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FINANCIAL DEEPENING PROCESS AND DYNAMICS OF ECONOMIC DEVELOPMENT IN NIGERIA

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Abstract: The finance-led growth hypothesis has sparked widespread controversies in both economics and financial literature on the effectiveness of the monetary policy transmission mechanism in driving the process of development in low income countries. These controversies have focused on supply-leading and demand-following hypothesis with regard to the direction of causality between financial deepening and economic growth. Thus, this paper took the side of the supply-leading hypothesis and empirically examined how the deepening of the Nigerian financial system shaped the process of economic development between 1981 and 2018 with a focus on poverty reduction and income inequality. Annual time series data on the underlying indicators of financial deepening and economic development were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin, National Bureau of Statistics (NBS) and the World Bank World Development Indicators (WDI). Econometrics techniques of autoregressive distributed lag (ARDL) model, Kwiatkowski-Phillips-Schmidt-Shin (KPSS) unit root test approach and bounds cointegration test form basis for the analysis. It was found from the KPSS unit root test results that the variables are mixed integrated. Additionally, the cointegration test results revealed that long run relationship exists among the variables in each of the models. This prompted the rejection of the null hypothesis of no cointegration. The estimated ARDL model revealed that broad money supply as a ratio of GDP has significant negative effect on both poverty headcount and income inequality in the short run. Similarly, the long run result showed evidence of negative impact of ratio of broad money supply to GDP on both poverty headcount and income inequality. The negative effect of the ratio of broad money supply to GDP on each of the economic development indicators corroborates with the theoretical expectation and provides appreciable empirical evidence that growth in monetary aggregate is an important channel through which financial deepening fosters pro-poor growth and more equal income distribution. However, private sector credit is statistically insignificant in influencing poverty and income gap in both short and long run. The result further revealed that real interest rate was found to exert significant positive impact on poverty. This implication of this finding is that rising level of real interest rate undermines the deepening of financing system and in turn exacerbates the poverty incidence. Given the findings, it is recommended that the monetary authorities, especially the CBN should continue to deepen the Nigerian financial system through sustained increase in monetary aggregates and effective allocation of credits to critical sectors with high potentials of flattening the curves of poverty and income inequality to boost economic development.

Keywords: *Financial deepening, economic development, poverty incidence, income inequality, monetary policy and transmission mechanism*

I. INTRODUCTION

The global financial architecture has given adequate recognition to the finance-led growth hypothesis. This is due to the controversy generated by the seminal work of Schumpeter (1911) on the issue in both developed and developing economies. Basically, Schumpeter (1911) argues that a well-functioning financial sector plays important role in driving real sector which resultantly leads to economic growth. Theoretically, the channel through which financial deepening promotes economic growth is explained in the supply-leading hypothesis which is often referred to finance-led growth hypothesis. The key argument of the supply-leading hypothesis is that improved access to financial services can make remarkable difference in the process of economic development through poverty reduction and more equitable income distribution. Similarly, the World Bank (2015) recognizes that greater access to financial services for both households and business tends to reduce income inequality and stimulate economic growth.

Mckinnon (1973) and Shaw (1973) advocated for the deepening of the financial sector for improved financial intermediation. This is believed to allow for financial inclusion with its associated benefits for inclusive growth. In support of the global recognition accorded to financial deepening in the international finance architecture, the World Bank and World Economic Forum (WEF) have underscored the need for countries to provide greater access to financial products and derivatives for both individuals and firms as a pathway to reducing poverty and equitable income distribution. Thus, countries are tasked to prioritize financial inclusion in their monetary policy design and implementation to increase opportunities for inclusiveness in the process of development. Ndebbio (2004) acknowledges that economic growth and development of a country depends largely on the role of financial deepening. As a reflection of the soundness of the financial sector, Ohwofasa & Aiyedogbon (2013) argue that financial deepening increases the availability of credits with respect to lending and deposit rate which boost pro-poor growth and more equal income distribution.

It is worthy of note that financial deepening has remained a top priority in government's efforts to engender real sector development and salvage the economy from its seemingly comatose condition. The pursuit of this all-important macroeconomic objective has remained an integral part of monetary policy coordination as the Central Bank of Nigeria (CBN) has often evolved measures to boost the capacity of deposit money banks to create money while controlling the value and cost of money. Besides the traditional objectives of maintaining price stability, external balance, employment generation and output growth, monetary policy operations provide credit rationing guidelines which enhances loans and advances to the real sector of the economy. Adejare (2014) observe that the CBN allocate bank credit and fix lending rate at low levels to accelerate growth and maintain price stability.

As part of efforts to deepen the Nigerian financial system, the CBN launched the National Financial Inclusion Strategy (NFIS) in 2012 with a target of reducing the rate of financial exclusion to 20 percent in 2020. It further introduced Anchor Borrower's Programme (ABP) and licensed 25 mobile money operators (MMOs) to deepen the inclusiveness of the financial system and provide more opportunities for economic development. Additionally, the CBN increased the capital requirement of microfinance banks (MFBs) in order to ensure that they are well positioned to deliver sustainable micro-financing services in accordance with the overall objective of NFIS. However, it is paradoxical that despite efforts to deepen the Nigerian financial system, the level of economic development has remained unimpressive as Nigeria continues to experience high levels of unemployment and poverty and widening income gap within the population. This has sparked widespread controversy in policy debates and development narratives on the effectiveness of the monetary policy transmission mechanism in driving the process of development. In view of the growing controversies, this paper examines how financial deepening shapes the process of economic development in Nigeria.

II. REVIEW OF RELATED LITERATURE

2.1 Theoretical Framework

The supply-leading hypothesis proposed by Schumpeter (1911) and expanded by Gurley & Shaw (1967) and King & Levine (1993) assume that financial deepening is an enabler of growth. This implies that that the direction of causality flows from financial development to economic growth. Ohwofasa & Aiyedogbon (2013) argue that the supply-leading hypothesis centers on the assumption that well-functioning financial institutions have the capacity of driving total economic efficiency, create and expand liquidity, mobilize savings, enhance capital accumulation and transfer resources from non-growth sectors to the more modem growth inducing sectors. According to Mckinnon (1973) and Shaw (1973), an efficient financial sector tends to reduce transaction and monitoring costs and asymmetric information with benefits of improved financial intermediation. The proponents of supply-leading hypothesis are of the view that growth in the real sector is largely determined by the extent of financial development. Consequently, financing deepening is expected to create opportunities for rapid and sustained growth of the economy and foster economic development.

On the other hand, the demand-following hypothesis credited to Robinson (1952)states that financial development responds to changesintherealsector. This implies that causality flows from economic growth to financial development. The proponents of the demand-following hypothesis arguegrowth in the real sector of the economy is perceived to trigger demand for financial products. That is, as the economy expands, it provokes increased demand for more financial services and thus leads to greater financial development. Robinson (1952) opines that it is the necessity from high economic growth that creates demand in the financial sector. This implies that financial markets develop and progress as a result of increased demand for their services from the growing real sector. Thus, increase in economic growth causes a rise in demand for financial services which translates to expansion of the financial sector (Kar & Pentecost,2000).

2.2 Empirical Literature

The nexus between financial deepening and economic development has been closely analyzed by a number of studies, but the empirical evidence in these studies remains controversial and ambiguous. While some support the view that financial deepening drive economic development, others find a contracting results. Some of these studies are reviewed below.

Jeanneney & Kpodar (2011) examined how financial development helps to reduce poverty directly through the McKinnon conduit effect and indirectly through economic growth. The results obtained with data for a sample of developing countries from 1966 through 2000 suggest that the poor benefit from the ability of the banking system to facilitate transactions and provide savings opportunities but to some extent fail to reap the benefit from greater availability of credit. Moreover, financial development is accompanied by financial instability, which is detrimental to the poor. The study recommended that policies to liberalize the financial sector and foster financial intermediation should be accompanied by sound macroeconomic policies, gradual external openness, and firm banking supervision.

Keho (2017) investigated the relationship between financial development, economic growth and poverty reduction in nine African countries for the period 1970-2013. The study followed ARDL bounds testing approach and found evidence of long-run relationship among the variables in eight countries with GDP and financial deepening having a positive effect on poverty reduction in five countries (Benin, Cameroon, Côte d'Ivoire, Gabon and South Africa), and poverty reduction having a positive effect on economic growth in three countries (Ghana, Nigeria and Senegal). The study also reveals bidirectional long-run causality between economic growth and poverty reduction in Côte d'Ivoire, Gabon and South Africa, and bidirectional long-run causality between finance and poverty reduction in Benin, Cameroon and South Africa. Given the findings, the study concludes that policies aimed at increasing economic growth and improving access to credit would reduce poverty.

Ben Naceur & Zhang (2016) explored the relationship between financial development and income distribution for a sample of 143 countries from 1961 to 2011. The study considered financial access, efficiency, stability, and liberalization as dimensions of financial development. The findings of the study revealed that four of the five dimensions of financial development can significantly reduce income inequality and poverty, except financial liberalization, which tends to exacerbate them. Also, banking sector development was found to provide a more significant impact on changing income distribution than stock market development. Overall, the findings are consistent with the view that macroeconomic stability and reforms that strengthen creditor rights, contract enforcement, and financial institution regulation are needed to ensure that financial development and liberalization fully support the reduction of poverty and income equality. Given that the development of financial institutions has a greater impact than the development of the stock market; study recommends that policymakers should give priority to banking sector improvement when considering poverty and income inequality alleviation.

Ran, Chen & Li (2020) examined the impact of financial deepening on income inequality between urban and rural areas in 31 provinces in China, from 2002 to 2013. The findings reveal that financial deepening has significant negative relationship with urban–rural income disparity. Specifically, it was found that for every 1 percent increase in financial deepening, urban–rural income disparity can be reduced by about 0.5 percent. From the decomposition effect of financial deepening, it was found that the proximity effect of the Eastern and Central regions is higher than that of the local effect, while the local effect of the Western region is higher than that of the Eastern and Central regions, but the proximity effect is not significant. Thus the study concludes that the findings are ofgreatsignificancetofurtherdeepenfinancialreform,improvethequalityoffinancialdevelopment, and achieve sustainable development of economy.

Chinweze (2017) investigated the impact of financial deepening in reducing Poverty in Nigeria. Human Development Index was used as proxy for reducing poverty due to its multidimensional nature while the ratios of credit to the private sector, broad money supply and market capitalization to gdp were used to proxy financial deepening. Data sourced from Central Bank of Nigeria Statistical Bulletin (2015) and World Development Indicators published by the World Bank from 1981 to 2015 were used to analyze this relationship by adopting the multilinear econometric model and using the Error Correction Model. It was found that there is a unidirectional causality running from financial deepening to poverty reduction. The study concluded that financial deepening is beneficial in reducing poverty in Nigeria. The study therefore recommended that Policy Makers should embark on a policy of financial inclusion and financial intervention programmes in Nigeria.

Ayinde & Yinusa (2016) analyzed the relationship between financial development and inclusive growth in Nigeria for the period 1980-2013. The technique of analysis is the quantile regression; which is to obtain a threshold for which the former impacts on the latter. The result shows a threshold level of 90th percentile. Interestingly, the study also found that the impact of financial development on inclusive growth depends on the measure of the former up to the threshold level and not beyond. Through a granger causality test, the direction of causality is through the inclusive growth rather than through the financial deepening measure. While the study found that either a low level or high level of openness on trade and capital investment are desirable for inclusive growth in Nigeria, the results also reveal that government involvement in the workings of the Nigeria economy and financial openness are sensitive to the pattern of financial development. The study, however, recommends that the involvement of government in ensuring the appropriate level of financial widening, through the central bank operations, is important to drive growth.

Odhiambo (2007) assessed the direction of causality between financial development and economic growth in three African countries comprising Kenya, South Africa and Tanzania. Using three proxies of financial development, the study found that the direction of causality between financial development and economic growth largely depends on the choice of measurement for financial development. In addition, the strength and clarity of the causality evidence is found to vary from country to country and over time. On balance, a demand-following impulse is found to be stronger in Kenya and South Africa, whilst Tanzania shows evidence of supply-leading impulse. Following the outcome of the empirical analysis, the study recommended that for Kenya and South Africa the real sector of the economy need to be developed further in order to sustain the development of the financial sector. However, it was suggested for the deepening of the Tanzanian financial sector in order to make the economy more monetized and in turn drive rapid and sustained development of the real sector.

Zhang (2014) studied the relationship between income inequality and financial deepening in China. The study specifically explores whether the effects of financial deepening on income inequality varies between urban residents and rural residents. Using the grey incidence analysis, this study first calculates the degree of grey incidence between dependent variables, per capita disposable income of urban residents, per capita net income of rural residents and overall Theil Inequality Index for China, and independent variables, depth of credit, depth of direct financing and depth of insurance. The empirical results indicate that the development of credit market does not have a strong relationship both with the growth of income and income inequality. The study therefore, recommended that the credit market should ensure the allocation of more resources to those who need them most, especially the small- and medium-sized enterprises, which will contribute to the growth of the income for the majority and narrowing the income gap.

III. METHODOLOGY

3.1 Research Design

This paper is employed ex post facto research design. This is considered appropriate for this paper given that the required data on financial deepening and economic development indicators already exist.

3.2 Model Specification

This study employed dynamic model patterned after the work of Chinweze (2017)and Ran, Chen & Li (2020) with broader measure of financial deepening and economic development. Specifically, this paper followed ARDL model with poverty and income inequality as the dependent variables while financial deepening is measured by credit to private sector as a ration of GDP, broad money supply as ratio of GDP and real interest rate. The formal specifications of the model are provided as follows:

$$POR_t = A_1 + \sum_{i=1}^{p} B_1 \Delta POR_{t-1} + \sum_{i=1}^{p} B_2 \Delta MGDG_{t-1} + \sum_{i=1}^{p} B_3 \Delta CGDP_{t-1} + \sum_{i=1}^{p} B_4 \Delta RIR_{t-1} + C_1 POR_{t-1} + C_2 MGDP_{t-1} + C_3 CGDP_{t-1} + C_4 RIR_{t-1} + e_{1t} \quad (1)$$

$$INQ_t = A_2 + \sum_{i=1}^{p} B_1 \Delta INQ_{t-1} + \sum_{i=1}^{p} B_2 \Delta MGDG_{t-1} + \sum_{i=1}^{p} B_3 \Delta CGDP_{t-1} + \sum_{i=1}^{p} B_4 \Delta RIR_{t-1} + C_1 POR_{t-1} + C_2 MGDP_{t-1} + C_3 CGDP_{t-1} + C_4 RIR_{t-1} + e_{2t} \quad (2)$$

Where: POR and INQ are poverty headcount and income inequality respectively.
MGDP and CGDP are broad money supply as ratio of GDP and credit to private sector as a ration of GDP respectively. RIR = Real interest rate.

A_1- A_2 = vector of intercepts or constant parameters

B_1 - B_4 = vector of short-run coefficients

C_1-C_4 = vector the long-run multipliers.

e_{1t} - e_{2t} = random stochastic terms

Δ = first difference notation

P = optimal lag order to be selected automatically using SIC.

3.3 Nature and Source of Data

Annual time series data covering the period of 1981-2018 were collected on the financial deepening and economic development indicators from the CBN Statistical Bulletin, National Bureau of Statistics (NBS) and World Bank World Development Indicators (WDI).

3.4 Data Estimation Techniques

Thispaper relies on Autoregressive Distributed Lag (ARDL) model developed by Pesaran & Shin (1999) to estimate the dynamic relationship between financial deepening and economic development. The ARDL has, in recent time, received widespread recognition in both theoretical and empirical econometrics due to its built-in properties. Hassler & Wolters (2006) are of the view that the popularity of the ARDL in applied econometrics is as a result of the fact that cointegration of nonstationary variables is equivalent to an error correction process, and it has built-in mechanism for reparametrizing the relationship among the variables in error correction form.Accordingly, Pesaran, Shin & Smith (2001) confirmed the empirical validity of the ARDL by integrating autoregressive and distributed-lag process in a single equation set-up.Thus, the ARDL allows for the inclusion of lags of the endogenous variable as well as other predictor variables, as exogenous variables. In addition to the ARDL, the Kwatkowski, Phillip, Schemidt and Shin, (KPSS, 1992) stationarity is applied to determine stationarity status of each of the variables. Unlike the augmented Dickey Fuller (ADF) test, the KPSS overcomes the perceived low power by using Lagrange multiplier (LM) statistic to test the null hypothesis of stationarity against the alternative hypothesis of no stationarity. Additionally, the bounds test approach to cointegration proposed is applied to test for evidence of long run relationship amongst the underlying variables. Essentially, it is considered appropriate for handling times series data mixed order of integration [I(0) and I(1)].

IV. RESULTS AND DISCUSSION

4.1 Stationarity Test

The stationarity test for each of the series was conducted using KPSS method at 5 percent level of significance. The results are summarized in table 1.

Table 1: KPSS stationarity test results

Null hypothesis: **Variable is stationary**					
Variable	Levels test results		First difference test results		Order of Integration
	LM statistic	5 Percent Critical value	LM statistic	5 Percent Critical value	
POR	0.199		0.032		I(1)
INQ	0.130		NC		I(0)
MGDP	0.110		NC		I(0)
CGDP	0.140	0.1460	NC	0.1460	I(0)
RIR	0.163		0.061		I(1)

Source: Author's computation based on data sourced from CBN Statistical Bulletin, NBS and WDI
NB: NC denotes not computed due to evidence of stationarity at the levels test result.

The results of the stationarity test reveal that the variables are mixed integrated. While income inequality, ratios of broad money supply and private sector credit to GDP are stationary at levels while poverty headcount and real interest rate are difference stationary. Thus, the variables are found to depict a stationarity process of I(0) and I(1). The evidence of mixed integration in the series necessitates the application ARDL bounds cointegration test.

4.2 Cointegration Test

The results of the bounds cointegration test performed at 5 performed level of significance are summarized in table 2-3.

Table 2: ARDL bounds test cointegration result for model 1

Null Hypothesis: No long-run relationships exist		
Series: POR MGDP CGDP RIR		
Test Statistic	Value	K
F-statistic	6.214	3
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Source: Author's computation based on data sourced from CBN Statistical Bulletin, NBS and WDI

Note: K represents number of exogenous variables

Table 3: ARDL bounds test cointegration result for model 3

Null Hypothesis: No long-run relationships exist		
Series: INQ MGDP CGDP RIR		
Test Statistic	Value	k
F-statistic	4.935	3
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Source: Author's computation based on data sourced from CBN Statistical Bulletin, NBS and WDI
Note: K represents number of exogenous variables

The cointegration test was performed using the ARDL bounds test approach given the evidence of mixed integration in the KPSS stationarity test. It was found that the variables in model 1 are cointegration. This indicates that poverty headcount has long run relationship with the underlying indicators of financial deepening. Similarly, the variables in model 2 are found to be cointegrated at 5 percent level of significance. This suggests that income inequality has long run relationship with all the measures of financial deepening. Overall, the results indicate that financial deepening and economic development can move together in the long run.

4.3 Estimation of the ARDL models

The ARDL model is estimated to gain insights into the long and short run effects of financial deepening on each of the measures of economic development. The results are summarized in table 4-5.

Table 4: ARDL short and long run estimates for model 1

Dependent Variable: POR				
Short run result				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MGDP)	-0.099652	0.028949	-3.442329	0.0107
D(CGDP)	0.464373	0.470585	0.986799	0.3361
D(RIR)	0.106312	0.427689	0.248573	0.8064
D(RIR(-1))	-0.254687	0.469324	-0.542669	0.5937
D(RIR(-2))	-0.222084	0.521515	-0.425845	0.6750
D(RIR(-3))	0.243427	0.512936	0.474575	0.6405
D(RIR(-4))	-0.243124	0.466218	-0.521482	0.6081
D(RIR(-5))	-0.381962	0.467402	-0.817203	0.4239
D(RIR(-6))	1.058648	0.432525	-2.447598	0.0243
CointEq(-1)	-0.981204	0.178374	-5.500831	0.0000
Long run results				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
MGDP	-0.101561	0.037081	-2.738959	0.0143
CGDP	0.473269	0.471008	1.004800	0.3276
RIR	2.353129	0.547900	4.294819	0.0004
C	13.84485	10.830374	1.278335	0.2165
R-squared	0.8037		Prob.(F-stat.)	0.0001

Source: Author's computation based on data sourced from CBN Statistical Bulletin, NBS and WDI

Table 5: ARDL short and long run estimates for model 2

Dependent Variable: INQ				
Short run result				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INQ(-1))	0.548150	0.128991	4.249507	0.0002
D(MGDP)	-0.247651	0.113883	-2.174608	0.0389
D(CGDP)	0.159895	0.098791	1.618511	0.1176
D(RIR)	-0.051047	0.082987	-0.615119	0.5438
D(RIR(-1))	-0.026026	0.099020	-0.262833	0.7948

D(RIR(-2))	-0.188763	0.078110	-2.416616	0.0230
CointEq(-1)	-0.207982	0.055251	-3.764329	0.0009
Long run results				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
MGDP	-1.190734	0.573591	-2.075929	0.0479
CGDP	0.768791	0.479520	1.603252	0.1210
RIR	0.371612	0.294912	1.260075	0.2188
C	49.591927	8.193658	6.052477	0.0000
R-squared	0.8037		Prob.(F-stat.)	0.0001

Source: Author's computation based on data sourced from CBN Statistical Bulletin, NBS and WDI

The results reveal that broad money supply as a percentage of GDP has significant negative effect on poverty headcount in both short and long run. The result also indicates that the long term effect of private sector credit on poverty is positive and statistically insignificant. This finding attests to the effectiveness of broad money supply in reducing the population in poverty. The negative effects of the share of broad money supplyto GDP is consistent with the previous findings by Jeanneney & Kpodar (2011) for a sample of developing countries, but contrasted with the results of Keho (2017) for Benin, Cameroon, Côte d'Ivoire, Gabon and South Africa. However, real interest rate was found to exert significant positive impact on poverty. This implication of this finding is that rising level of real interest rate undermines the deepening of financing system and in turn exacerbates the poverty incidence. The error correction estimate (-0.9812) has the expected negative sign and it is significant at 5 percent level. This suggests that the model can return to equilibrium in the long run at a speed of 98.12 percent. More so, it was found that broad money impacted negatively on income inequality. This finding aligns with the result of Ran, Chen & Li (2020) for 31 provinces in China. Therefore, increase in monetary aggregates provides opportunity for more equal distribution of income among the population. The error correction coefficient (-0.2079) indicates that the inequality model is convergent to long run equilibrium at a speed of 20.79 percent. The implication of this finding is that any disequilibrium in the short run can be reconciled to achieve equilibrium relationship in the long run.

V. CONCLUSION

The thrust of this paper is the empirical investigation of the link between financial deepening and economic development in Nigeria. This is anchored on the supply-leading hypothesis given that growth associated with the deepening of the financial system is expected to create opportunities for economic development. The bounds testing approach to cointegration analysis is employed in this paper to examine whether financial deepening indicators have long run relationship with each of the measures of economic development. Again, the short and long run effects of financial deepening on poverty headcount and income inequality were estimated using ARDL model. The findings indicate that broad money supply impacts negatively on poverty and income inequality. However, private sector credit share of GDP does not significantly contribute to reduction in poverty and income gap. Owing to the findings, it is concluded that financial deepening through increase in broad money supply fosters pro-poor growth and more equal distribution of income. Thus, it is recommended that the monetary authorities, especially the CBN should continue to deepen the Nigerian financial system through sustained increase in monetary aggregates and effective allocation of credits to critical sectors with high potentials of flattening the curves of poverty and income inequality to boost economic development. Further studies should cover other aspects of financial deepening which allows for more financial inclusion for the unbanked and underbanked, and expand the scope of economic development to include productive employment.

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