FINANCIAL DEVELOPMENT, INCOME INEQUALITY AND POVERTY: EMPIRICAL EVIDENCE FROM THE SOUTHERN AFRICAN DEVELOPMENT COMMUNITY (SADC)

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Abstract

Even though the role that financial development plays in boosting economic growth has received considerable empirical attention in the Southern African Development Community (SADC), but the same cannot be said about the impact that financial development has on poverty and income inequality. This paper therefore empirically examines the financial development-poverty-income inequality nexus in 15 SADC countries from 1995 to 2018. Specifically, the paper analyzes the impact of three important dimensions of financial development (i.e. access, depth, and stability) on poverty and inequality. The paper finds that all the three dimensions of financial development reduce inequality in the SADC region by disproportionately increasing incomes of the poor. Also, SADC countries with better-developed financial intermediaries experience faster declines in poverty and inequality. Moreover, financial stability has a larger poverty and inequality-reducing effect relative to financial access and depth. The results are robust when macroeconomic and institutional factors; and reverse-causality are controlled for.

Keywords: Financial Development; Income Inequality; Poverty; Cross-country Regression; SADC

JEL Classification Numbers: G10; G20; I30; D30

INTRODUCTION

The pivotal role that financial sector development plays in spurring economic growth is well articulated in the literature, however the relationship that exists between financial sector development and income development has not received much scholarly attention. From a theoretical point of view, there exist two broad strands of competing theories trying to explain the impact that financial development has on income distribution. One line of inquiry posits that an Inverted-U relationship exists between finance and income inequality. On the other hand, other researchers postulate that the nexus between the two variables largely progress in a linear trajectory. Staunch proponents of the first line of thinking (i.e. the Inverted-U hypothesis) such as Greenwood and Jovanovic (1990) argue that there is a non-linear relationship between financial development and inequality in which case the distribution effect of financial development is largely dependent on the level of economic development. During infant stages of economic development, only rich echelons of society have access to financial services since the high fixed costs of finance exclude the poor from accessing the same, and this in the end increases the overall level of inequality in an economy. However, overtime as the economy gradually experiences growth the financial system becomes more accessible and affordable to the majority of society (both rich and poor) since human capital now becomes the main driver of growth relative to physical capital. Contrastingly, other researchers such as Galor and Zeira (1993) and Galor and Moav (2004) postulate that in fact a linear relationship exists in the financial development-income distribution nexus. From their point of view, it is financial deepening that eases credit constraints in society more especially among the poor thus enhancing human and capital accumulation. In the end; this

leads to the narrowing of an economy's income distribution and hence reduces inequality.

Despite the above theoretical divergence in the literature, empirical studies seem to provide some consensus on the fact that financial development does play a pivotal role in poverty and inequality reduction across the globe. In particular, there is a growing body of empirical work (Haffejee and Masih, 2018; Kapingura, 2017; Seven and Coskun, 2016; Beck et al., 2004 and 2007; Honohan, 2004; Li et al., 1998; Rajan and Zingales 2003) which suggests that when private credit is increased it can, not only boost income growth for the poorest sections of society, but can also contribute to inequality reduction. This appears to invalidate the pioneering proposition given by Greenwood and Jovanovic (1990). However; the above group of empirical studies has one common weakness in that they all utilize the ratio of private credit to the gross domestic product (GDP) as a proxy for estimating financial sector development. But, by using this proxy, these studies essentially cover one aspect of financial development (i.e. financial system depth) thereby neglecting other important dimensions such as financial access and financial stability which have important implications on the finance-poverty-inequality nexus. This paper's empirical analysis will attempt to cover all the three dimensions of financial development as a way of holistically examining the nexus.

A careful review of recent literature on the subject in question shows that attempts aimed at including other dimensions of financial development such as access and stability in the finance-poverty- inequality nexus have largely been and far and few. Among the few available attempts includes studies done by Haffejee and Masih (2018,) Kapingura (2017), Claessens and Perotti (2007) and Demirguc-Kunt et al., (2008) that unearth empirical evidence in support of the proposition that access to finance is pivotal in alleviating poverty and reducing income

inequality. In contrast to this, others such as Jeanneney and Kpodar (2011) Kuneida et al., (2011) generate empirical evidence suggesting that financial instability increases poverty levels and also that increased financial integration worsens inequality by benefitting the rich at the expense of the poor. In concurrence with the above findings, Furceri and Loungani (2015) find that opening-up the capital account worsens income inequality in both the short and medium terms. A similar result was found when the domestic financial system is liberalized. But it must be pointed out that the majority of these studies have not focused on sub-Saharan Africa, let alone the Southern African Development Community (SADC).

It is against this background that this paper aims at empirically examining the above conflicting propositions on the linkage between financial development, income inequality, and poverty in the SADC region. In this undertaking, three vital dimensions of financial development namely access, depth and stability will be examined in relation to the level of income inequality and poverty in 15 SADC member countries from the period 1995-2018.As a matter of fact, SADC is the most financially-advanced region in sub-Saharan Africa and also contains countries with some of the highest levels of income inequality and poverty in the world. But in spite of these economic characteristics, so far, no known study has been attempted in the region to assess the finance-poverty-inequality nexus. This paper therefore principally aims to address this glaring research gap currently existent in the literature. In a nutshell, our empirical findings suggest that improving financial access, stability and depth has the potential to reduce poverty and income inequality in the aforementioned region. On top of this, we find that financial stability appears to have a higher inequality and poverty-reducing effect relative to financial depth and financial access in southern Africa.

Having set up our introductory part as above, the rest of this paper is arranged along the following lines: Section 2 presents a brief review of theoretical and empirical literature. Data and the analytical methodology follow from this in section 3. Empirical results and robustness checks are presented in section 4. Finally, concluding remarks and some suggestions for further research are provided in section 5 as part of the epilogue. But before venturing into the above sections we first present a brief overview of recent development as far as financial development, economic growth, poverty, and inequality are concerned in the SADC region.

An Overview of Recent Developments in the Financial Sector, Economic Growth, Poverty, and Income Inequality in the SADC Region

Since the 1990s financial systems in the SADC region have been undergoing significant growth and liberalization. Among some remarkable policy reforms undertaken by southern African economies include reduction of trade tariffs, introduction of flexible exchange rate regimes and the adoption of indirect monetary policy instruments. These reforms have helped to reduce barriers to entry of new players in the banking system and the formal economy in general. Recent empirical evidence suggests that financial sector liberalization has generated positive effects on economic growth prospects of the SADC region. Furthermore, liberalization has boosted saving levels in many member countries as competition among financial players has increased returns on savings. Since 2004, financial sectors of countries such as Mauritius, Seychelles and South Africa have experienced remarkable development to the extent that over 50 percent of their GDP has been invested in highly accessible short-term deposits and securities thereby illustrating the robust health of the

financial sectors of the above economies. Other low-income member countries such as Tanzania have also made tremendous progress in opening up their banking sector to new foreign entrants since the late 1990s. For other countries such as Angola, Madagascar and Malawi; financial sector liberalization has brought significant improvements in credit systems which have the potential to enhance access to credit for investors in the short-to-medium term (SADC, 2012; Abel et al., 2019).

In addition to this, SADC just like other African sub-regions has experienced rapid economic growth in the last two decades so much so that the economic bloc has averaged around 4 percent growth since the mid-1990s.Indeed; this economic boom has resulted from factors such as the end of civil wars in member countries such as Angola and Mozambique, a commodity export boom, better macroeconomic management and governance and the discoveries of new mineral resources among others. But despite this episode of rapid economic growth, the majority of SADC's population continues to languish below the international poverty line currently pegged at U$1.90. Latest SADC estimates suggest that about 42 percent of its population live in absolute poverty. It therefore comes as no surprise that a significant number of SADC member states failed to meet the target number of one of ending extreme poverty under the Millennium Development Goals (MDGs) framework that ended in 2015 and the current Sustainable Development Goals (SDGs) (World Bank, 2017). The World Bank recognizes that attractive private finance to cover the huge financing gaps is necessary to help the world meet SDG goals which in turn would help to fight poverty and reduce inequality reduction. (World Bank, 2020).

On top of this, Africa is the most unequal continents on earth containing 7 of the 10 most unequal countries in the world. Worse still, the SADC region is the most unequal region in Africa. Indeed, SADC countries such as Angola,

Botswana, Lesotho, Namibia, South Africa, Swaziland, and Zambia have high income inequality with Gini indices of more than 0.50 (World Bank, 2016). To a large extent these high inequality statuses in the SADC have historical roots in massive land dispossession policies and racially-discriminatory tendencies of their colonial heritage. However, it must be pointed out that inequality is a complex and pervasive phenomenon in the SADC region (Cornia, 2014, UNDP, 2017).

LITERATURE REVIEW

There seems to be a reasonable consensus in the literature on the fact that financial development boosts economic growth. Indeed, researchers such as Acemoglu and Zilibotti (1997); Rajan and Zingales (1998) observe that financial development enables the mobilization of savings from both domestic and foreign sources and thus aiding the efficient allocation of capital. For King and Levine (1993) the mobilization savings also raises total factor productivity in the economy. In addition to this, financial sector development also facilitates the trade in goods and services.

But despite the above consensus on the finance-growth node, the same cannot be said about the finance-poverty-inequality nexus where researchers have been unable to generate clear findings on whether financial development contributes to poverty reduction and income inequality reduction. A careful review of the literature reveals that there exist conflicting predictions as far as the financial development-inequality-poverty nexus is concerned. As a matter of fact, there are some theoretical models that suggest that as financial development catalyzes economic growth it consequently contributes to inequality reduction. The basic argument underpinning this view is that imperfections in financial markets such as information asymmetry, contract enforcement costs, and transactions

costs impose a larger binding constraint on the poor relative to the rich since the former oftentimes lack collateral and have neither credit histories nor connections. According to Galor and Zeira (1993) it is such credit constraints that in the end hinder the poor from accessing capital even when they have promising investment projects that can yield high returns.

In contrast, there is a strand of theories that questions whether financial development plays any role in poverty reduction. The gist of argumentation in these theories is that the poor basically depend on informal connections and family ties in order to access capital so that any improvements in the financial sector will basically be more beneficial to the rich. Among the vocal proponents of this view are Greenwood and Jovanovic (1990) who generated a model which postulates there exist a non-linear relationship between financial development and income distribution when the economic development process in motion. As pointed out earlier on; these researchers argue that in infant stages of the economic development process, it is only the rich who have the capacity to access and benefit from financial markets as a result; financial sector development increases the level of inequality between the rich and the poor. But as the rate of development accelerates financial development gradually becomes beneficial to an increasing proportion of the population so that income inequality begins to decline. However, other researchers such as Bourgignon (2004) observe that if financial development reduces the level of inequality this could curtail economic growth and impede poverty reduction efforts. He reasons that in instances where the poor have lower saving levels relative to the rich this would diminish national savings and thereby stunting economic growth and increasing poverty levels.

But as far as financial development-poverty nexus is concerned, financial development enhances an economy's resilience by offering households and firms the necessary

instruments to weather storms associated with adverse macroeconomic shocks. This can go a long way in reducing poverty levels. Additionally, it can also be argued that sound financial systems have the potential to strengthen transmission mechanisms for both fiscal and monetary policies in developing countries mainly through diversification of policy instruments as well as information sharing. Moreover, some aspects of financial sector development such financial inclusion have the ability to not only reduce but also to mitigate adverse effects associated with income inequality on economic growth in developing countries (Ostry, Berg, and Tsangarides 2014; World Bank 2014; IMF, 2015).In support of this assertion, there are empirical socio-economic studies which suggest that financial inclusion, more especially of women, significantly reduces inequality of opportunity and thus boosting welfare and inclusive growth.

In a similar vein, empirical literature suggests that, on the overall, financial sector development catalyzes economic growth more especially at lower levels of financial development. On the same, literature is awash with empirical studies showing that there exists a certain threshold beyond which financial sector development may hinder economic growth and hence increase poverty levels (Arcand, Berkes, and Panizza 2012; Ceccheti and Kharoubi 2015; Sahay et al., 2015). However; this threshold may not be very useful for developing regions such as SADC since the majority of member states in the region appear to be well below the aforementioned threshold that may be detrimental for growth. Related to this are assertions that financial development assists in mitigating the negative macroeconomic shocks and hence poverty incidences by easing borrowing constraints of firms and households and also encouraging better risk diversification and management strategies (Caballero and Krishnamurty 2001; Acemoglu and Zilibotti 1997). But the possible downside that may

abound from this is that in developing regions such as SADC where credit market imperfections are prevalent, financial development may propagate and indeed worsen the negative impact of real shocks across the macro-economy and thus increase poverty levels (Bernanke, Gertler, and Gilchrist 1999).

Against this background of contradicting theoretical propositions, this empirical analysis aims at examining the impact of financial development on the distribution of income and poverty in the SADC region as a way of distinguishing the above divergent theoretical predictions.

DATA AND EMPIRICAL METHODOLOGY

Data sample and Research Variables

The study's sample contains 15 SADC countries namely: Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe. The estimations cover the period 1995-2018, representing the period in which SADC has been active as an economic bloc. Likewise, the study uses measures of financial sector development poverty and income inequality as is commonly suggested by literature. Indeed, the World Bank's inequality and poverty database (PovcalNet) (http://iresearch.worldbank.org/PovcalNet/povOnDemand.aspx) will provide data on poverty and income inequality indicators. The Gini coefficient will be used as a proxy for income inequality and this simply is a relative ratio of the areas on the Lorenz curve. In the PovcalNet dataset, the Gini ranges from 0 to the 100^{th} percentile whereby zero represents perfect equality (i.e. each person in society receiving the same amount of income) and 100 percent representing extremely unequal income distribution (i.e. a single individual having all the income in society). Also, the study

utilizes the poverty gap index in order to cover the role that financial development plays in alleviating poverty in the SADC region. The poverty gap index measures the average deficiency in income of the poorest individuals from the conventional poverty line of US$ 1.25.

On top of this, the study attempts to cover important dimensions of financial sector development such as access, depth and stability. Our analysis utilizes 3 variables obtained from the World Bank's Global Financial Development Database (http://www.worldbank.org/en/publication/gfdr/data/global-financial-development-database) to cover financial institution development and financial market development. In order to measure access to financial services we employ bank accounts per 1000 adults. In this case, bank accounts per 1000 adults capture bank access. Furthermore, we use a widely utilized indicator of financial depth namely: ratio of banks' private credit to GDP. The higher the values of this ratio the deeper are the financial institutions; the opposite also holds. For financial stability; our study uses the ratio of regulatory capital to risk weighted as its main proxy. As a matter of fact, when the regulatory capital is high then banks will have reduced chances of defaulting and vice versa.

But it is also necessary to control for other variables that have been used as determinants of poverty and income inequality such as the ratio of government consumption expenditure to GDP, per capita real GDP, openness to international trade and the rate of inflation. We utilize per capita real GDP in order to control for the effect of economic growth. As pointed out in the literature review section, economic growth has strong relationship with income inequality. From theory, it can be expected that per capita real GDP will have a negative coefficient since low levels of income inequality and poverty are associated with higher income levels. On a similar note, we expect both government expenditure to GDP ratio and openness to international trade

to exhibit negative coefficient signs. As theory postulates; these variables are important proxies for public expenditure and international trade respectively. Lastly, following pioneering work by Easterly and Fischer (2001) the inflation rate coefficient is also expected to carry a positive sign since inflation oftentimes harms the poor more disproportionately relative to the rich. All the above control variables will be obtained from the World Bank's World Development Indicators (WDI) (https://data.worldbank.org/products/wdi).

Empirical Models

The study follows the finance, poverty and inequality literature in generating analytical framework in order to empirically examine the models the aforementioned nexus. These models will be estimated using cross country data described above. The following are the regression models estimating the financial development-income inequality relationship and the financial development-poverty-inequality relationship:

$$\boldsymbol{GINI_{i,t} = \alpha + \beta FSD_{i,t} + \omega_1 Y_{i,t} + \omega_2 INFL_{i,t} + \omega_3 OPEN_{i,t} + \omega_4 GOVCONS_{i,t} + \varepsilon_t} \quad (\mathbf{1})$$

$$\boldsymbol{POVGAP_{i,t} = \alpha + \beta FSD_{i,t} + \omega_1 Y_{i,t} + \omega_2 INFL_{i,t} + \omega_3 OPEN_{i,t} + \omega_4 GOVCONS_{i,t} + \varepsilon_t} \quad (\mathbf{2})$$

In the above equations (1) and (2), $GINI_{i,t}$ and $POVGAP_{i,t}$, represent the Gini coefficient and the poverty gap, respectively. $FSD_{i,t}$ represents financial sector development, the key explanatory variable that we are interested in investigating. It covers the three dimensions of financial development previously described. Its coefficient β is expected to be negative, which implies that higher financial development contributes to lowering of income

inequality and poverty reduction. This is so because lower values of bank accounts per 1,000 adults, private credit to GDP ratio, and regulatory capital to risk-weighted assets ratio implies a more accessible, deeper and stable financial sector, respectively. Furthermore, $Y_{i,t}$ is the log of GDP per capita used to control for the wealth effect, and ω_1 we expect to be negative. *INFL*, *OPEN*, and *GOVCONS* are a set of control variables representing inflation, openness to international trade, and government consumption. Following the literature, ω_2 is expected to be positive; ω_3 and ω_4 are expected to be negative.

As discussed earlier on in the literature review section: endogeneity may be present in the financial development-income inequality-poverty nexus. For instance, at lower levels of poverty, financial services are more likely to be easily affordable and readily accessible to poor sections of society and as such this may stimulate development of the financial sector. On a similar note, when the poverty gap is narrower and/or less income inequality is prevalent, this situation may enhance economic growth as postulated by the Kuznets Inverted-U hypothesis of rising and then falling of income inequality in response to economic growth. This being the case, it is essential to control for possible simultaneity bias and indeed endogeneity in order to holistically analysis the financial development, inequality and poverty nexus in the SADC region. In order to address the above simultaneity bias and reverse causation, the study will utilize instrumental variable (IV) regression analysis. In this endeavor, two types of instruments are employed namely (a) lagged values of the endogenous variables and (b) instruments underpinning theoretical and empirical finance and growth literature including legal systems and ethnic fractionalization (i.e. linguistic and religious heterogeneity among countries). This data is obtained from the Fractionalization dataset compiled by the Norwegian Centre for Research Data

(.http://www.nsd.uib.no/macrodataguide/set.html?id=16&sub=1). It must also be pointed out that the lagged values of endogenous variables are also used in order to mitigate possible autocorrelation with the current random disturbance term.

Another important diagnostic regression test that will be employed is the Hansen's J-test of over-identifying restrictions. This will assist in ascertaining the validity of the instrumental variables employed in the analysis. The Hansen's J-test basically tests the null hypothesis that the instruments are not correlated with the idiosyncratic error term and whether the instruments are valid. If the null hypothesis is rejected then the instruments are invalidated and vice versa (Hansen, 1982).

We will also employ the Wooldridge autocorrelation test to investigate the presence of serial correlation the regression models. This is a general test for serial correlation of any order. It investigates the possibility that that residuals may be correlated over more than one period in random-effect or fixed-effect regressions. The Wooldridge test is preferred to other auto-correlation such as Durbin Watson because it is able to generalize diagnostic testing to any order of correlation and also because it is easy to implement (Wooldridge, 2010; Drukker, 2003).

Empirical Results

Tables 1, 2 and 3 present empirical results for the impact of financial development on the poverty and income inequality in the SADC region. As already pointed out, we split financial development to cover its important aspects such as financial access, financial depth and financial stability. Each of these three aspects are each approximated by an indicator namely bank accounts per 1000 adults as a proxy for financial access. On its part financial depth is captured by the ratio of private credit to GDP. Finally,

financial stability is represented by regulatory capital to risk-weighted assets. The table below presents empirical results on the impact of financial access on poverty and inequality. In the analysis, the two columns show the OLS estimates and IV regression estimates.

Table 1: The Impact of Financial Access on Income Inequality and Poverty

	Gini coefficient		**Poverty gap**	
	OLS regression	IV	OLS regression	IV
	regression		regression	
Log of per capita GDP	-4.005^{***}	-3.719^{***}	-3.825^{***}	-3.119^{***}
	(0.812)	(0.123)	(0.415)	(0.053)
Inflation	1.125^{*}	1.119^{**}	0.925^{**}	1.001^{***}
	(0.815)	(0.633)	(0.515)	(0.273)
Openness to International trade	-0.825^{***}	-0.619^{***}	-0.801^{***}	-0.419^{***}
	(0.005)	(0.033)	(0.095)	(0.013)
	-0.825	-0.711	-0.601	-0.682
	(0.915)	(0.733)	(0.715)	(0.783)
Government consumption	1.025^{***}	1.009^{***}	1.005^{***}	0.919^{***}
	(0.125)	(0.311)	(0.095)	(0.103)
Constant				
Bank accounts per 1000 adults	-1.885^{***}	-1.119^{***}	-1.625^{***}	-0.819^{***}
	(0.115)	(0.233)	(0.095)	(0.073)
R-squared	0.592	0.497	0.564	0.442
Hansen J statistic		0.522		0.508
Wooldridge test	8.511		8.097	
	(0.002)		(0.031)	

* p<0.10, ** p<0.05, *** p<0.01
NB: parentheses indicate standard errors, the panel is unbalanced
OLS is ordinary least squares and IV is instrumental variable

We firstly aim to better understand the distributional effect of financial access (as an aspect of financial development), by controlling for macroeconomic and institutional variables in the regression in both the OLS and IV regressions. Empirical results from Table 1 indicate that

an increase in the number of people with bank accounts reduces the Gini coefficient and this holds for both the OLS and IV regression approaches. This suggests that financial access reduces the income inequality by exerting a disproportionately positive effect on the incomes of the poor.

On the same, the above table suggests that financial access reduces the poverty gap beyond any impact on overall per capita GDP. This shows that increased financial access narrows the gap between the poor and the rich in society in spite of the increase in average incomes. The result appears to hold for both OLS and IV regressions.

We also test for the appropriateness of the instruments used by applying the Hansen J-test of over-identifying restrictions. In our analysis this test investigates whether the instrumental variables are correlated with the dependent variable beyond their capacity to shed light on the cross-country variation in bank accounts per 1000 adults. The p-values in Table 1 indicate that the excluded instruments are valid instruments implying that they are not uncorrelated with the random disturbance term but also that they are correctly excluded from the estimated regression equation. Thus we fail to reject the null hypothesis of valid instrumental variables. Still on diagnostic checking, Wooldridge test results suggest that no serial correlation is present in the sample. This suggests the empirical results are robust.

Confirmation of the validity of the instruments under the IV regression suggests that the direction of causality runs from financial access to poverty and income inequality reduction.

Next, the analysis proceeds to present the empirical results for the effect of financial deepening on income inequality and poverty and these findings are given by Table 2.

Table 2: The Impact of Financial Deepening on Income Inequality and Poverty

	Gini coefficient		**Poverty gap**	
	OLS regression	IV	OLS regression	IV
Log of per capita GDP	regression -2.325^{***} (0.695)	regression -2.119^{***} (0.503)	regression -2.005^{***} (0.412)	regression -1.719^{***} (0.233)
Inflation	1.325^{**} (0.710)	1.059^{**} (0.633)	2.305^{***} (0.215)	1.709^{***} (0.193)
Openness to International trade	-1.205^{***} (0.241) -0.325 (0.415)	-1.119^{***} (0.133) -0.119 (0.233)	-0.985^{***} (0.015) -0.677 (0.715)	-0.819^{***} (0.133) -0.401 (0.473)
Government consumption	4.325^{***} (0.415)	4.119^{***} (0.233)	2.625^{***} (0.075)	2.619^{***} (0.143)
Constant				
Private credit to GDP (percentage)	-1.605^{***} (0.015)	-1.109^{***} (0.133)	-1.805^{***} (0.041)	-0.919^{***} (0.093)
R-squared	0.499	0.473	0.478	0.422
Hansen J statistic	10.325	0.602	11.617	0.452
Woodridge test	(0.021)		(0.004)	

* p<0.10, ** p<0.05, *** p<0.01
NB: parentheses indicate standard errors, the panel is unbalanced
OLS is ordinary least squares and IV is instrumental variable

Table 2 indicates that private credit to GDP ratio reduces the poverty gap and Gini index in the SADC countries. This is clearly depicted by the negative and significant OLS and IV regression results. In concurrence with this finding, the majority of the control variables (i.e. government consumption, and openness to international trade) also appear to decrease the level of poverty and the gap between rich sections and poor sections of society in the aforementioned region. In contrast, when the level of

inflation raises this leads to a sharp increase in the poverty gap and the level of income inequality.

In a similar vein, p-values from the Hansen J-test depicted in Table 2 suggest that the excluded instruments are valid instruments. This implies that the instruments are not only uncorrelated with the random disturbance term but also that they are correctly excluded from the estimated regression equation. Thus we fail to reject the null hypothesis of valid instrumental variables. This means that the instruments jointly explain cross-country variation financial depth (i.e. private credit to GDP ratio). With this therefore, we conclude that increased financial depth reduces the level of income inequality as well as the poverty gap. This finding holds when macroeconomic factors (government consumption and inflation) and the international environment (i.e. openness to international trade) are controlled for. The robustness of these empirical results seems to be confirmed by the Wooldridge autocorrelation test results which indicate that no serial correlation is present in the sample.

The above validity of the instruments in the above IV regressions gives the paper license to conclude that the direction causality runs from financial depth to poverty and income inequality.

Having considered financial access and depth as important aspects of financial development, we now proceed to examine the impact of financial stability on income inequality and poverty. Empirical results of this analysis are presented in Table 3.

From the above table it can be clearly deciphered that regulatory capital to risk weighted assets reduces both income inequality and the poverty gap in the SADC region. This result seems to hold under both the OLS and IV regression frameworks. In agreement with these findings, log of per capita GDP and most of the control variables such as openness to trade and government expenditure also appear

to have a poverty and inequality-reducing effect in the aforementioned region. However, increased levels of inflation increase the poverty gap and the level of income inequality in the region. All the above findings are in line with our apriori expectations.

Table 3: The Impact of Financial Stability on Income Inequality and Poverty

	Gini coefficient		**Poverty gap**	
	OLS regression	IV	OLS regression	IV
Log of per capita GDP	regression -2.925^{***}	-2.019^{***}	regression -2.300^{***}	-2.011^{***}
	(0.015)	(0.603)	(0.315)	(0.633)
Inflation	0.425	0.401	0.410	0.611
	(0.675)	(0.603)	(0.711)	(0.813)
Openness to International trade	-0.925^{***}	-0.719^{***}	-0.805^{***}	-0.702^{***}
	(0.115)	(0.033)	(0.095)	(0.103)
	-0.925^{***}	-0.319^{***}	-0.725^{***}	-0.279^{***}
	(0.415)	(0.233)	(0.019)	(0.043)
Government consumption	8.325^{***}	4.909^{***}	7.625^{***}	4.229^{***}
	(0.895)	(0.233)	(0.991)	(0.093)
Constant				
Regulatory capital to risk-weighted assets (percentage)	-4.325^{***}	-4.119^{***}	-4.075^{***}	3.709^{***}
	(0.415)	(0.233)	(0.317)	(0.453)
R-squared	0.462	0.392	0.411	0.344
Hansen J statistic		0.442		0.410
Wooldridge test	13.725		17.995	
	(0.041)		(0.001)	

* p<0.10, ** p<0.05, *** p<0.01
NB: parentheses indicate standard errors, the panel is unbalanced
OLS is ordinary least squares and IV is instrumental variable

From the above empirical results one can conclude that financial stability reduces the level of poverty and income inequality in the SADC region. Therefore, increasing the pace of financial sector development will likely contribute to poverty alleviation and narrowing of the income distribution among the rich and poor sections of society. On the same note, results of the Hansen J-test suggest that the above findings are robust since their instrumental variables appear to be valid. Furthermore, our Wooldridge autocorrelation test results suggest that there is no serial correlation in the models.

Moreover, the above Hansen J-test results together with the significance of IV regressions suggest that there is no reverse causality. Therefore, we conclude that the causality runs from financial stability to poverty and inequality but not the other way round. Thus financial stability is a cause but not consequence of income-inequality reduction and poverty alleviation in SADC.

In a closing, when the three dimensions of financial development are compared, it is evident from Tables 1, 2, and 3 that financial stability has a higher poverty and inequality-reducing effect in the SADC region relative to financial depth and financial access. This suggests that stability of the financial sector plays an important role in the enhancing the socio-economic welfare of citizens of the above economic bloc.

CONCLUDING REMARKS

We now proceed to present some concluding remarks. In a nutshell, there is ample theoretical and empirical evidence in the literature on the positive role that financial development plays in spurring economic growth in an economy. However, the same cannot be said about the impact that financial development has on income distribution and poverty reduction since very few studies

have been attempted on the subject in question. This is despite sound theoretical reasons given in the literature on why financial development has the capacity to reduce the levels of both poverty and income inequality in an economy. As a matter of fact, the few available studies which have been undertaken on the finance, inequality and poverty nexus across the world and indeed in Africa, have mainly focused on the role of only one aspect of financial development (i.e. financial deepening) on growth and inequality. On top of this, none of these studies have ever been conducted in the SADC region despite the region being the most financially advanced in sub-Saharan Africa. It is against this background that this paper was undertaken in order to expand the investigation on the above topic from merely focusing on financial depth to include other facets of financial development such as financial access and financial stability. Our enquiry also paid a particular attention to the income levels and quality of institutions in the SADC region

On the overall, the paper finds that financial development aspects (e.g. access, depth and stability) have an inequality and poverty-reduction effect in the SADC region. Indeed, this reduction seems to largely emanate from financial stability relative to financial access and financial deepening. On the same note, the paper unearths evidence suggesting that GDP per capita, openness to international trade and government expenditure reduce the level of poverty and inequality in southern Africa. However, inflation appears to increase both poverty and inequality among poor sections of the society.

In light of the above findings, therefore, we argue that it may be prudent for policy makers in the aforementioned region to steer the development of the financial sector towards the direction of inclusive growth (i.e. boosting the pace and distribution of economic growth). Additionally, the financial reforms that SADC is currently undertaking should have a particular emphasis on not only

expanding financial access and financial depth but should also encourage financial stability. Possible ways of achieving this is by removing credit and interest controls and improving regulatory and supervisory frameworks more especially in the banking and capital market sectors. Also, since our findings suggest that financial stability has a higher poverty and inequality-reducing effect, it is may be prudent to give priority to the former when devising inclusive development and financial development policies in the region. In closing, we also suggest that further research should focus on the role that financial liberalization plays in the nexus. This would provide a comprehensive picture on the role of financial sector development in improving income distribution and alleviating poverty in southern Africa.

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