Financial development and income inequality in ECOWAS Countries

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DOI 10.56201/ijebm.v10.no9.2024.pg12.20

Abstract
This study investigated the relationship between financial development and income inequality in ECOWAS nations from 1986 to 2023. ARDL / PMG non-linear panel approach was used in the study, which used secondary data from the World Development Indicators (WDI). The dependent variable is income inequality of the ten countries chosen to represent the ECOWAS in this study base on availability of data, they are: Ghana, Guinea, Senegal, Liberia, Mali, Niger, Nigeria, and Cote d'Ivoire. The explanatory variables include; real income, inflation, government spending financial sector development. The findings showed a strong long-term link between real income, inflation, government spending financial sector development, and income inequality in ECOWAS member states. The findings showed that real income had a favorable and considerable short-term impact on income inequality in all ECOWAS countries. On the other hand, inflation is negatively correlated with income inequality. Furthermore, there is a weak and inverse relationship between government expenditure and income inequality in ECOWAS countries. Income inequality and financial sector development are positively correlated. Based on the result of our findings the recommend that government of ECOWAS countries should create a good financial environment to enable the poor to reach a better life opportunity. For this, regulations that make financial resources difficult to access should be audited and access to capital should be facilitated. Thus, entrepreneurial activities may develop and productivity increases throughout the economy.

Keywords: *Financial Development, Income Inequality, Greenwood Jovanovic Hypothesis*

Introduction

Development and proper management of financial sector helps in faster and sustained economic growth. First, for example, easy access to financial resources boosts investment activities that directly increase the income of poor segments of population by generating employment opportunities. Second, easy access to financial resources provides various opportunities and enables the poor segments of population among other to increase human capital formation by investing in education, health and various aspects of socioeconomic development of their children and family members. Third, financial development reduces income and wealth inequalities and mitigates various problems, which arises due to increasing income inequality of such type and so on and so forth. Last but not least, development and proper management of financial sector might

also be helpful in protecting the indexed income of elite class via easy access to financial resources during the instances of high inflations since inflation is very harmful for those who earn fixed income as high inflation reduces their purchasing power. Financial development may affect income inequality by various channels. For example, financial development stimulates capitalization that affects economic activity and hence economic growth. Economic growth affects income inequality via trickle-down channel. Furthermore, financial sector also provides easy access of poor segments of population to financial resources (Galor and Zeira 2020).

This easy access to financial resources enables poor segments of population to start small business ventures or help in running existing small projects (enterprises). This creates employment opportunities and reduces income inequality. The easy access to financial resources enables poor people to feed. The literature has recently begun to draw attention to the effect of financial development on income inequality (Haan and Sturm 2021). The current literature presents three disparate hypotheses regarding the relationship between financial development and income inequality. The first is the inequality-widening hypothesis that indicates that financial development is a cause of an enhancing / expanding influence on income inequality. This hypothesis emphasizes that in countries with particularly weak institutions, people with rich and good connections might benefit from the process of financial development. The financial system generally directs funds to people that are rich, easily able to offer collateral and are more likely to pay credits. As the financial sector continues to grow, the rich get more funding from this sector. However, the poor, who do not offer collateral, are neglected and may not receive credit or debt from this sector. As a result of this tendency, poor people do not get adequate financial services. For this reason, it is much harder for the poor to migrate to cities, spend enough money on human capital or education and start a new business (Clarke et al. 2019).

Eventually, the poor are only equipped with primary education and participate in the unskilled labor market with low wages (Ahmed and Masih 2020). The second is the inequality-narrowing hypothesis, which indicates that financial development is a mitigating effect on income inequality. This hypothesis, proposed by Galor and Zeira (2020) and Banerjee and Newman (2019), implies that the development of the financial sector will facilitate the access of the poor to the loans. Such a financial system might provide equal opportunities for talented and ambitious low-income individuals (Law and Tan 2021). Individuals are considered to inherit wealth at different levels. It is stated that those with greater wealth have invested more in education and have directed more qualified work. On the other side, individuals with less initial wealth have to invest in human capital to reach higher incomes. In an underdeveloped financial system where borrowing is difficult and costly, poor individuals will not be able to find credit for human capital investments. Moreover, this structure will continue for new generations. Poverty will be transferred to other generations as well. Therefore, as the financial system grows and develops, wider credit opportunities emerge. The poor might access opportunities to credit for human capital investments and increase their potential to start their own business and gain earnings (Abosedra et al. 2021; Ahmed and Masih 2020). Consequently, income inequality decreases with the development of the financial sector.

The third hypothesis, called the Greenwood-Jovanovic hypothesis and based on the theoretical approach of Kuznets (2018), indicates that there is a non-linear relationship between financial

development and income inequality. According to this approach, financial markets are growing very slowly in the early stages of economic development. Due to the insufficient financial infrastructure at this stage, only the rich might access credit facilities. In the middle stages of the economic development process, the financial superstructure begins to emerge, economic growth and savings grow, and rich people benefit much more from this process of progress. The inequality between the poor and the rich begins to expand. In the last stage of economic development (maturity phase), financial markets have reached a certain volume, the infrastructure required for financial services has been established, and credit facilities have become accessible to all individuals, including poor individuals. As the financial system reaches a certain level of development, the development of the financial system begins to cause a mitigating effect on income inequality (Greenwood and Jovanovic 1990). This relationship between financial development and income inequality is also called the inverted U-shaped hypothesis. The aim of this paper is to determine the relationship between financial development and income inequality in ECOWAS countries during the period 1980-2022.

2. Literature Review

The first section focus on the conceptual clarification. Financial development is generally defined as the improvement in quantity, quality and efficiency of financial intermediary services. Whilst theoretical economists were trying to model the hypothetical relationship between financial development and economic growth, empirical researchers were examining the appropriateness of the different indicators for financial intermediation. As the empirical literature on this issue has evolved, monetary aggregate measures have come to the fore. A number of studies have chosen an alternative set of monetary aggregates to investigate the relationship between financial intermediation and growth. There are few indicators that have been suggested as the proxy of financial intermediation, depending on the specific characteristics of the financial system. The chosen variables are relevant to the size, the efficiency and/or the relative significance of different financial intermediaries in the whole financial system. Initially, the empirical studies focused on the ratio of different types of monetary aggregates (such as M1, M2 and M3) to nominal GDP as the financial sector indicators because the variables are widely available following most of the literature, financial development is measured as the ratio of monetary survey to GDP (Jung, 2018; Liu et al.,2020; Darrat, 2019). The use of the monetary aggregates is based on the McKinnon-Shaw framework, which reveals that a monetized economy reflects a highly developed capital market (World Bank,2021; Calderon and Liu, 2023).

This view of point is consistent with the literature, as usually defines financial development as the improvement in quantity, quality and efficiency of financial intermediary services. In other words, a high degree of monetization, therefore, should be positively related to economic performance. Under this assumption, many researchers use this measure as financial depth (Goldsmith, 2018; McKinnon, 1973; King and Levine, 2022; Ram, 2019; Schich and Pelgrin, 2022). The monetary indicators, however, have been criticized as they measure the extent of monetization rather than financial deepening. They may not accurately represent the effectiveness of the financial sector in ameliorating informational asymmetries and easing transaction costs as well as the measure takes into account deposits by one financial intermediary in another, which may incur double counting problem (Levine et al., 2020).

This section centers on empirical review. Although the theoretical literature on the relationship between financial development and income inequality goes backward (Greenwood and Jovanovic 1990; Banerjee and Newman 1993; Galor and Zeira 1993), the empirical literature has recently improved. Empirical studies are seen to cover a period of about 15 years. The first reason for these developments is the calculation of new income inequality indicators for countries in recent years. With this data, researchers are able to conduct further studies on income inequality in underdeveloped and developing countries. For example, the Texas Inequality Project (UTIP) sets out a calculation method to measure and explain the movements of inequalities in wages and earnings in the world.

The data set, called the Estimated Household Income Inequality (EHII), provides income inequality indicators covering the period 1963 to 2015 for 151 countries. In addition, the World Income Inequality Database (WIID) provides comprehensive statistics on income inequality for approximately 172 developed, developing and transition countries. Finally, Solt (2019) develops the data set called the Standardized World Income Inequality Database (SWIID). This method is developed to solve the data problem for countries. Because international research on the causes and consequences of income inequality has been inadequate due to limitations of existing data sets. SWIID produces indicators such as gross and net income inequality for 192 countries. The second reason for the recent development in the literature is the advances in econometric estimation methods.

Beck et al. (2020) investigate the relationship between financial development and income inequality in 52 developed and developing countries between 1980- 2000 using Panel OLS approach, and the result shows that the inequality narrowing hypothesis is supported.

Clarke et al. (2022) examines the relationship between financial development and income inequality in 83 countries from 1980- 2020 using Panel ordinary least square and 2 stage least square regression. The inequality narrowing hypothesis is supported. The Greenwood-Jovanovic hypothesis is rejected.

Liang (2021) analyzes the relationship between financial development and income inequality China between 1991 and 2020 using Generalized Momentum Method. The result of the finding supported inequality narrowing hypothesis and rejected Greenwood Jovanovic hypothesis

Law and Tan (2020) investigate the relationship between financial development and income inequality in Malaysia for the period of 1980- 2019 using Autoregressive Distributed Lag (ARDL) approach to co-integration. The result of their findings reveals that there is no significant relationship between financial development and income inequality.

Ang (2022) investigate the relationship between financial development and income inequality for India economy between 1991- 2021 using Autoregressive Distributed Lag (ARDL) approach to co-integration. The result of their findings reveals that the inequality narrowing hypothesis is supported.

Batuo et al. (2024) investigate the relationship between financial development and income inequality on 22 African countries during the period 1990- 2023 using the GMM methodology.

The result of their findings reveals that the inequality narrowing hypothesis is supported while Greenwood Jovanovic hypothesis is rejected.

3. Methodology

Model Specification and Estimation Procedure

Utilizing the study's theoretical framework and Ubaka et al.'s research as a guide. The following describes the model used in this study:

$INE = \beta_0 + \beta_1 Yt + \beta_2 INF + \beta_3 Gt + \beta_4 FD + \mu$ 3.1

Therefore, equation 3.1 is the designated model for this study. Where INE represent income inequality, Yt represent real income, Gt represent government expenditures, and INF represent inflation. The variables on the right side of equation 3.1 are the indexes of financial sector development. . The work make use of ARDL / PMG panel technique which are objective, even when endogenous factors exist. Furthermore, it works even when there is a discrepancy in the variables' optimal delay durations. The fundamental ARDL model is defined as follows: $Y_{it} = \sum_{j=1}^{p} \lambda_{ij} Y_{i,t-j} + \sum_{j=0}^{q} \delta'_{ij} X_{i,t-j} + \mu_i + \epsilon_{it}$ 3.2

where xi, t - j is the vector of independent variables, yit is the dependent variable, λij is the dependent variable's lag coefficient, δij ′ is the representation of the independent variable's lags and current coefficients, μi is the fixed effect, and ϵit is the error term. In order to establish a lasting connection between the variables in equation 3.2

4.4. Panel Estimation Results and Discussion

ARDL / PMG non-linear panel approach was used to estimate the data set after Pedroni (2000, 2004) and Kao (1999) co-integration tests confirmed a long-term link. Income Inequality (INE) is the model's dependent variable, and the findings are shown in Tables 4.5.

Table 4.5: Panel ARDL/PGM Estimation Results (Dependent Variable = INE i.e. Income Inequality)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
SHORT RUN MODEL				
COINTEQ01	-0.713061	0.022150	-4.210152	0.0000
D(Yt)	0.053046	0.001035	3.693253	0.0020
D(Yt(-1))	0.014772	0.260411	0.192070	0.2740
D(INF)	-0.030121	0.005668	-1.606002	0.0105
D(INF (-1))	0.008110	0.002741	0.302137	0.1403
D(Gt)	-0.410612	0.050228	-1.810050	0.0512
D(Gt (-1))	-0.014006	0.031320	-0.454900	0.6010
D(FD)	-0.271087	0.410035	-2.050911	0.0410
D(FD (-1))	0.075340	0.021684	2.017003	0.1020

C	4.014020	2.141062	1.205000	0.0140

Authors' computation from data 2024

4.5 Short Run Estimation

The findings showed that real income had a favorable and considerable short-term impact on income inequality in all ECOWAS countries. A 1% increase in real income will result in a 5.3% rise in income inequality. On the other hand, inflation is negatively correlated with income inequality. Income inequality in ECOWAS countries would decrease by 3% for every 1% rise in inflation. Furthermore, there is a weak and inverse relationship between government expenditure and income inequality in ECOWAS countries. For every 1% increase in government spending in the ECOWAS, income inequality will fall by 41%. Income inequality and financial sector development are positively correlated. For every 1% rise in financial sector development in the ECOWAS countries, there will be a 27% decrease in Income inequality. The outcome is in line with Liang (2021) study. However, it contradicts the findings of Law and Tan (2020) study. If there are any changes among the regresses, the income inequality model will return to equilibrium fast, as shown by the speed of adjustment, or 71.3%, the panel estimate error term. This aligns with Ang (2022) research.

LONG RUN MODEL

	Coefficient	**Std. Error**	**t-Statistic**	**Prob.***
Yt	0.300710	0.081242	3.593001	0.0000
INF	-0.103062	0.000611	-3.479470	0.0002
Gt	-0.058210	0.016801	-2.710035	0.0001
FD	-0.012675	0.002580	-3.037920	0.0000
Mean dependent var	-0.020099			
S.E. of regression	0.432650			
Sum squared resid	12.31070			
Log likelihood	13.54987			
S.D. dependent var	1.055700			
Akaike info criterion	1.022845			
Schwarz criterion	1.649105			
Hannan-Quinn criter.	0.680203			

4.6 Long Run Estimation

Table 4.6's lower section shows the long-run component of the non-linear panel ARDL. Income inequality will rise in ECOWAS countries by 30.07% for every 1% increase in real income. A plausible rationale for this result might be that income inequality continue to widen in ECOWAS countries as a result of lopsided real income. Every 1% increase in inflation in the ECOWAS will result in a 10.3% decrease in the region's Income inequality. Additionally, there is a negative and negligible correlation between the total amount of government spending and Income inequality. Every 1% increase in government spending in the ECOWAS countries will result in a 5.8% decrease in Income inequality. Furthermore, for every 1% rise in financial development in the ECOWAS countries, income inequality will decrease by 10.4%. It gives further weight to the conclusion reached by Beck et al. (2019) but does not support the work of Clarke et al. (2022).

5. Conclusion and Policy Recommendations

Using the ARDL / PMG non-linear panel approach, this study investigated the relationship between financial development and income inequality in ECOWAS nations from 1986 to 2023. The findings showed a strong long-term link between real income, inflation, government spending financial sector development, and income inequality in ECOWAS member states. The findings showed that real income had a favorable and considerable short-term impact on income inequality in all ECOWAS countries. On the other hand, inflation is negatively correlated with income inequality. Furthermore, there is a weak and inverse relationship between government expenditure and income inequality in ECOWAS countries. Income inequality and financial sector development are positively correlated. Indirect policies to be followed are:

1. Government of ECOWAS countries should create a good financial environment to enable the poor to reach a better life opportunity. For this, regulations that make financial resources difficult to access should be audited and access to capital should be facilitated. Thus, entrepreneurial activities may develop and productivity increases throughout the economy. 2. Government and monetary authority should take measures to reduce constraints and disruptions in the financial markets when designing policies to combat poverty and economic growth of West African economies. 3.Proper attention of policy makers to the financial sector can prevent the mismanagement in the monetary and fiscal policy action, help reduce income inequality and therefore save ECOWAS countries from a big disaster.

References

Ahmed, A. R., Masih, M. (2020). What is the link between financial development and income inequality? evidence from Malaysia. *MPRA Paper* No. 79416.

Ang, J. B. (2022). Finance and inequality: the case of India. *Southern economic journal*, 76(3), 738-761

Banerjee, A. V., Newman, A. F. (2019). Occupational choice and the process of development. *Journal of political economy*, 101(2), 274-298. DOI: 10.1086/261876

Batuo, M. E., Guidi, F., Mlambo, K. (2024). Financial development and income inequality: Evidence from African Countries. MPRA Paper No. 25658.

Beck, T., Demirgüç-Kunt, A., & Levine, R. (2020). Financial institutions and markets across countries and over time-data and analysis. World Bank Policy Research Working Paper 4943

Calderon C, Liu L (2023). The direction of causality between financial development and economic growth. *J. Dev. Econ.*, 72: 321-334.

Clarke, G. R., Xu, L. C., Zou, H. F. (2022). Finance and income inequality: what do the data tell us?. *Southern economic journal*, 578-596

Darrat A.F. (2019). Are financial deepening and economic growth causally related? Another look at the evidence. Int. Econ. J., 13: 19-35.

Dickey, D. A., Fuller, W. A. (1981). Likelihood Ratio Statistics for Autoregressive Time Series with A Unit Root. Econometrica: *Journal of the Econometric Society*, 1057-1072. DOI: 10.2307/1912517

Engle, R. F., Granger, C. W. J. (1987). Co-integration and Error Correction: Representation, Estimation, and Testing. Econometrica: *Journal of the Econometric Society*, 251-276. DOI: 10.2307/1913236

Galor, O., Zeira, J. (2020). Income distribution and macroeconomics. The review of economic studies, 60(1), 35-52.

Greenwood, J., jovanovic, B. (1990). Financial development, growth, and the distribution of income. *Journal of political Economy*, 98(5, Part 1), 1076-1107. DOI: 10.1086/26172

Goldsmith, R. W. (2018). Financial structure and development. Yale: Yale University

Jung WS (1986). Financial development and economic growth: international evidence. Econ. Dev. Cultural Change, 34: 336-346.

Law, S. H., Tan, H. B., Azman-Saini, W. N. W. (2021). Financial development and income inequality at different levels of institutional quality. *Emerging Markets Finance and Trade*, 50(sup1), 21-33.

Levine, R. (2022). Finance and growth: theory and evidence. Handbook of economic growth, 1, 865-934. DOI: 10.1016/S1574-0684(05)01012-9.

King, R. G., & Levine, R. (2022). Finance and growth: Schumpeter might be right. The *Quarterly Journal of Economics*, 108, 717-737

Levine, R., Loayza, N., & Beck, T. (2022). Financial intermediation and growth: Causality and causes. *Journal of Monetary Economics*, 46, 31-77.

Li, H., Lyn, S., & Zou, H.-F. (2022). Explaining international and intertemporal variations in income inequality. Economic J

Liang, Z. (2021). Financial development and income distribution: A system GMM panel analysis with application to urban China. *Journal of Economic development*. 2, 1-21

McKinnon, R. I. (1973). *Money and capital in economic development*. Brookings Institution

Solt, F. (2019). Standardizing the world income inequality database. Social Science Quarterly, 90(2), 231-242. DOI: 10.1111/j.1540-6237.2009.00614.x

World Bank (2021a) World Bank country and lending groups. https://datahelpdesk.worldbank.org/knowledgebase/artic les/906519

World Bank (2021b) World Bank indicators. http://data.worldbank.org/indicator