

Financial Development and Income Inequality in the Selected Southern African Development Community Countries

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Abstract: Financial development is widely regarded as another conduit through which income inequality can be reduced. The study empirically examines the relationship between financial development and income inequality in selected Southern African Development Community (SADC) countries, employing the Generalised Method of Moments technique for the period 1980 to 2016. Based on the inequality-decreasing hypothesis, a model which links financial sector development and inequality was estimated. Empirical results revealed that financial sector development overall does have an impact on income inequality in the selected SADC countries. An interesting observation from the empirical results is that the actual dimension of financial development plays a significant role in determining the relationship between financial development and income inequality in the SADC region. The impact of financial depth on income inequality is not obvious in the study, depending on the variable used. On the relationship between financial system stability and income inequality, results reveal that a stable financial system is beneficial to the poor. Financial efficiency does not appear to have a significant role in reducing income inequality in the selected SADC countries. The findings imply that a specific approach to financial sector development rather than a blanket approach is desirable.

Keywords: Financial sector development, income inequality, SADC, GMM.

1. INTRODUCTION

Financial development has an integral role in the economy of a country (Clarke *et al.*, 2003; Nasifeh and Khosrow, 2012; Levine *et al.*, 2000; King and Levine, 1993; Easterly, 1993; Pagano, 1993; and Levine, 1997). Financial sector development has also emerged as another source of reducing inequality as recognized in studies (Beck *et al.*, 2007; Jalilian and Kirkpatrick, 2002; Honohan, 2004 and Demirgüç-Kunt and Levine, 2009), although literature does not reach consensus. According to Kappel (2010) there are two methods in which financial development influences inequality. Firstly, through credit extension by allowing a large number of economic participants, including the poor, to gain access to micro finance institutions and financial market access. The second way is through entrepreneurial opportunities that integrate poor economic agents into the broader market.

Demirgüç-Kunt and Levine (2009) contend that the nexus between the development of the financial sector and inequality is not so clear, as finance has the ability to exacerbate or reduce inequality. Becker and Tomes (1986) posit that inequality might be reduced in instances whereby financial services reach the disadvantaged and poor, thereby enabling them access to economic opportunities, which lessens intergenerational prevalence of comparative incomes. Conversely, Greenwood and Jovanovic (1990)

postulate that big firms and the rich, who are already well-off can disproportionately gain from financial sector development, therefore broadening the inequality gap between the poor and rich.

The majority of financial systems in the Southern African Development Community (SADC) are largely Bank-Based, except South Africa which boasts both a developed banking industry and developed financial markets. The level of financial development in the SADC is at different stages across the numerous member states, with countries such as South Africa relatively ahead in terms of financial development whereas members such as Namibia, Botswana and Mauritius, possess reasonably developed financial markets, while Malawi, Madagascar and Democratic Republic of Congo (DRC) possess poorly developed financial markets (KPMG, 2014). Nyawata and Bird (2004) posit that before the global trend towards economic liberalization in the 1990s, many financial systems in the SADC region were repressed and therefore adopted measures to liberalize their financial systems. The types of financial intermediaries across SADC member states include primary dealers, stockbroking firms, mutual banks, foreign exchange dealers, non-bank deposit-taking institutions, pension funds, unit trust companies money lenders, commercial banks and central banks (SARB, 2014).

The distribution of income and resources in Southern Africa is skewed as people do not have access to land and thereby do not have economic independence. Gumede (2015) states that although growth has been high and the middle class has been

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growing, income inequality, poverty and unemployment appears to have increased in the past decade. This phenomenon may be attributed a situation whereby only the political elite and middle class benefit from high economic growth rates while the masses of the unemployed struggle to make a decent living. Jauch and Muchena (2011) contend that “grafted capitalism” which was not meant to develop the entire economy, rather a small formal enclave sector which did not result in dynamic growth and development, is to be blamed for the high rate of inequality in Southern Africa. Labour market access is another factor that is attributed for the high income inequality as the mismatch between skills required by the market and the skills that the labour force possess excludes majority of the youth population.

This study seeks to advance existing literature by examining the relationship between financial development and income inequality using the Generalised Method of Moments from 7 countries in SADC between 1980 and 2016. Specifically, the study analyses whether financial development as a broader concept reduces income inequality or if the actual dimensions of financial development determine the effect of finance development on income inequality. The SADC region has launched various initiatives to encourage financial sector development through allocating finance to the productive sectors. Amongst the programs is the SADC Finance and Investment Protocol (FIP) as well as other financial liberalisation policies that are aimed at stimulating the member states’ financial systems. Given the conflicting views in the literature, the study thus will provide empirical evidence that highlights the influence that developing the financial system has on income inequality in SADC.

The current study differs essentially from the majority of previous studies as it includes five different dimensions of financial development, namely financial, stability, efficiency, liberalisation, depth and access. The majority of available studies focus on financial depth as proxy for financial development. Empirical evidence indicates that the five different dimensions do affect income inequality in SADC. The findings also indicate that the various dimensions of finance development can influence income inequality in a number of ways, which implies that it is worthwhile to examine the various dimensions of financial development rather than financial development as broader concept. The paper comprises five sections. Subsequent to the introduction and background in section one, section two presents the theory and

empirical literature on financial development and inequality in SADC. The third section discusses the methodology which was used in the study and section four and five presents the empirical findings and conclusions of the study, respectively.

2. THEORETICAL AND EMPIRICAL LITERATURE REVIEW

Theoretical predictions on the interlinkages of financial sector development with income inequality postulate that income inequality is influenced by financial development in various ways, such as directly through financial access as well as the indirect channel through economic growth. In terms of the direct channel, Kappel (2010) articulates that work to theoretically enquire the effect of financial development on income distribution was pioneered by Greenwood and Jovanovic (1990); they conjectured a nonlinear U-shaped inequality and financial development nexus. They hypothesized a link whereby the distributional impact of financial development is reliant on the economic development level. In this model, they assume two opportunities for investment that each economic participant has: the first offers a low return as it is safe, while the second is riskier but offers a high return. The model posits that in time most of the economic participants will gain access to the financing services, and the trend of income gap reverses in the economy. Greenwood and Jovanovic (1990) also pioneered a model whereby finance service providers channel funds between savers and borrowers through analysing imperfect information. Nasifeh and Khosrow (2012) posit a U-shaped relationship because at the infancy stage of economic development, less developed financial intermediaries exist, so only the rich have an opportunity to take part and reap profits from financial markets. Through the economic development stages, a larger number of individuals are involved in financial markets, which would mean a greater percentage of economic participants enjoy the benefits of a developing financial system.

Nasifeh and Khosrow (2012), in contrast to Greenwood and Jovanovic (1990), suggest that a linear finance-inequality nexus is suggested by alternative theories. These linear models fall under two categories, namely the inequality-decreasing and the inequality-increasing theory of financial development. Inequality-increasing theory is derived from the Marxist theory; its advocates argue that weak financial institutions ensure that the financial system only serves the most affluent class (Rajan and Zingales, 2003). As a result of their

commercial purpose, banks require collateral to extend credit, which would mean only the well-endowed and those with connections can have the ability to access credit and subsequently means that the poor cannot get loans because they cannot produce collateral, therefore causing inequality to increase. Weak institutional quality in society further enforces the inequality-widening hypothesis (Dhrifi, 2015). Dhrifi (2015); Liang (2006) and Seven and Coskun (2016) provide empirical support for this hypothesis in nations that are characterized by low and middle income and rural china respectively.

Interms of the inequality-decreasing hypothesis Nasifeh and Khosrow (2012) postulate a negative correlation between inequality and financial development, it implies that the poor and disadvantaged can enrich themselves through participating in the financial markets as they would gain access to funds thereby reducing inequality as the financial system develops. Banerjee and Newman (1993) provide theoretical support for this hypothesis. Banerjee and Newman (1993) assume a model that comprises three sectors, where two out of the technologies necessitate undividable investment. Because of imperfect markets, only the wealthy will afford to borrow sufficient capital to utilise those above-average return technologies, hence the early wealth dissemination will have long-run implications on income distribution and growth. The model suggests that high income inequality would be persistent in economies where credit markets are not developed as it difficult to raise capital to finance the indivisible investment. They determine that financial development will have a negative relation to inequality.

Kuznets (1955) pioneered theoretical literature on the nexus between income inequality and economic growth. Kuznets (1955) hypothesized that in the initial phases of development, inequality rises alongside growth and subsequently when expansion in the economy occurs income inequality reduces. As Asad (2012) puts it simply, economic growth first increases and then reduces income inequality in the society. Medgyesi and Tóth (2009) posit that Kuznets (1955) suggests that inequality changes are consequences of the contraction in the low-income traditional industry which suffers as the high-income modern industry expands. Therefore, the shifts in the sectors are supposed to lead to the inverted 'U' shape of inequalities. There exists mixed empirical literature which agrees and also contradicts the explanatory power and relevance of the general relationship. As

Asad (2012) further elaborates, some empirical evidence supports the presence of the Inverted-U relationship, while other studies suggest a U shaped relationship and other studies hypothesise no relationship at all.

Empirically, many scholars have delved deep in the interaction between financial development and inequality, both cross-country as well as time series studies, to ascertain the dynamics of the interaction between developing the financial system and the impact that it has on income inequality in an economy. Currently, empirical literature fails to provide a clear view on what the finance development-inequality nexus should be, however scholars postulate that this relationship mainly dependent on economic development.

Law and Tan (2009) observed in Malaysia the effect that financial development plays on income inequality by utilising an ARDL bounds test for the period 1980-2000. Their empirical findings revealed a weak and statistically insignificant effect of financial market development on income inequality. This is consistent with Azleen and Mansur (2017) who utilising an Auto Regressive Distributed Lag (ARDL) model and an error correction mechanism to measure the presence of long-term interlinkage discovered that financial development is insignificant in influencing inequality.

Shahbaz (2009) studied the interaction between the income increases of the poor fragment of the inhabitants and financial development in Pakistan utilising an ARDL Model. Findings suggested that financial development improves the income of the poor indirectly via economic growth, as well as directly through investments in physical and human capital. Similarly, Nasifeh and Khosrow (2012) using an Unrestricted Error Correction Model in Iran discovered that financial development and income inequality affect each other negatively and linearly, implying that developing the financial system would reduce income inequality. Furthermore, the authors highlighted that no indication of the Greenwood and Jovanovic (1990) Inverted-U relationship was discovered. However, these findings are in contrast to Jaber *et al.*, (2012) who utilising an (ARDL) model discovered a positive and reducing interconnection between financial development and inequality, therefore supporting the Greenwood-Jovanovic hypothesis.

On available panel data studies, Liang (2006) examines the interaction between financial sector

development and income distribution in urban and rural China using a Generalized Method of Moment (GMM) technique; the author discovered that in urban China developing the financial sector causes inequality to decrease whereas in rural China the same did not apply. The outcomes are in line with results of Beck *et al.*, (2007) who made use of a wide-ranging international sample to test the effect of developing the financial sector on the variations in dissemination of incomes. Batuo *et al.*, (2010) assessed how inequality is impacted by financial development in 22 African countries; their outcomes revealed that developing the financial sector reduces inequality, which is in line with studies from scholars including Kappel (2010). Kappel (2010) goes deeper to elaborate the importance of also developing stock markets in conjunction with improving loan markets in order to eliminate inequality. On the contrary, this is consistent with Park and Shin (2015) in the case of a sample of 162 countries the period between 1960 and 2011 where the effect of developing the financial sector on inequality is inconclusive and mixed, however the authors discovered the presence of a U-shaped relationship.

The available literature Liang (2006); Kappel (2010); Batuo *et al.*, (2010) has mainly measured the link between the variables of interest using ratio of liquidity(M2), bank assets, stock market size and private credit and to represent financial development.

The study will contribute to literature by considering five dimensions of financial development, namely financial efficiency, liberalization, access, depth and stability as well as the effect that they have on inequality in SADC.

3. DATA AND METHODOLOGY

The study utilised data covering the span from 1980 to 2016. For analysis purposes different data sources were used to compile a unique and original dataset. The Inequality data is retrieved from the "World Institute for Development Economics Research -World Income Inequality Database (WIDER-WIID)". The "Chinn-Ito Financial Openness Index" data was retrieved in the Chinn-Ito Financial Openness Index website. The data for control variables and the different dimensions of financial development was retrieved from the World Development Bank Development indicators. Based on the inequality-decreasing hypothesis, a model is estimated based on the study of Naceur and Zhang (2016) derived from financial development literature. Other variables are used in

order to augment the model to capture key institutional settings and macroeconomic activities in the SADC region.

The model is specified as follows:

$$Gini_{i,t} = \alpha + \beta_1 FD_{i,t} + \beta_2 Gov_{i,t} + \beta_3 Trade_{i,t} + \beta_4 Infl_{i,t} + \beta_5 Y_{i,t} + \epsilon_{i,t}$$

Where $Gini_{i,t}$ denotes the Gini coefficient, $FD_{i,t}$ is a vector of Financial development explanatory variables, $Infl_{i,t}$ represents inflation, $Trade_{i,t}$ denotes trade openness, $Gov_{i,t}$ represents government expenditure and $Y_{i,t}$ represents the log of GDP per capita,

3.1. Definition of Variables and a *Priori* Expectations

The Gini coefficient is utilised to proxy income inequality. This is in line with Naceur and Zhang (2016).

To measure the five dimensions of financial development, two variables of stability, efficiency, access and depth, in a Global Financial Development Database have been utilized while a single variable is used to capture financial liberalisation. The two indicators that proxy financial depth are: Total Bank Assets to GDP and Banks' Private Credit to GDP. According to IMF (2016), since the majority of the countries in SADC don't possess highly established equity exchanges, Stock Market's Total Value Traded does not fully represent financial depth. A high value of Private Credit to GDP and Total Bank Assets suggests deeper financial institutions, which means that they are in a better position to extend credit. Thus in this case, Total Bank Assets to GDP as well as Banks' Private Credit to GDP are predicted to have a negative correlation to inequality. The two indicators that measure financial system stability are: Liquid Assets to Deposits and Short Term Funding (%) and Bank Credit to Bank Deposit (%). A high Bank Credit to Bank Deposit implies a high possibility of a banking crisis, which may be detrimental to the poor and the general public (Gadanecz and Jayaram, 2009). A positive relationship is expected between Bank Credit to Bank Deposit (%) and income inequality. Financial efficiency is represented by the Bank Lending-Deposit Spread and Stock Market Turnover Ratio. Naceur and Zhang (2016) highlight a high turnover ratio is a sign of an efficient financial market while also a low bank lending-deposit spread means higher bank operating efficiency. Thus, a positive correlation is predicted between Bank Credit to Bank Deposit (%) and income inequality while

a negative correlation is expected between Stock Market Turnover Ratio (%) and income inequality. Automated Teller Machines (ATMs) per 1000 km and Bank Accounts per 1,000 Adults represent financial access. A high value of these variables means that borrowing costs will be reduced as funds available would have increased as well as an increase capital formation (Hariharan and Marktanner, 2012) Therefore, financial access is anticipated to have a negative relation to income inequality. To capture the impact of financial liberalization the paper will utilise the Chinn-Ito Financial Openness Index. This index assesses the level of capital account openness in transactions, that ranges from 2.44 to -1.86, where -1.86 is full financial repression (Chinn and Ito, 2007). Financial liberalisation is envisaged to negatively related with inequality.

Variables that are regarded to be determinants of income inequality are used as control variables. Real GDP per capita which represents the degree of development in the economy and economic activity in the model. The correlation between Real GDP per capita and inequality is predicted to be negative. Inflation, which is measured as the percentage variation in the price of a “basket” of services and goods consumed by households, is included for capturing the effect of macroeconomic programs on inequality. The interaction between income inequality and inflation is unclear, whereby there is both a negative and positive correlation. Exports to GDP, as a proxy of trade openness, is applied in the model to capture openness internationally (Dhrifi, 2015). The interaction between exports and inequality is unclear depending on the economic structure. Government expenditure to GDP which is the government expenditure compared to GDP in an economy, this proxy depicts the function that the state may carry out in the growth of the economy and reducing inequality. Government expenditure is expected to be negatively related to inequality.

3.2. Estimation Techniques

The Generalized Method of Moments (GMM) is applied in the study, as suggested by Arellano and Bond (1991). The system GMM is suitable for counteracting endogeneity bias, initial conditions, omitted variable bias, autocorrelation, individual specific and heteroscedasticity problems (Batuo *et al.*, 2010). The dynamic nature of the interaction between financial development and inequality affects their

behaviour, for example, a decrease in income inequality has a possibility of increasing the financial services that are demanded by the people.

3.2.1. Generalized Method of Moments (GMM)

“Hansen introduced the Generalized Method of Moments in his celebrated 1982 paper” (Baum *et al.*, 2003. Johnston and DiNardo (1997) state that there has been a surge in the usage of GMM estimators for two key purposes:

1. “GMM nests many common estimators, and provides a useful framework for their comparison and evaluation.
2. GMM provides a ‘simple’ alternative to other estimators, especially when it is difficult to write down the maximum likelihood estimator.”

The GMM estimator offers a number of advantages over other econometric models. Firstly, some relationships between variables are dynamic, so only the GMM estimator can capture them. The GMM estimator captures the relationship without problems of inconsistency and bias which prevail in traditional fixed effects or pooled, commonly referred to as within group (WG), ordinary least squares (OLS) estimations (Blundell *et al.*, 2000; Nickell, 1981). Secondly, the GMM estimator enables scholars to study a larger number of independent variables without endogeneity concerns. Thirdly, the GMM estimator corrects the bias that is triggered by a reduction in data variation in the difference-GMM (a problem that is especially prevalent in highly persistent series); this bias is fixed through obtaining the variable values at levels back to the regressions in system-GMM. Therefore, removing the bias that is caused by weakened instruments improves the exactness of coefficients.

3.3. Testing the Validity of the GMM

The Arellano-Bond test for second-order serial correlation and the Sargan-Hansen test for over-identifying restrictions were carried out as diagnostic tests. These tests are discussed in brief.

3.3.1. The Sargan-Hansen Test for Over-Identifying Restrictions

According to Roodman (2009) one of the crucial assumptions in ensuring that a GMM model is valid is the exogeneity of instruments. Roodman (2009) emphasizes that only when a dynamic panel-data instrumental variable techniques model is over-

identified, a joint validity statistic test for moment conditions can be conducted to authenticate that in the residual process the excluded instruments are correctly independent. The appropriate instrument joint validity test utilised in the sys-GMM estimation model as suggested by Roodman (2009) and Arellano and Bond (1991) is the Sargan/Hansen test. The Sargan's statistic is a unique instance of Hansen's J that assumes conditional homoskedasticity.

The Sargan's statistics utilizes all over identifying restrictions with an estimate of the error variance from the IV regression. The null hypothesis of the Sargan test is that "*the instruments are uncorrelated with the error term and the vector of empirical moments is randomly distributed around 0*". The Sargan/Hansen statistics is also useful for subsets of instruments validity tests, through a "difference-in-Sargan/Hansen" test, sometimes referred to as a C statistic. Baum *et al.*, (2003) assert that the "robustified Sargan statistic is numerically similar to the Hansen J statistic computed from feasible efficient two-step GMM for that model" also known as the Hansen-Sargan or the Sargan-Hansen statistic.

3.3.2. The Arellano-Bond Test for Second-Order Serial Correlation

Roodman (2009) states that an additional test to check an occurrence that would make some lags not valid as instruments. The idiosyncratic disturbance term autocorrelation is conducted by Stata. The Arellano-Bond test for autocorrelation as developed by Arellano and Bond is specifically created to identify second-order serial correlation (AR (2)) in the idiosyncratic error term (Adenutsi, 2014). The validity of the Arellano-Bond test for autocorrelation applies to any GMM regression on panel data, which includes 2SLS and OLS whereby the regressors are "post determined", depending on future disturbances. This test's null hypothesis is "*no autocorrelation*" and is used to the differenced residuals. The AR (1) test process in first differences typically does not to reject the null hypothesis; as a result, we will not consider it. The AR (2) test in first differences has better usefulness, as it identifies autocorrelation in levels.

Roodman (2009) further points out that Arellano and Bond discovered that the test had better detected lagged instruments made to be not valid because of autocorrelation compared to the Sargan and Hansen test, nevertheless, he also pointed out that the test fails when correlation decreases to 0.2, whereby the null of

no serial correlation is rejected only 50 percent of the time.

4. PRESENTATION OF EMPIRICAL RESULTS

Using nine indicators to measure five dimensions of financial development, the study tested the relationship between financial development and income inequality in seven SADC member states, which included Botswana, Malawi, Mauritius, South Africa, Namibia, Tanzania and Zambia. The section is a presentation of results of the model, which was estimated in section 3. In the study six models were estimated to distinguish the effect of each dimension of financial development on inequality. The first model, which is the baseline model, incorporates all the dimensions of financial development which captures the overall influence of financial development on inequality. Subsequent models study the individual impact of the various measures of financial development on inequality.

4.1. Descriptive Statistics

Table 1 shows the summary statistics of the variables utilised in the current paper. Table 1 also highlights the maximum and minimum of the different variables of this study, and makes it possible to know whether or not the observed variable are within the expected range or they are outliers. The mean value of the GINI variable is 23, with a standard deviation of 9, suggesting that in general the SADC region is grappled with income inequality. The mean value of the amount of ATMs per 1000 adults is 7, with a standard deviation of 10, which is testament to the fact that the SADC region is lacking in terms of financial infrastructure. In regards to the amount of Bank accounts per 1000 adults the mean is 154 the standard deviation is 159, signalling that on average almost 85% of the population of the selected SADC countries is unbanked. The mean of the bank lending deposit spread is 9 and the standard deviation is 29, this is not very high given that most banking markets in the SADC region are not highly developed.

4.2. Correlation Matrix

Table 2 reports the correlation relationship between the Gini and the different dimensions of financial sector development and other explanatory variables. As illustrated in Table 2, the correlation between the Gini coefficient, bank accounts per 1 000 adults, ATMs per 1 000 km, GDP per capita, Chinn-Ito Financial Openness Index, exports to GDP and government expenditure to GDP is negative, which implies that

Table 1: Descriptive Statistics

	Gini	ATMs	Bank accounts	Bank credit to deposit	Bank lending & deposit	Banks private credit	Chinn ito financial openness	Exports to GDP	GDP per capita	Government expenditure	Inflation	Stock market turnover	Total bank assets to GDP
Mean	55.21	7.45	154.47	75.68	9.04	23.60	-0.65	34.27	3.14	18.77	14.26	13.31	28.35
Median	56.70	1.30	126.86	68.38	6.72	13.38	-1.19	30.46	2.15	18.65	10.90	4.84	19.28
Maximum	70.10	54.73	876.80	137.33	32.79	77.84	2.37	75.12	19.63	31.55	112.69	1081.12	87.67
Minimum	33.83	0.32	12.50	23.35	0.43	2.59	-1.90	10.26	-10.95	8.28	-0.11	0.02	4.56
Std. Dev.	9.69	10.88	159.91	29.83	6.40	20.57	1.38	13.56	6.09	5.08	12.39	76.14	21.37
Skewness	-0.41	2.34	1.76	0.35	1.25	0.99	1.39	0.54	0.77	0.09	3.75	13.69	1.08
Kurtosis	2.32	9.01	6.70	1.95	4.00	2.64	3.46	2.52	3.55	2.31	25.21	192.43	2.90
Sum	11207.70	1513.44	31358.24	15364.75	1836.30	4791.53	-133.04	6957.71	638.47	3810.84	2895.35	2702.35	5755.95
Sum Sq. Dev.	18976.76	23940.42	5165860.	179818.2	8288.22	85519.07	386.03	37191.87	7508.30	5216.32	31031.88	1171143.	92334.11
Observations	203	203	203	203	203	203	203	203	203	203	203	203	203

Source: Author's computation using Stata 14 Econometric Software.

Table 2: Correlation Matrix

Correlation	Gini	ATMs	Bank accounts	Bank credit to deposit	Bank lending & deposit	Banks private credit	Chinn ito financial openness	Exports to GDP	GDP per capita	Government expenditure	Inflation	Stock market turnover	Total bank assets to GDP
Gini	1.00												
ATMs	-0.25	1.00											
Bank accounts	-0.01	0.80	1.00										
Bank credit to deposit	0.49	0.05	-0.16	1.00									
Bank lending & deposit	-0.41	-0.28	-0.16	-0.48	1.00								
Banks private credit	0.40	0.12	-0.11	0.86	-0.49	1.00							
Chinn ito financial openness	-0.01	0.23	0.22	-0.28	0.03	-0.20	1.000000						
Exports to GDP	-0.53	0.59	0.46	0.10	-0.39	0.05	0.23	1.00					
GDP per capita	-0.57	0.01	0.20	-0.20	0.06	-0.22	0.07	-0.17	1.00				
Government expenditure	-0.53	0.44	0.35	0.33	-0.57	0.25	-0.19	0.63	-0.19	1.00			
Inflation	0.09	-0.29	-0.19	-0.36	0.31	-0.33	-0.17	-0.20	-0.03	-0.16	1.00		
Stock market turnover	0.07	0.29	0.10	0.06	-0.08	0.15	-0.05	0.07	-0.02	0.08	-0.08	1.00	
Total bank assets to GDP	0.38	0.08	-0.17	0.83	-0.48	0.99	-0.20	-0.01	-0.22	0.22	-0.30	0.15	1.00

Source: Author's computation using Stata 14 Econometric Software.

Table 3: GMM Estimation Results on the Relationship Financial Development and Inequality in the SADC Region, 1980–2016**Dependent Variable: Income Inequality**

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	34.4200*** (0.000)	6.0783*** (0.000)	29.3899*** (0.000)	38.7238*** (0.000)	34.2823*** (0.000)	33.6467*** (0.000)
Banks' Private Credit to GDP	1.0714*** (0.000)	1.2884*** (0.000)				
Total Bank Assets to GDP	-1.0779*** (0.000)	-1.1652*** (0.000)				
Bank Credit to Bank Deposits (%)	0.1686*** (0.000)		0.0898*** (0.000)			
Liquid Assets to Deposit and Short Term Funding (%)	0.0601*** (0.000)		0.0664*** (0.000)			
Bank Lending-Deposit Spread	-0.0582 (0.279)			-0.0623 (0.269)		
Stock Market Turnover Ratio	0.0127*** (0.000)			0.0030 (0.434)		
Bank Accounts per 1,000 adults	0.1166*** (0.000)				0.0290 (0.313)	
ATMs per 1000 km	-0.1529 (0.000)				-0.1957*** (0.000)	
Chinn-Ito	1.4699*** (0.000)					0.2760 (0.345)
Inflation	-0.0271 (0.127)	-0.0509*** (0.006)	-0.1124*** (0.000)	-0.0994*** (0.000)	-0.1350*** (0.000)	-0.0956*** (0.001)
Government Expenditure to GDP	0.3620*** (0.000)	0.5628*** (0.000)	1.0579*** (0.000)	1.3019*** (0.000)	1.4361*** (0.000)	1.4361*** (0.000)
Exports as a % of GDP	0.0485 (0.151)	0.0128 (0.642)	0.1471*** (0.000)	0.0216 (0.539)	0.1542*** (0.000)	0.0737 (0.181)
GDP per capita	-0.5431 (0.000)	-0.6748*** (0.000)	-0.6320*** (0.000)	-0.7666*** (0.000)	-0.6826*** (0.000)	-0.8771*** (0.000)
Arellano-Bond test for AR(2)	0.715	0.403	0.180	0.245	0.420	0.307
Observations	222	223	223	222	222	223
Sargan (p-value)	0.000	0.000	0.000	0.000	0.000	0.000
Countries	7	7	7	7	7	7

Notes: Standard errors reported in parentheses. */ (**)/ [***] indicates significance of the coefficients or rejection of the null hypothesis on a 10 %/(5 %)/ [1 %] level of significance.

Source: Author's computation using *Stata 14* Econometric Software.

these variables are beneficial in narrowing the income inequality gap by disproportionately benefiting the poor and less endowed. However, the correlation between the Gini coefficient, total bank assets to GDP, banks' private credit to GDP, bank credit to bank deposit (%), stock market turnover ratio (%), liquid assets to deposits and short term funding (%) and inflation is positive, implying that these variables widen inequality in the SADC countries by disproportionately benefiting the rich. However, these preliminary results are

insufficient to arrive at a conclusion. Further tests were estimated in the next section.

4.3. Presentation and Discussion of the Empirical Results on the Effect of Financial Sector Development on Income Inequality

The empirical findings depicted in Table 3 indicate that in the baseline model, both proxies of financial depth, which are total bank assets to GDP and bank credit to the private sector, are highly significant

although the variable of bank credit to the private sector does not bear the correct sign according to a *priori* expectations. According to the empirical findings, the correlation between private credit and inequality is positive, which implies that a 1 % rise in credit extended by banks to the private sector will lead to a 107 % growth in inequality. The results are contrary with theoretical predictions of Banerjee and Newman (1993) and to empirical findings of scholars such as Beck *et al.* (2004, 2007), Clark *et al.* (2003), Szymborska (2016) and Fomum and Aziakpono (2016) that hypothesise a negative correlation between credit extension and inequality, accentuating the importance of financial deepening which benefits the previously low-income users of financial services by enhancing their credit lines, thus providing better investment options. However, the positive relationship between credit extension and inequality discovered in the model may be justified by theoretical predictions of Kuznets's Inverted U-Hypothesis on income inequality. Since many member states in SADC are not economically developed, this may imply that even though banks provide credit, the impact of the credit extension does not filter through to all the economic participants.

On the other financial depth variable, results imply that a 1 % increase in the total bank assets to GDP will cause a 107 % reduction in inequality in the SADC member states, this prediction is consistent with Maldonado (2016) albeit that they don't establish a significant relationship. The findings from these variables highlights the usefulness that a well performing financial system that has the ability to provide deep financial markets, lower transaction costs, facilitating the transfer of funds from those with excess to those with shortage of funds, thereby affecting inequality and hence facilitating the growth of the overall economy.

With regards to financial system stability, in both the baseline model and Model 3, the relationship that liquid assets to deposits and short term funding (%) and the bank credit to bank deposit ratio have with inequality is highly significant and positive. This implies that when the liquid assets to deposits and short term funding ratio and the bank credit to bank deposit ratio rises by 1%, inequality will grow by 16 % and 6 %, respectively. The significance of the two variables signifies that a more unstable financial system is detrimental to the poor and those who are less financially well-off, whereas a stable financial system demonstrates the quality of financial development and sustains confidence. Similarly, these findings are consistent with

Jeanneney and Kpodar (2011) and Naceur and Zhang (2016) who establish that financial instability seemingly reduces poor people's income in a variety of ways, such as unwarranted bank closures, disrupting the payment system, unstable growth and inflation. To further elaborate this point, Neaimea and Gaysset (2016) stress how financial instability has the ability to hurt even the most advanced economies, in developing countries, such as in SADC, the impact can be particularly far-reaching as people with low income do not have to incur downside risks which would mean their livelihoods would be disturbed.

The two measures of financial efficiency, Stock market turnover ratio and Bank lending-deposit spread don't have the expected *a priori* impact on inequality, furthermore only the Stock market turnover ratio relationship is significant statistically. A reduction in the bank lending-deposit spread leads to a rise in inequality; these findings are contrary to Naceur and Zhang (2016) who hypothesized the beneficial impact of improving financial market efficiency for reducing inequality, implying that an efficient financial system allows agents to find the most affordable services cheaply and timely. The lower cost, especially, can be very beneficial to the poor. Meniago and Asongu (2018) further add weight to this notion by highlighting that financial activity performs a substantial role in decreasing inequality, especially an efficient financial system that enables small and Medium Enterprises (SMEs) and individuals to acquire finances at low costs, which benefits the poor. However, the SMMEs failure to access financial services could be an explanation for this result.

In terms of stock market turnover ratio and inequality the relationship has a positive sign that is also significant statistically, at the 1 % level. This means when stock market turnover rises by 1 % the Gini rises on average *ceteris paribus* by 1.2 %. These findings are consistent with findings from Maldonado (2016) who suggested that these results may be an indication of the market participation costs which are supply side and high sector wages which is a direct impact, this would imply that capital market efficiency marginally raises inequality as indicated by the Gini. On the contrary our findings are not in line with Naceur and Zhang (2016) and theoretical predictions which predicts that a rise in the size and stock market activity reduces income inequality through income distribution.

When it comes to financial access, our empirical results are rather mixed. The association between the

amount of banks accounts per 1000 adults and inequality is positive and insignificant; this implies that the amount of bank accounts opened does not have a bearing on the level of inequality. The findings are in line with findings of Honohan (2004) and Naceur and Zhang (2016) who discovered a negative and highly significant correlation between the number of bank accounts and the inequality levels, which is testament to the hypothesis that financial inclusion can also reduce banks' concentration and further lower intermediation costs. These results may explain Guerineau and Jacolin, (2014)'s suggestion that Sub-Saharan Africa (and SADC by extension) is the region with few bank branches, with hardly four bank branches for every 100 000 people. In the region bank branches are usually focused in the largest cities as result the degree of financial inclusion tends to be low. Neaimea and Gaysset (2018) further accentuate that financial systems that are not developed have few bank accounts and branches which results in low competitiveness that causes high banks' lending margins and low long-term interest rate which in turn do not provide savings incentives. Therefore, Neaimea and Gaysset (2018) recommend that actions to develop the financial system should initiated especially in places whereby investment opportunities will be met by a high social rate of return.

In terms of the other proxy of financial access, the findings alude to a negative and significant correlation between the number of ATMs per 1000 km and the GINI coefficient at the 1% significance level. The results are consistent with Ang (2009), Hoi and Hoi (2012) and Neaimea and Gaysset (2016) who discovered that a rise in the amount of ATMs per 100 000 adults reduces income inequality in India, Vietnam and MENA countries, respectively.

According the baseline model results, a significant and positive correlation exists between financial liberalization and inequality in our model. The coefficient of the Chinn-Ito index means that a 1 % surge in financial liberalisation increases inequality by 27 %. Bumann and Lensink (2016) concur with these findings and further emphasize that theoretically and empirically financial depth has a huge bearing on the impact that capital account liberalization has on inequality, which implies that an economy with deep financial markets is in a better position to have a significant income inequality-reducing impact. The majority of countries in SADC lack in terms of financial depth, which may be a reason why financial liberalisation does not significantly impact inequality in

the SADC member states. On the contrary the findings are not consistent with Ang (2009) who discovered that financial liberalization has a significant causal effect towards the Gini coefficient. According to Furceri and Loungani (2015) countries that have robust financial institutions may experience low volatility and improved consumption smoothing through capital account liberalization, however countries with weak institutions the inequality gap may be widened as well off agents would be favoured to obtain financial access.

In terms of control variables Inflation is negative and significant every model. This means that a reduction in inflation will cause a decrease in inequality. The correlation between inequality and inflation from recent literature is unclear, whereby there is both a negative and positive correlation. The findings are in line with scholars such as Bouvet (2010), Amornthum (2004), Albanesi (2007), Albanesi (2001), and Fowowe and Abidoye (2013) who envisage a negative relationship between inflation and inequality. Theoretically, the negative relationship between the two variables is explained by two channels: transferring funds from nominal creditors to nominal debtors and redistributing funds via the tax system (Yue, 2011), and scholars such as Maestri and Roventini (2012) hypothesised that inflation decreases average inequality and wealth.

On the contrary, Beck *et al.*, (2007), Hoi and Hoi (2012) and Chimboza (2014) predict a positive relationship between inequality and inflation. Theoretical justifications for this relationship propose that inflation affects income inequality through a variety of channels, such as shifting funds towards firm profits and away from wage earners (Fischer and Modigliani, 1978; Laidler and Parkin, 1975), redistribution towards nominal debtors and away from nominal creditors when interest rates on assets are presented in monetary terms that do not adjust for inflation and through affecting economic growth (Nantob, 2015).

With regards to government expenditure, the relationship is positive and significant statistically, which implies that an increase in government expenditure is linked to an increase in income inequality. These findings are consistent with Chimboza (2014) who discovered that in a sample of African countries an increase in public spending is associated with an increase in the Gini coefficient. Szymborska (2016) even surprisingly discovered that government social expenditure exacerbates income inequality in USA, reason being that some transfers are not enough to recompense for the concentration of

income and meaning that fiscal policy targets are not adequately created. On the contrary, the results are not in line with results from Clarke *et al.* (2003) and Nikoloski (2013) who did not consider the level of economic development in the countries under review. Chimboza (2014) further underscores that the level of economic development is important in the redistributive mechanisms in low-income countries and thus for the sample at hand the rich benefit more than the poor, resulting in wider income gaps.

On GDP per capita, the correlation between GDP per capita and inequality is negative and significant in all the models. These findings imply that a rise in per capita income will cause a decline in inequality in the selected SADC members. The results concur with Clarke *et al.*, (2003) and Bumann and Lensink (2016). Fomum and Aziakpono, (2016) quoting Beck *et al.* (2004 and 2007) indicates that economies with highly established financial systems witness faster declines in inequality thus inducing incomes of the poor to surpass the average growth rate of GDP per capita. On the other hand, other scholars which include Chimboza (2014) and Szymborska (2016) hypothesises a positive relationship between these variables.

With regards to trade openness, in all the models the relationship between exports and income inequality is significant and positive. The outcomes are in line with predictions of Park and Shin (2015) who postulates that the wage gap is widened between low-skilled and high-skilled through trade thus influencing inequality. This is because the high-skilled workforce benefits from skill-biased technological progress while low skilled-workers tend to continue earning low wages in agricultural sectors. Zielschot, (2013) also concurs with these findings and hypothesises that openness has an inequality-increasing effect.

The Sargan test of over identifying restrictions depicts that the instruments utilised are valid. With a p-value of 0.000 the study therefore fails to reject the null and concludes that all over identifying restrictions are valid. The results of the Arellano-Bond test for second-order serial correlation reveal that there is no second-order autocorrelation. With the AR (2) values above 0.5, we therefore fail to reject the null and conclude that there is no second-order autocorrelation.

5. SUMMARY AND CONCLUSION OF THE STUDY

The paper sought to investigate the relationship between financial sector development and income

inequality in SADC for the period 1980 until 2016. Not like earlier papers on the subject, the study measures financial development using different measures which are financial efficiency, financial depth, financial system stability, financial access and financial liberalization. Given the potential endogeneity between the variables of interest, the GMM technique was utilised.

The findings revealed that the effect of the various measures of financial development on income inequality is not the same. The effect that the the two variables of financial depth have on income inequality is mixed. A fascinating observation from the empirical results is that bank private credit to GDP is positively related to income inequality, which implies an elitist banking system that favours the wealthy over the poor and the entire population. On financial system stability, findings reveal that a higher bank credit to bank deposit ratio is associated with a rise inequality in the selected SADC members. These findings are a testament that a more unstable financial system is detrimental to the poor and those who are less financially well-off. The importance of financial inclusion or access cannot be underestimated; results reveal that a rise in the number of ATM outlets available to the public significantly reduces income inequality in the SADC region. An interesting finding about financial liberalization is that an improvement in financial liberalization causes an increase in income inequality in selected SADC countries. A possible reason for this finding is that many economies in the SADC lack financial depth, this finding is in agreement with Bumann and Lensink (2016). Financial efficiency seemingly has no significant ability to reduce inequality in the selected SADC member states. Finally, diagnostic test results were conducted in the model; these results reveal that all instruments used are valid and that there is no second-order autocorrelation.

The empirical findings in the study yield a number of policy recommendations. Firstly, financial access has emerged as another source in which income inequality can be minimised in Southern Africa. This then implies that authorities need to take decisive measures that will enable financial institutions to expand their geographical footprint especially in remote and rural areas by creating an enabling environment for financial institutions to offer financial services to the excluded members of the community. On the other hand the positive relationship between bank private credit to GDP and income inequality suggest that financial institutions alone are not capable of equitably distributing financial resources among all segments of

the economy in a manner that enables all economic agents to access credit. This highlights the importance of policy actions that are aimed towards financial inclusion in order to ensure that vast members of the population are afforded a chance to contribute in the financial sector. The significance of the relationship between financial system stability variables and income inequality implies that an unstable financial system is more likely to be detrimental to the poor and less financially fit members of the society. This therefore necessitates that central banks and other monetary authorities should actively regulate financial institutions in order to ensure that they operate in a prudent and safe manner without endangering the livelihoods of the poor and vulnerable members of society. Overall, the mixed results between the different dimensions of financial sector development and income inequality in the SADC region suggest that a blanket approach to financial sector development as a means to lessen income inequality in SADC is not the best approach. A specific approach concentrating on specific segments of the financial system may provide the desired results.

REFERENCES

- Adenutsi, D. E. (2014). Financial liberation and international remittances in Sub-Saharan Africa: a panel data analysis. (Doctoral dissertation, Stellenbosch: Stellenbosch University).
- Albanesi, S. (2007). Inflation and Inequality. *Journal of Monetary Economics*, 54, 1088-1114. <https://doi.org/10.1016/j.jmoneco.2006.02.009>
- Amornthum, S. (2004). Income Inequality, Inflation and Nonlinearity: The Case of Asian Economies. <http://www2.hawaii.edu/~amornthu/pdf/Paper610.pdf>.
- Ang, J. (2009). Financial Liberalization and Income Inequality. Munich Personal RePEc Archive. Paper No. 14496.
- Arellano, M., & Bond, S. (1991). Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. *Review of Economic Studies*, 58, 277-297. <https://doi.org/10.2307/2297968>
- Asad, H. (2012). Effective Financial development, Inequality and Poverty. (Doctoral Dissertation: University of Exeter, United Kingdom).
- Azleen R. A., & Mansur, M. (2017). What is the Link between Financial Development and Income Inequality? Evidence from Malaysia. Munich Personal RePEc Archive. MPRA Paper No. 79416.
- Banerjee, A. V., & Newman, A. F. (1993). Occupational Choice and the Process of Development. *Journal of Political Economy*, 101(2), 274-298. <https://doi.org/10.1086/261876>
- Batuo, M. E., Guidi, F., & Mlambo, K. (2010). Financial Development and Income Inequality: Evidence from African Countries. JEL Classification: G20, D63, 055.
- Baum, C. F., Schaffer, M. E., & Stillman, S. (2003). Instrumental Variables and GMM: Estimation and Testing. *Stata Journal*, 3(1), 1-3. <https://doi.org/10.1177/1536867X0300300101>
- Beck, T., Demirgüç-Kunt, A., & Levine, R. (2004). Finance, Inequality, and the Poor. *Journal of Economic Growth*, 12(1), 27-49. <https://doi.org/10.1007/s10887-007-9010-6>
- Beck, T., Demirgüç-Kunt, A., & Levine, R. (2007). Finance, Inequality and the Poor. *Journal of Economic Growth*, 12(1), 27-49. <https://doi.org/10.1007/s10887-007-9010-6>
- Becker, G. S., & Tomes, N. (1986). Human capital and the rise and fall of families. *Journal of Labour Economics*, 4(3), 1-39. <https://doi.org/10.1086/298118>
- Blundell, R., Bond, S. & Windmeijer, F. A. G. (2000). Estimation in Dynamic Panel Data Models: Improving on the Performance of the Standard GMM estimator. London, the Institute for Fiscal Studies. <https://doi.org/10.1920/wp.ifs.2000.0012>
- Bouvet, F. (2010). EMU and the Dynamics of Regional per Capita Income Inequality in Europe. *Journal of Economic Inequalities*, 8, 323-344. <https://doi.org/10.1007/s10888-010-9129-0>
- Bumann, S., & Lensink, R. (2016). Capital Account Liberalization and Income Inequality. *Journal of International Money and Finance*, 61, 143-162. <https://doi.org/10.1016/j.jimonfin.2015.10.004>
- Chimboza, M. (2014). The Effect of Financial Development on Income Inequality in Africa: Looking for a Needle in a Haystack? (Master's thesis: Jönköping University, Jönköping, Sweden).
- Chinn, M. D. & Ito, H. (2007). A New Measure of Financial Openness. *Journal of Comparative Policy Analysis*, 10(3), 309-322. <https://doi.org/10.1080/13876980802231123>
- Clarke, G., Xu, L. C., & Zou, H. (2003). Finance and Income Inequality: Test of Alternative Theories. World Bank Policy Research Working Paper 2984. <https://doi.org/10.2139/ssrn.364160>
- Demirgüç-Kunt, A. and Levine, R. (2009). Finance and Inequality: Theory and Evidence. NBER Working Paper Series. Working Paper 15275. <https://doi.org/10.1146/annurev.financial.050808.114334>
- Dhriif, A. (2015). Financial Development and the Growth-Inequality-Poverty Triangle. *Journal of the Knowledge Economy*, 6(4), 1163-1176. <https://doi.org/10.1007/s13132-014-0200-0>
- Easterly, W. (1993). How Much Do Distortions Affect Growth? *Journal of Monetary Economics*, 32(4), 187-212. [https://doi.org/10.1016/0304-3932\(93\)90002-V](https://doi.org/10.1016/0304-3932(93)90002-V)
- Fischer, S., & Modigliani, F. (1978). Towards an understanding of the real effects and costs of inflation *Weltwirtschaftliches Archiv* number, 114, 810-833. <https://doi.org/10.1007/BF02696381>
- Fomum, A. T., & Aziakpono, M. J. (2016). Financial development and income inequality in Africa: A panel heterogeneous approach. Paper presented at the Economic Society of South Africa at UCT on the 2nd-4th September 2015.
- Fowowe, B., & Abidoye, B. (2013). The Effect of Financial Development on Poverty and In-Equality in African countries. *The Manchester School*, 81(4), 562-585. <https://doi.org/10.1111/j.1467-9957.2012.02302.x>
- Furceri, D., & Loungani, P. (2015). Capital Account Liberalization and Inequality. IMF Working paper. 15/243. <https://doi.org/10.5089/9781513531083.001>
- Gadanecz, B., & Jayaram, K. (2009). Measures of Financial Stability: A Review. IFC Bulletin No 31.
- Galor, O., & Zeira, J. (1993). Income Distribution and Macroeconomics. *Review of Economic Studies*, 60 (1), 35-52. <https://doi.org/10.2307/2297811>

- Greenwood, J., & Jovanovic, B. (1990). Financial Development, Growth, and the Distribution of Income. *Journal of political Economy*, 98(5), 1076-1107.
<https://doi.org/10.1086/261720>
- Guerineau, S., & Jacolin, L., (2014). L'inclusion Financière en Afrique Sub-Saharienne: Faits Stylisés et Déterminants. *Revue d'économie financière*, 116, 57-80.
<https://doi.org/10.3917/ecofi.116.0057>
- Gumede, V., (2015). Poverty and Inequality in Africa: Towards the post-2015 Development Agenda for Sub-Saharan Africa. University of South Africa.
- Hariharan, G., & Marktanner, M. (2012). The Growth Potential from Financial Inclusion. ICA Institute and Kennesaw State University. http://www.frbatlanta.org/documents/news/conferences/12intdev/12intdev_Hariharan.pdf.
- Honohan, P., (2004). Financial Development, Growth and Poverty: How Close are the Links? World Bank Policy Research Working Paper, 3203, World Bank, Washington D.C.
<https://doi.org/10.1596/1813-9450-3203>
- IMF (International Monetary Fund). (2016). Selected Issues-Macroeconomic Issues. United Republic of Tanzania. IMF Country Report No. 16/255 International Monetary Fund Washington, D.C.
<https://doi.org/10.5089/9781498391177.002>
- Jaberi, K. N., Mohamadvand, N. M. R., & Noroozi, D. (2012). The Effect of Financial Development on Income Inequality in Iran. *Quarterly Journal of Economic Growth and Development Research*, 2 (6), 173-208.
- Jalilian, H., & Kirkpatrick, C. (2002). Financial Development and Poverty Reduction in Developing Countries. *International Journal of Finance and Economics*, 7, 97-108.
<https://doi.org/10.1002/ijfe.179>
- Jauch, H., & Muchena, D. (eds) (2011). Tearing us apart: Inequalities in Southern Africa. Johannesburg and Windhoek: OSISA & LaRRI.
- Jeanneney, S. G., & Kpodar, K. (2011). Financial Development and Poverty Reduction: Can There Be a Benefit Without A Cost? *The Journal of Development Studies*, 47(1), 143-163.
<https://doi.org/10.1080/00220388.2010.506918>
- Johnston, J., & DiNardo, J. (1997). *Econometric Methods*. International Editions. Singapore: Mcgraw-Hill. *Journal of Economic Literature*, 35, (3), 688-726.
- Kappel, V. (2010). The Effects of Financial Development on Income Inequality and Poverty, Proceedings of the German Development Economics Conference, Hannover 2010, No. 25.
<https://doi.org/10.2139/ssrn.1585148>
- King, G., & Levine, R. (1993). Finance and Growth: Schumpeter Might Be Right? *The Quarterly Journal of Economics*, 108 (3), 1076-1107.
<https://doi.org/10.2307/2118406>
- KPMG (Klynveld Peat Marwick Goerdeler). (2014). Insights into African Capital Markets: The African Debt Market. KPMG. https://www.africanbondmarkets.org/fileadmin/uploads/afdb/pdf/Publications/The_African_Debt_Market_KPMG.pdf.
- Kuznets, S. (1955). Economic Growth and Income Inequality. *The American Economic Review*, 45(1), 1-28.
- Laidler, D., & Parkin, M. (1975). Inflation: A survey. *Economic Journal* 85, 741-809.
<https://doi.org/10.2307/2230624>
- Law, S. H., & Tan, H. B. (2009). The Role of Financial Development on Income Inequality in Malaysia. *Journal of Economic Development*, 34(2).
<https://doi.org/10.35866/caujed.2009.34.2.008>
- Lenka, S. K., (2015). Measuring Financial Development in India: A PCA Approach. *Theory of Applied Economics*, 1, 187-198.
- Levine, R. (1997). Financial Development and economic Growth: Views and Agenda. *Journal of Economic Literature*, 688-726.
- Levine, R., Loayza, N., & Beck, T. (2000). Financial Intermediation and Growth: Causality and Causes. *Journal of Monetary Economics*, 46 (1), 31-77.
[https://doi.org/10.1016/S0304-3932\(00\)00017-9](https://doi.org/10.1016/S0304-3932(00)00017-9)
- Liang, Z. (2006). Financial Development and Income Distribution: A System GMM Panel Analysis with Application to Urban China. *Journal of Economic Development*, 31 (2), 1-21.
- Maestri, V., & Roventini, A. (2012). Inequality and Macroeconomic Factors: A Time-Series Analysis for a Set of OECD Countries. LEM Papers Series 2012/21, Laboratory of Economics and Management (LEM), Sant'Anna School of Advanced Studies, Pisa, Italy.
<https://doi.org/10.2139/ssrn.2181399>
- Maldonado, J. E. (2016). Financial Systems and Income Inequality (Doctoral dissertation: College of Europe).
- Medgyesi, M., & Tóth, I.G. (2009). Economic Growth and Income Inequalities. In Ward, T. Lelkes, O. Sutherland, O. and Tóth, I. G.(ed) *European Inequalities: Social Inclusion and Income Distribution in the European Union*. ISBN 978-963-7869-40-2; Budapest: TÁRKI Social Research Institute Inc.
- Meniago, C., & Asongu, S. A. (2018). Revisiting the Finance-Inequality Nexus in a Panel of African Countries. *Research in International Business and Finance*, 46, 399-419
<https://doi.org/10.1016/j.ribaf.2018.04.012>
- Hoi, L. Q., & Hoi, C. M. (2012). Financial Development and Income Inequality in Vietnam: An Empirical Analysis. *Journal of Economics and Development*, 14(2), 5.
- Naceur S. B., & Zhang, R. (2016). Financial Development, Inequality and Poverty: Some International Evidence. IMF Working Paper. WP/16/32.
<https://doi.org/10.5089/9781498359283.001>
- Nantob, N. (2015). Income Inequality and Inflation in Developing Countries: An Empirical Investigation. *Economics Bulletin*, 35(4), 2888-2902.
- Nasifeh, B., & Khosrow, P. (2012). Financial Development and Income Inequality Relationship in Iran. *Middle-East Journal of Scientific Research*, 12(7), 906-914.
- Neaime, S., & Gaysset, I. (2018). Financial Inclusion and Stability in MENA: Evidence from Poverty and Inequality', *Finance Research Letters*, 24, (C), 230-237.
<https://doi.org/10.1016/j.frl.2017.09.007>
- Neaimea, S., & Gaysset, I. (2016). Financial Exclusion and Stability in MENA: Evidence from Poverty and Inequality. *Lecture and Working Paper Series No. 4*, 2016.
- Nickell, S. J., (1981). Biases in Dynamic Models with Fixed Effects. *Econometrica*, 49, 1417-1426.
<https://doi.org/10.2307/1911408>
- Nikoloski, Z. (2013). Financial Sector Development and Inequality: Is there a Financial Kuznets Curve? *Journal of International Development*, 25, 897-911.
<https://doi.org/10.1002/jid.2843>
- Nyawata, O., & Bird, G. (2004). Financial Liberalisation in Southern Africa: An Assessment. *Development Policy Review*, 22(3), 287-307.
<https://doi.org/10.1111/j.1467-7679.2004.00250.x>
- Pagano, M., (1993). Financial Markets and Growth: an Overview. *European Economic Review*, 37(2), 613-622
[https://doi.org/10.1016/0014-2921\(93\)90051-B](https://doi.org/10.1016/0014-2921(93)90051-B)
- Park, D., & Shin, K. (2015). Economic Growth, Financial Development and Income Inequality. *Emerging Markets Finance and Trade*, ADB Economics Working Paper Series. No. 441.
<https://doi.org/10.2139/ssrn.2707517>
- Rajan, R. G., & Zingales, L. (2003). The Great Reversals: The Politics of Financial Development in the Twentieth Century. *Journal of Financial Economics*, 69(1), 5-50.
[https://doi.org/10.1016/S0304-405X\(03\)00125-9](https://doi.org/10.1016/S0304-405X(03)00125-9)

- Roodman, D. (2009). How to do Xtabond2: An Introduction to Difference and System GMM in Stata. *The Stata Journal* 9, 1, 86-136.
<https://doi.org/10.1177/1536867X0900900106>
- Seven, U., & Coskun, Y. (2016). Does Financial Development Reduce Income Inequality and Poverty? Evidence from Emerging Countries. *Emerging Markets Review*, 26, 34-63.
<https://doi.org/10.1016/j.ememar.2016.02.002>
- Shahbaz, M. (2009). Financial Performance and Earnings of Poor People: A Case Study of Pakistan. *Journal of Yasar University*, 4(16), 2557-2572.
- SARB (South African Reserve Bank). (2014). Financial Sector Development and Economic Growth in SADC. SADC. <https://www.sadcbankers.org/Lists/News%20and%20Publications/Attachments/197/FSD%20Final%20August%202014.pdf>
- Szyborska, H. K. (2016). Financial Sector Transformation and Income Inequality an Empirical Analysis. *Financial Internet Quarterly*, (2), 36-48.
<https://doi.org/10.1515/figf-2016-0142>
- Yue, H. Y. (2011). Income Inequality, Economic Growth and Inflation: A Study on Korea. *Journal of Economic Research*, 2(5).

Received on 20-10-2019

Accepted on 13-11-2019

Published on 31-12-2019

DOI: <https://doi.org/10.6000/1929-7092.2019.08.128>

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