced in low-income countries. Corruption also has a more destructive impact than political instability in Africa (Adefeso, 2018). It is associated with higher firm's borrowing costs, lower stock valuation, worse corporate governance, bank stability, and risk for bank lending (Ng, 2006; Wei & Kong, 2017; Ben Ali et al., 2020). On the other hand, controlling corruption and its interaction with financial development reduces income inequality (Adams & Klobodu, 2016). In contrast, Ekşi & Doğan, (2020) show no statistically significant relationship between corruption perception and financial development.

Political instability is another factor that stagnates economic growth (Mbaku, 1988; Ayessa & Hakizimana, 2021) and eventually impacts financial sector development. However, powerful financial development channels are running from political stability that explains cross-country differences in economic and financial stability (Roe & Siegel, 2008; Ertugrul et al. 2019). In Africa, political instability positively correlates with lower degrees of financial inclusion (Alhassan et al., 2021). To date, almost every country in Africa is haunted by weak institutions, and constant struggles for political power (Ong'ayo, 2008).

In Africa, discussions of the finance-inequality nexus often take a different form. On the one hand, most empirical work emphasizes the impact of financial liberalization on economic growth (Reinhart & Tokatlidis, 2003; Kabango & Paloni, 2011; Andersen et al. 2012; Precious et al. 2014; Akinsola & Odhiambo, 2017). Nevertheless, success stories are rare. Abubakar et al. (2015) show bank credit positively affect growth via human capital accumulation. A non-linear relationship is also presented (Tita & Aziakpono, 2016; Bolarinwa & Akinlo, 2021), yet the effect is mixed, supporting the inverted U shape vis a vis U shape hypothesis (Jobarteh & Kaya, 2019; Asongu et al. 2020; Khan et al. 2021).

Overall, in Africa the current literature falls short of isolating the impact of the banking and stock market, shows geographical regions variations, and the impact of governance indicators in moderating the relationship. Moreover, the mechanisms of how these effects are accomplished are not well identified; and the degrees to which they have been effective have remained far from conclusive. This paper extends the current literature in these aspects.

3. Materials And Method

We obtain the data from different sources over 1980–2017. A good measure for country-level income inequality is the gini index. The index measures the extent to which income among individuals or households deviates from a perfectly equal distribution. The Standardized World Income Inequality Database (SWIID) provides income inequality estimates across countries and over time using the Luxembourg Income Study Study (Solt, 2019). It is a widely used dataset due to its broad coverage and allows comparison across countries. The dataset presents gini disposable, an estimate of gini index of inequality in square root scale of household disposable income (post-tax, post-transfer), and gini market income (pre-tax, pre-transfer).

The financial data are obtained from the Global Financial Development Database (GFD) that contains a wide array of indicators covering financial access, depth, efficiency, and stability since 1960. Concerning the governance indicators, we use the World Bank Worldwide Governance Indicators (WGI), constructed by Kaufmann et al. (2010b). The dataset report six broad dimensions of governance for over 215 countries and territories over the period 1996–2018. We use corruption, and political instability as crucial governance indicators. The robustness test also considers the regulatory quality and government effectiveness. The remaining control variables are from the World Bank, World Development Indicators (WDI).

Our econometric model theoretical foundation is based on the works of (Kuznets, 1955; Greenwood & Jovanovic, 1990; Oded Galor & Joseph Zeira, 1993) and the subsequent empirical models by (Clarke et al., 2006; Bae et al. 2012; de Haan et al. 2018; Van Velthoven et al. 2019). However, our study departs in two ways. First, we address only the issue of financial development (i.e., in our definition, we mean the expansion of the banking sector and stock market). For

Africa decoupling the financial sector is essential because it clearly shows the effect of the financial system characterized by its early development in terms of deposit mobilization and credit expansion. Second, we extend the current literature by investigating the spatial variation using correlation coefficients, taking into account five geographical regions and the governance indicators.

The first batch of the specification uses a panel data fixed effect regression and estimates the relationship between banking, stock market, and composite financial development on income inequality. We construct the composite index by interacting the banking and stock market indicators. Even though inequality changes take time, most financial data are subjected to business cycle fluctuation. In this case fixed effect regression estimates introduce endogeneity bias because it does not allow for the possibility of unobserved heterogeneity, measurement error, and reverse causality (i.e., the initial level of wealth distribution may affect who can obtain credit from the financial sector (Greenwood & Jovanovic, 1990)). One approach to handle these estimation challenges is averaging the vector for a non-overlapping five years period (Clarke et al. 2006). Since few vectors have missing values, this approach is not appealing.

Hence, we use two strategies to handle problems associated with endogeneity. On the one hand, we use indicators in percentage to GDP forms; this method substantially shrinks the fluctuation on our vectors. In addition, we use the instrumental variable approach and estimate the relationship using the two-stage least square estimation (2sls) technique. Since our interest is investigating the effect of financial sector development on income inequality, we adopt the legal system as an instrument from law and finance literature proposed by (Porta et al. 1998). The legal origin instrument embeds the concept on rules concerning the protection of stakeholders and creditors, the origin of the rules, and the quality of their enforcement. A bulk of literature uses legal origin dummy as an instrument for financial sector development (Favara, 2003; Clarke et al. 2006; Huang & Lin, 2009). Despite favorable approach in the law and finance literature of legal origin's importance, for many years, results for key indicators and specifications neither show Common Law to be consistently superior nor French Civil Law to be consistently inferior to other legal families in generating strong financial development outcomes (Roe & Siegel, 2008).

We argue that if legal institutions cannot protect potential investors or businesses, they will not invest, thereby impeding financial development. Due to this fact, for practical purposes, we use the rule of law estimates instead of the legal origin dummy from Kaufmann et al. (2010b). In Africa, attributing the current legal system merely to colonizers is conceptually incorrect, nor represent the current commercial or civil law enforcement practices. The rule of law estimates captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular, the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

The benchmark estimation is specified as follows;

$$Gini_{it} = \theta_0 + f(Banking_{it})\theta_1 + \theta_2 CV_{it} + \delta_i + \mu_t + \epsilon_{it} \text{----- (1a)}$$

$$Gini_{it} = \theta_0 + f(Stock_{it})\theta_1 + \theta_2 CV_{it} + \delta_i + \mu_t + \epsilon_{it} \text{----- (1b)}$$

$$Gini_{it} = \theta_0 + f(Banking_{it})\theta_1 + f(Stock_{it})\theta_2 + f(Banking_{it} \times Stock_{it})\theta_3 + CV_{it}\theta_4 + \delta_i + \mu_t + \epsilon_{it} \text{-----}$$

Where:

The subscript *i* and *t* indexes country and time, respectively. *f(banking)* & *f(stock)* is represented by domestic credit to the private sector by banks (% of GDP) and Stock market total value traded to GDP (%) respectively. *f(BankingXStock)* measures the composite index for banking and stock market indicators. *CV* is a set of control variables represented by GDP growth (annual %), Inflation, and foreign direct investment inflow (% of GDP). Our control variables conjuncture economic growth, monetary policy, and the [*de facto*] italics is ours openness of an economy. δ_i , μ_t , ϵ_{it} captures the time-varying, country-specific, and random error terms, respectively. Domestic credit, stock value traded, composite index, and GDP growth are also inserted into the regression equation in the squared form to test the inverted U shape hypothesis.

The second batch of specifications involves 2sls using the rule of law as an instrument. In both the fixed and 2sls estimation, we use interaction terms for each independent variable to conjuncture the moderating effect of corruption and political instability.

Our sample shows a significant variation in gini disposable, domestic credit, and stock value traded. The average gini distribution ranges from 33% in Libya to 67% in Namibia, domestic credit ranges from 2.6% in Congo Democratic Republic to 31% in Mauritius, and stock value traded ranges from 0.3% in Namibia to 34% in South Africa. The pairwise correlation shows income inequality is higher in countries where higher domestic credit and stock value traded are recorded. However, our result shows that income inequality is linked with per capita income linearly and positively. For instance, Libya's average per capita income is 6632 USD, while in Namibia, it is 3467 USD. The minimum per capita income recorded over the period under investigation is in Malawi with 300 USD, where the average gini was 47% which is in between the continent least and most unequal countries. In the next section, we formally exploited this variation using fixed-effect and 2sls regression analysis.

4. Empirical Results

4.1. Baseline Estimation Results

Our baseline estimation result shows that a rise in domestic credit increases gini disposable [Table 2]. The result suggests that the financial system mobilizes resources and finances, promising business opportunities that are likely productivity-enhancing activities (King & Levine, 1993). In this regard, even though a massive business opportunity exists, the poor can not access it because most of the time, the system requires collateral. The financial development to offer a

comprehensive benefit for a significant portion of the population and ensure even income distribution, the system has to be inclusive. It has proven that financial inclusion reduces poverty and income inequality in developing countries (Park & Mercado, 2015; Demir et al. 2020; Omar & Inaba, 2020).

Digital financial service growth in Africa has led to an increase in the number of people enjoying access to formal financial services (IFC, 2018). Africa now has more digital financial services deployments than any other region globally, with more than 700 million individual users worldwide. Mobile money solutions and agent banking offer affordable, instant, and reliable transactions, savings, credit, and even insurance opportunities in rural villages. However, inclusion in providing credit is still low, leaving many not benefiting from the existing development. The development of the banking sector affects income inequality through the credit or deposit channel. However, the financial depth measured by domestic credit varied within Africa and remained the lowest compared to Latin American & Caribbean, and OECD countries (Nyantakyi & Sy, 2015). This phenomenon is partly explained in [Figure 1], which shows that most African countries are at the initial level of financial development. Although the current digital technology brings enormous benefits to broaden financial inclusion, the resource mobilized to finance investment opportunities are still low.

The other side of the credit channel explains who benefits from it. The continent banking system is characterized by shallow financial access to low-income communities. The degree to which entrepreneurs from rural areas access working capital is limited by collateral requirement, which allows a significant portion of the credit to be directed to those who are relatively wealthy. As the rich people access this limited finance and get productive income gap between the poor and the rich becomes exacerbated. Our finding corroborates the hypothesis that when countries transition to an industrial society, the income distribution between the rich and poor widens (Greenwood & Jovanovic, 1990).

The other sector that is at its infancy level in Africa is the stock market. Stock market and income inequality are the least researched area in the finance-inequality literature. Little is known about its effect on income inequality in the African continent. An inverse relationship exists between stock market development and income inequality (Tsagkanos, 2017; Destek et al. 2020). However, our finding shows a positive relationship between stock value traded and gini disposable. It should be noted that only a few countries have well-established markets with dispersed distribution, ranging from a relatively developed stock market in South Africa to the least in Uganda (Ngare et al. 2014). The market coverage is only 32 percent at the geographic boundary level. On top of that, the agriculture or agri-industrial stock traded that have massive bases are limited.

The key implication is again evolving around the impact of the stock market on agricultural dwellers. Stock market in Africa is underdeveloped and have failed to meet the continent's capital needs (Uzum et al. 2021). Even though stock return prices are determined by agricultural-specific factors (Valdes et al. 2016), the existing capital represented by market capitalization negatively affects agriculture growth (Ngong et al. 2022). The result suggests that the capital raised from the stock market is not enhancing the production or productivity of the agriculture sector. Given that most of the population lives in rural areas, the result makes sense in the African context. It corroborates the claim that the financial system benefits those already accessing the financial service.

Our composite interaction term between domestic credit and stock value traded is positively related to gini disposable. In this specification, there is no evidence supporting the inverted U-shape hypothesis. The finding implies that previous efforts that establish a non-linear relationship between financial development and income inequality need to be checked for two reasons. First, the non-linearity is sensitive to specification differences. The banking sector specification supports the claim, but the composite index shows that the whole financial system does not. Second, since finance is endogenous, the financial sector indicator must be confirmed by GDP controls.

There is no substantial difference between the effect running from the banking, stock market, and composite index. Moreover, the non-linearity relationship presented in [Figure 1] is reversed as we control GDP growth, Inflation, and FDI inflow and shows evidence for an inverted U shape hypothesis is supported in the finance inequality nexus in Africa. Our control variables are insignificant in most specifications also provides evidence for an inverted U shape relationship between gini disposable and GDP growth. A higher FDI inflow also raises gini disposable.

Overall our result shows that financial sector development widens income inequality in Africa. Our finding supports current literature claiming that financial sector development exacerbated income inequality and an inverted U shape relationship in the nexus finance inequality. However, the continent is big with different policies pursued in each country, stage of financial development, economic growth, socio-political conditions, and law enforcement practices. Attributing the baseline result without accounting for these structural differences becomes misleading. We handle these challenges using a subsample analysis by geographical locations. These geographical proximities allow inferring a relationship from relatively similar countries net of socio-economic and culture grounded differences in the structure of economies. Second, we exploit the existing differences in governance that may place countries in different positions in the financial sector development.

We can obtain three insights from [Figure 2 & Figure 3]. First, most countries in Northern and Southern Africa exhibit a positive correlation between gini disposable and domestic credit, whereas, in Eastern and Western Africa, the correlation is negative. It is likely that the baseline result is driven by the level of financial depth in the Northern and Southern African countries. It is also an indication that a sub-sample analysis may provide additional insight concerning the relationship. Second, the correlation in the banking sector seemingly translated into the stock market in the respective regions.

However, this phenomenon is not moving in tandem with GDP growth. For instance, among the rapidly growing economies in Africa (i.e., Morocco, Kenya, Ghana, Egypt, South Africa, Algeria, Nigeria, Ethiopia, and Angola), it is only in Ghana, South Africa, and Angola that the positive correlation has been exhibited. One characteristic of the development efforts in Africa is pooling people out of poverty. Whether we attribute the effect to the financial sector or not, evidence shows a higher economic growth narrows income inequality. We argue that the existing heterogeneity is attributed to omitted factors such as governance and geography. Given that regional institutional arrangements are geographical location-based,^[1] we configure geographical regions with governance indicators and do two empirical exercises.

4.2. The Moderating Effect of Corruption and Political Instability

The first empirical exercise considers how corruption moderates the relationship [Table 3, Panel A]. This factor plays an essential role in shaping the financial development in each region. Corruption distorts the extent to which banks provide credit to the private sector. Wei & Kong, (2017) show that corruption and financial development have significant positive influences on a company's bank loans, and its interaction does not increase a company's bank loans. Corruption asymmetrically impacts financial sector development (Alsagr & van Hemmen, 2021). Adams & Klobodu, (2016) also show that the interaction of financial development and the control of corruption affect income inequality negatively.

Corruption captures perceptions of the extent to which public power is exercised for private gain. These includes petty and grand forms of corruption and the state by elites and private (Kaufmann et al. 2010b). Our result shows that a higher level of corruption increases gini disposable. Most importantly, its interaction with the domestic credit, stock value traded, and composite index raises gini disposable [Table 3]. We also find that the specification on linear form for stock market and composite index changes sign as we interact with corruption. Under such circumstances, credit is not directed to the productive sectors that create massive employment opportunities. The implication is that bribery distorts the smooth functioning of the financial sector by rationing credit. The result further reveals small and medium-scale businesses left uncovered with the credit expansion and get the capital needed for operation.

The other omitted factor that may moderate the relationship is political instability. Political stability and absence of violence/terrorism measure perceptions of the likelihood of political instability or politically-motivated violence, including terrorism (Kaufmann et al. 2010b). The indicator is essential in Africa as most countries suffer from the political turmoil that eventually disturbs the functioning of the financial system and determines the social outcome. Political instability creates uncertainty and reduces investment; as a result, the relationship between investment and income inequality becomes affected (Alesina & Perotti, 1996). It impedes financial development and is a primary determinant of differences for financial development across countries (Roe & Siegel, 2011).

We find virtually similar findings with the corruption results [Table 3, Panel B]. Domestic credit interacted with political instability raises gini disposable. However, in the linear form of specification, the sign changed from negative to positive between stock value traded, composite index, and its interaction with political instability. Following independence, many countries exhibited a stable political environment; however, the nature has changed from the fight for independence to politically driven unrest. Still, interstate conflicts, election-related violence, longstanding ethnonational conflicts, maritime piracy, and extremism exists in the continent. As these types of instability happen, the ground for financial sector to expand becomes tinny. As a result the existing financial institutions will not provide credit to the conflict-prone community; usually the poor. Nor the financial market works efficiently in mobilizing deposits. These and other factors come together in widening income inequality in the continent.

Overall the above two omitted factors do an excellent job moderating the relationship between financial sector development and income inequality. Corruption and political instability are identified as crucial indicators because, in Africa, armed conflict, violent transitions of power, and increasing terrorist threats affect the government and private sector commitment in expanding opportunities to those who do not access finance. In relative terms, the continent comes to the front with the two indicators that show an unfavorable governance system. Even if the financial system architecture worldwide is almost similar, their function is shaped by the existing structural, socio-economic, and political situations in different regions.

Apart from a statistically significant moderating effect of corruption and political instability, other governance factors such as regulatory quality, government effectiveness, and conflict intensity provide virtually similar findings.[2]

4.3. Estimation Results Based on Geographical Regions

Now we turn into assessing the relationship across five geographical regions. We argue that corruption and political turmoil vary across countries. The next configuration assumes that this heterogeneity could be related to geographical locations [Table 4] because neighboring countries share substantial structural and economic conditions. Our subsample analysis based on geographical regions put forward two empirical findings. The geographical location brings enormous development opportunities. In almost all regions, natural resources are abundant, and the means for livelihood is enormous.

Yet, the geographical configuration in most parts confirms the findings from the baseline results is robust. Especially in Northern, Central, and Southern Africa, there exist a positive relationship between domestic credit, stock value traded, and the composite index with gini disposable. In these areas, there also exists a non-linear relationship. Contrary to that, the result is mixed in Eastern and Western African countries. For instance, in Eastern African countries, the relationship is reversed; a higher domestic credit, stock value traded reduces gini disposable. In western Africa regions the relationship is observed only in the banking sector that a rise in domestic credit increases gini disposable.

Sub-Saharan Africa (SSA) is often known for poor economic performance. At the same time, the area is endowed with natural resources that can transform the livelihood of more than half a billion people. However, a country's geographical location alone does not determine its socio-economic development (Bosker & Garretsen, 2012). It is also an area heavily affected by poverty and inequality. Our result confirms that the baseline result is highly driven by the effect coming from Northern and Southern Africa. Besides, in Eastern and Western Africa, there is shred of evidence showing that domestic credit caused investment (Iheonu et al., 2020), contributing to the negative relationship obtained in the ECOWAS[3] region. Concerning the relationship's magnitude, there is no significant differences across regions.

Agenda 2030 for sustainable development goals (SDGs) has drawn particular attention to reducing income inequality in Africa (UNDP, 2017). In each region, there are structural drivers of inequality. The economy is organized in a dualistic approach with limited labor employment in the agriculture sector, yet most laborers earn a low income. Also, there exists a high concentration of human and physical capital in Eastern and Southern Africa. Nevertheless, countries have

limited capacity to influence distributive policies. All these bring the natural resource curse hypothesis true. Besides, policies are oriented towards urban centers to the contrary that the majority of the people live in rural areas.

As a result, when economic growth is recorded in sectors with high asset concentration, skilled labor-intensity such as finance, and capital intensive sectors, realizing an evenly distributed income becomes challenging. On the other hand, inequality gets diminishing in countries where economic growth is pro-agriculture and labor-intensive sectors. The bottom line remained in most African countries' financial development widens income inequality.

Pertinent to our control variables, we find that trade integration narrows gini disposable except in the Southern Africa region. Creating synergies across countries appeared to be a plausible way to overcome inequality. Thus, the promotion of regional economic integration has been the overwhelming African response to a surge in inequality, poverty, and economic development. It is documented that regionalism brought enormous economic development for Africa (Uzodike, 2010). In response, the newly established Continental Free Trade Agreement (CFTA) presents significant opportunities to boost intra-African trade (UNCTAD, 2017). Development-oriented regionalism can guide Africa to achieve development goals, build a resilient economy, minimize the risk associated with external financial and economic crises, and foster inclusive growth. It can also contribute to spilling over benefits in fostering peace and political stability on the continent.

4.4. Geography, Corruption, and Political Instability Configuration

The last empirical exercise assesses whether a heterogeneous effect exists across regions can provide a consistent estimate when interacting with the omitted factors in the respective regions. The geography corruption configuration shows that corruption moderates the relationship in different ways. The moderation based on the geographic regression results presents that corruption exacerbated income inequality in the Northern, South, and East African countries [Table 5]. However, there are few exceptions in Eastern, Southern, and Central Africa where the interaction between domestic credit and corruption reduces gini disposable. One way to understand the moderating effect is that corruption does not have a similar effect in all parts of Africa.

In those countries where corruption is prevalent, capital is accumulated in the hands of few who have a connection with officials. Corrupted economies have a disproportionately small middle class and significant divergence between the living standards of the upper class and lower class. Because most of the country's capital is aggregated in the hands of a few rich people, the income created in the economy also flew to these individuals. The mechanism in which corruption manifests in the financial sector is by discouraging small businesses from getting credit by credit rationing, collateralized loan requirement, unfair competition, and heavy pressure from large companies. Besides, corruption is linked with higher firms' borrowing costs, lower stock valuation, and worse corporate governance (Ng, 2006). Indirectly corruption negatively affects banks' lending through excessive risk (Ali et al. 2020).

Banks tend to prefer large-size firms or government agencies for risk aversion issues as these companies bring lower information asymmetry. As a result, capital that could have been redirected to small businesses wiped out from the financial sector by big companies. These phenomena explain why in most African countries, the impact of corruption in the financial system, among others, exacerbates income inequality.

Meanwhile, in the Western African countries, corruption is not significant in the finance-inequality nexus. Under some circumstances, there is no significant relationship between corruption and the financial sector (Ekşi & Doğan, 2020). Either the regulatory effectiveness in the financial sector is stringent, or the rule of law plays a crucial role in alleviating the distortionary effect of corruption in the financial sector. However, the result does not imply that West African countries do not suffer from corruption. Overall, corruption moderates the finance-inequality nexus by exacerbating income inequality. However, there is evidence that the subsample analysis suggests that corruption is not significant in some areas.

We also argue that political instability is another factor pronouncing the link between finance and income inequality in the respective geographical regions [Table 6]. Political instability through retarding economic growth (Ayessa & Hakizimana, 2021) affects the development of the financial sector. Ertugrul et al. (2019) show a strong effect from political risk and economic deterioration towards financial stability. On the other hand, a powerful effect on financial development runs through political stability that explains differences in financial development across countries (Roe & Siegel, 2008). Political instability hampers financial inclusion efforts (Alhassan et al., 2021).

After independence, many African countries undergo several political conflicts that affect the continent's growth potential. The cause may range from internal to external induced geopolitical and economic interests of the international community (Ong'ayo, 2008) to power struggle to rule. In addition to these factors, uneven development, poverty, disease, ethnic-based political structures, and inequality pressure some countries' stability. Africa stood first when it came to politically motivated conflicts. The forms of political instability in Africa have even further widened, including several civil wars, genocides, political assassinations, insurgencies, and terrorism. Besides, the degree of causalities places systematic implications on the nexus between finance and inequality. These phenomena create an unfavorable environment to spur the financial sector.

Our result shows that in the Northern and Southern African regions, political instability exacerbated income inequality. Political instability in isolation and its interaction with the stock value traded and the composite index raises gini disposable. However, the interaction with domestic credit is inconclusive in Southern Africa. After the Arab Spring, the political situation and violence/terrorism risk worsened for Tunisia, Libya, and Egypt in the Northern African countries. In the Southern African countries where militias spread violence along with the impact of the poor governance system in some countries worth mentioning in escalating conflicts within and between countries. Most importantly, arbitrary borders created by the colonial powers, the heterogeneous ethnic composition of African states, incompetent political leadership, and poverty are the principal causes threatening the development of the economy and the financial sector.

The evidence obtained from West African countries is insignificant. In Eastern and Central Africa, the interaction with domestic credit reduces gini disposable. However, with the composite index, the result remains robust in exacerbating gini disposable. We are not able to justify why political instability reduces income

inequality in those regions. However, potential reasons could be that the peace situation in these regions has been getting better in recent years. Countries started to initiate long-term development by relying on their resources, and improved economic integration in the region contributes to becoming one of the fastest-growing economies in the continent. Even if the political situation in most countries is fragile, the macroeconomic fundamentals are still there. As a result, colossal capital flow to each country boosts small businesses, employment, and technology transfer. These, among others, although small instabilities recorded, countries are managed to develop their financial sector, capital inflow, and eventually narrow income inequality.

In a nutshell, the two predominant problems determine the relationship between financial sector development and income inequality. Although the finding revealed in most regions, the estimation is robust to the baseline estimation results.

Our result is robust for alternative gini indicators (i.e., gini market) and financial sector development indicator for banking (deposit money banks' assets to GDP) and stock market (i.e., stock market capitalization to GDP (%)). Moreover, to corroborate economic transition and the impact of remittance, we control agriculture, forestry, and fishing, value-added, Bank branches per 100,000 adults, and remittance inflows to GDP.

[1] There are eight regional economic communities in five geographical regions.

[2] Additional empirical exercise result can be obtained upon request.

[3] ECOWAS represents the Economic Community of West African States.

5. Discussion

After implementing liberalization policies, in most African countries, the banking industry is dominated by the private sector. This ownership structure along with the competitive nature of the industry, pushes the coverage to be limited in financing investments that have a higher return, minimum risk, and urban centers. This tendency seriously hamper the benefits of financial sector development. Four insights regarding the nexus between financial sector development and income inequality in Africa are presented. Our baseline findings support the current literature that claims financial sector development widens income inequality. We show that financial inclusion and the beneficiaries of domestic credit are not the poor segments of the population. In order to use the financial sector in promoting societal development, the sector's orientation should be pro-poor. Given the deep-rooted poverty in the continent, expanding the financial service by preserving the status quo does not bring people out of poverty and narrow the income difference between the rich and the poor. To this end, financial inclusion, especially digitalizing the financial system, enables the financial coverage to be wider. Besides, collateralized loan disbursement should be eased to include many rural entrepreneurs who have business ideas but failed to do so due to financial constraints.

The second implication from our finding is that governance factors are important in shaping the impact of finance on income inequality. In most African countries, corruption and political instability are common trends. Regardless of the degree of prevalence, both retard economic growth, affect productivity enhancement operations, and disturb the function of the financial system. When corruption prevails, small business owners fail to get working capital because the loan is directed to those who have connections to financial institutions or government officials. Political instability also puts pressure on the liquidity of the financial system and leads to many businesses going bankrupt. In both cases, the poor people are the losers. If the governance system is unchecked, distributing the benefits of the financial sector to the broader population becomes in peril. Therefore, good governance not only catalyzes economic growth it also brings the task of redistributive justice easy.

The geography and governance configuration offers insight on the need to examine regional differences in the African context. The result shows that the baseline result is highly driven by the effect running from the Northern and Southern African countries. There are slightly different results reported in the Western and Eastern African regions. The main takeaway from this configuration is that although the baseline result has been confirmed in key regions, empirical works need to account for the heterogeneity attributed to geography and governance.

The bottom line remained that finance pronounced income inequality by choosing those already using the system. A plausible way to reverse the situation is to promote financial inclusion. In the continent where most people are not banked, the stock market benefits the rich, and governance issues are rampantly transforming the sector in a way to improve the livelihood of poor people has paramount importance. Providing incentive mechanisms could help to realize financial institutions to operate in the rural areas. In this aspect, the role played by microfinance institutions is pivotal. Therefore, development finance policies should gear towards broadening access, easing the cost of doing business, and ensuring good governance can unlock the sector's development potential and realize fair income distribution.

The above and other discussion points are in the vein of findings presented in this paper. Africa has a long way to go to use the benefits of the financial sector for sustainable development and brings people out of poverty.

6. Conclusion

The paper adds to a growing literature in understanding the causes of income inequality by focusing on 49 African countries from 1980 to 2017. We answer how the financial sector affects income inequality by exploiting the differences in geographical regions and governance factors. The paper decouples the financial sector development into the banking and stock market. We also create a composite index to see the whole effect. The analysis is conducted in two forms. The first batch of countries have the banking sector, and the second batch includes 17 countries with the stock market. The composite index is later constructed for the 17 that have both the banking and stock market.

We use panel data fixed effect regression and 2sls estimation technique intended to overcome endogeneity problems to answer the question. Besides, our analysis is supported by the spatial presentation of correlation coefficients for leading indicators. We conclude that financial sector development widens income inequality in Africa, and there exists an inverted U shape relationship. Our conclusion has further implications.

African countries failed to achieve financial inclusion, or the domestic credit is directed to those already accessing the financial sector. Amid the current effort by most African countries to bring the people out of poverty, the finding suggests a lost opportunity in using the benefits of the financial sector for socio-economic development. One approach to curve the existing reality is to work aggressively on financial inclusion, integrating inclusion with digitalization, easing the cost of borrowing money from banks, expanding the list of stock traded, and applying a progressive transfer scheme. The continent is unique because unless the whole society grows together, there is a tendency that the existing corruption and political turmoil exacerbate income inequality.

We then link the impact of corruption and political instability in moderating the impact of financial sector development on income inequality. Our finding shows that paying more attention to controlling corruption and ensuring political stability is essential. The paper stressed that the two factors exacerbated income inequality. Unless good governance is ensured in African countries, domestic credit is directed to those who have a connection to officials, business gets bankrupt, investors get pessimistic, and the employment creation effort will be in peril. Hence, improving the governance system capacitates the development of the financial sector, pulling people out of poverty by expanding business opportunities.

The geography-governance configuration also lends current literature that needs to be checked. One major problem of the African financial system architecture is that no tailor-made system is adopted in different countries. The liberalization policies since the 1980s pushed the finance sector to be privatized and neglect the issue of equity. We suggest that future research should understand the heterogeneity within Africa while establishing the finance inequality nexus.

The empirical work presented in this paper is not flawless. Other researchers can extend the findings presented in this paper by incorporating other domestic, regional, and global shocks. The development of digitalization, the impact of the informal sector, and institutional factors are also other parts that need further investigation. Furthermore, understanding the role of regional economic communities in Africa has paramount importance.

Declarations

This paper has not been previously published or under consideration by another journal and has no conflict of interest, financial or otherwise.

Appendices

A Separate supplementary file is available for robustness tests.

References

1. Abubakar A, Kassim SH, Yusoff MB (2015) Financial Development, Human Capital Accumulation and Economic Growth: Empirical Evidence from the Economic Community of West African States (ECOWAS). *Procedia - Social and Behavioral Sciences* 172:96–103. <https://doi.org/10.1016/j.sbspro.2015.01.341>
2. Adams S, Klobodu EKM (2016) Financial development, control of corruption and income inequality. *Int Rev Appl Econ* 30(6):790–808. <https://doi.org/10.1080/02692171.2016.1208740>
3. Adefeso H (2018) Corruption, Political Instability and Development Nexus in Africa : A Call for Sequential Policies Reforms. *Munich Personal RePEc Archive*, 85277. <https://mpra.ub.uni-muenchen.de/85277/>
4. Aghion P, Bolton P (1997) A Theory of Trickle-Down Growth and Development. *Rev Econ Stud* 64(2):151–172. <https://doi.org/10.2307/2971707>
5. Akinsola FA, Odhiambo NM (2017) The impact of financial liberalization on economic growth in sub-Saharan Africa. *Cogent Econ Finance* 5(1):1–11. <https://doi.org/10.1080/23322039.2017.1338851>
6. Alesina A, Perotti R (1996) Income distribution, political instability, and investment. *European Economic Review*, 40(1996), 1203–1228
7. Alhassan A, Li L, Reddy K, Duppati G (2021) The relationship between political instability and financial inclusion: Evidence from Middle East and North Africa. *Int J Finance Econ* 26(1):353–374. <https://doi.org/10.1002/ijfe.1793>
8. Alsagr N, van Hemmen S (2021) The asymmetric influence of corruption on financial development: fresh evidence from BRICS economies. *J Financial Crime*. <https://doi.org/10.1108/JFC-03-2021-0062>
9. Alvaredo F, Atkinson AB, Piketty T, Saez E (2013) The Top 1 Percent in International and Historical Perspective †. *J Economic Perspect* 27(3):3–20
10. An H, Zou Q, Kargbo M (2021) Impact of financial development on economic growth: Evidence from Sub-Saharan Africa. *Aust Econ Pap* 60(2):226–260. <https://doi.org/10.1111/1467-8454.12201>
11. Andersen TB, Jones S, Tarp F (2012) The finance-growth thesis: A sceptical assessment. *Journal of African Economies*, 21(SUPPL.1). <https://doi.org/10.1093/jae/ejr040>
12. Arestis P, Demetriades O, Luintel B, K (2001) Financial Development and Economic Growth: The Role of Stock Markets. *J Money Credit Bank* 33(1):16–41
13. Aryeetey E (2003) Recent developments in African financial markets: Agenda for further research. *Journal of African Economies*, 12(SUPPL. 2), 111–152. https://doi.org/10.1093/jae/12.suppl_2.ii111
14. Asongu SA, Nnanna J, Acha-Anyi PN (2020) Finance, inequality and inclusive education in Sub-Saharan Africa. *Econ Anal Policy* 67:162–177. <https://doi.org/10.1016/j.eap.2020.07.006>

15. Atkinson AB (2005) Top incomes in the UK over the 20th century. *J R Statist Soc A* 168(Partb):325–343
16. Atkinson AB, Piketty T, Saez E (2011) Top Incomes in the Long Run of History. *J Econ Lit* 49:1(1953):3–71
17. Bae K, Han D, Sohn H (2012) Importance of access to finance in reducing income inequality and poverty level. *Int Rev Public Adm* 17(1):55–77. <https://doi.org/10.1080/12264431.2012.10805217>
18. Bakaboukila Ayessa E, Hakizimana J (2021) Effects of Political Instability on Economic Growth in the Republic of Congo. *Mod Econ* 12(12):1896–1912. <https://doi.org/10.4236/me.2021.1212099>
19. Beck T, Demirgüç-Kunt A, Levine R (2007) Finance, inequality and the poor. *J Econ Growth* 12(1):27–49. <https://doi.org/10.1007/s10887-007-9010-6>
20. Ben Ali MS, Fhima F, Noura R (2020) How does corruption undermine banking stability? A threshold nonlinear framework. *J Behav Experimental Finance* 27:100365. <https://doi.org/10.1016/j.jbef.2020.100365>
21. Bolarinwa ST, Akinlo AE (2021) Is there a nonlinear relationship between financial development and income inequality in Africa? Evidence from dynamic panel threshold. *J Economic Asymmetries* 24(September):e00226. <https://doi.org/10.1016/j.jeca.2021.e00226>
22. Bosker M, Garretsen H (2012) Economic geography and economic development in sub-Saharan Africa. *World Bank Economic Review* 26(3):443–485. <https://doi.org/10.1093/wber/lhs001>
23. Carmen M, Reinhart, Ioannis Tokatlidis (2003) Financial Liberalization: The African Experience. *J Afr Econ* 12(2):53–88
24. Chêne M (2014) The Impact of Corruption on Growth and Inequality. Transparency International, *March*, 1–11
25. Clarke GRG, Xu LC, Zou H (2006) Finance and Income Inequality: What Do the Data Tell Us? *South Econ J* 72(3):578–596. <https://doi.org/10.2307/20111834>
26. Clarke G, Xu LC, Zou HF (2002) Finance and income inequality: Test of alternative theories. *Ann Econ Finance* 14(2 A):1–25. <https://doi.org/10.2139/ssrn.364160>
27. de Haan J, Pleninger R, Sturm JE (2018) Does the impact of financial liberalization on income inequality depend on financial development? Some new evidence. *Appl Econ Lett* 25(5):313–316. <https://doi.org/10.1080/13504851.2017.1319554>
28. Demir A, Pesqué-Cela V, Altunbas Y, Murinde V (2020) Fintech, financial inclusion and income inequality: a quantile regression approach. *Eur J Financ*. <https://doi.org/10.1080/1351847X.2020.1772335>
29. Demirgüç-Kunt A, Levine R (2009) Finance and Inequality: Theory and Evidence. *Annual Rev Financial Econ* 1(1):287–318. <https://doi.org/10.1146/annurev.financial.050808.114334>
30. Denk O, Courneve B (2015) Finance and Income Inequality in OECD Countries. In *SSRN Electronic Journal* (Issue 1224). <https://doi.org/10.2139/ssrn.2649944>
31. Destek MA, Sinha A, Sarkodie SA (2020) The relationship between financial development and income inequality in Turkey. *J Economic Struct* 9(1). <https://doi.org/10.1186/s40008-020-0187-6>
32. Ekşi İH, Doğan B (2020) Corruption and financial development: Evidence from Eastern Europe and Central Asia countries. *Public Finance Q* 65(2):196–209. https://doi.org/10.35551/PFQ_2020_2_3
33. Ertugrul HM, Ozun A, Kirikkaleli D (2019) How is financial stability impacted by political and economic stabilities in emerging markets? A dynamic panel analysis. *Romanian J Economic Forecast* 22(4):148–159
34. Favarra G (2003) An Empirical Reassessment of the Relationship Between Finance and Growth. *IMF Working Papers*, 03(123), 1. <https://doi.org/10.5089/9781451854633.001>
35. Greenwood J, Jovanovic B (1990) Financial Development, Growth, and the Distribution of Income. *Journal of Political Economy*, 98(5, Part 1), 1076–1107. <https://doi.org/10.1086/261720>
36. Hasan I, Horvath R, Mares J (2020) Finance and wealth inequality. *Journal of International Money and Finance*, 108(February 2018), 102161. <https://doi.org/10.1016/j.jimonfin.2020.102161>
37. Huang HC, Lin SC (2009) Non-linear finance-growth nexus: A threshold with instrumental variable approach. *Econ Transit* 17(3):439–466. <https://doi.org/10.1111/j.1468-0351.2009.00360.x>
38. IFC. Digital Access: The Future of Financial Inclusion in Africa. In *International Financial Corporation, World Bank Group* (Issue November (2018) https://www.ifc.org/wps/wcm/connect/aa5e09c7-121e-4588-803a-52ef56b846b2/201805_Digital-Access_The-Future-of-Financial-Inclusion-in-Africa_v1.pdf?MOD=AJPERES
39. Iheonu CO, Asongu SA, Odo KO, Ojiem PK (2020) Financial sector development and Investment in selected countries of the Economic Community of West African States: empirical evidence using heterogeneous panel data method. *Financial Innov* 6(1). <https://doi.org/10.1186/s40854-020-00195-0>
40. J.Forbes K (2000) A reassessment of the relationship between inequality and growth. *Am Econ Rev* 90(4):869–887. <https://doi.org/10.1257/aer.90.4.869>
41. Jobarteh M, Kaya H (2019) Revisiting financial development and income inequality nexus for Africa. *Afr Financ J* 21(1):1–22
42. Jung SM, Cha HE (2020) Financial development and income inequality: evidence from China. *J Asia Pac Econ* 0(0):1–23. <https://doi.org/10.1080/13547860.2020.1717301>
43. Kabango GP, Paloni A (2011) Financial Liberalization and the Industrial Response: Concentration and Entry in Malawi. *World Dev* 39(10):1771–1783. <https://doi.org/10.1016/j.worlddev.2011.04.001>
44. Kaufmann D, Kraay A, Mastruzzi M (2010) The Worldwide Governance Indicators Methodology and Analytical Issues. In *Hague Journal on the Rule of Law* (Vol. 5430). <http://ow.ly/JaiU50qDu1Z>

45. Khan I, Khan I, Sayal AU, Khan MZ (2021) Does financial inclusion induce poverty, income inequality, and financial stability: empirical evidence from the 54 African countries? *J Economic Stud* 49(2):303–314. <https://doi.org/10.1108/JES-07-2020-0317>
46. Kim DH, Hsieh J, Lin SC (2019) Financial liberalization, political institutions, and income inequality. *Empirical Economics*. Issue 0123456789. Springer, Berlin Heidelberg. <https://doi.org/10.1007/s00181-019-01808-z>
47. Kim DH, Lin SC (2011) Nonlinearity in the financial development-income inequality nexus. *J Comp Econ* 39(3):310–325. <https://doi.org/10.1016/j.jce.2011.07.002>
48. King RG, Levine R (1993) Finance, entrepreneurship and growth. *J Monet Econ* 32(3):513–542. [https://doi.org/10.1016/0304-3932\(93\)90028-E](https://doi.org/10.1016/0304-3932(93)90028-E)
49. Kuznets S (1955) Economic Growth and Income Inequality. *Am Econ Rev* 45(1):1–28. <http://links.jstor.org/sici?sici=0002-8282%28195503%2945%3A1%3C1%3AEGAI%3E2.O.CO%3B2-Y>
50. Mbaku JM (1988) Political instability and economic development in Sub-Saharan Africa: Some recent evidence. *Rev Black Political Econ* 17(1):89–111. <https://doi.org/10.1007/BF02900956>
51. Menyah K, Nazlioglu S, Wolde-Rufael Y (2014) Financial development, trade openness and economic growth in African countries: New insights from a panel causality approach. *Econ Model* 37:386–394. <https://doi.org/10.1016/j.econmod.2013.11.044>
52. Ng D (2006) The impact of corruption on financial markets. *Managerial Finance* 32(10):822–836. <https://doi.org/10.1108/03074350710688314>
53. Ngare E, Nyamongo EM, Misati RN (2014) Stock market development and economic growth in Africa. *J Econ Bus* 74:24–39. <https://doi.org/10.1016/j.jeconbus.2014.03.002>
54. Ngong CA, Thaddeus KJ, Asah LT, Ibe GI, Onwumere JUJ (2022) Stock market development and agricultural growth of emerging economies in Africa. *Journal of Capital Markets Studies, ahead-of-p*(ahead-of-print). <https://doi.org/10.1108/jcms-12-2021-0038>
55. Nyantakyi E, Sy M (2015) The Banking System in Africa: Main Facts and Challenges. In *African Development Bank* (Vol. 6, Issue 5)
56. Oded Galor and Joseph Zeira (1993) Income Distribution and Macroeconomics. *Rev Econ Stud* 60(1):35–52. <https://doi.org/10.4337/9781785365065.00026>
57. Omar MA, Inaba K (2020) Does financial inclusion reduce poverty and income inequality in developing countries? A panel data analysis. *J Economic Struct* 9(1). <https://doi.org/10.1186/s40008-020-00214-4>
58. Ong'ayo AO (2008) Political instability in Africa Where the problem lies and alternative perspectives. In *African Diaspora Policy Centre* (Issue January 2008). <https://doi.org/10.13140/2.1.2585.0241>
59. Park C-Y, Mercado RJ (2015) Financial Inclusion, Poverty, and Income Inequality in Developing Asia. In *SSRN Electronic Journal* (Issue 426). <https://doi.org/10.2139/ssrn.2558936>
60. Piketty T, Yang L, Zucman G (2019) Capital Accumulation, Private Property, and Rising Inequality in China, 1978–2015. *Am Econ Rev* 109(7):2469–2496
61. Porta R, La, Lopez-de-Silanes F, Shleifer A (1998) Law and Finance. *J Polit Econ* 106(6):1113–1155
62. Precious C, Bahle M, Praise G (2014) Impact of financial liberalization on economic growth: A case study of South Africa. *Mediterranean J Social Sci* 5(23):238–245. <https://doi.org/10.5901/mjss.2014.v5n23p238>
63. Roberts A, Kwon R (2017) Finance, inequality and the varieties of capitalism in post-industrial democracies. *Socio-Economic Rev* 15(3):511–538. <https://doi.org/10.1093/ser/mwx021>
64. Robilliard A-S (2020) What's New About Income Inequality in Africa? In *World Inequality Lab* (Issue Brief 2020-03)
65. Roe MJ, Siegel JI (2008) Political Instability's Impact on Financial Development. *Public Choice* 87(4):387–223
66. Roe MJ, Siegel JI (2011) Political instability: Effects on financial development, roots in the severity of economic inequality. *J Comp Econ* 39(3):279–309. <https://doi.org/10.1016/j.jce.2011.02.001>
67. Solt F (2019) The Standardized World Income Inequality Database. *Harvard Dataverse, V6, Versions 8*. <https://doi.org/doi/10.7910/DVN/LM40WF>
68. Tita AF, Aziakpono MJ (2016) Financial development and income inequality in Africa: A panel heterogeneous approach. In *Economic Research Southern Africa (ERSA)* (Vol. 614, Issue June). https://econrsa.org/system/files/publications/working_papers/working_paper_614.pdf
69. Tsagkanos A (2017) Stock Market Development and Income Inequality. *J Economic Stud* 44(1):1–27
70. Twerefou DK, Abbey E, Codjoe EA, Ngotho PS (2019) Impact of stock market development on economic growth: Evidence from selected Sub-Saharan African countries. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis* 67(4):1071–1083. <https://doi.org/10.11118/ACTAUN201967041071>
71. UNCTAD (2017) *From Regional Economic Communities to a Continental Free Trade Area: Strategic tools to assist negotiators and agricultural policy design in Africa*
72. UNDP (2017) Income Inequality Trends in sub-Saharan Africa. In *United Nations Development Programme*. <https://doi.org/10.18356/542cba95-en>
73. Uzodike U (2010) The Role of Regional Economic Communities in Africa's Economic Integration: Prospects and Constraints. *Afr Insight* 39(2). <https://doi.org/10.4314/ai.v39i2.50997>
74. Uzum P, Ikpefan AO, Omankhanlen AE, Ejemeyovwi JO, Ehikioya BI (2021) Enabling stock market development in africa: A review of the macroeconomic drivers. *Invest Manage Financial Innovations* 18(1):357–364. [https://doi.org/10.21511/imfi.18\(1\).2021.29](https://doi.org/10.21511/imfi.18(1).2021.29)
75. Valdes R, Von Cramon-Taubadel S, Engler A (2016) What drives stock market integration? An analysis using agribusiness stocks. *Agricultural Econ (United Kingdom)* 47(5):571–580. <https://doi.org/10.1111/agec.12256>
76. Van Velthoven A, De Haan J, Sturm JE (2018) Finance, income inequality and income redistribution. *Appl Econ Lett* 26(14):1202–1209. <https://doi.org/10.1080/13504851.2018.1542483>

77. Wei F, Kong Y (2017) Corruption, financial development and capital structure: evidence from China. *China Finance Review International* 7(3):295–322. <https://doi.org/10.1108/CFRI-10-2016-0116>
78. Weil DN (2015) Capital and wealth in the twenty first century. *Am Econ Rev* 105(5):34–37. <https://doi.org/10.1257/aer.p20151057>
79. Wellen L, Van Dijk MP (2018) New Financial Technologies and 4Th Industrial Revolution in the Third World (the Example of Customer Care of M-Pesa, Kenya). *EUrASEANs: J Global Socio-Economic Dynamics* 2(9):07–12. [https://doi.org/10.35678/2539-5645.2\(9\).2018.07-12](https://doi.org/10.35678/2539-5645.2(9).2018.07-12)
80. Zhang R, Ben Naceur S (2019) Financial development, inequality, and poverty: Some international evidence. *International Review of Economics and Finance*, 61(November 2018), 1–16. <https://doi.org/10.1016/j.iref.2018.12.015>

Tables

Table 1-6 are available in the Supplementary Files section.

Supplementary

Supplementary File is not available with this version

Figures

Figure 1

Scatter Plot of Financial Sector Development and Income Inequality Note: The scatterplot is fitted for 49 countries in Panel A & C, and 17 countries in Panel B and D from 1980-2017. Domestic credit and stock value traded figures are adjusted for share with GDP. The pairwise correlation shows a non-linear relationship. After controlling macroeconomic indicators, the relationship is reversed in the later section.

Figure 2

Spatial Presentation Correlation between Domestic Credit and Gini Disposable

Figure 3

Spatial Presentation on Correlation between Gini Disposable and Stock Value Traded

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [Tables.docx](#)