Investment and inequality in Africa: which financial channels are good for the poor?

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Abstract

This paper examines how domestic, foreign, private and public investments affect income-inequality through financial intermediary dynamics of depth, efficiency, activity and size. With the exception of financial allocation efficiency, financial channels of depth and activity are good for the poor as they diminish estimated household income-inequality. Financial size does not have a significant income-redistributive effect. Financial allocation efficiency has a disequalizing effect on income-distribution; implying policies designed to improve the allocation of mobilized funds to economic agents only benefit the rich to the detriment of the poor. The use of financial and investment dimensions previously missing in the literature provide new insights into the two contrasting theories in the finance-inequality nexus.

1. Introduction

Poverty and inequality undoubtedly remain important challenges to economic and human developments. Over the past three decades, investment rates have fallen considerably in majority of African countries(Ndikumana, 2002). This decrease in investment is a major cause for worry, given the close connection between the level of investment and the rate of economic growth(Barro,1991; Ben-David, 1998). Financial repression and its pervasiveness of stifling economic growth have been elaborately covered by a substantial bulk of literature(McKinnon, 1973; Shaw,1973). In the 1980s and 1990s, most African countries embarked on a series of structural and policy adjustments in the financial sector as part of economic reforms with the goal of given impetus to economic growth as well as improving overall economic and financial efficiency(Janine & Elbadawi, 1992). Hitherto, owing to scarcity and lack of relevant data on income-inequality for Africa, only two studies to the best of our knowledge have addressed the finance-inequality nexus in the continent(Kai & Hamori,2009; Batuo et al.,2010)

In the light of the above points, drawing from the experience of a continent that has been implementing development financial reforms, this study aims to assess the income-redistributive effects of investment through financial intermediary channels of depth, efficiency, activity and size in Africa. In particular, the paper seeks to investigate how financial development impacts income-inequality, conditional on domestic, foreign, private and public investments. The main contributions of this work to finance and economic literature are the following: (1)an assessment of why income-inequality in Africa has remained stubbornly high, in spite of more than two decades of economic and financial reforms; (2) contrary to mainstream finance-growth literature this work improves the employment of financial indicators by using financial intermediary dynamics of depth, efficiency, activity and size in the assessment of the impact of finance on income-inequality; (3) we innovate the income-finance literature by introducing a previously missing investment dimension

into the debate, where-in the inequality-finance nexus is contingent on aggregate domestic, foreign, private and public investment dynamics.

The remainder of this paper is organized in the following manner. Section 2 discusses existing literature. Data and Methodology are described and outlined in Section 3 respectively. Empirical analysis and discussion of results are reported in Section 4. We conclude with Section 5.

2. Existing Literature

2.1 Theoretical highlights

A bulk of empirical research has given substantial support to the view that financial development has a significant effect on the pattern of income distribution, more precisely that it either reduces or enhances inequality depending on theoretical postulations. Hence two strands of theories have been developed that provide contrasting views on the income-redistributive impact of finance .

Some protagonists posit an inverted U-shaped link between financial development and inequality. For instance, Greenwood and Jovanovic(1990) study on the finance-growth-inequality nexus predicts a Kuznets curve relationship between finance and inequality. In the early stages of development, when the financial sector is underdeveloped, inequality augments with financial development. Conversely, this positive impact on inequality reduces as the economy develops ; moving to the intermediate phase and then to the mature phase of development where-in agents would see their incomes increase as they gain access to the financial intermediary sector. In plainer terms, in the transition from a primitive slow-growing economy to a developed fast growing one, a nation passes via a stage in which the distribution of wealth across the rich and poor stretches.

On the other hand some authors suggest a linear relationship between financial development and income-inequality(Banerjee & Newman, 1993; Galor & Zeira, 1993). Their basic theoretical assumption is that financial market imperfections such as financial asymmetries, transaction and contract enforcement costs could be very binding on the poor who are deficient of the collaterals, credit histories and relational networks. Thus, even when the poor have projects with high returns, they may still be credit rationed, which infringes on the efficiency of capital allocation and limits the social mobility of the poor. Under these circumstances, income inequality rises with financial development. Conversely, increasing capital allocation efficiency would reduce income-inequality by facilitating funding to the poor individuals with productive investment.

2.2 Finance and inequality

The relationship between finance and inequality can be classified into three main strands.

The first strand explores the link among financial development, growth and inequality. Undernourishment(Claessens & Feijen, 2006), population with lower income (Beck et al.,2007) decrease with financial development. One particular interesting characteristic in this category is the debate on the benefits of financial development. Some proponents asserts that financial imperfections such as information and transaction costs are binding on the poor(who lack collaterals and credit histories) and thus a relaxation of these credit constraints will disproportionately benefit the poor. It follows that improvement of capital allocation efficiency would reduce income-inequality by facilitating funding to poor individuals with productive investment(Galor & Zeira, 1993; Aghion & Bolton, 1997; Galor & Moay, 2004). In contrasts, some theories postulate that financial development primarily helps the rich. In a non linear

relationship between finance, income-inequality and economic growth developed by Greenwood and Javanovic(1990) financial development does not benefit the poor at the tender stage of development.

In the second strand we find literature that addresses unequal access to and usage of finance. Whereas in developed countries, more than 90% of households have access to financial services, access to retail banking services is minimal in the poorer segments of the population in undeveloped countries, with fewer than one-quarter of households having access to even basic banking services(Honohan,2006). Low usage in lower income countries derives in part from low banking sector outreach. As regards the second dimension of this strand(access to finance), it is important here to distinguish between financial depth and access to finance. As pointed out by Claessens & Perotti (2007), numbers on the size of loans and deposits per capita are substantially higher in lower income countries than in their higher income counterparts. The higher average loan and deposit values in lower income countries suggest that usage of formal banking services is limited to firms and the relatively rich households.

In the third strand, we find papers on the effects of inequality in access to finance. Absence of equal opportunities in access to finance may result in corruption(Berger & Udell,1998), slower firm growth(Ayyagari et al.,2006; Beck et al.,2005), reduction in entrepreneurial activities and lack of convergence in growth rates between rich and poor countries(Banerjee & Duflo, 2005), diminish individual welfare gains such as reduction in the prevalence of hunger, poor health, low education and gender inequality(Claessens & Feijen, 2007).

We have analyzed available evidence that financial access is quite skewed and affects competition, individual welfare and enterprise growth. The absence of diffused access can

undermine growth, reduce welfare and create vulnerability to financial meltdown. It may be interesting to investigate why financial sector reforms have not been targeted at improving access to financing. The second category of the literature investigates this concern with natural and political views.

2.3 Why inequality in access to finance?

Hitherto, we have seen that financial systems provide unequal access to households and firms. For the purpose of clarity, motives for unequal access to finance could be naturally economic or due to political influences.

Natural economic reasons like natural high fixed cost in offering financial services or walls created by entry regulations that serve a valid public good(e.g. identification requirements for opening up a bank account to maintain financial integrity). It is due to financial market frictions that the poor cannot invest in their education despite their high marginal productivity of investment(Galor & Zeira, 1993; Banerjee & Newman, 1993).

Unequal access can also results from political influence which creates regulatory obstacles to protect established rents(Rajan & Zingales, 2003; Acemoglu et al.,2005). This implies countries with poor political institutions, naturally leads to unequal political influence. Powerful groups will impact the regulatory and judicial environment and frequently control the allocation of finance(directly via bank ownership or through political networking).

2.4 The experience and lessons of financial reform

For clarity of purpose it is worthwhile classifying literature on financial reform (in the context of inequality and resulting lessons) into three main strands.

In the first strand, we find studies focused on the timing and experience of financial liberalization in developing and developed countries over the past two decades(Henry,2003; Chinn & Ito,2006). We find evidence especially at individual firm level, that domestic deregulation and liberalization have augmented the supply of domestic capital, attracted foreign capital, led to more relaxed financial constraints…etc. All these have led to increased investment and growth. Capital market liberalization specifically has been found to averagely have appealing effects on growth, asset allocation and efficiency(Levine and Zervros,1996; Henry,2000a; Henry,2000b; Henry,2006).

The second strand focuses on literature pertaining to asset allocation, rents, and growth opportunities. Here-in, we find works substantiating that, reforms often benefit insiders through preferential allocation of assets, rents and growth opportunities. The cases of Chile in the 1970s(Velasco, 1988; Valdes-Prieto,1992), Mexico in the 1980s(Haber & Kantor, 2004; La Porta et al.,2003; Haber et al.,2003) and Russia in the 1990s(Claessens & Pohl,1995; Perotti, 2002) point to the fact that privatization of state owned banks benefit groups of insiders. We also find evidence of preferential allocation of licenses to a few insiders(Clarke et al.,2003), benefits of stock market liberalization that have been directed only to the top quintile of the income distribution(Das and Mohapatra,2003), listing and corporate governance rules often designed to help insiders(Khwaja & Mian, 2005) and last but not the least, poor regulation and weak enforcement in the liberalization markets allowed insiders ample space for the expropriation of minority shareholders(La Porta et al.,2000; Claessens et al.,2002). In this strand we also find evidence that, while financial openness generally improves capital allocation and investment at the micro level(Henry,2003),it does not necessarily translate into higher economic growth at the aggregate level.

In the third strand, we find literature on allocation of risks created by financial reforms. Bank crises can be socialized(Dooley,2000) and typically increase inequality(Galbraith & Lu, 1999). Financial crises also benefit the lower-income strata through looting by the poor who have nothing to lose(Akerlof & Romer, 1993). In the redistributive impact of crisis through politics, Glaeser et al.(2003) argue that in many countries, the political response to institutional subversion by the rich is not institutional reform, but rather a form of massive Robin Hood redistribution. In some cases, this backlash slows economic and social progress on the one hand and on the other hand, the effect could simply be a change in the elite. In many cases reforms are often opportunistic, geared towards political ends especially during elections(Dinc,2004; Brown & Dinc,2004).

2.5 Finance and Inequality in Africa

Studies on the finance-inequality nexus are relatively absent in the context of Africa owing to scarcity and lack of relevant data on inequality. In a first detailed econometric analysis, Kai and Hamori(2009) examine the relationship between financial deepening and inequality in sub-Saharan Africa between 1980 and 2002 and find that financial depth helps reduced inequality.

Batuo et al.(2010) assess how financial development is related to income distribution in a panel of 22 African countries for the period between 1990 and 2004. Using a dynamic panel estimation technique(GMM), findings indicate that income-inequality decreases as economies develop their financial sectors. They are consistent with the bulk of theoretical and empirical research and find no evidence supporting the Greenwood-Javanovic(1990) hypothesis of an inverted U-Shaped relationship between financial development and income-inequality.

As we must have emphasized earlier the main contributions of this paper to the finance and economic literature are the following: (1)an assessment of why income-inequality in Africa has remained stubbornly high, in spite of more than two decades of economic and financial reforms; (2) contrary to mainstream finance-growth literature[1] this work improves the employment of financial indicators by using financial intermediary dynamics of depth, efficiency, activity and size in the assessment of the impact finance on income-inequality; (3) we innovate the inequality-finance literature by introducing an investment dimension into the debate, where-in the income-finance nexus is contingent on aggregate domestic, foreign, private and public investment dynamics.

The following testable hypotheses will guide the empirical section of the paper.

Hypothesis 1 : Financial depth is good for the poor.

Hypothesis 2 : Financial allocation efficiency is instrumental to the poor[2].

Hypothesis 3 : Financial activity helps the poor.

Hypothesis 4 : Financial size decreases income-inequality.

3. Data and Methodology

3.1 Data

We examine a sample of 13 African countries(Algeria, Botswana, Cameroon, Egypt, Kenya, Malawi, Mauritius, Morocco, Senegal, South Africa, Swaziland, Tanzania and Uganda) with data obtained from African Development Indicators(ADI) and the Financial Development

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[1] This is the first empirical study to investigate the finance-inequality nexus with financial intermediary dynamics of depth, efficiency, activity and size. In an African context, while Kai and Hamori(2009) use only financial depth, Batuo et al.(2010) use both financial depth and financial activity. To these variables we introduce alternative indicators of financial depth and financial activity for robustness purposes on the one hand, and on the other hand further our analysis with other dynamics of financial development(banking efficiency, financial efficiency, and financial size).

[2] Some proponents in the literature assert that financial imperfections such as information and transaction cost are binding on the poor(who lack collateral and credit histories) and thus a relaxation of these credit constraints will disproportionately benefit the poor. It follows that improvement of capital allocation efficiency would reduce income-inequality by facilitating funding to poor individuals with productive investment(Galor & Zeira, 1993; Aghion & Bolton, 1997; Galor & Moay, 2004).

and Structure Database(FDSD) of the World Bank(WB). Owing to scares inequality data for the African continent from WDI, we borrow from Kai and Hamori (2009) in using estimated household income inequality data obtained from the University of Texas Inequality Project(UTIP). The sample of countries are those for which data is available from UTIP and those that have not experienced a civil war during the period 1980-2002. The time interval also coincides with two decades of financial and economic reforms in the African continent. A synthesis of selected variables is found in Appendix 3. For the purpose of clarity, this data is classified into the following categories.

3.1.1 Financial development indicators

a) Financial depth

While recent finance-inequality literature has either not used financial depth(Beck et al.,2004; Beck et al.,2007) or focused only on a single measure of finance(Kai & Hamori, 2009;Batuo et al.,2010), we borrow from Beck et al.(1999) and Asongu(2011a) and proxy for financial depth both from overall-economic and financial system perspectives by indicators of broad money supply (*M2/GDP*) and financial system deposits (*Fdgdp*) respectively. While the first represents the monetary base plus demand, saving and time deposits, the second denotes liquid liabilities. The two variables are in ratios of GDP(see Appendix 3) and should robustly check each other as either accounts for over 97% of information in the other (see Appendix 2).

b) Financial efficiency

The concept of efficiency here is neither profitability-oriented nor guided by the production efficiency of decision making units in the financial sector (via Data Envelopment Analysis: DEA). What this paper is concerned with is the ability of banks to effectively fulfill their fundamental role of transforming mobilized deposits into credit for economic operators. We

use measures for banking-system-efficiency and financial-system-efficiency (respectively 'bank credit on bank deposits: *Bcbd'* and 'financial system credit on financial system deposits: *Fcfd'*). Like in the case of financial depth, these two financial allocation(intermediation) efficiency proxies can check each other as they represent more than 88% of variability in one another (see Appendix 2).

c) Financial size

Consistent with the FDSD we measure financial intermediary size as the ratio of "deposit bank assets" to the "total assets" (deposit bank assets on central bank assets plus deposit bank assets: *Dbacba*). Unfortunately, we could not find another indicator of financial size despite a thorough search, numerous computations and deepened correlation analyses.

d) Financial activity

Financial intermediary activity here refers to the ability of banks to grant credit to economic operators: consistent with some motives of financial reforms which sought to stimulate investment. While past works highlighted in the literature have focused only on a single measure(Beck et al.,2004; Beck et al.,2007;Batuo et al.,2010) we proxy for both bank-sector-activity and financial-sector-activity with "private domestic credit by deposit banks: *Pcrb*" and "private credit by domestic banks and other financial institutions: *Pcrbof*" respectively. The later indicator checks the former as it represents more than 91% of information in the former (see Appendix 2).

3.1.2 Investment instrumental variables

The paper uses Gross Domestic Investment, Foreign Direct Investment, Gross Public Investment and Gross Private Investment as instrumental variables. The choice of these

instrumental variables is premised on the finance-inequality literature, where-in financial reforms were investment-targeted.

3.1.3 Control Variables

In line with the finance-growth(Levine & King, 1993; Hassan et al., 2011) and finance-inequality(Dollar & Kraay, ;Beck et al.,2007; Kai and Hamori, 2009) literature, we control for trade, inflation, population growth, government expenditure and GDP growth.

3.1.4 Descriptive statistics and correlation analysis

Descriptive statistics and correlation analysis are represented in Appendix 1 and Appendix 2 respectively. From the descriptive statistics, it could be noted that an estimation approach that directly assumes a particular form of distribution is inappropriate and would produce biased and inconsistent estimates. As for the correlation analysis, it has two main objectives. On the one hand it enables us avoid issues linked to multicolinearity and overparametization. On the other hand, it provides us with a foresight on possible linkage-signs between various indicators. Among them, it is worth noting that all correlations with the variable of interest have the right signs. While *inflation* and *population growth* are positively correlated with *inequality*, the remaining variables are negatively correlated with it. These negative relations are consistent with theory in the perspective that aggregate investment(domestic, foreign, private and public) measures designed to improve services in the financial sector(depth, efficiency, activity and size), and control variables(trade and government expenditure) all have an appealing redistributive impact on household income. As for inflation and population growth, they decrease purchasing power and household income per capita respectively; in line with their positive association with the variable of interest.

3.2 Methodology

3.2.1 Endogeneity

Though the lack of financial access has long been recognized as the leading cause of persisting inequality, Claessens & Perotti(2007) have urged the need to recognize the reverse effect as well. They borrow from Acemoglu & Robison (2005) in highlighting that inequality affects financial development and in particular the distribution of access, because unequal access to resources affects de facto political power. Consistent with the literature(Rajan & Zingales,2003; and Perotti & Volpin, 2007) in a weak institutional framework where de facto political influence dominates de jure political representation, inequality renders it easy for established interests to influence access to finance by direct control or regulatory 'kidnapping' of the financial system.

3.2.2 Estimation technique

Borrowing from Beck et al.(2003) we employ the Two-Stage-Least Squares(TSLS) with investment dynamics as instrumental variables. As we have highlighted earlier, the paper requires an estimation technique that takes account of endogeneity. The Instrumental Variable(IV) estimator can avoid the bias that Ordinary Least Squares(OLS) estimates suffer-from(absence of consistency) when independent variables in the regression are correlated with the error term in the equation of interest. Another important aspect worth point-out is the close relation between investment and finance in effects of financial reforms; which provides another justification for the use of aggregate investment dynamics as instruments. Thus the IV model investigates if domestic, foreign, private and public investments affect income-inequality

through financial channels of depth, efficiency, activity and size. In line with Asongu(2011bd) TSLS process involves the following steps:

-justify the use of a TSLS over an OLS estimation technique via the Hausman-test for endogeneity;

-show that instrumental variables (aggregate investment dynamics) are exogenous to the endogenous components of explaining variables (financial channels), conditional on other covariates(control variables);

-verify if the investment-instruments are valid and not correlated with the error-term in the equation of interest through an Over-identifying restrictions (OIR) test.

Thus our methodology will include the following models:

First-stage regression:

$$FinancialChannel_{it} = \gamma_0 + \gamma_1(Domestic)_{it} + \gamma_2(Foreign)_{it} + \gamma_3(\mathrm{Pr}\,ivate)_{it}$$
$$\gamma_4(Public)_{it} + \alpha_i X_{it} + \upsilon \tag{1}$$

Second-stage regression:

$$Inequality_{it} = \gamma_0 + \gamma_1(FinancialChannel)_{it} + \beta_i X_{it} + \mu \tag{2}$$

In the two equations, X is a set of exogenous variables that are included in first-stage regressions. For the first and second equations, υ and u, respectively denote the error terms. Instrumental variables are the four aggregate investment variables.

3.2.3 Robustness of results

To assess the robustness of our results we: (1) use Heteroscedasticity and Autocorrelation Consistent(HAC) standard error regressions in every model; (2) control for the consistency of

financial channels with alternative indicators; (3) check restricted with unrestricted regressions at the Second-stage of the TSLS approach.

4. Empirical Analysis

This section presents the results from cross-country regressions to assess the importance of aggregate investment dynamics in the effectiveness of financial channels and the ability of the exogenous components of financial channels to explain cross-country differences in income-inequality conditional on investment dynamics(instruments).

4.1 Finance and Investment

In Table 1, we regress the financial indicators on domestic, foreign, private and public investments conditional on control variables and also test for their joint significance.

Table 1: First-stage regressions

		Dependent Variables: Financial Development							
		Financial Depth		Financial Efficiency		Financial Activity		Financial Size	
		M2 Model 1	Fdgdp **Model 1***	BcBd Model 2	FcFd **Model 2***	Pcrb Model 3	Pcrbof **Model 3***	Dbacba Model 4	Dbacba **Model 4***
Instruments	Constant	**0.476*** (8.566)	**0.411*** (8.311)	**1.049*** (13.19)	**1.166*** (10.91)	**0.308*** (7.121)	**0.430*** (6.125)	**0.563*** (15.00)	**0.605*** (9.272)
	Domestic	**0.008*** (4.571)	---	0.003 (0.990)	---	**0.006*** (4.034)	---	**0.006*** (3.363)	---
	Foreign	**-0.010** (-2.057)	**-0.009** (-2.132)	**-0.032*** (-2.926)	**-0.038*** (-2.737)	**-0.011** (-2.516)	**-0.015** (-2.241)	-0.002 (-0.511)	**0.010* (1.848)
	Private	---	**0.005*** (2.631)	---	0.008 (1.475)	---	**0.007** (2.473)	---	**0.007*** (3.492)
	Public	**0.008*** (2.811)	**0.010*** (4.036)	**-0.021*** (-3.399)	**-0.029*** (-4.033)	-0.003 (-1.223)	-0.004 (-1.291)	**-0.008*** (-3.069)	-0.003 (-1.148)
Control Variables	Trade	---	---	---	---	---	---	**0.002*** (8.588)	---
	Inflation	**-0.001** (-2.369)	**-0.0009** (-2.100)	**-0.003*** (-3.550)	**-0.003*** (-2.848)	**-0.001*** (-2.835)	**-0.001** (-2.019)	**-0.002*** (-4.903)	---
	Popg	**-0.084*** (-6.747)	**-0.085*** (-7.609)	---	---	**-0.048*** (-4.621)	**-0.054*** (-3.404)	---	**-0.069*** (-5.659)
	G.E	**-0.006** (-2.457)	---	---	---	---	---	---	**0.014*** (5.038)
	GDPg	---	---	**-0.016*** (-2.901)	**-0.022*** (-3.166)	**-0.007*** (-3.052)	**-0.009*** (-2.683)	**-0.006** (-2.497)	---
	Fisher-test	**21.652***	**22.173***	**10.187***	**11.394***	**13.714***	**8.814***	**25.675***	**17.951***
	Adjusted R²	0.324	0.292	0.154	0.169	0.233	0.154	0.390	0.266
	Number of Observations	259	257	253	256	251	258	232	234

Dbacba: Deposit bank assets on Central bank assets plus Deposit bank assets. Popg: Population growth rate. GDPg: GDP growth rate.
G.E: Government Expenditure . *,**,***: Significance levels of 10%, 5%, and 1% respectively.

It is worth noting this is the first-step of the TSLS approach where-in, the instruments must explain the endogenous components of the financial channels, conditional on other covariates(control variables). After controlling for trade, inflation, population growth, general government expenditure and GDP growth, we find that investment dynamics enter jointly significantly in all regressions at the 1% level. This Fisher test results also reflect the strength of our instruments. We avoid introducing domestic and private investments in the same regression because both reflect the same information or variability at the height of over 58%.

4.2 Inequality and Finance

Table 2 addresses two main issues: (1) the concern of whether the exogenous components of financial channels explain inequality conditional on investment dynamics and; (2) whether *only* the exogenous components of financial channels explain inequality conditional on aggregate investment dynamics. In other words, the second concern seeks to assess if the income-redistributive impact of investment goes beyond financial channels. To make these assessments we use the TSLS regressions with investment instrumental variables . Thus we integrate equation (2) into the first-stage regressions (first equation). While the first issue is addressed by the significance of estimated coefficients, the second is investigated by the overidentifying restrictions (OIR) test whose null hypothesis posits that, the instruments (aggregate investments) are not correlated with the error term of the equation of interest (equation 2).Therefore, a rejection of the null hypothesis of the OIR test is a rejection of the position that only financial channels explain inequality conditional on investment. Robustness checks are done at three stages: (1) the use of alternative indicators of each financial dynamic; (2) the application of alternative models with Heteroscedasticity and Autocorrelation Consistent Standard Errors(HAC) captured by models with the "*" sign; (3) introduction of an(a)

autonomous(constant) financial development measure in the regressions when the OIR test rejects its null hypothesis.

Table 2 shows restricted TSLS inequality regressions. We first and foremost justify our choice of a TSLS estimation method with a Hausman test for model specification. The null hypothesis of this test is the position that estimated coefficients by OLS are not consistent; implying they suffer from endogeneity because the explaining variables in the equation of interest are correlated with the error term. Where the Hausman test fails to reject the null hypothesis (absence of endogeneity) we do not consider the TSLS estimation method appropriate because estimates by OLS are efficient and consistent. OLS regressions show strong evidence of endogeneity in all eight models. Depending on the nature of identification (difference between instruments and endogenous regressors) we report the weak instrument test of first-stage regressions with Cragg-Donald statistics.

The first issue is addressed by the significance of financial channel estimated coefficients. Financial depth from overall economic(monetary base) and financial system (liquid liabilities) perspectives is a significant determinant of inequality in estimate household income: Model 5 and Model 6(6*) respectively. This significance also applies to financial efficiency from the banking system(Models 5,5* & 7) and financial system(Models 6,6* & 8) standpoints. Financial activity through banking system activity(Models 7 & 7*) and financial system activity(Models 8 & 8*) also has an income redistributive effect. The added significance of the financial size channel(Model 7,7*,8, & 8*) shows that all financial intermediary dynamics under consideration address the first issue. With regard to the second concern, rejection of the null hypothesis of the OIR test in all eight regressions demonstrates that not only financial channels explain income-inequality conditional on investment aggregates. In other words,

investment dynamics exert an influence on inequality through other mechanisms beyond financial channels. We have found that the instruments are correlated with the error term in the equation of interest; implying investment dynamics do not address the issue of endogeneity (which the financial channels suffer-from). The presence of biased estimates owing to endogeneity could further be confirmed by the signs of estimated coefficients. At least judging from empirical literature, we expected negative signs for the financial depth channel(Kai & Hamori, 2009;Batuo et al.,2010); as is the case of financial activity (Beck et al.,2004; Beck et al.,2007;Batuo et al.,2010). As for financial efficiency and size, we cannot establish with certainty which sign is right as this paper is the first to use them in finance-inequality literature. However, borrowing from initial correlation analysis we expected their corresponding estimates to display negative signs. Given the invalidity of the instruments, biased estimated coefficients and absence of additional financial channels to consider, we relax the restricted assumption of the TSLS approach in Table 2 and assume the presence of a(an) constant(autonomous) finance: hence an unrestricted TSLS approach captured in Table 3.

Table 2: Restricted Second-Stage regressions with HAC

		Dependent Variables: Estimated Household Income Inequality							
		Model 5	**Model 5***	Model 6	**Model 6***	Model 7	**Model 7***	Model 8	**Model 8***
Financial Depth	Monetary Base(M2)	**39.58***** **(4.00)**	39.584 (1.29)	---	---	---	---	---	---
	Liquid liabilities(Fdgdp)	---	---	**63.74***** **(5.059)**	**63.748*** **(1.685)**	---	---	---	---
Financial Efficiency	Banking System Efficiency (BcBd)	**35.46***** **(7.918)**	**35.46***** **(2.602)**	---	---	**21.09***** **(3.353)**	21.09 (1.291)	---	---
	Financial System Efficiency (FcFd)	---	---	**27.06***** **(6.368)**	**27.06*** **(1.964)**	---	---	**30.13***** **(3.149)**	30.13 (1.249)
Financial Activity	Banking System Activity (Pcrb)	---	---	---	---	**-83.74***** **(-4.585)**	**-83.74***** **(-3.570)**	---	---
	Financial System Activity (Pcrbof)	---	---	---	---	---	---	**-140***** **(-3.06)**	**-140.8*** **(-2.025)**
Financial Size	Dbacba	---	---	---	---	**64.19***** **(7.504)**	**64.19***** **(3.251)**	**80.00***** **(5.201)**	**80.00*** -2284
	Hausman test	**595.00*****	**595.00*****	**898.07*****	**898.0*****	**399.14****	**399.14*****	**626.46*****	**626.4*****
	OIR(Sargan) test	36.64***	36.64***	25.78***	25.78***	27.07***	27.07***	4.683*	4.683*
	P-value	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.096]	[0.096]
	Cragg-Donald	9.285	---	10.88	---	6.478	---	1.343	---
	Adjusted R²	0.093	0.093	0.084	0.084	0.086	0.086	0.091	0.091
	F-Statistics	---	---	---	---	**763.3*****	**107.56*****	**258.50*****	**25.70*****
	Observations	213	213	216	216	191	191	196	196

(): z-statistics. Chi-square statistics for Hausman test. LM statistics for Sargan test. [ ]:p-values. Cragg-Donald Weak Instrument test. *, **, ***: significance levels of 10%, 5% and 1% respectively. Dbacba: Deposit bank assets on Central bank assets plus Deposit bank assets. Models with the "*" are in Heteroscedasticity and Autocorrelation Consistent standard errors(HAC).

Table 3: Unrestricted Second-Stage regressions with HAC

		Dependent Variables: Estimated Household Income Inequality							
		Model 9	Model 9*	Model 10	Model 10*	Model 11	Model 11*	Model 12	Model 12*
	Constant	56.78***	56.78***	55.95***	55.95***	46.40***	46.40***	41.04***	41.04***
		(17.33)	(9.093)	(15.15)	(7.155)	(12.03)	(8.026)	(5.265)	(3.076)
Financial Depth	Monetary Base	-18.71***	-18.71***	---	---	---	---	---	---
		(-4.661)	(-3.081)						
	Liquid liabilities	---	---	-26.86***	-26.86	---	---	---	---
				(-3.885)	(-2.560)				
Financial Efficiency	Banking System Efficiency	-3.43	-3.431	---	---	6.980**	6.980	---	---
		(-1.20)	(-0.973)			(2.367)	(0.996)		
	Financial System Efficiency	---	---	-3.036	-3.036	---	---	12.148**	12.14
				(-1.165)	(-0.784)			(2.378)	(0.908)
Financial Activity	Banking System Activity	---	---	---	---	-37.75***	-37.75***	---	-53.86
						(-4.321)	(-3.920)		(-1.485)
	Financial System Activity	---	---	---	---	---	---	-53.86**	---
								(-2.192)	
Financial Size	Dbacba	-1.79	-1.79	1.171	1.171	3.075	3.075	12.211	12.21
		(-0.348)	(-0.204)	(0.190)	(0.102)	(0.490)	(0.343)	(0.857)	(0.560)
	Hausman test	15.33***	15.33***	22.18***	22.185***	22.856***	22.85***	28.64***	28.64***
	OIR(Sargan) test	1.20	1.20	1.91	1.915	0.683	0.683	1.774	1.774
	P-value	[0.272]	[0.272]	[0.166]	[0.166]	[0.408]	[0.408]	[0.182]	[0.182]
	Cragg-Donald	7.167	---	4.568	---	7.413	---	1.101	---
	Adjusted R²	0.174	0.174	0.149	0.149	0.177	0.177	0.096	0.096
	F-Statistics	10.64***	5.385***	8.505***	3.767**	9.212***	13.88***	2.94**	2.339*
	Observations	193	193	196	196	191	191	196	196

(): z-statistics. Chi-square statistics for Hausman test. LM statistics for Sargan test. [ ]:p-values. Cragg-Donald Weak Instrument test. *, **, ***: significance levels of 10%, 5% and 1% respectively. Dbacba: Deposit bank assets on Central bank assets plus Deposit bank assets. Models with the "*" are in Heteroscedasticity and Autocorrelation Consistent standard errors(HAC).

Consistent with the analytical approach expressed for Table 2, Table 3 addresses the two main issues. Firstly, rejection of the null hypothesis of the Hausman test in all eight regressions validates the TSLS estimation technique. While the significance of estimated coefficients address the first issue, the second concern is fully addressed by the OIR test. Failure to reject the null hypothesis in all eight regressions shows that only financial channels(in the presence of constant) explain the redistributive effect of income conditional on aggregate investment dynamics. In plainer terms, investment contributes to explaining income inequality through no other mechanisms than financial channels. This confirms the instruments are valid and the issue of endogeneity is no longer relevant as the investment dynamics are not correlated with the error term in the unrestricted equation of interest. The signs of estimated coefficients are those expected and in accordance with the literature: financial depth(Kai & Hamori, 2009;Batuo et

al.,2010) and financial activity(Beck et al.,2004; Beck et al.,2007;Batuo et al.,2010). As for others financial parameters, while those corresponding to financial size are insignificant at the 10% level, financial efficiency substantially increases household income-inequality. An in-depth account of this new finding in the finance-inequality literature is covered as we revisit tested hypothesis below.

In revisiting the hypotheses we can assert the following. (1) Financial depth is good for the poor, in line with theoretical(Galor & Zeira,1993; Banerjee & Newman,1993) and empirical (Beck et al.,2004; Beck et al.,2007; Kai & Hamori, 2009;Batuo et al.,2010) literature. We therefore confirm *Hypothesis 1*. (2) Financial allocation efficiency has a disequalizing effect on income-distribution; implying policies designed to improve the allocation of mobilized funds to economic agents only benefit the rich to the detriment of the poor. Thus this finding confirms the Greenwood and Javanovic(1990) inverted U-shape hypothesis owing to the relatively underdeveloped state of most countries in the sample. Drawing from Claessens & Perotti(2007), this disequalizing effect could be understood from the numbers on the size of loans and deposits per capita; which are substantially higher in lower income countries than in their higher income counterparts. This suggests higher average loans and deposit values benefit only the wealthy and firms for the most part. In other words, formal banking services are limited to firms and relatively rich households of countries in the sample. This finding also supports Asongu(2011c) who postulates that financial allocation efficiency significantly undermines inequality adjusted-welfare in the African continent. We therefore reject *Hypothesis 2*. (3) Financial activity helps the poor. We confirm *Hypothesis 3*, that is consistent with theoretical(Galor & Zeira,1993; Banerjee & Newman,1993)and empirical(Beck et al.,2004; Beck et al.,2007;Batuo et al.,2010) literature.(4) The fourth hypothesis is that financial size helps the poor. The estimated coefficients are

insignificant with the wrong signs. Therefore we conclude that financial size is not significantly anti-poor.

5. Conclusion

Owing to the lack of data on income-inequality for Africa, there are presently only two studies dedicated to the continent in the finance-inequality literature(Kai & Hamori, 2009;Batuo et al.,2010). While these papers have limited their analysis to few financial development indicators, the present work has contributed to this literature by integrating previously missing financial and investment components in the nexus. The results broadly indicate financial development does not help the poor from all dimensions. While financial channels of depth and activity are good for the poor as they diminish estimated household inequality, financial intermediary allocation efficiency increases it. The findings on financial depth and activity are broadly consistent with empirical (Beck et al.,2004; Beck et al.,2007; Kai & Hamori, 2009;Batuo et al.,2010) and theoretical(Galor & Zeira,1993; Banerjee & Newman,1993) literature which postulate a negative and linear relationship between financial development and income-inequality. On the other hand findings of financial efficiency are in line the Greenwood and Jovanovic (1990) inverted U-shaped hypothesis since most countries in the sample are still undeveloped.

As a policy implication, not all financial intermediary development dynamics are pro-poor. Thus financial sector reforms aimed at curbing poverty and income-inequality should focus on financial channels that matter in the development context.

Appendices

Appendix 1: Summary Statistics

Variables	Mean	S.D	Min.	Max.	Skewness	Kurtosis	Obser.
Income Inequality(EHII)	45.128	5.140	29.033	64.360	-0.224	0.905	247
Domestic Investment(GDI)	21.829	7.069	5.608	43.406	0.399	-0.003	288
Foreign Investment(FDI)	1.213	2.067	-7.125	10.294	1.338	4.383	275
Private. Investment(Priv.I)	13.607	5.234	2.303	34.516	0.146	0.301	281
Public Investment(Pub. I)	6.840	3.900	0.000	22.149	0.825	0.587	276
Openness(Trade)	69.245	36.366	22.303	205.13	1.409	1.312	289
Inflation	15.065	22.831	-4.140	200.03	5.570	37.228	297
Government Expenditure(G.E)	16.101	4.501	6.971	31.554	0.554	0.438	287
Population growth(Popg)	2.603	0.867	0.670	6.238	0.253	1.673	299
GDP growth(GDPg)	3.978	4.181	-10.240	19.450	0.109	1.399	286
Money Supply(M2)	0.377	0.212	0.046	0.830	0.589	-0.836	288
Liquid Liabilities(Fdgdp)	0.305	0.182	0.026	0.742	0.574	-0.840	286
Banking Efficiency(BcBd)	0.766	0.407	0.070	2.259	1.070	1.274	294
Financial Efficiency(FcFd)	0.855	0.492	0.139	2.606	1.514	2.201	286
Banking Activity(Pcrb)	0.227	0.167	0.011	0.698	0.975	0.143	281
Financial Activity (Pcrbof)	0.269	0.238	0.011	1.325	1.996	4.844	288
Financial Size(Dbacba)	0.741	0.198	0.110	0.999	-0.702	0.238	273

S.D: Standard Deviation. Min : Minimum. Max : Maximum. Obser : Number of observations

Appendix 2 : Correlation Matrix

Instrumantal Investment Variables				Control Variables					Financial Development Variables							Income Inequality	
									Fin. Depth		Fin. Efficiency		Fin. Activity		F. Size		
GDI	FDI	Priv.I	Pub. I	Trade	G.E	Popg	Infl.	GDPg	M2	Fdgdp	BcBd	FcFd	Pcrb	Pcrbof	Dbacba	EHII	
1.000	0.090	0.587	0.430	0.338	0.391	-0.154	-0.22	0.226	0.402	0.354	-0.074	-0.148	0.225	0.075	0.316	-0.297	GDI
	1.000	0.089	0.024	0.358	0.057	0.007	-0.09	0.318	-0.047	-0.060	-0.208	-0.198	-0.158	-0.153	0.123	-0.022	FDI
		1.000	-0.168	0.313	0.208	-0.217	-0.25	0.120	0.218	0.200	0.134	0.107	0.296	0.189	0.365	-0.271	Priv. I
			1.000	0.085	0.210	-0.001	0.021	0.055	0.251	0.185	-0.202	-0.270	0.011	-0.125	-0.104	-0.161	Pub. I
				1.000	0.392	-0.215	-0.14	0.308	0.026	0.074	-0.072	-0.129	0.001	-0.084	0.502	-0.041	Trade
					1.000	0.084	-0.14	0.077	0.017	0.004	0.084	0.132	0.087	0.145	0.271	-0.021	G.E
						1.000	0.237	0.041	-0.420	-0.458	0.096	0.068	-0.286	-0.231	-0.357	0.211	Popg
							1.000	-0.026	-0.234	-0.244	-0.231	-0.180	-0.258	-0.202	-0.352	0.157	Infl.
								1.000	-0.042	-0.053	-0.195	-0.208	-0.146	-0.170	0.031	-0.041	GDPg
									1.000	0.976	-0.081	-0.011	0.693	0.563	0.306	-0.413	M2
										1.000	-0.054	0.052	0.744	0.642	0.391	-0.375	Fdgdp
											1.000	0.883	0.507	0.455	0.343	-0.060	BcBd
												1.000	0.621	0.716	0.370	-0.055	FcFd
													1.000	0.915	0.527	-0.366	Pcrb
														1.000	0.494	-0.242	Pcrbof
															1.000	-0.073	Dbacba
																1.000	EHII

GDI: Gross Domestic Investment. FDI: Foreign Direct Investment. Priv.I: Private Investment. Pub.I: Public Investment. Trade: Openness. G.E: Government Final Expenditure. Popg: Population growth rate. GDPg: GDP growth rate. M2: Money Supply. Fdgdp: Liquid liabilities. BcBd: Bank credit on Bank deposits. FcFd: Financial system credit on Financial system deposits. Pcrb: Private domestic credit by deposit banks. Pcrbof: Private domestic credit by deposit banks and other financial institutions. Dbacba: Deposit bank assets on Central bank assets plus deposit bank assets. EHII: Estimated Household Income Inequality. Fin: Financial.

Appendix 3: Variables definitions

Variables	Sign	Variable Definitions	Sources
Income Inequality	EHII	Estimated Household Income Inequality	UTIP, Kai and Hamori (2009)
Domestic Investment	GDI	Gross Domestic Investment (% of GDP)	World Bank(WDI)
Foreign Investment	FDI	Foreign Direct Investment (% of GDP)	World Bank(WDI)
Private Investment	Priv.I	Gross Private Investment (% of GDP)	World Bank(WDI)
Public Investment	Pub.I	Gross Public Investment (% of GDP)	World Bank(WDI)
Openness	Trade	Imports(of goods and services) plus Exports(of goods and services) on GDP	World Bank(WDI)
Government Expenditure	G. E	General Government Final Consumption Expenditure (% of GDP)	World Bank(WDI)
Population growth	Popg	Average annual population growth rate	World Bank(WDI)
Growth of GDP	GDPg	Average annual GDP growth rate	World Bank(WDI)
Inflation	Inflation	Consumer prices (annual %)	World Bank(WDI)
Economic financial depth(Money Supply)	M2	Monetary Base plus demand, saving and time deposits	World Bank(FDSD)
Financial system depth(Liquid liabilities)	Fdgdp	Financial system deposits	World Bank(FDSD)
Banking system allocation efficiency	BcBd	Bank credit on Bank deposits	World Bank(FDSD)
Financial system allocation efficiency	FcFd	Financial system credit on Financial system deposits	World Bank(FDSD)
Banking system activity	Pcrb	Private credit by deposit banks	World Bank(FDSD)
Financial system activity	Pcrbof	Private credit by deposit banks and other financial institutions	World Bank(FDSD)
Financial size	Dbacba	Deposit bank assets on Central banks assets plus deposit bank assets	World Bank(FDSD)

GDI: Gross Domestic Investment. FDI: Foreign Direct Investment. Priv.I: Private Investment. Pub.I: Public Investment. Trade: Openness. G.E: Government Final Expenditure. Popg: Population growth rate. GDPg: GDP growth rate. M2: Money Supply. Fdgdp: Liquid liabilities. BcBd: Bank credit on Bank deposits. FcFd: Financial system credit on Financial system deposits. Pcrb: Private domestic credit by deposit banks. Pcrbof: Private domestic credit by deposit banks and other financial institutions. Dbacba: Deposit bank assets on Central bank assets plus deposit bank assets. EHII: Estimated Household Income Inequality. WDI: World Development Indicators. FDSD: Financial Development and Structure Database. UTIP: University of Texas Inequality Project.

References

Acemoglu, D., & Robison, J.A.,(2005). Economic Origins of Dictatorship and Democracy. Cambridge University Press.

Aghion, P., & Bolton, P., (2005). "A theory on trickle-down growth and development". *Review of Economic Studies*, 64(2), pp.151-172.

Akerlof, G., & Romer, P.,(1993). "Looting: The economic underworld of bankruptcy for profit". Brookings Papers on Economic Activity, 2, pp.1-73.

Asongu, S.A., (2011a). "New financial intermediary development indicators for developing countries". *MPRA Paper* No. 30921.

Asongu, S.A., (2011b). "Law, finance, economic growth and welfare: why does legal origin matter?". *MPRA Paper* No.33868.

Asongu, S.A.,(2011c). "Financial determinants of human development in developing countries". *MPRA Paper* No. 33949.

Asongu, S.A.,(2011d). "Law, finance and investment: does legal origin matter?", *MPRA Paper* No.34698.

Ayyagari, M., Demirgüç-Kunt, & A., Maksimovic, V.,(2006). "How important are financing constraints? The role of finance in the business environment". *Working Paper* No. 3820. The World Bank Policy Research, Washington D.C.

Banerjee, A.V., & Newman, A.F., (1993). "Occupational Choice and the Process of Development," *Journal of Political Economy,* 101(21), pp.274-298.

Banerjee, A.V., & Duflo, E., (2005). "Growth theory through the lens of development economics". In: Handbook of Economic Growth, 1, pp. 473–552.

Barro, R. J. (1991). "Economic growth in a cross section of countries", *Quarterly Journal of Economics*, 106(2), pp.407-443.

Batuo, M.E., Guidi, F., & Mlambo, K., (2010, August). "Financial Development and Income Inequality: Evidence from African countries", African Development Bank.

Beck, T., Demirgüç-Kunt, A., & Levine, R.,(2003). "Law and finance: why does legal origin matter?", *Journal of Comparative Economics*, 31, pp. 653-675.

Beck, T., Demirgüç-Kunt, A., & Levine, R.,(2004, June). "Finance, Inequality and Poverty: Cross-country Evidences", *World Bank Policy Research Working Paper* No.3338.

Beck, T., Demirgüç-Kunt, A., & Levine, R.,(2007). "Finance, inequality and the poor", *Journal of Economic Growth*, 12(1), pp.27-49.

Beck, T., Demirgüç-Kunt, A., & Maksimovic, V., (2005). "Financial and legal constraints to growth: Does firm size matter?", *Journal of Finance*, 60(1), pp. 137-177.

Ben-David, D. (1998). "Convergence clubs and subsistence economies", *Journal of Development Economics*, 55, pp. 155-177.

Berger, A., & Udell, G., (1998). "The economics of small business finance: The roles of private equity debt markets in the financial growth cycle", *Journal of Banking and Finance*, 22(6), pp.613-673.

Brown, C., & Dinc, S.,(2004). "The politics of bank failures: Evidence from emerging markets". Quarterly Journal of Economics, 120(4), pp.1413-1444.

Chinn, M., & Ito, H., (2006). "What matters for financial development? Capital controls, institutions and interactions", *Journal of Development Economics*, 81, pp.163-192.

Claessens, S., Djankov, S., Fan, J., & Lang, L.,(2002). "Disentangling the incentive and entrenchment effects of large shareholdings", *Journal of Finance*, 57(6), pp. 2741-2771.

Claessens, S., & Feijen, E.,(2006). "Finance and hunger: Empirical evidence of the agricultural productivity channel", *Working Paper* No. 4080. The World Bank Research, Washington, DC.

Claessens, S., & Feijen, E.,(2007). "Financial development and the millennium development goals", *Working Paper* No. 89.The World Bank, Washington, DC.

Claessens, S., & Perotti, E.,(2007). "Finance and inequality: Channels and evidence", *Journal of Comparative Economics*, 35(4), pp. 748-773.

Claessens, S., & Pohl, G.,(1995). Banks, capital markets and corporate governance: Lessons from Russia for Eastern Europe. In: Simoneti, Marko, Kawalec, Stefan(Eds), Bank Rehabilitation and Enterprise Restructuring. The World Bank, CEEPN.

Clarke, G.R.G., Cull, R., Soledad, M. P.M., & Sanchez, S.M., (2003). "Foreign bank entry: Experience, implications for developing countries". *World Bank Research Observer*, 18, pp.25-59.

Demirguc-Kunt, A., Beck, T., & Levine, R., (1999). "A New Database on Financial Development and Structure", *International Monetary Fund*, WP *2146*.

Das, M., & Mohapatra, S.,(2003). "Income inequality: The aftermath of stock market liberalization in emerging markets", *Journal of Empirical Finance*, 10, pp.217-248.

Dinc, S.,(2004). Government ownership of banks and political lending in developing countries. Mimeo, University of Michigan.

Dollar, D., & Kraay, A.,(2002). "Growth is Good for the Poor", *Journal of Economic Growth*, 7, pp. 195-225.

Dooley, M.P.,(2000). "A model of crises in emerging markets", *Economic Journal*, 110, pp.256-272.

Galbraith, J.K., & Lu, J., (1999). Inequality and financial crises: Some early findings. Working Paper, No.9, UTIP.

Galor, O., & Moav, O., (2004). "From physical to human capital accumulation: Inequality and the process of development", *Review of Economic Studies*, 71(4), pp.1001-1026.

Galor, O., & Zeira, J., (1993). "Income Distribution and Macroeconomics", *Review of Economics*, 60(1), pp.35-52.

Glaeser, E.L., Scheinkman, J., & Shleifer, A.,(2003)."The injustice of inequality", *Journal of Monetary Economics*, 501, pp.199-222.

Greenwood, J., & Jovanovic, B.,(1990). "Financial development, growth and the distribution of income", *Journal of Political Economy*, 98(5), pp.1076-1107.

Haber, S., & Kantor, S.,(2004, June). Getting privatization wrong: The Mexican banking system, 1991-2003. Mimeo. Stanford University.

Haber, S., & Razo, A., & Mauer, N.,(2003). The Politics of Property Rgihts: Political Instability, Credible Commitments and Economic Growth in Mexico, 1876-1929. Cambridge University Press.

Hassan, K., Sanchez, B., & Yu, J., (2011). "Financial development and economic growth: New evidence from panel data", *The Quarterly Review of Economics and Finance*, 51, pp.88-104.

Henry, P.B.,(2000a). "Stock market liberalization, economic reform and emerging market equity prices", *Journal of Finance*, 55(2), pp.529-564.

Henry, P.B.,(2000b). "Do stock market liberalization cause investment booms?", *Journal of Financial Economics*, 58(1-2), pp.301-334

Henry, P.B.,(2003). "Capital account liberalization, the cost of capital and economic growth", *American Economic Review*, 93(2), pp. 91-96.

Henry, P.B.,(2006). "Capital account liberalization: Theory, evidence and speculation", *NBER Working Paper* No.12698.

Honohan, P., (2006). "Household financial assets in the process of development", *Working Paper* No.3965. The World Bank Policy Research. Washington, D.C.

Janine, A., & Elbadawi, I.A.,(1992). "Parallel Markets, the foreign Exchange Auction, and Exchange Rate Unification in Zambia", World Bank Policy Working Paper No. 909, The World Bank.

Kai, H., & Hamori, S., (2009). "Globalization, financial depth and inequality in Sub-Saharan Africa", *Economics Bulletin*, 29 (3), pp. 2025-2037.

Khwaja, A.I., & Mian, A.,(2005). "Unchecked intermediaries: Price manipulation in an emerging stock market", *Journal of Financial Economics*, 78(1),pp. 203-241.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R.W., (2000), " Investor protection and corporate governance", *Journal of Financial Economics*, 58(1), pp.3-27.

La Porta, R., Lopez-de-Silanes, F., & Zamarippa, G.,(2003). "Related lending", *Quarterly Journal of Economics*, 118(1), pp.231-268.

Levine, R., & Zervos, S.,(1996). "Stock market development and long-run growth", *World Bank Economic Review*, 10(2), pp.323-339.

King, R.,& Levine, R.,(1993). "Finance and growth: Schumpeter might be right", *Quarterly Journal of Economics*, 108, pp.717-738.

McKinnon, R., (1973). Money and Capital in Economic Development. *Brookings Institution Press*, Washington DC.

Ndikumana, L., (2000). "Financial Determinants of Domestic Investment in Sub-Saharan Africa: Evidence from Panel Data". *World Development*, 28(2), pp.381-400.

Perotti, E., (2002). "Lessons from the Russian meltdown: The economics of soft legal constraints", *International Finance*, 5(3), pp.359-399.

Perotti, E., & Volpin, P., (2007). Investor protection and entry. Mimeo. University of Amsterdam. London Business School.

Rajan, R., & Zingales, L., (2003). "The great reversals: The politics of financial development in the twentieth century", *Journal of Financial Economics*, 69(1), pp.5-50.

Shaw, E.,(1973), Financial Deepening in Economic Development, New York, Oxford University Press.

Velasco, A.,(1988). "Liberalization, crisis, intervention. The Chilean financial system, 1975-1985", *IMF Working Paper* 1988/66.

Valdes-Prieto, S.,(1992). Financial liberalization and the capital account: Chile 1974-1984. In: Caprio et al.(Eds), The Impact of Financial Reform. The World Bank, Washington, D.C.