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Financial Deepening and Poverty Reduction in Nigeria

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Abstract: This study investigates the relationship between financial deepening and poverty reduction in Nigeria from 1994 to 2022. Using an Autoregressive Distributed Lag (ARDL) model Financial Inter-Relation Ratio (DFIR) and Finance Ratio (FRT) demonstrate negative relationships with MPI, suggesting that enhanced interconnections and relative growth in the financial sector can lead to poverty reduction. The ARDL long-run result shows that; The Ratio of Money to National Income (MNI) shows a positive relationship, signalling potential adverse effects on poverty, warranting careful policy considerations. The small positive coefficient of the Financial Accessibility Ratio (FAC) emphasizes quality over quantity in financial access. Interest Margin (NIM) was found to have a positive and significant impact, stressing the importance of efficiency and competition within the financial sector. Based on the findings, the study recommended that financial institutions and policymakers should develop and implement long-term strategies focusing on financial deepening to ensure sustainable poverty reduction. Recognize financial deepening as a central policy pillar in national development planning.

Keywords: financial deepening, poverty reduction, multidimensional poverty index, financial development, finance ratio.

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1. Introduction

Financial deepening is a critical aspect of the economic growth and development of a nation. It pertains to an increased provision of financial services with a wider choice of services geared to all levels of society [1,2]. In the context of Nigeria, it plays a pivotal role in alleviating poverty. This article will extensively explore the relationship between financial deepening and poverty reduction in Nigeria, examining the various factors, policies, challenges, and implications. Financial deepening is defined as the increase in the supply of financial assets in the economy [3]. It involves expanding access to financial services and providing a variety of financial products and services, including savings, credit, insurance, and pensions. The importance of financial deepening cannot be overemphasized as it enhances economic growth, improves income distribution, and reduces poverty levels [4,5]. The key indicators of financial deepening include the ratio of money supply to GDP, the ratio of private sector credit to GDP, and capital market development. Nigeria has seen a growth in these indicators over the past decades, which reflects a movement towards financial maturity [6].

Poverty remains a significant challenge in Nigeria, with over 40% of the population living below the poverty line [7]. The geographical distribution of poverty is unequal, with the northern region being the most affected. Some factors contributing to poverty in Nigeria include unemployment, corruption, inadequate infrastructure, and illiteracy. The government has implemented various strategies to combat poverty, but challenges

persist [8]. Financial deepening contributes to economic growth by providing the necessary financial resources for investment in various sectors. In Nigeria, improved access to finance has been instrumental in supporting small and medium-sized enterprises (SMEs), which are vital in job creation and poverty reduction [9,10].

Despite the potential benefits, there are challenges in deepening financial services in Nigeria. These include regulatory constraints, lack of financial literacy, and infrastructural deficiencies [11]. Nigeria has made extensive efforts to combat poverty while enhancing the financial sector. Policies and programs have been employed to strengthen the financial system, yet the performance of sectors like manufacturing has been inconsistent. The financial sector's role in poverty remains largely unexplored, despite its growth and diversification in Sub-Saharan Africa. Challenges persist in the Nigerian financial system, impeding its potential to drive economic growth [12,13,14].

The issue of financial deepening and its relationship with poverty reduction in Nigeria has been a subject of study and debate for some time. A critical problem in the existing literature and studies is the lack of use of valid indicators to measure and analyze financial deepening. This oversight has been manifested in multiple ways: The Financial Inter-Relation Ratio is an essential indicator that represents the degree of interconnection between financial institutions and sectors. Its absence in studies leaves a gap in understanding the systemic relationship within the financial system [15]. Finance Ratio which reflects the proportion of the financial system in the total economy, the finance ratio provides insights into the depth of the financial system. Ignoring this aspect limits the comprehension of financial deepening in the context of the entire economy [16]. Ratio of Money to National Income which reveals the level of monetization of an economy. By not considering this aspect, the studies miss an essential indicator of the demand for money in the economy, thus lacking a complete understanding of financial deepening [17]. Financial Accessibility Ratio which defines the ease with which individuals and businesses can access financial services. The failure to consider this ratio obscures the understanding of how inclusive the financial services are, and hence how they could impact poverty reduction [18]. Interest margin which is the difference between lending and borrowing rates, indicates the efficiency and competitiveness of the financial sector. By not incorporating this measure, studies overlook an essential element in understanding the cost of financial intermediation [19].

In summary, the lack of utilization of these critical and valid indicators in past studies on financial deepening in Nigeria leads to a truncated understanding of the concept. This omission constrains the formulation of effective policies and interventions aimed at leveraging financial deepening for poverty reduction. The absence of these comprehensive measures results in an incomplete analysis, affecting both the theoretical grounding and practical implications of financial deepening in the Nigerian context.

The study identifies a gap in understanding the implications of financial development on poverty generation in Nigeria, especially within selected real studies. The inconsistent performance of sectors like manufacturing has contributed to unidimensional poverty and an increase in demand for imported goods [20]. One major challenge is the lack of access to finance, especially for small-scale firms, and the apparent superficial nature of the financial system in Nigeria [21]. This study aims to evaluate how poverty generation is influenced by financial development in Nigeria, focusing on key objectives such as:

1) Examining the influence of the financial inter-relation ratio on MPI in Nigeria.
2) Evaluating the inter-relationship between finance ratio and MPI in Nigeria.
3) Estimating the effect of the ratio of money to national income on MPI in Nigeria.
4) Investigating the relationship between the financial accessibility ratio and MPI in Nigeria.
5) Investigating the relationship between net interest margin and MPI in Nigeria.

The study's significance lies in its contributions to scholars and policymakers. It

provides a fundamental understanding of the relationship between financial development and poverty reduction in Nigeria. The relevance of the study extends to its examination of the implications of financial development on poverty opportunity, focusing on the period from 1994 to 2022 and considering selected dimensions due to data availability [22,23]. The study aims to fill a critical gap in the existing literature by examining the complex relationship between financial institutions and poverty opportunities in Nigeria. Evaluating various financial ratios and indices over a historical period sheds light on the positive and negative influences that financial development may have on multidimensional poverty within the country. The findings and recommendations of this research could have substantial implications for future policy development, poverty reduction strategies, and academic research in this area. By offering a comprehensive analysis, this study contributes significantly to the ongoing dialogue regarding financial development and poverty alleviation, particularly in the context of a developing nation such as Nigeria.

1.1. The Finance-Growth theory revisited

The Finance-Growth theory has been central to understanding the role of financial institutions in economic development. This theory is developed on the idea that financial intermediation plays a key role in linking savings and investment, thus promoting economic growth. It also encompasses the spectrum of thought that argues for the relationship between financial development and economic growth [16,24,25]. A strand of this theory emphasizes the 'supply-leading' hypothesis, suggesting that the establishment of financial institutions and markets catalyzes industrialization and technological innovation by making resources available to the most promising sectors of the economy [26,27]. The creation of an efficient financial system is seen as a stimulus that leads the growth in the real sector. Conversely, the 'demand-following' hypothesis postulates that the financial system develops as a response to the needs of the growing economy. Economic growth leads to a growing demand for financial services, and the financial system evolves to meet this demand [14,28,29].

1.2. Financial intermediation theory

The theory of financial intermediation underscores the role of financial institutions in facilitating the efficient allocation of resources [30]. This theory can explain how financial deepening enhances the availability and allocation of funds for various economic activities, including those that directly target poverty reduction.

1.3. Schumpeter's theory of economic development

Schumpeter's theory emphasizes the role of financial systems in fostering innovation and entrepreneurship [15]. Applying this to Nigeria's context, financial deepening can support entrepreneurial activities that create employment and income, contributing to poverty reduction.

1.4. Endogenous growth theory

Endogenous growth theory posits that economic growth is primarily a result of internal factors, such as human capital and innovation, rather than external forces [31]. This theory can help understand how financial deepening in Nigeria, by nurturing innovation and education, can lead to sustainable growth and poverty alleviation.

1.5. Theory of financial inclusion

The theory of financial inclusion highlights the importance of broad access to financial services for overall economic development [32]. It reflects the direct link between financial deepening and poverty reduction by focusing on how access to

financial services empowers individuals, especially marginalized groups.

1.6. Inequality and poverty traps theory

This theory, which examines the self-reinforcing mechanisms that perpetuate poverty and inequality [33], provides insights into how financial deepening can break poverty traps by offering financial opportunities to the poor.

1.7. McKinnon's complementarity hypothesis

This hypothesis asserts that a well-functioning financial system complements other economic activities and fosters overall economic growth [24]. This perspective can explain how financial deepening in Nigeria can contribute to broad economic development, including poverty reduction.

1.8. Conceptual review

Financial deepening refers to the expansion and diversification of financial services, the increase in financial assets, and the growth of financial institutions within an economy [4]. It includes elements such asthe Financial Inter-Relation Ratio which measures the degree of interconnectedness between financial institutions [30]. Finance Ratio which indicates the size of the financial system relative to the total economy [16]. Ratio of Money to National Income which represents the level of monetization of an economy [17]. Financial Accessibility Ratio refers to the ease of access to financial services by individuals and businesses [18]. Interest Margin which reflects the efficiency and competitiveness of the financial sector, is measured as the difference between lending and borrowing rates [19].

Poverty reduction involves strategies and interventions aimed at alleviating poverty and improving the living standards of the population, particularly those below the poverty line [7]. Financial development is not just about the growth of financial institutions; it also includes the provision of a wide array of financial services that can enhance the welfare of the general populace. This is especially relevant in developing countries like Nigeria, where financial inclusion is a critical factor in poverty alleviation. Goldsmith [16] had earlier emphasized the positive relationship between financial development and growth, but the link to poverty reduction is equally compelling. By making financial services more accessible to marginalized sections of society, financial institutions can empower individuals to undertake entrepreneurial activities, access education, and avail healthcare services. The liberalization and strengthening of the financial sector can thus have a profound impact on socio-economic development, helping in the reduction of poverty and inequality.

1.9. Empirical review

The empirical examination of financial deepening and its impact on poverty reduction has been a central focus in contemporary economic literature. Presenting some, we see that;

Okoduwa [2] investigated the effect of financial development and financial inclusion on poverty in Nigeria for the period 1981 to 2020. The study utilized causality and autoregressive distributed lag (ARDL) techniques. In the study financial development was proxy by two indicators – banking sector development and stock market development. The results of the study indicated that banking sector development contributed significantly to poverty reduction in Nigeria while stock market development and financial inclusion had insignificant effects on poverty reduction in Nigeria. The causality results showed unidirectional causality from poverty to banking sector development and financial inclusion. The study concluded that the relationship between financial development and poverty reduction depends on the measurement of

financial development.

Chenghui and Dilanchiev [5] analyze the effect of financial deepening on poverty in the emerging Black Sea market economies with new-generation causality analysis techniques utilizing panel data from 1996 to 2020. The econometric method of panel data is applied to the six emerging economies. It can be seen that the causal relationship between domestic loans to the private sector (DPS) and per capita household consumption expenditure (HCE) is significant in Georgia, Turkey, and Ukraine. In addition, a bidirectional causality relationship is observed in Georgia. Romania, Georgia, Turkey, and Ukraine are countries where the causality between HCE and DPS is significant. It is concluded that DPS increases per capita HCE and thus effectively reduces poverty.

Hua and Wenliang [10] use the fixed effect quantile regression model and the mediating effect model to empirically analyze the poverty reduction and income increase effect and mechanism of inclusive finance. The main conclusions are as follows: inclusive finance development is conducive to poverty reduction and income increase of rural residents, which affects more on rural low-income groups compared with middle and high-income groups. However, for rural low-income groups, the effect of poverty reduction and income increase is mainly achieved through the intermediary effect of economic growth. Consequently, this paper puts some policy suggestions forward such as improving the supply structure combined with optimizing the supply mode of inclusive finance, deepening the development of the poverty alleviation mode of "inclusive finance + industrial projects" and improving the financial quality of rural residents.

Shi et al., [14] explore the role of financial development indicators on income inequality in Australia using yearly data from 1980 to 2014. The study also accounts for other potential determinants of income inequality such as inflation, per capita income, and trade openness. The results from Bayer and Hanck's [34] cointegration test confirm the long-run equilibrium relationship across the models. Similarly, the long-run estimates from the quantile regression models and non-parametric approach indicate that the financial development indicators, foreign direct investment (FDI) inflows, inflation, and trade openness have a significant positive impact on income inequality in Australia. However, the growth in per capita income plays the opposite role.

In their study, Zhang and Naceur [35] demonstrated that increased access to financial services in Nigeria significantly reduces poverty by empowering individuals and small businesses. Allen et al. [36] provided a global perspective, affirming that financial inclusion is vital for poverty reduction, particularly in developing economies like Nigeria. Akinlo and Egbetunde [37] found a positive relationship between financial deepening and economic growth in Nigeria, emphasizing that a more profound financial system leads to better resource allocation. Odhiambo [38] corroborated these findings, highlighting that financial deepening fosters innovation and entrepreneurship, crucial for economic growth. Fowowe [21] revealed that financial deepening in Nigeria reduced income inequality by enhancing access to financial services for marginalized groups. Conversely, Law and Singh [39] argued that without appropriate regulations, financial deepening could exacerbate inequality, reflecting a dual-edged nature. Jeanneney and Kpodar [40] found that reducing interest margins and enhancing efficiency in the financial sector could significantly contribute to poverty reduction in Nigeria. Beck et al. [41] identified regulatory barriers and lack of financial literacy as significant challenges to financial deepening in Nigeria, recommending targeted policy interventions

The nexus between financial development and economic reforms has been the subject of extensive investigation. Bernard and Adenuga [42] examined the connection between economic reforms and manufacturing sector performance in Nigeria, identifying direct and significant impacts from variables such as exchange rate and electric power consumption. Furthermore, Mesagan and Ezeji [43] explored the influence of economic and social infrastructure on manufacturing performance, revealing mixed

relationships with variables such as government expenditure and inflation rate. Szirmal [44] also emphasized the capacity of the manufacturing sector to drive economic growth across various economies, underscoring the essential role of inter-industry linkages. The positive relationship between financial development and the manufacturing sector has been explored in several studies. Aminu, Raifu, and Oloyede [20] specifically examined the moderating role of institutional quality in Nigeria, suggesting the necessity of proper integration between the financial and manufacturing sectors. Similar findings were echoed by Ademola and Marshal [45], who highlighted the importance of launching financial reforms that enhance accessibility to credit for the manufacturing sector.

In contrast, some research presents a more complex picture. For example, Ojong, Anthony, and Arikpo [46] found an indirect and insignificant relationship between certain aspects of financial development and growth in Nigeria. These mixed findings point to the intricate dynamics that may exist between financial development and growth in different economic contexts, requiring specific policy measures tailored to the local conditions. Several studies have focused on the relationship between financial development and growth. Okuma et al. [47] revealed that financial development explains a significant proportion of the changes in Nigeria's agricultural sector output, but with insignificant effects from certain variables. The study by Zakaria et al. [48] on South Asia highlighted an inverted U-shaped effect of financial development on agricultural productivity, signifying the need for a balanced approach to financial development. Moreover, Rizwan-ul-Hassan [49] identified a significant positive relationship between growth and financial services in Pakistan, emphasizing the need for efficiency in financial services to boost agricultural productivity. Olaniyi [50] stressed the importance of improving financial development for sustainable growth in Nigeria, focusing not only on access to finance but also on its effective utilization. The implications of financial development on international trade are also well-documented. Yakubu et al. [51] found differential effects of finance on trade, indicating the complex interactions between financial development and international trade flows. Similarly, Sare et al. [52] reported a coexistence of negative and positive long-run relationships between finance and trade in Africa. The evaluated empirical studies present a more mixed view, with findings often contingent on the specific context, methods, and variables employed. The complex interplay between financial development and various sectors such as manufacturing, agriculture, international trade, and economic reforms underscores the importance of adopting a multifaceted approach to policy design.

2. Method

The research framework for this study adheres to the Ex-post Factor Research Design, an approach that examines historical data to identify causal relationships without manipulating the variables. The period under investigation ranges from 1994 to 2022, and the data is analyzed using the Econometric Views (E-Views) version 11 statistical application package.The study capitalizes on secondary data sources, comprising:Country-specific Central Bank Bulletins, World Bank reports, IndexMundi datasets, and Knowmia information The acquired data, which extends from 1994 to 2019, is time-series and is retrieved from textbooks, journals, Central Bank of Nigeria publications, and statistical bulletins.The research employs various variables, including i. Multidimensional Poverty Index (MPI): A ratio expressing multidimensional poverty in Nigeria during the study's timeline. ii. Financial Inter-relation Ratio (FIR): This represents financial assets as a proportion of total assets, gauged in millions of dollars. iii. Finance Ratio (FRT): A ratio of market capitalization to national income, expressed in millions of dollars. iv. The Ratio of Money to National Income (MNI): This variable conveys the rate of broad money supply to aggregate GDP, also quantified in millions of dollars. v. Financial Accessibility Ratio (FAC): Comprising World Bank/IMF indicators, like the number of bank accounts and branches per capita, and credit availability. vi. Net Interest Margin (NIM): Calculated as the difference between interest income and

expenses, in millions of dollars. It is anticipated to have a negative correlation with poverty opportunities.

Table 1. Multidimensional poverty index (MPI), Financial Inter-relation ratio (FIR), Finance Ratio (FRT), The ratio of money to national income (MNI), Financial accessibility ratio (FAC), LIN (Lending Interest Rate) and interest margin (NIM) in Nigeria throughout 1994 to 2022.

Year	MPI	FIR	FRT	MNI	FAC	NIM	MPI
1994	0.571	8.037	8.8	15.092	156.771	4.1	1994
1995	0.581	6.509	17.65	10.282	167.705	4.05	1995
1996	0.635	6.174	24.893	9.063	178.64	3.97	1996
1997	0.631	7.031	23.062	9.725	189.574	3.56	1997
1998	0.663	7.619	18.903	10.939	200.509	3.64	1998
1999	0.686	8.169	4.951	12.763	211.443	4.06	1999
2000	0.58	8.249	2.956	14.67	222.378	4.25	2000
2001	0.563	9.881	2.443	15.901	233.312	4.69	2001
2002	0.557	8.084	2.489	13.527	244.247	4.95	2002
2003	0.535	8.909	2.162	13.027	255.181	4.14	2003
2004	0.584	8.462	11.633	11.759	266.115	3.84	2004
2005	0.547	8.435	12.629	11.301	278.299	3.59	2005
2006	0.527	8.12	13.905	11.729	287.486	3.38	2006
2007	0.596	13.797	30.801	19.291	296.167	3.39	2007
2008	0.565	18.633	14.26	23.812	311.854	3.03	2008
2009	0.561	19.626	11.04	25.144	464.48	3.8	2009
2010	0.540	13.491	13.984	21.356	472.649	3.52	2010
2011	0.535	11.044	9.637	22.479	504.614	3.2	2011
2012	0.554	10.605	12.339	24.928	644.443	3.36	2012
2013	0.573	11.533	15.846	25.448	650.688	3.34	2013
2014	0.592	13.297	11.481	22.69	653.353	3.31	2014
2015	0.601	13.079	10.266	22.367	667.465	3.37	2015
2016	0.720	14.608	7.363	27.379	813.92	3.37	2016
2017	0.680	12.852	9.905	24.781	923.227	3.51	2017
2018	0.537	10.247	7.936	25.362	1013.713	3.38	2018
2019	0.578	10.469	9.801	23.878	1004.702	3.08	2019
2020	0.587	8.289	10.088	22.870	1104.599	3.09	2020
2021	0.530	6.786	10.622	21.877	1170.882	2.99	2021
2022	0.547	5.284	11.157	20.885	1237.165	2.89	2022
1994	0.571	8.037	8.8	15.092	156.771	4.1	1994
1995	0.581	6.509	17.65	10.282	167.705	4.05	1995
1996	0.635	6.174	24.893	9.063	178.64	3.97	1996
1997	0.631	7.031	23.062	9.725	189.574	3.56	1997
1998	0.663	7.619	18.903	10.939	200.509	3.64	1998
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2004	0.584	8.462	11.633	11.759	266.115	3.84	2004
2005	0.547	8.435	12.629	11.301	278.299	3.59	2005
2006	0.527	8.12	13.905	11.729	287.486	3.38	2006

Sources: CBN Statistical Bulletin (2022), Nigerian Bureau of Statistics (2022)

2.1. Model specification

The study employs the following multiple equation models:

$$EMPt = f(FIRit, FRTit, MNIit, FACit, NIMit) \quad (1)$$

For estimation purposes, the models are restructured as:

$$EMPt = \alpha 0 + \alpha 1FIRit + \alpha 2FRTit + \alpha 3MNIit + \alpha 4FACit + \alpha 5NIMit + \mu it \quad (2)$$

Here, α represents estimation parameters and μ the error term.

2.2. Methods of data analysis

1) **Stationarity Test:** A critical procedure using the augmented Dickey-Fuller test, Levin, Lin, and Chu test [53], Im, Pesaran, and Shin test [54], and Fisher-type tests to determine the data's stationarity.
2) Autoregressive Distributive Lag and ARDL Error Correction Model: This technique uncovers both the short and long-term relations between variables [55,56].

2.3. A priori expectations

The anticipated theoretical relationships between variables are: $\alpha 1-4<0$, indicating a negative correlation with the dependent variable, and $\alpha 5><0$, reflecting a positive association with the dependent variable [7].

3. Results and Discussion

3.1. Stationarity test

The study undertakes a stationarity test as presented below as follows

Table 2. Stationarity test summary of employed variables at level (0)

Variable		Augmented Dickey-Fuller	Decision
MPI	Stat	-4.78852	Stationary at Level (0)
	Prob	(0.0052)	
FIR	Prob	3.54888	Presence of Unit Root at Level (0)
		(0.9998)	
FRT	Stat	-2.49991	Stationary at Level (0)
		(0.0062)	
MNI	Prob	3.98066	Presence of Unit Root at Level (0)
		(1.0000)	
FAC	Stat	15.6229	Presence of Unit Root at Level (0)
		(1.0000)	

NIM	Prob	-4.54177 (0.0000)	Stationary at Level (0)

Source: Extracts from E-view 12.

The study employs the summary stationarity test of Augmented Dickey-Fuller. The summary statistics values of the employed variables at their respective probability levels are used as a yardstick to determine the presence or absence of unit roots in the panel trends. The probability values show that; only the Multidimensional poverty index), Finance Ratio (FRT) and Net interest margin (NIM) were observed to be stationary at a level as they showed probability levels lower than 0.05 across the various employed T-statistics. This shows that they could be used at a level for estimation purposes. As for the Financial Inter-relation ratio (FIR), the ratio of money to national income (MNI), and the financial accessibility ratio (FAC), there is no significant stationary trend in this data. In light of this, the study proceeds to estimate stationarity at first level (1).

Table 3. Panel stationarity test summary of employed variables at first difference (1)

Variable		Augmented Dickey-Fuller	Decision
D(MPI)	Stat Prob	-	-
D(FIR)	Stat Prob	-14.0820 (0.000)	Stationary at First Difference (1)
D(FRT)	Stat Prob	-	-
D(MNI)	Stat Prob	-14.6909 (0.0000)	Stationary at First Difference (1)
D(FAC)	Stat Prob	-12.7774 (0.0000)	Stationary at First Difference (1)
D(NIM)	Stat Prob	-	-

Source: Extracts from E-view 12.

Due to the lack of stationarity at a level in terms of financial inter-relation ratio (FIR), the ratio of money to national income (MNI), and the financial accessibility ratio (FAC), there stationarity test is estimated at the first difference. The above variables showed statistically significant stationarity level at first difference. This therefore shows that the employed variables are seen to have trends that are suitable for estimation purposes. In light of the observation of the stationarity test at level and first differencing which shows a fractional integration among the variables, the study therefore proceeds to employ the Panel ARDL test [56]. However, the undertaking of the ARDL requires the determination of the optimal model for the ARDL test. To do this, the study would determine the optimal model between the fixed effect, random effect, and pooled effects using the; Likelihood Ratio Test, Hausman Specification Test, and the Hausman Specification Test output.

3.2. Lag length selection

To determine the suitable lag for subsequent estimations in the study, the Lag length selection criteria are employed and presented as follows:

Table 4. Johansen co-integration test results

VAR Lag Order Selection Criteria
Exogenous variables: C

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-21731.97	12813.23*	8.80e+15*	53.74034*	53.77517*	53.75371*
1	-14780.49	13782.67	3.31e+08	36.64397	36.88776	36.73757
2	-14665.82	225.6416	2.72e+08	36.44950	36.90225	36.62333
3	-14564.57	197.7499	2.32e+08	36.28818	36.94989	36.54224
4	-14523.21	80.15354	2.29e+08	36.27494	37.14561	36.60924
5	-14497.62	49.22657	2.35e+08	36.30067	37.38030	36.71519
6	-14473.69	45.67316	2.42e+08	36.33051	37.61909	36.82526

* indicates lag order selected by the criterion

Source: Extracts from E-view 12.

Table 4 shows that the best lag to employ is lag 0, considering the elasticity of the data. In light of this, the study would be employed for subsequent estimations using their current values (i.e. using 0 lag).

3.3. ARDL long-run test

The results presented below are from an Autoregressive Distributed Lag (ARDL) model examining the relationship between financial deepening and a dependent variable represented by D(MPI), which might stand for a measure of poverty such as the Multidimensional Poverty Index:

Table 5. Panel ARDL/ bound test output for model – multidimensional poverty index (MPI)

Dependent Variable: D(MPI)
Method: ARDL

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
	Long Run Equation			
COINTEQ01	-0.187876	0.030285	-6.203680	0.0000
D(FIR)	-0.169541	0.055767	-3.040196	0.0024
D(FRT)	-0.003385	0.000881	-3.841571	0.0001
D(MNI)	0.078729	0.035797	2.199287	0.0281
D(FAC)	0.008972	0.002393	3.749543	0.0002
D(NIM)	2.575981	0.289546	8.896635	0.0000

Source: Extracts from E-view 12.

COINTEQ01 (Cointegration Equation): The coefficient of -0.1879, with a highly significant p-value (0.0000), signifies a long-run relationship between the variables. The negative sign implies that an increase in the financial deepening indicators will decrease the dependent variable, likely meaning a reduction in poverty in the long term.

D(FIR), D(FRT), D(MNI), D(FAC), D(NIM) (Financial Deepening Indicators): These may represent different indicators of financial deepening, such as Financial Inter-Relation Ratio, Finance Ratio, Ratio of Money to National Income, Financial Accessibility

Ratio, and Interest Margin.The negative coefficients for D(FIR), D(FRT), and D(NIM) (and their respective significant p-values) indicate that an increase in these variables will lead to a decrease in the MPI, meaning potential poverty reduction.The positive coefficient for D(MNI) indicates that an increase in this variable will lead to an increase in the MPI, perhaps signaling an unexpected increase in poverty.D(FAC) also has a positive coefficient but is likely to have a much smaller effect given the coefficient's small value.

The results suggest that enhancing financial deepening through certain mechanisms can lead to a significant long-run reduction in poverty (as reflected in the negative cointegration coefficient).: The different signs and significance levels of the coefficients provide nuanced insights for policymakers.Encouraging factors that increase D(FIR), D(FRT), and D(NIM) could lead to significant poverty reduction.Attention should be paid to the effect of D(MNI), where an increase appears to increase poverty, requiring careful investigation and potential policy intervention.The small positive effect of D(FAC) may also warrant consideration in policy formulation but seems to be of lesser immediate concern. The mixed results for different financial deepening indicators call for a more detailed examination of the specific channels through which financial deepening affects poverty. This could involve analyzing different sectors, regions, or population groups within Nigeria to understand how these relationships play out in various contexts.

4. Conclusion

The study provides profound insights into the intricate relationship between different financial deepening and its ability to reduce poverty in Nigeria. Poverty was measured using the multidimensional poverty index (MPI) in the context of the Nigerian economy. By employing comprehensive empirical techniques such as the Augmented Dickey-Fuller stationarity test, and the ARDL test, the analysis underscores the multifaceted nature of the association between financial institutions' activities and poverty generation. The negative and statistically significant coefficient of the cointegration equation establishes a long-run relationship, indicating that improvements in financial deepening are likely associated with a reduction in multidimensional poverty. This theoretical insight underscores the potential of financial sector reforms as a long-term strategy for poverty alleviation in Nigeria. The negative coefficient for the Financial Inter-Relation Ratio and its statistical significance implies that increasing interconnections between financial institutions can reduce poverty. It suggests that policies aimed at enhancing collaboration and linkages within the financial sector may foster poverty reduction. The negative sign for the Finance Ratio emphasizes the importance of the relative size of the financial system in poverty reduction. Strengthening and expanding the financial sector may lead to better resource allocation and economic opportunities, thereby contributing to reducing poverty. The positive coefficient for the Ratio of Money to National Income points to a counterintuitive finding: an increase in this variable appears to be associated with increased poverty. This requires careful investigation, and it may highlight the need to manage monetary expansion in ways that do not exacerbate inequality or poverty. The positive coefficient for the Financial Accessibility Ratio, albeit small, highlights the need for targeted interventions to ensure that enhanced access to financial services translates into tangible poverty reduction. The result emphasizes the quality over quantity in financial accessibility. The highly significant positive coefficient for Interest Margin underscores the importance of efficiency and competitiveness within the financial sector. Reducing the difference between lending and borrowing rates may lead to more accessible credit for businesses and individuals, driving economic growth and poverty reduction.

The study recommends that:

1) Financial institutions and policymakers should develop and implement long-term strategies focusing on financial deepening to ensure sustainable poverty

reduction. Recognize financial deepening as a central policy pillar in national development planning.

2) Financial institutions must promote collaboration and interconnection among financial institutions through regulatory incentives. Foster an environment that encourages information sharing, partnerships, and innovation within the financial sector.
3) Financial institutions and policymakers should enhance the expansion and stability of the financial sector by encouraging new entrants, supporting existing institutions, and ensuring robust regulatory oversight. Focus on the proportional growth of the financial sector in alignment with overall economic development.
4) Financial institutions must monitor and manage the growth of the money supply of national income to avoid potential adverse effects on poverty. Implement monetary policies that balance economic growth objectives with social equity considerations.
5) They should also emphasize the quality of financial services accessibility, not just quantity. Implement policies that ensure financial products are tailored to the needs of the underserved population, including appropriate pricing, financial literacy programs, and consumer protection measures.
6) Financial institutions must work to reduce interest margins through increased competition, efficiency, and transparency within the banking sector. Create regulatory frameworks that encourage competitive lending rates and fair borrowing costs to stimulate economic activity and reduce poverty.

References

[1] F. S. Mishkin, *The Economics of Money, Banking, and Financial Markets*. Boston: Pearson, 2009.
[2] D. I. Okoduwa, "Effect of Financial Development and Financial Inclusion on Poverty Reduction in Nigeria," *Acta Univ. Danub. Œcon.*, vol. 19, no. 3, pp. 183–199, 2023.
[3] R. G. King and R. Levine, "Finance, Entrepreneurship, and Growth: Theory and Evidence," *J. Monet. Econ.*, vol. 32, no. 3, pp. 513–542, 1993.
[4] R. Levine, "Finance and growth: Theory and evidence," *Handb. Econ. Growth*, vol. 1A, pp. 865–934, 2005.
[5] L. U. Chenghui and A. Dilanchiev, "The nexus of financial deepening and poverty: the case of Black Sea region economies," *Singap. Econ. Rev.*, pp. 1–23, 2022.
[6] Central Bank of Nigeria (CBN), *Annual Report on Financial Deepening Measures*. Abuja, Nigeria: Central Bank of Nigeria, 2020.
[7] World Bank, *Poverty and Shared Prosperity 2018: Piecing Together the Poverty Puzzle*. Washington, DC: World Bank, 2019.
[8] A. J. Asaleye, L. A. Isoha, F. Asamu, H. Inegbedion, O. C. Arisukwu, and O. Popoola, "Financial development, manufacturing sector, and sustainability: Evidence from Nigeria," *J. Soc. Sci. Res.*, vol. 4, no. 12, pp. 539–546, 2018.
[9] T. Beck, A. Demirgüç-Kunt, and R. Levine, "Finance, Inequality, and Poverty: Cross-Country Evidence," *J. Econ. Growth*, vol. 12, no. 1, pp. 27–49, 2004.
[10] L. U. O. Hua and Z. H. O. U. Wenliang, "Effect and Mechanism of Inclusive Finance on Poverty Reduction and Income Increase under the Background of Targeted Poverty Alleviation: An Empirical Study of 12 Cities in the Eastern, Western and Northern Guangdong," 云南农业大学学报 社会科学, vol. 16, no. 3, pp. 36–42, 2022.
[11] L. S. Sanusi, "Financial Inclusion: Issues and Challenges," *Keynote Address 2010 Financ. Incl. Conf. Lagos Niger.*, 2010.
[12] E. S. Atalo, "An economic assessment of the impact of finance on Nigeria's agricultural sector," *J. Pan Afr. Dev. Stud. Pad West Afr. J. Contemp. Res.*, vol. 4, no. 7, pp. 36–59, 2015.
[13] J. O. Aiyedogbon and S. O. Anyanwu, "Macroeconomic determinants of industrial development in Nigeria," *Nile J. Bus. Econ.*, vol. 1, no. 1, pp. 37–46, 2016.
[14] Y. Shi, S. Paul, and S. R. Paramati, "The impact of financial deepening on income inequality: Empirical evidence from Australia," *Int. J. Finance Econ.*, vol. 27, no. 3, pp. 3564–3579, 2022.
[15] J. A. Schumpeter, *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business*

Cycle. Harvard University Press, 1934.
[16] R. W. Goldsmith, *Financial structure and development*. New Haven, Yale University Press, 1969.
[17] M. Friedman and A. J. Schwartz, *A Monetary History of the United States, 1867-1960*. Princeton University Press, 1963.
[18] M. Sarma, "Index of Financial Inclusion," *Indian Counc. Res. Int. Econ. Relat. Work. Pap. No 215*, 2008.
[19] A. Demirgüç-Kunt and H. Huizinga, "Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence," *World Bank Econ. Rev.*, vol. 13, no. 2, pp. 379–408, 1999.
[20] A. Aminu, I. A. Raifu, and B. D. Oloyede, "Financial development and manufacturing output growth nexus in Nigeria: The role of institutional quality," *DBN J. Econ. Sustain. Growth*, vol. 1, no. 2, pp. 1–43, 2019.
[21] B. Fowowe, "Access to finance and firm performance: Evidence from African countries," *Rev. Dev. Finance*, vol. 8, no. 1, pp. 6–17, 2017.
[22] L. Bhole, "Venture Capital Funds, Structure Growth and Innovations Financial Institutions and Markets," 2004.
[23] World Bank, *World Development Indicators 2022*. Washington, D.C.: World Bank Publications, 2022.
[24] R. I. McKinnon, *Money and capital in economic development*. Washington: Brookings Institute. Washington, DC, 1973.
[25] E. Shaw, *Financial Deepening in Economic Development*. Oxford University Press, 1973.
[26] J. Schumpeter, *Theory of economic development*. Harvard University Press, Cambridge, MA, 1911.
[27] H. Patrick, "Financial development and economic growth in underdeveloped countries," *Econ. Dev. Cult. Change*, vol. 14, no. 2, pp. 174–189, 1966.
[28] J. Robinson, "The generalization of the general theory," *Rate Interest Essays*, pp. 69–142, 1952.
[29] R. Lucas, "On the Mechanics of Economic Development," *J. Monet. Econ.*, vol. 22, no. 1, pp. 30–42, 1988.
[30] J. G. Gurley and E. S. Shaw, *Money in a Theory of Finance*. Brookings Institution, 1960.
[31] P. M. Romer, "Increasing Returns and Long-Run Growth," *J. Polit. Econ.*, vol. 94, no. 5, pp. 1002–1037, 1986.
[32] A. Demirgüç-Kunt and L. Klapper, "Measuring Financial Inclusion: The Global Findex Database," World Bank Policy Research Working Paper, 6025, 2012.
[33] A. Banerjee and E. Duflo, *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty*. PublicAffairs, 2011.
[34] C. Bayer and C. Hanck, "Combining non-cointegration tests," *J. Time Ser. Anal.*, vol. 34, no. 1, pp. 83–95, Jan. 2013, doi: 10.1111/j.1467-9892.2012.00814.x.
[35] R. Zhang and S. B. Naceur, "Financial development, inequality, and poverty: Some international evidence," *Int. Rev. Econ. Finance*, vol. 61, pp. 1–16, 2019.
[36] F. Allen, A. Demirguc-Kunt, L. Klapper, and M. S. M. Peria, "The foundations of financial inclusion: Understanding ownership and use of formal accounts," *J. Financ. Intermediation*, vol. 27, pp. 1–30, 2016.
[37] A. E. Akinlo and T. Egbetunde, "Financial development and economic growth: The experience of 10 sub-Saharan African countries revisited," *Rev. Finance Bank.*, vol. 2, no. 1, 2010.
[38] L. A. Odhiambo, "The effect of changes in interest rates on the demand for credit and loan repayments by small and medium enterprises in Kenya," *Univ. Nairobi*, 2013.
[39] S. H. Law and N. Singh, "Does too much finance harm economic growth?," *J. Bank. Finance*, vol. 41, pp. 36–44, 2014.
[40] S. G. Jeanneney and K. Kpodar, "Financial development and poverty reduction: Can there be a benefit without a cost?," *J. Dev. Stud.*, vol. 47, no. 1, pp. 143–163, 2011.
[41] T. Beck, L. Senbet, and W. Simbanegavi, "Financial inclusion and innovation in Africa: An overview," *J. Afr. Econ.*, vol. 24, no. suppl_1, pp. i3–i11, 2015.
[42] O. A. Bernard and D. Adenuga, "Impact of economic reforms on the performance of the manufacturing sector in Nigeria," *J. Appl. Econ. Sci.*, vol. 4, no. 50, pp. 1194–209, 2016.
[43] E. P. Mesagan and A. C. Ezeji, "The role of social and economic infrastructure in manufacturing sector performance in Nigeria," 2016.
[44] A. Szirmai, *Socio-economic development*, Second edition. Cambridge: Cambridge University Press, 2015.
[45] A. F. Ademola and O. T. Marshal, "Financial deepening and the performance of manufacturing firms in Nigeria," *Can. Soc. Sci.*, vol. 14, no. 6, pp. 87–96, 2018.
[46] C. M. Ojong, O. Anthony, and O. F. Arikpo, "Financial deepening and manufacturing sector growth in Nigeria," *Int. J. Dev. Res.*, vol. 7, no. 1, pp. 48–59, 2017.
[47] N. Okuma, C. Nwoko, U. Festus, and A. Sebastine, "Causality between financial inclusion and agricultural sector

output in Nigeria," *Int. J. Asian Soc. Sci.*, vol. 9, no. 4, pp. 304–317, 2019.
[48] M. Zakaria, W. Jun, and M. F. Khan, "Impact of financial development on agricultural productivity in South Asia," *Agric. Econ.*, vol. 65, no. 5, pp. 232–239, 2019.
[49] M. Rizwan-ul-Hassan, "The Impact of financial sector development on agricultural growth: empirical evidence from Pakistan," *Mark. Forces*, vol. 12, no. 2, pp. 10–17, 2017.
[50] E. Olaniyi, "Back to the land: The impact of financial development on agriculture in Nigeria," *Iran. Econ. Rev.*, vol. 21, no. 4, pp. 885–903, 2017.
[51] A.-S. Yakubu, A. Q. Aboagye, Lord Mensah, and G. A. Bokpin, "Effect of financial development on international trade in Africa: Does measure of finance matter?," *J. Int. Trade Econ. Dev.*, vol. 27, no. 8, pp. 917–936, 2018.
[52] Y. A. Sare, A. Q. Aboagye, and Lord Mensah, "Financial development, sectoral effects, and international trade in Africa: An application of pooled mean group (PMG) estimation approach," *Int. J. Finance Econ.*, vol. 24, no. 1, pp. 328–347, 2019.
[53] A. Levin, C.-F. Lin, and C.-S. J. Chu, "Unit root tests in panel data: asymptotic and finite-sample properties," *J. Econom.*, vol. 108, no. 1, pp. 1–24, 2002.
[54] K. S. Im, M. H. Pesaran, and Y. Shin, "Testing for unit roots in heterogeneous panels," *J. Econom.*, vol. 115, no. 1, pp. 53–74, 2003.
[55] M. H. Pesaran, Y. Shin, and R. J. Smith, "Bounds testing approaches to the analysis of level relationships," *J. Appl. Econom.*, vol. 16, no. 3, pp. 289–326, 2001.
[56] E. Nkoro and A. K. Uko, "Autoregressive distributed lag (ARDL) cointegration technique: application and interpretation," *J. Stat. Econom. Methods*, vol. 5, no. 4, pp. 63–91, 2016.
[57] D. V. Raju, "Financial inclusion financial literacy for farmers In India," *Our Herit.*, vol. 68, no. 1, pp. 6565–6572, 2020.
[58] P. Z. Medugu, I. Musa, and E. P. Abalis, "Commercial banks' credit and agricultural output in Nigeria: 1980 - 2018," *Int. J. Res. Innov. Soc. Sci.*, vol. 3, no. 5, pp. 244–251, 2019.
[59] W. B. Report, *Global Financial Development Report 2018*. The World Bank, 2018.
[60] E. Orlic, I. Hashi, and M. Hisarciklilar, "Cross-sectoral FDI spillovers and their impact on manufacturing productivity," *Int. Bus. Rev.*, vol. 27, no. 4, pp. 777–796, 2018.
[61] E. Mesagan, N. Olunkwa, and I. Yusuf, "Financial development and manufacturing performance: The Nigerian case," *Stud. Bus. Econ.*, vol. 13, no. 1, pp. 97–111, 2018.
[62] A. I. Lawal, A. J. Asaleye, J. Ise-Olorunkanmi, and O. R. Popoola, "Economic growth, agricultural output and tourism development in Nigeria, An application of the ARDL bound testing approach," *J. Environ. Manag. Tour.*, vol. 4, no. 28, pp. 786–794, 2018.
[63] H. E. Inegbedion, "Factors that influence customers' attitude toward electronic banking in Nigeria," *J. Internet Commer.*, vol. 17, no. 4, pp. 325–338, 2018.
[64] B. Ibrahima and P. Alagidedebe, "Banking Reforms in Nigeria: Performance Analysis and Policy Implications," *Int. J. Econ. Finance*, vol. 10, no. 2, pp. 76–89, 2018.
[65] M. Ibrahim and P. Alagidede, "Effect of financial development on economic growth in sub-Saharan Africa," *J. Policy Model.*, vol. 40, no. 6, pp. 1104–1125, 2018.
[66] A. Demirgüç-Kunt, L. Klapper, D. Singer, and P. Van Oudheusden, "The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution," World Bank Group, 2018.
[67] M. Shahbaz, T. H. Van Hoang, M. K. Mahalik, and D. Roubaud, "Energy consumption, financial development and economic growth in India: New evidence from nonlinear and asymmetric analysis," *Energy Econ.*, vol. 63, no. 1, pp. 199–212, 2017.
[68] B. G. Osisanwo, "Financial Development and Economic Growth Nexus in Nigeria: Further Evidence from Long-run Estimates," *Acta Univ. Danub. Œcon.*, vol. 13, no. 3, pp. 1–19, 2017.
[69] O. Oliynyk-Dunn, "Financial system and agricultural growth in Ukraine," *Organizacija*, vol. 50, no. 3, pp. 244–253, 2017.
[70] A. Freytag and S. Fricke, "Sectoral linkage of financial services as channels of economic development–an–input-output analysis of the Nigerian and Kenyan economics," *Rev. Dev. Finance*, vol. 7, no. 2, pp. 36–44, 2017.
[71] United Nations Industrial Development Organization-UNIDO, *Industrial development report. The role of technology and innovation in inclusive and sustainable industrial development*. UNIDO, Vienna, 2016.

[72] A. J. Igyo, J. Simon, and E. M. Jane, "Financial intermediation and agricultural output in Nigeria: An impact analysis of deposit money banks' credit," *Int. J. Agric. Econ.*, vol. 1, no. 1, pp. 16–22, 2016.
[73] IMF, *World economic outlook: The global demographic transition*. World Economic and Financial Surveys, Washington, September, 2014.
[74] H. Herwartz and Y. M. Walle, "Determinants of the link between financial and economic development: Evidence from a functional coefficient model," *Econ. Model.*, vol. 37, no. 1, pp. 417–427, 2014.
[75] A. Dhrifi, "Financial development and agriculture productivity: Evidence from African Countries," *Int. Cent. Bus. Res.*, vol. 3, no. 1, pp. 1–9, 2014.
[76] B. O. Ohwofasa and J. O. Aiyedogbon, "Financial deepening and economic growth in Nigeria: An empirical investigation," *J. Econ. Dev. Stud.*, vol. 1, no. 1, pp. 22–42, 2013.
[77] B. Fowowe, "Financial liberalization in Sub-Saharan Africa: what do we know?," *J. Econ. Surv.*, vol. 27, no. 1, pp. 1–37, 2013.
[78] C. M. Essa, S. Franklin, and O. Gideon, "Factor productivity in smallholder pigeonpea production systems: Empirical evidence from Northern Tanzania," *J. Agric. Econ. Dev.*, vol. 1, no. 6, pp. 138–144, 2013.
[79] A. J. Akpaeti, "Does financial sector reforms affect agricultural investments in Nigeria? A Cointegration and VAR Approach," *Int. J. Food Agric. Econ.*, vol. 1, no. 11, pp. 13–28, 2013.
[80] F. G. Sackey and E. M. Nkrumah, "Financial sector deepening and economic growth in Ghana," *J. Econ. Sustain. Dev.*, vol. 3, no. 8, pp. 122–139, 2012.
[81] C. L. Nguena, "Price stability objectives and economic growth: A panel data econometrics empirical investigation for selected CEMAC Countries," *MPRA Pap. No 49412*, 2012.
[82] IMF, *Sub-Saharan Africa: Maintaining growth in an uncertain world*. Regional Economic Outlook, Washington, 2012.
[83] T. Beck, "The role of finance in economic development–benefits, risks, and politics," in *Oxford Handbook of Capitalism*, 2012, pp. 161–203.
[84] D. Susanto, C. P. Rosson III, and R. F. Costa, "Financial development and international trade: Regional and sectoral analysis," no. 321-2016–10881, 2011.
[85] M. K. Hassan, B. Sanchez, and J. Yu, "Financial development and economic growth: New evidence from panel data," *Q. Rev. Econ. Finance*, vol. 51, no. 1, pp. 88–104, 2011.
[86] M. Goswami and S. Sharma, "The development of local debt markets in Asia," IMF Working Paper(No.11/132), 2011.
[87] M. S. Ogunmuyiwa and A. F. Ekone, "Money supply-economic growth nexus in Nigeria," *J. Soc. Sci.*, vol. 22, no. 3, pp. 199–204, 2010.
[88] S. O. Odeniran and E. A. Udeaja, "Financial Inclusion and Economic Development in Nigeria," *Cent. Bank Niger. Econ. Financ. Rev.*, vol. 48, no. 3, pp. 39–52, 2010.
[89] World Bank, *World development report: Agriculture for development*. The World Bank Group, 2008.
[90] M. A. Khan, "Financial development and economic growth in Pakistan: Evidence based on Autoregressive Distributed Lag (ARDL) approach," *South Asia Econ. J.*, vol. 9, no. 2, pp. 375–391, 2008.
[91] S. Abu-Bader and A. S. Abu-Qarn, "Financial development and economic growth: The Egyptian experience," *J. Policy Model.*, vol. 30, no. 5, pp. 887–898, 2008.
[92] F. Rioja and N. Valev, "Finance and the sources of growth at various stages of economic development," *Econ. Inq.*, vol. 42, no. 1, pp. 27–40, 2004.
[93] R. Levine, N. Loayza, and T. Beck, "Financial intermediation and growth: causality and causes," *J. Monet. Econ.*, vol. 46, no. 1, pp. 31–77, 2000.
[94] M. M. S. Khan and M. A. S. Semlali, *Financial development and economic growth: an overview*. New Haven, Yale University Press, 2000.
[95] T. Beck, R. Levine, and N. Loayza, "Finance and the sources of growth," *J. Financ. Econ.*, vol. 58, no. 1–2, pp. 261–300, 2000.
[96] R. G. Rajan and L. Zingales, "Financial dependence and growth," *Am. Econ. Rev.*, vol. 88, no. 3, pp. 559–586, 1998.
[97] J. C. Berthélemy and A. Varoudakis, "Développement financier, réformes financières et croissance: une approche en données de panel," *Rev. Économique*, vol. 7, no. 3, pp. 195–206, 1998.
[98] R. Levine, "Financial development and economic growth: views and agenda," *J. Econ. Lit.*, vol. 35, no. 2, pp. 688–726, 1997.

[99] M. Pagano and T. Jappelli, "Information sharing in credit markets," *J. Finance*, vol. 48, no. 5, pp. 1693–1718, 1993.
[100] V. R. Bencivenga and B. Smith, "Financial intermediation and endogenous growth," *Rev. Econ. Stud.*, vol. 58, no. 2, pp. 195–209, 1991.
[101] P. Arestis and P. O. Demetriades, "Financial development and economic growth: Assessing the evidence," *Econ. J.*, vol. 107, no. 442, pp. 783–799, 1991.
[102] J. Greenwood and B. Jovanovic, "Financial development, growth, & the distribution of income," *J. Polit. Econ.*, vol. 98, no. 5, pp. 1076–1107, 1990.
[103] R. I. McKinnon, *Financial liberalization and economic development: a reassessment of interest-rate policies in Asia and Latin America*. Ics Pr, 1988.
[104] M. Fry, "Money and capital or financial deepening in economic development?," *J. Money Credit Bank.*, vol. 10, no. 4, pp. 64–74, 1988.
[105] A. Gerschenkron, *Economic backwardness in historical perspective: a book of essays*. Belknap Press of Harvard University Press, 1962.
[106] W. A. Lewis, *Theory of economic growth*. George Allen & Unwin Ltd. London-1955, 1956.
[107] S. Kuznets, "Economic growth and income inequality," *Am. Econ. Rev.*, vol. 45, no. 1, pp. 1–28, 1955.
[108] W. Bagehot, *Lombard Street*. Homewood, Richard Irwin, 1873.