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Re-examining the Nexus Between Financial Development and Poverty Reduction: Evidence from Emerging Economies

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Abstract

During the past two decades, the research on financial development and growth has gained a lot of coverage. This research looks at the degree to which financial development helps alleviate poverty. Cointegration estimation of the system, called the FMOLS, was applied over the period 1995–2015 to a panel of five African emerging economies. Using liquid liability as a percentage of GDP and bank domestic credit as a percentage of GDP as the main financial development indicators, the findings indicate that both financial development indicators minimize poverty. Other factors such as economic growth and inflation are not statistically significant. Government spending, on the other hand, does not tend to affect poverty irrespective of the measure of financial growth employed. These findings suggest that while financial growth is capable of reducing poverty, it must be combined with a reduction in inflation, as well as other macroeconomic variables. The use of liquid liability and bank domestic credit as measures of financial growth is robust to the results.

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1. Introduction

In the theoretical and empirical literature, the interconnections between financial stability and economic growth are broader. In the previous literature, the associated imperative dimensions of the relationship between financial growth and poverty reduction cannot be contained in the substance. Financial development 's impact on poverty has been largely inconclusive and unclear from the beginning due to the change in income rates resulting from financial development reforms, which are similar to poverty reduction in developing countries. Poverty reduction policies should take on more significance as compared to emerging-country development theories. This is due to economic development leading to prosperity, which, in turn, does not improve the lives of the poor (Odhiambo, 2010).

There are startling disparities among countries in wealth distribution and deprivation predominance. According to the Human Development Report (UNDP, 2005) the income ratio of the richest 20% of the population to the poorest 20% surpassed 17 out of 21 countries but was still below 5 out of 27. Basically, in some nations, no one lives on exactly $1 a day, except in 22 nations in which over 33% of the general population live below this commonly used poverty line. The research on the impact of financial growth on poor people's capital accumulation has been well accepted, though some studies remain indecisive. Several studies support the concept that financial development improves capital distribution skill and decreases credit constraints, as well as reduces poverty with all these results, benefiting the vulnerable by encouraging investment in commercial activities and boosting the growth of human capital (Aghion, Burgess, Redding, & Zilibotti, 2005; Beck & Maimbo, 2013; Ficawoyi & Kevin, 2016).

In the opposite view, another theory indicates that financial growth and its inclusion interfere with the creation of wealth for the poor and may lead to an increase in poverty because abundant financial resources cause excessive consumption and prompt competition for social status (Levine, 1997; Moav & Neeman, 2010). Because of social similarities, the incomes and consumption at the highest point of the income transmission scale serve as lower rates to mimic the consumption patterns of the wealthy — for example, by purchasing expensive goods — to separate themselves from the poor (Moav & Neeman, 2010; Rayo & Becker, 2010). This incentive,

popularly known as “keeping up with the Joneses,” encourages low-income households to assign a large fraction of their income to consumption and depend on constant consumer borrowing, which prevents more wealth creation and contributes to continued poverty (Alvarez-Cuadrado, Van Long, & Poschke, 2017; Kumhof, Rancie, & Winant, 2015).

The study's main objective is to examine the impact of financial growth on poverty reduction in emerging economies. In terms of creativity, the present work uses two variables of financial growth for the nexus of finance–poverty, with an emphasis on emerging economies. This empirical research adds up to the previous work on the measurement of financial growth and poverty reduction while at the same time using household consumption expenditure per capita as a calculated variable for poverty compared to the use of the GINI index and other variables as a measure of poverty by some scholars.

2. Literature review

The "big divide" between rich and poor nations went on beyond the twentieth century's end. While numerous studies have shown that over the past 50 years an enormous array of rich and middle-income nations has converged on parallel forms of growth, the gap between these nations as a whole and the extremely poor nations has expanded (Aghion et al., 2005). On the other hand, for most developing nations, the post-1980 period marked the starting point of the liberalization process, with a particular focus on the importance of financial markets. In any case, interests in most nations since the early 1980s, despite evidence provided by the literature and conviction of the positive impacts of financial markets are limited in scope (OECD, 2008). Despite the widespread but over-optimized conviction of the positive effect of financial development and poverty reduction, this truth provides an impetus for examining financial development and the linkages between poverty in the setting of liquid liabilities (percentage of GDP) and banks' domestic loans to the private sector (percentage of GDP).

A sound financial system helps the poor to get to financial administrations, particularly credit and risk-insurance administrations. In this way, the economic assets of the poor are enhanced, their productivity increased, and the capacity for sustainable living expanded (World Bank, 2000; Jalilian & Kirkpatrick, 2002). In agreement with Chibba (2009), the financial sector empowers poor people to draw up surplus reserve funds or borrow cash to start micro-enterprises,

which inevitably leads to broader financial services, more jobs, and higher wages, thus reducing poverty.

Africa's financial sector development

Development of the financial sector is now widely recognized as key to economic growth and development with an inclusive financial system essential for inclusive development (Levine, 2004; Park & Mercado, 2015). Confirmation from Africa also highlights the positive impact of financial sector development on growth and profitability, although the results are not good, mainly due to the poor quality of the available data (Senbet & Otchere, 2010). It must be understood that the media for the interaction between the growth of the financial sector and economic development are various roles the financial system plays, along with information creation, liquidity provision, market discovery, governance and risk management, etc. (Levine, 1997). In the banking sector, for example, normal accumulation of savings is insufficiently provided that such savings are intermediated for efficient allocation of capital by private credit arrangements. Similarly, the unimportant existence of stock exchanges is negligible if they are not active in knowledge and liquidity output through well-functioning trading systems (Senbet & Otchere, 2010). Therefore, policies should be led by a useful perspective of financial structures in preparing changes in the financial sector, not just savings and capital mobilizations. As part of the Structural Adjustment Program initiated by the IMF and the World Bank, African countries, mainly in the financial sector, were liberalized between 1980 and 1990 for future financial growth. The reforms include the abolition of the credit cap, liberalization of interest rates, state-owned restructuring and privatization, and the implementation and promotion of private banking and financial market structure growth initiatives. Moreover, supervisory and regulatory systems as well as deposit insurance are used in some countries (Allen et al., 2014). Liberalization of the financial environment has emerged in the African continent in a more brooding way due to developments in the financial sector. Such changes have caused rapid change in environments and technology around the world. In the last two decades, there has been steady growth, with higher growth in the world. The stock market has provided equal performance (Otchere, Senbet, & Simbanegavi, 2017).

Given this remarkable achievement, in terms of both changes in the financial sector and economic growth, financial markets in Africa are substantially less well developed than those elsewhere in the world on all financial development initiatives for all purposes. Nonetheless, most African nations' financial sectors remain very immature by other peer nations' standards, and the

African financial growth void is widening; so is the gap in financial inclusion (Allen et al., 2016). Moreover, a decline in financial deepening may have served to improve the African financial sector's resilience by decreasing its presentation (low share of private sector credit relative to GDP).

The global financial emergency has caused upheaval around the world, including Africa. It exposed significant administrative deficiencies and misrepresented motives in the management of an account and the general financial system, resulting in increased risk exposures, not by banks as it were, but by "shadow" banks. It has guided restored efforts to boost the financial sector 's stability by reducing the frequency and magnitude of potential crises among other measures, as well as implementing the Basel III Agreement.

Also, apart from capital targets, there are currently targets for bank liquidity management and control, which periodically arise from a bungle between short-term bank liability and long-term assets. A highlight of the financial recession of 2008 was a complete dry-up of liquidity within the economy, leading to a collapse of the US and past credit markets. Controllers in the financial sector in Africa have also adopted certain elements of Basel III to improve their financial markets by improving regulatory capacity, making progress in risk management and governance, etc. The other challenges that African policymakers face, however, are the development of financial growth through financial inclusion and financial deepening (Beck & Maimbo, 2013).

Much of what is commonly and deeply understood about development finance appears to be focused on the experiences of the more anticipated Asian and Latin American economies and less on the African experience. Again, the role of Sub-Saharan Africa (SSA) itself is different, with South Africa and, to a few degrees, Nigeria and Kenya increasing in the growth of financial markets, while the rest of the nations are leading low, moderately underdeveloped, and fragmented financial markets. This elevates how one seems to think about these modified encounters and whether the "good" encounters with the development of the financial sector extend within the efficient economy up to this meaningless one. For the case in Kenya, financial expansion tends to be in the center of the growth of the financial sector, while the case in South Africa can be regarded as being in financial deepening. In this way, more nation-centered research is needed to unmask the idiosyncrasies of the distinctive economies of Africa (Allen et al., 2016). Ultimately, the global financial crisis has raised latent vulnerabilities for both developing markets and reemerging countries, such as SSA, and previous emergencies.

Poverty in Africa and other developed countries

When one considers poverty and development, one frequently considers bone-dry, health care, sanitation, and food as needs — not banking. In any case, financial services, it turns out, are an essential means of poverty reduction. Various studies have demonstrated that financial development can quicken economic growth, reduce income inequality, and promote advancement. Approaching administrations at financial institutions energizes reserve funds and protects against "bad events." This decreases imbalance and expands economic growth and stability. Extending the compasses of the world's banking system to incorporate those at the base of the economic and social pyramid should be a need for every one of us. Individuals in many creating nations are avoided from having access to the financial system, particularly in African and Asian nations like Bangladesh, Ghana, India, Indonesia, Kenya, Nigeria, Pakistan, Rwanda, Tanzania, and Uganda. Presented below is a graphical representation of poverty and financial development assessment.

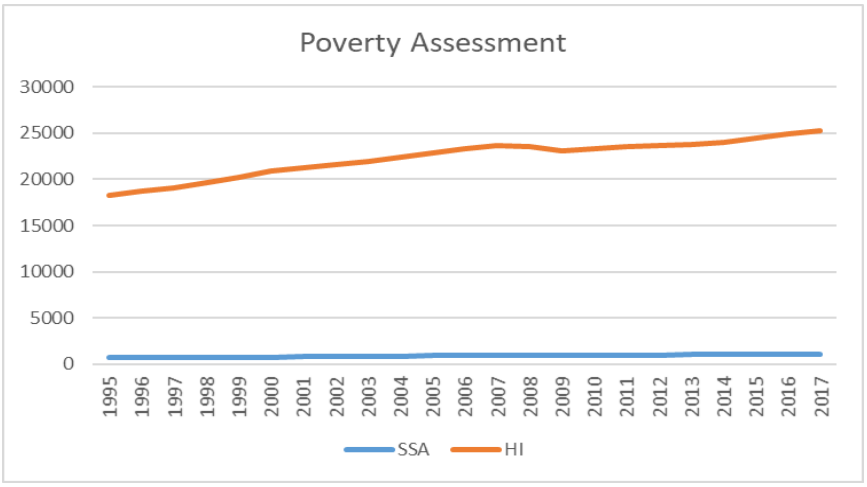

Figure 1: Poverty assessment (US$) in Sub-Saharan Africa (SSA) and High-Income countries (HI)
Source: World Bank (2019)

In summary, it can be concluded that despite SSA countries striving hard to close the poverty gap, they still lag as compared to high-income countries. Figure 1 depicts an increase in the annual household consumption per capita considered poverty as compared to SSA countries where there was no increase throughout 1995–2017.

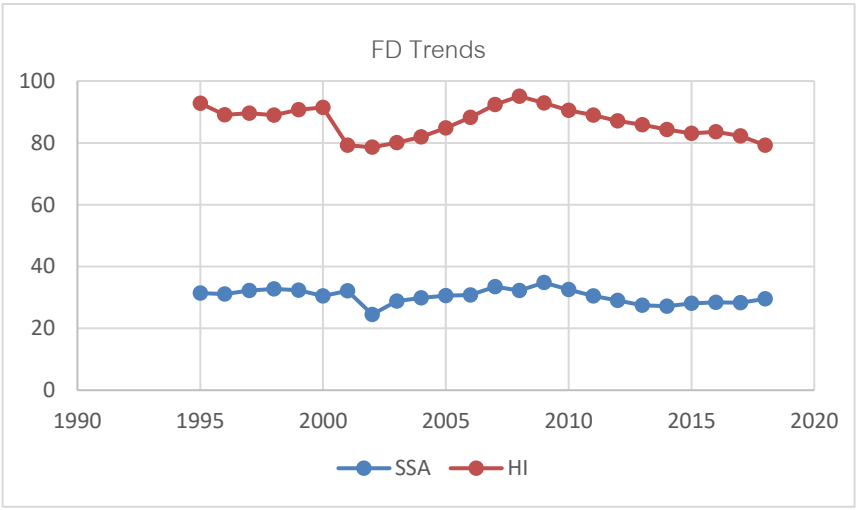

Figure 2: Financial development assessment (%) in SSA and HI

Source: World Bank (2019)

Figure 2 depicts the graphical representation regarding financial development measured as domestic credit to the private sector by banks as a percentage of GDP. It shows that from the early 1990s, high-income countries have received an appreciable percentage of credit of 92% as compared to 31% by private sectors in SSA. However, there was a decrease in credit in the mid-2000s, which later rose again throughout the last decade. High-income countries received credit in higher percentages as compared to SSA countries due to factors such as political instability and corruption.

Linkages between financial development and poverty reduction

The relationship between financial development and poverty reduction has not been completely investigated on either the theoretical or the empirical fronts. From a theoretical point of view, financial development can specifically contribute to poverty reduction in developing nations in several ways. To begin with, by tending to the causes of financial market disappointments such as information asymmetry and the high fixed cost of lending to fewer borrowers, financial development can expand the openings for the poor to obtain formal finance (Jalilian & Kirkpatrick, 2002; Stiglitz, 1998).

Furthermore, financial development may stream down to the poor through its impact on economic growth, typically through the inferred positive relationship between financial development and economic growth. The stream down hypothesis has been broadly bolstered by

several studies (Dollar & Kraay, 2002; Ravallion & Datt, 2002; Uddin, Shahbaz, Arouri, & Teulon, 2014). Be that as it may, Khan, Gill, and Noreen (2012), in conducting a study on the relationship between inequality, poverty, and growth utilizing information from Latin America, found no backing for this theory.

On the empirical front, exceptionally few studies have examined the relationship between financial development and poverty reduction (Guillaumont Jeanneney & Kpodar, 2006; Honohan, 2004; Jalilian & Kirkpatrick, 2002; Quartey, 2005). Indeed, where such studies have been conducted, the discoveries concerning the finance–poverty linkage have been generally uncertain. Jalilian and Kirkpatrick (2005), analyzing the causal relationship between financial development and poverty reduction in emerging nations, discover that financial sector development contributes to poverty reduction through a growth-enhancing impact up to a certain threshold level of economic development.

Guillaumont Jeanneney and Kpodar (2006), conducting a study on the relationship between financial development, financial instability, and poverty, conclude that financial development is pro-poor and financial instability harms particularly the poor and lessens the positive impact of financial development on poverty reduction. Quartey (2005), in analyzing the relationship between financial development, savings preparation, and poverty decrease in Ghana, finds that, indeed, even though financial sector development does not Granger cause savings preparation in Ghana, it reduces poverty. Moreover, Honohan (2004) finds a negative affiliation between financial sector development and headcount poverty.

Essentially, utilizing data for 58 developing nations from 1980 to 2000, Beck and Maimbo (2013) suggest that financial development reduces poverty past its impact on aggregate growth. They stated that countries with better-developed financial intermediaries (measured as the ratio of private credit to GDP) had faster decreases in both poverty and income inequality by disproportionately boosting the incomes of the poor.

In country-specific studies, Kpodar and Jeanneney (2008) investigate how financial development makes a difference to diminish poverty specifically through the McKinnon conduit effect and in a roundabout way through economic growth utilizing information for a test of developing countries from 1966 through 2000. Their findings indicate that the poor benefit from the banking system's ability to promote transactions and provide savings opportunities but to some

degree fail to reap the benefits of increased credit availability. In a show of disdain, the advantages of financial development for the poor exceed the cost.

Contrary to discoveries in the literature, African nations have financial structures that are not quite the same as industrialized nations. In these countries, the estimation of assets accessible to private operators is constrained. Despite the arrangement of financial reforms, financial markets in these nations are still underdeveloped. Fowowe and Abidoye (2013) analyze the impact of financial development as estimated by private credit on the growth of poverty and inequality in SSA nations. Their discoveries demonstrate that private credit has no noteworthy impact on poverty in these nations. Notwithstanding, empirical results demonstrate that macroeconomic variables, for example, low inflation and trade openness, cause a decrease in poverty. In Ethiopia, for example, Geda, Shimeles, and Zerfu (2008) utilize the rich household panel data of urban and rural Ethiopia that covers the period from 1994 to 2000, and the authors endeavored to establish the connection between finance and poverty in Ethiopia. Their outcomes demonstrate that access to finance is a significant factor in consumption smoothing and, consequently, poverty reduction.

Odhiambo (2010) looks at the inter-temporal causal relationship between financial development and poverty reduction in Kenya in the period from 1968 to 2006. The results endeavor to answer whether financial development in Kenya may promote poverty reduction. The study, which employs a causal model based on co-integration and Error Correction Model (ECM), which incorporates the savings rate as an irregular variable, finds an unmistakable causal stream from financial development to decreased poverty in Kenya. It also builds up a unidirectional causality from financial development to savings and a bi-directional causality between savings and poverty reduction. In his study on the relationship between financial development, savings mobilization, and poverty decrease in Ghana, Quartey (2005) finds that financial sector development encompasses a positive impact on poverty reduction, although the effect is insignificant given the reality that financial intermediaries have not channeled enough savings to the pro-poor sectors of the economy, mainly due to government deficit financing, a higher default rate, the need for collateral, and the need for proper business proposals.

3. Methods and data

Based on Ravallion (1997) and Ravallion and Chen (1999), a function for modeling poverty with a set of control variables that are normally used for poverty explanation is applied in the study.

An annual data series from 1995–2015 was considered in five African countries: Algeria, Cameroon, Ghana, Kenya, and South Africa. Apart from the poverty level used as a dependent and financial development as the main variable under discussion, economic growth, inflation, trade openness, and government expenditures are also involved in the study as control variables. Presenting a variable for determining financial development takes the nature of an exogenous shock. GDP per capita growth is used to measure economic growth; inflation is used as a macroeconomic policy. Trade openness and government expenditure are controllable variables. The empirical model for this study is also consistent with that of Dhrifi (2015), Jeanneney and Kpodar (2011), and Majid, Dewi, and Kassim (2019). An econometric model is developed with the financial development indicator measured as liquid liability of percentage of GDP and domestic credit to private sectors by bank as a percentage of GDP used as financial development in the equations below:

$$POV_{it} = \alpha_{it} + \beta_1 FDit + \beta_2 GR_{it} + \beta_3 INF_{it} + \beta_4 OPEN_{it} + \beta_5 GOEx_{it} + \varepsilon_{it} \quad (1)$$

$$POV_{it} = \alpha_{it} + \beta_1 FD2_{it} + \beta_2 GR_{it} + \beta_3 INF_{it} + \beta_4 OPEN_{it} + \beta_5 GOEX_{it} + \varepsilon_{it} \quad (2)$$

where subscript i represents a country, and t represents the time under discussion. The coefficients α, β_1, β_2, β_3, β_4, and β_5 denote the parameters to be estimated. The study expects that FD_{it} and $FD2_{it}$ which represent financial development variables will reduce poverty. GR_{it} is measured as GDP per capita; OPEN is trade openness; and inflation (INF) is proxied as a consumer price index. GOEX is government expenditure.

To investigate how financial development can be used as a catalyst for poverty reduction, there was a consistency of data sources (Cepparulo, Cuestas, & Intartaglia, 2017; Cherif, 2008; Dhrifi, 2015). An annual data series from 1995–2015 was considered in the five African countries. Apart from the poverty level used as a dependent variable and financial development as the main variable under discussion, economic growth, inflation, trade openness, and government expenditures are also involved in the study as control variables. In this study, poverty (POV) is measured by per capita household consumption expenditure, which has also been employed by Dhrifi (2015), Odhiambo (2009) and Quartey (2005). Financial sector development (FD) is proxied by two indicators — liquid liabilities as a percentage of GDP and domestic credit to the private sector by banks (% GDP) — which is consistent with a study by Cherif (2008). GDPPC, which is always used to measure economic growth, as indicated by Dollar and Kraay (2002), and inflation proxied by consumer price index, is consistent with Jeanneney & Kpodar (2011). Trade openness

as the totality of exports and imports is a portion of GDP. Finally, government expenditure GOEx proxies for general government final consumption. Table 1 summarize the variables employed.

Table 1: Summary of variables

Variables	Definitions (Proxies)	Sources
POV (poverty)	Per capita household consumption expenditure	WDI
FD1 (financial development)	Liquid liabilities as a % of GDP	PWT
FD2 (financial development)	Domestic credit to the private sector by banks (% GDP)	WDI
GDPPC (growth)	Gross domestic product per capita	WDI
INF (inflation)	Consumer price index	WDI
OPEN (trade openness)	Exports and imports as % GDP	WDI
GOEx (government expenditure)	General government final consumption	WDI

Before the data are analyzed, a panel unit root test developed by the Im, Pesaran, and Shin methodology is employed to ensure the stationarity of data and obtain robust findings. After confirming all data are stationary, the next step is to study the long-term relationship between financial development and poverty using the Kao cointegration method. After the presence of cointegration has been confirmed among the examined variables, the next step is the estimation of the long-term equilibrium relationship. Since the standard OLS estimation leads to a biased and inconsistent estimator when applied to cointegrated panels (Kao, 1999; Pedroni, 2001), the study applies Pedroni's (2001) group-mean fully modified OLS (FMOLS) estimator. Pedroni (2001) argued that only in the case that the regressors are strictly exogenous could the OLS method be generally used for valid inferences. The FMOLS estimator allows for greater flexibility in the existence of heterogeneity of the cointegrating vectors (Pedroni, 2001, 2004). Again, according to Hansen and Phillips (1990) panel fully modified least squares (FMOLS) afford optimal estimations of cointegration regressions. The method revises least squares to account for serial correlation properties and for the endogeneity in the regressors that accounts for the existence of a cointegration effect and relationship. A further robustness check is estimated using ARDL and 3SLS estimation procedures.

4. Results and discussion

The results of the Im, Pesaran and Shin (IPS) in Table 2 indicate the presence of a unit root in all the variables at level with intercept as well as level with intercept and trend. The estimation

considered the AIC (Akaike information criterion) as the method of lag selection with a maximum lag of 3. The test fails to reject the null hypothesis of a unit root at 1%, 5%, and 10% significance levels. The study continues to indicate strong evidence of stationarity (no unit root) with the variables estimated at the 1st difference intercept. The existence of non-stationary variables in the study and with the dependent variable "POV*it*" affects the validity of the test. However, empirical evidence implies that poverty, especially in developed countries, indicates low volatility and mean regressive behavior. In actuality, the watched non-stationarity does not reduce the estimations' robustness.

Table 2: Unit root test results

IPS	Level intercept		Level intercept & Trend		First difference intercept	
Variables	Statistics	P-values	Statistics	P-values	Statistics	P-values
POV	2.76081	0.9971	0.66248	0.7462	-3.82357	0.0001***
FD	0.30681	0.6205	-2.34791	0.0094	-5.54559	0.0000***
FD2	1.77464	0.9620	-0.14687	0.4416	-6.98002	0.0000***
GDPPC	2.24528	0.9876	0.96516	0.8328	-3.71301	0.0001***
INF	8.18385	1.0000	4.41345	1.0000	-2.30534	0.0106**
OPEN	2.70834	0.9966	0.59519	0.7241	-5.38585	0.0000***
GOEX	4.61446	1.0000	-0.72008	0.2357	-0.83603	0.0016***

Note: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

For all variables in Table 3, the statistically significant t-statistics of the Kao test indicates cointegration. Due to the heterogeneity allowed for in the Kao estimations, this study favors Kao test results. Thus, the data from all study countries for all variables in Equations (1 & 2) appear to be cointegrated. This implies the presence of a long-term equilibrium relationship among the variables, which, in turn, enables the estimation of Equations (1 & 2) using FMOLS. Moreover, the usage of FMOLS appears valid, since the data from all study countries for all variables in Equations (1 & 2) possess the same order of integration, I (1), from the IPS unit root test.

Table 3: Kao cointegration results

	Statistics	P-value
Modified Dickey–Fuller t	-1.9848	0.0236**
Dickey–Fuller t	-1.3840	0.0832*

Augmented Dickey–Fuller t	-3.0742	0.0011***
Unadjusted modified Dickey–Fuller t	-1.9713	0.0243**
Unadjusted Dickey–Fuller t	-1.3787	0.0840*

Note: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 4: FMOLS regression results

Variables	Equation 1	Equation 2
Financial development (FD)	-9.9700 (0.3542)***	-3.6898 (0.2453)***
Growth (GDPPC)	3.7374 (0.4349)	0.1774 (0.0166)
Inflation (INF)	1.7800 (0.0987)***	3.2842 (0.6935)
Trade openness (OPEN)	0.1152 (0.5812)	-7.0989 (0.0246)**
Government expenditure (GOEx)	1.8065 (0.5735)***	2.4440 (0.6162)***

Note: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 5: Robustness check results

	ARDL Estimations		3SLS Estimations
Variables	Long Term	Short Term	
FD	-0.3622 (0.0000)***	0.1308 (0.2382)	-6.1603 (0.0000)***
GDPPC	1.1459 (0.0000)***	0.6932 (0.0025)***	.34054 (0.0000)***
INF	0.0119 (0.9421)	0.0119 (0.6834)	1.2805 (0.0420)**
OPEN	0.0536 (0.2861)	-0.0229 (0.8205)	-3.5881 (0.0420)**
GOEX	-0.2848 (0.0000)***	0.0089 (0.8136)	1.8200 (0.0000)***

Notes: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

The main objective of this study is to assess the contribution of financial development to poverty reduction. The study employed household final consumption as a measure of the poverty level. The estimation results in Table 4 show that financial development, measured as liquid liabilities as a percentage of GDP and domestic credit to private sectors as a percentage of GDP, has a negative and significant impact on poverty. The result can be explained that a percentage increase in financial development (liquid liabilities as a percentage of GDP and domestic credit to private sectors as a percentage of GDP) helps reduce the level of poverty drastically. These findings are consistent with Odhiambo (2009), who with the use of cointegration and ECM estimations stated that financial development and economic growth Granger cause poverty reduction, meaning financial development and growth lead to the course of poverty reduction in South Africa. In the same way, Dhrifi (2015) clearly stated that high levels of financial development are linked with poverty reduction in developing countries.

Regarding the effects of economic growth on poverty reduction, the outcomes show that the coefficient is positive and not significant in all five countries in both models. Thus, an increase in the level of economic growth, as measured by GDPPC, actually increases the poverty rate. This result is consistent with Dhrifi (2015), who stated that there is a positive and significant relationship between the growth per capita and the per capita household consumption expenditure. The author explained that an increased growth rate of 1% results in an increased level of household consumption of 0.17 points when financial development is considered as domestic credit to the private sector by bank as a percentage of GDP.

Regarding the estimation above, it can be noted in both models that inflation has a positive sign of poverty. This result explained that an increase in inflation leads to an equal increase in poverty, among other things. The same goes for the expected results of inflation in this study, as stated earlier and in a study by Jeanneney and Kpodar (2011). Raju and Yifei (2015) stated that inflation is detrimental and increases poverty. Trade openness explained as the addition of exports and imports as a portion of GDPPC can be seen from the results above as having no significant effects on reducing poverty when financial development is measured as liquid liabilities percentage of GDP, which is consistent with the expected outcome of the study. On the other hand, measuring with model 2, trade openness reduces poverty. This result is confirmed through the study by Jeanneney and Kpodar (2011), which is also consistent with a study conducted by Raju and Yifei (2015).

Government expenditure from the results and findings shows that there is a significant and positive effect between poverty and government expenditure, indicating that a percentage increase in government expenditure will result in about a 100% increase in poverty level among the selected Africa countries. Kpodar and Jeanneney (2008) confirmed this result in an investigation conducted on developing countries when they utilized the McKinnon conduit effect. Moreover, Anderson, Duvendack, and Esposito (2018) conducted a study with an outcome that contradicts the positive significant effects of government expenditure on poverty. In assessing the impact of financial development on reducing poverty, the produced model in the study has an explanatory power of 0.982619, thus 98% of the investigation.

Robustness check

The study conducted a further robustness test for the model above, employing two estimation methods. The 3SLS and ARDL (PMG) methods of estimation were also utilized. The concerned variable — financial development in all methods of estimation, indicating a negative impact of financial development on poverty, which is consistent with the original outcome above, meaning an increase in financial development — reduces poverty in the selected African countries. Other control variables like trade openness in ARDL short-term estimations and 3SLS estimation help in reducing poverty. Government expenditure in the long run of the ARDL estimation reduces poverty, although it has no significant impact.

5. Conclusion and recommendations

This paper examines the relationship between financial development as measured by liquid liability as a percentage of GDP and domestic credit to the private sector by bank as a percentage of GDP and poverty. Specifically, we liken the extent to which each one of these financial development indicators contributes to the process of poverty reduction. To that effect, the study employed a poverty model developed by Ravallion (1997) and Ravallion and Chen (1999), modeling poverty with a set of control variables that are normally used for poverty explanation. Presenting a variable for determining financial development takes the nature of an exogenous shock. Applying the panel fully modified ordinary least squares to a panel of five developing economies from 1995 to 2015, the results indicate that both financial development indicators have poverty reduction effects when poverty is measured by per capita household consumption.

As for the other variables like economic growth and inflation, there is no significant effect on poverty. On the other hand, government expenditure does not appear to have any impact on poverty, regardless of the measure of financial development indicator employed. These results imply that financial development has some ability to reduce poverty. The results are robust to the use of liquid liability as a percentage of GDP and domestic credit to the private sector by bank as a percentage of GDP as a measure of financial development. A few studies have reported that financial development reduces poverty (Beck & Maimbo, 2013; Honohan, 2004; Jalilian & Kirkpatrick, 2005; Jeanneney & Kpodar, 2011; Odhiambo, 2009), and our financial development results are consistent with the literature, at least when poverty is measured as per capita household consumption. In the theory of Greenwood and Jovanovic (1990), the poor always have to pay a fee or a charge to participate in the formal financial market. Failure to pay excludes one from taking advantage of the privileges in the financial sector. A clear possible recommendation is the lowering of these fees for people to take advantage of the opportunities. These charges, according to Stiglitz (1998), are a major cause of poverty in developing economies.

The government expenditure results appear to be consistent with those of Anderson et al. (2018) and Jeanneney and Kpodar (2011), who question the effectiveness of government expenditure to reduce poverty. Indeed, if theories recommend that government expenditure has macroeconomic impacts, the study infers that the government spending within the financial development literature may not work. The current study suggests that increased government spending ought to be geared towards the social intervention program necessary for poverty reduction.

There is still room for further improvement. The data is only dated to 2015, for new outcomes the data shall be expanded beyond 2015. The sample period is not long enough to determine the degree of impact of growth and other indicators of poverty. As already noted, due to the unavailability of data, our measures of poverty rely upon per capita household consumption, as employed by Odhiambo (2009), which is not a clear indicator of poverty. Future study should employ other measures of poverty, such as GINI or Theil Index. Finally, this study considers the potential for financial development to have countrywide impacts, but macro impacts may emerge at the regional or provincial levels, if they are not countrywide. These limitations warrant further study of this issue.

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