



Financial inclusion, monetary policy and economic growth in Nigeria

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Abstract

This paper explored the nexus between financial inclusion, monetary policy and economic growth in Nigeria from 1981- 2019. The survey employed secondary data to calibrate the nexus and the data were sourced from Central Bank of Nigeria statistical bulletins and the World Bank group published annual statistics. The study adopted the following techniques of data evaluation, unit root test, ARDL Bound cointegration test, ARDL short-run and ARDL Error Correction Model test. The result portrays in totality that, in both the short and long-runs the model variables were statistically and theoretically significant in stimulating economic growth in Nigeria. However, the Bound F-stat indicates that there is no long run association among the variables. Conversely, ECM test results do not only reveal the existence of a long relationship among the variables, but the findings show that an increase in the branches of DMBs has the potential to stimulate economic growth in Nigeria. The work admonished the Central Bank of Nigeria to periodically review its monetary policy rate to a single digit; also a downward review of other monetary policy instruments is necessary. The banks are required to expand their operational network in order to capture the financially excluded adults and more so, increase their capital accumulation ability through the financial system intermediate function.

Keywords: Financial intermediation, financial inclusion, economic growth, deposit money banks, capital accumulation

Introduction

The most prominent among a handful of responsibilities and obligations of a viable financial system anywhere in the world revolves around the pinnacle of the system capacity to massively mobilize idle financial resources from the surplus units of the economy for onwards creation of credit facilities for the deficits units in fulfillment of the financial system intermediate function in an economy. These financial resources or capital formation are generated through various account domiciles and operated by both the deposit money banks (DMBs) and other non-bank financial services institutions. Such accounts include savings account, current account and fixed deposit as obtainable in Nigeria and some other African countries. Aside, the acceptance of deposits by the operators in the financial system, the financial system also provides a latitude of financial services to economic agents within an economy and beyond. Financial services provided by the system include but are not limited to the creation of credit facilities for investors and all manner of borrowers, provide financial access and advisory services to clients, insurance services and financial risk management.

Unfortunately, a sizable population of the global unbanked adults are inadvertently financially excluded or un-boarded from partaking in the aforementioned benefits. Thus, the need for an aggressive financial inclusion of the unbanked adults population.

Financial inclusion encompasses the inherent capacity of any nation's financial system to effortlessly offer financial services, access, products and advisory services in a cost efficient manner to the unbanked and less privileged populace in that society.

According to the world bank group, financial inclusion is an enabler for continuous economic growth and development, as well as a vehicle with the enormous capacity to pool the poor and the financially vulnerable population from the

shackles of poverty, and further improve social welfare of any nation at large including that of Nigeria.

The bank further reasserted that aggressive financial inclusion drive, would avail economies Worldwide the opportunity of broadening their capital base through the expansion of its individual country's capital web. The endless integration of the unbanked poor and the informal sector into the nation formal financial mainstream, has the potential benefits to make loanable funds available to investors and borrowers of financial resources that proportion of the hitherto docile capital or idle cash that were initially in the hands of unbanked adults for further lubrication of economic activities (investments) with the attendant multiplier impact on other macroeconomic indices vice versa.

Recent evidence from the world bank global Findex survey indicated that about 1.7 billion of the world's overall adults population are yet to own bank accounts and they are financially excluded from the formal global financial stream. Ironically, a considerable chunk of this financially excluded adults population reside in developing countries and particularly within the sub-Saharan Africa.

In Nigeria, in spite of the apex bank (Central Bank Nigeria CBN) targets of ensuring that about 80% of the unbanked adults poor population are captured into the country's financial web by 2020, following the Bank 2012 National Financial Inclusion Strategic Plan (NFISP). Yet evidence of the financial inclusion reports support that significant progress is far-fetched. This is because out of the 1.7 billion estimated unbanked adults population, Nigeria accounts for over 3.4 % of the adults that are financially excluded. Corroborating this assertion, the CBN attempt at improving the nation's financial inclusion rate through the NFISP 2012 witnessed an improvement from 36.3% in 2010 to over 60.3% in 2012. Afterwards, the rates have been plunging downwards to 58.4% in 2016.

Since 2016, considerable attempt by the country monetary authority to innovatively expand the nation financial inclusion rate through monetary policy remodeling in terms of the reduction in the statutory requirements needed for account opening and operation in the country and other further expansion efforts like the introduction of community banking model, microfinance Bank, the non- interest Islamic banking model, cashless policy approach as well as mobile and internet banking services seems to have not yielded significant results comparatively to other African Countries. Because of the following contextual factors inhibiting and affecting the financial inclusion drive of the CBN. And paramount among these factors is the county's rising poverty rate that is currently estimated by the world poverty clock to have hit 90 million Nigerians. Secondly, a huge percentage of the unbanked adults in Nigeria have poor or non- existence of financial literacy. Thirdly, there is the challenge of inaccessibility and unavailability of financial institutions in and around the rural areas. Lastly, the high cost of maintaining an account in Nigeria and the like, do largely disincentivize the unbanked adults from owning an account.

Irrespective of the aforesaid bottlenecks, for the CBN to actualize its targeted goals of having a coherent and effective monetary policy impact on the Nigerian economy, the apex bank ought to have overwhelming control of the volume of money supply for optimal macroeconomic targeting. A sound monetary policy undertaken by the monetary authority should be results oriented and capable of fostering macroeconomic stability that can elicit both domestic, foreign direct and portfolio investments. These are nonetheless the basic benchmarks for overall inclusive growth of an economy. Therefore, this study is centered on interrogating the nexus between financial inclusion, monetary policy and economic growth in Nigeria. Economic growth is the increasing capacity of an economy to produce goods and services per annum, Ozili (2018) [28]. As washed in several literature, economic growth is watered by financial inclusion, and financial inclusion in itself is driven by an array of innovative monetary policies and strategies put in place by CBN in the Nigerian context.

Conceptual framework

The literature is grossly inundated with variants of definitions that attempt to substantiate and define financial inclusion. Asymmetric definitions by economists, policy experts, scholars alike had underscore the importance of financial inclusion which is inversely related to financial exclusion and as a yardstick of economic growth. Increasingly, there is this general consensus among practitioners that the degree of financial deepening, products, channels of access, policies and strategies of financial inclusion are fluid. That is to say that each country develops and implements its own model of financial inclusion. However, countries may adopt identical policy initiatives, but the trajectory of institutional architecture underpinning each and every economy is quite differential, so also the financial inclusion outcome.

According to the World bank the concept of financial inclusion defines the rendering of financial services to all economic agents by creating financial access and products to meet the needs of the financially vulnerable adults in a manner that is affordable and efficient. Allen, Demirguc-Kunt, Klapper and Peria (2016) [3] see the enrollment into

any formal financial services has been financially inclusive. From Hall (2014) standpoint, he perceived financial inclusion from three broad perspectives as follows;

- Financial Participation (which defines the integration of the unbanked adults into the formal financial setting that provides all the needed financial access, products, channels and services).
- Financial Capability (the financial system should be able to render services that would edify the unbanked adults and make them to be financially literate)
- Financial Wellbeing (evaluates the extent to which the services of financial inclusion offered by the financial system had improved the welfare of the hitherto financially exclusive adults poor).

But, the African Development Bank (AFDB) views financial inclusion as the conscious attempt to get all adults on board the formal financial web and provide them with accessible and affordable financial services. Chibba (2009) [9], definition to a larger extent synchronize with the above AFDB summation. And for Abor, Issahaku, Amidu and Murinde (2018) [1] financial inclusion refers to the removal of all financial bottlenecks such that everybody in the economy can have access to the formal financial services and products at all times.

Review of theoretical literature

This session of the work took a cursory evaluation of a handful economic theories that justifies the a-priori theoretical nexus underpinning the economic relationship of financial inclusion and economic growth.

The Harrod- Domar Growth Theory

This theory gives us an insight to the cyclical mobility between capital accumulation and investment that infers into the interdependence of savings, investment, capital stock and the aggregate output level. The trajectory for sustainable economic growth supports the idea that increased savings lead to increased investments, an increase in investments on the other hand causes an increase in capital stock and that further accelerates productive activities and eventually economic growth. Though, Harrod (1939) [20] and Domar (1946) [13] separately understudied this relationship, the literature addressed this theory as the Harrod-Domar model of economic growth. These strands of Keynesian economists deviated from the intrinsic Keynesian short-run analysis of economic growth and delved into examining how saving and capital investment could stimulate economic growth in the long-run. In the nutshell, the Harrod-Domar approach to economic growth assumes that investment and capital stock are a function of increased savings, but savings can only be expanded when the monetary authority takes concrete monetary policy measures that could bring about financial inclusion. Thus, reinforcing the role of financial inclusion as an enabler of economic growth globally.

Supply Led Finance Hypothesis

This theory was enunciated by Patrick (1966) [29], the theory perceived finance as a catalyst for economic growth and development of nations all over the world. Patrick asserted that supply led finance or finance induced growth and development is the capacity of financial resources or capital formation to create, support and expand productive

economic activities. The theory is of the view that to facilitate the growth and development of the real sector of an economy; the financial sector must first and foremost be developed to serve as the building block for the evolution of the real sectors of the economy. It further argued that the presence of financial institutions aid to galvanize capital accumulation from the surplus economic units through the instrumentality financial inclusion for onwards allocation to entrepreneurs' and other deficits units of the economy Arikpo & Adebesei (2017) ^[4]

Financial inclusion theories

The theories of financial inclusion are subdivided into three broad sub-sectional theories which includes; The theory of financial inclusion beneficiaries, the theory of financial inclusion deliverer and the theory of financial inclusion Funders.

The theory of financial inclusion benefactors, in the literature existential arrays of conflicting prepositions are deposited on the perceived benefactors from financial inclusion, Ghosh and Vinod (2017) ^[17], Swamy (2014) ^[33], Mehrotra and Yetmen (2015) ^[23], Bhandari (2018) ^[6] and Ozili (2018) ^[28] holds differential views on the perceived benefactors from financial inclusion. Thus, financial inclusion based on this Theory, should not be confined to only women and the poor alone. Rather, financial inclusion should be seen as a vehicle having that access and carrying capacity to bring on-board every economic agent that was previously excluded from the nation's financial web and provide them unlimited opportunity and access to all financial resources in the economy. In other words, financial inclusion should be able to cater for all and sundry financial needs in the society.

Secondly, the theory of financial inclusion deliverers is centered on those who should statutory be responsible in providing the structure and services needed for the overall financial inclusion in an economy. As posited by these scholars, Aggarwal and Klapper (2013) ^[2], Staschen and Nelson (2013) ^[32] and Chibba (2009) ^[9] they suggest that the government is best qualified to render the services of financial inclusion to its citizenries. But, Gabor and Brooks (2017) ^[16] and Ozili (2018) ^[28] summed up that the services of financial inclusion should exclusively be the responsibility of the private sector given their efficiency in service delivery, as such Banks and Fintech firms are well suited to deliver financial inclusion services. Contrarily, Arun and Kamath (2015) ^[5] and Pearce (2011) ^[30] argued otherwise that the services of financial inclusion should be rendered through the collaborative efforts of both the private and public sectors.

The theory of financial inclusion Funders

Given the associated costs inherent in financial inclusion services, the theory of financial inclusion funding fundamentally looks at who should bear the cost of funding financial inclusion. However, Marshall (2004) ^[22] asserts that financial inclusion should be funded by the public through taxes. Mohiuddin (2015) ^[24] conversely argued that the funding of financial inclusion should be undertaken by the capitalists in that society. The argument is that the activities of these bourgeoisies has led to the widening of the inequality gap between the haves and the have not. In finding a locus between these two extreme perspectives, Cobb, Wry and Zhao (2016) ^[10] and Dashi, Lahaye and

Rizvanolli (2013) ^[11] suggest that financial inclusion expenditures or fundings should be shared between the private and public sectors of the economy.

Review of empirical literature

Empirically, the work took turn to appraise earlier surveys on financial inclusion as the basic template to consolidate on this study. Consequently, Nwafor and Yomi (2018) ^[25] study examined the nexus underpinning financial inclusion and economic growth in Nigeria, they adopted the double least square framework of data evaluation. The result of the work ascertained that financial inclusion potentially elicits economic growth in Nigeria within the period under review. Harley, Adegoke and Adebola (2017) ^[19] evaluated the relationship between financial inclusion, economic growth and poverty reduction in the LDCs, employing the panel method of data analysis. Evidence from the study portrayed that financial inclusion is a stimulus for economic growth. However, the relationship between financial inclusion and poverty reduction is not significantly robust as a-priori envisaged in the literature. Using the VAR method of regression Gretta (2017) ^[18] measured the nexus between financial inclusion and economic growth in a sample of the underdeveloped regions of the world. The result of the study supports that financial inclusion catalyzes economic growth in the three underdeveloped regions of the Middle East, North Africa and Brics.

In a research undertaken by Okoye, Adetiloye, Erin and Modebe (2017) ^[26] deploying the OLS technique of data analysis to evaluate the strategic role of financial inclusion as a vehicle for the enhancement of economic growth and development in Nigeria. The result revealed that credit apportionments to the private sector are insignificant in enhancing economic growth in Nigeria.

Sharma (2016) studied the connection between financial inclusion and economic growth in India, using VAR and Granger causality approaches of data analysis. The result of the work ascertained that there is a direct relationship between financial inclusion or deepening and economic growth in India.

Methodology

The paper adopted the ex-post-facto research design under which the pathway through which the data for this survey will be tested and estimated. And the techniques for data analysis commenced with the stationarity measurement of the data using unit root test, ARDL and ECM techniques of data analysis are adopted to evaluate the viability of our model. The time series for this study is secondary data sourced from the CBN annual statistical bulletin and the World Bank statistics implying that the study took a quasi-experimental dimension in determining the nexus of the relationship among the dependent and the independent variables.

Model Specification

The model of the work is constructed in a functional form to empirically evaluate the Linear or the Log-linear relationship among the model identified variables.

Considerably, the model for the study is hereby crafted as follows

Model I: $GDP = F(DMB, SV, CR, KR) \dots\dots\dots 1$

Similarly, a sample of the Linear and Log-Linear model for eq 1 above is crafted as in the equations below.

Linear econometrics models

$$GDP = \Phi_0 + \Phi_1 DMB + \Phi_2 SV + \Phi_3 CR + \Phi_4 LR + U_t \text{-----} 2$$

Log-Linear econometrics model

$$\ln GDP = \Phi_0 + \Phi_1 \ln DMB + \Phi_2 \ln SV + \Phi_3 \ln CR + \Phi_4 \ln LR + U_t \text{-----} 3$$

Where: Φ_0 is the intercept or constant

U_t = Error Term

Φ_1, Φ_2, Φ_3 and Φ_4 are the slope of the model that define the coefficient of the parameter estimates

The proxy variables for estimating the nexus between financial inclusion and economic growth are defined as follows.

GDP= Real GDP

DMB= Number of Branches of Deposit money Banks in Nigeria

SV= Savings account deposit

CR= Credit allotment to the private sector

LR= Liquidity Ratio

The a priori theoretical preposition underlying the model variables are as stated below.

$\Phi_1, \Phi_2, \Phi_3 > 0$, and $\Phi_4 < 0$

Results and Discussion

Unit Root Test Result

Following the inherent non-stable nature of the data set for this work, the assessment of the unit root of these variables is necessary in order not to carry-out a spurious analysis and this work adopted the Phillips-Perron unit root tests to determine the stability of the variables. The empirical results of the unit root test carried out at 5% level are as tabulated below

Table 1: Phillips-Perron unit root tests result

Variables	Level			First Difference			
	Critical-V	Perron-Stat	P-value	Critical -V	Perron-Stat	p-Value	Order
LNGDP	-2.941145	-0.795232	0.8091	-2.943427	-3.122725	0.0325*	I(1)
LNDMB	-2.941145	-2.146750	0.2284	-2.943427	-4.747261	0.0000*	I(1)
LNSV	-2.941145	-1.529225	0.5082	-2.943427	-4.506974	0.0044*	I(1)
LNCR	-2.941145	-1.213809	0.6585	-2.943427	-5.704364	0.0001*	I(1)
LNL	-2.941145	-3.308693	0.0214				I(0)

An analysis of the unit root test results above indicates that three of the variables captured in the model comprising LNGDP, LNDMB, LNSV and LNCR were non-stationary at first difference, while LNL was stationary at levels as ascertained to by the unit root test result. However, after the first difference of the three variables, they all attained stationarity at 5% probability level. Consequently, given that the variables are now stationary and integrated of order one I(0) and I(1), from the foregoing, this study is well-positioned to evaluate both the short and long runs relationship among the variables in the model using the Autoregressive Distributed Lag (ARDL) technique of data analysis.

ARDL Bound Cointegratin test Result

Table 2: F-Bound Test

Test statistics	Value	Significant	Lower Bound	Upper Bound
F-statistics	3.4972821	10%	2.45	3.52
K		5%	2.86	4.01
		1%	3.74	5.06

The F- Bound test result above reveal that the F-stat of 3.497282 > 2.86 lower bound level, but the Bound Test F-stat is rather less than the upper bound level of 4.01 at 5% significant level. Thus, Although, Phillips-perron unit root test did justified that the variables in the model are a mixture of I(0) and I(1), thus, the need to assess the long-run relationship among the variables is expected, of which the study adopted the ARDL bound test to dissect the long-run association among the variables. However, the findings of the long run association among the variables is undefined, given rise for the long run evaluation of the model using the ARDL Error Correction Framework

Results of ARDL Short-Run and Error Correction Model Test (ECM)

Table 3: Result of the Short-Run Component of the ARDL Model

Variable	Coefficient	Std. error	t- Statistics	P-Value
C	4.678725	1.021569	4.579940	.00001
LNGDP(-1)	0.351432	0.137811	2.550090	0.0182
LNDMB(-3)	0.483725	0.155967	3.01450	0.0052
LNSV	0.205051	0.131761	1.556237	0.1339

$R^2 = 0.668606$, F- Stat = 6.557056, F- Stat (P-Value) = 0.000108, DW Stat = 2.289445

The result of the Short-Run component of the ARDL test uncovered an R^2 of 0.668606 this affirms that in the short-run the independent variables in the model collectively accounted for over 67% of the total variation in the Real Gross Domestic Product (LNGDP) of Nigeria between 1981 to 2019. The remaining 3 % is accounted for by other parameters not integrated into the model but have been accommodated by the error term. Similarly, the result indicates an F-statistics of 6.557056 with an equivalent P-Value of 0.000108, which justifies that the model is adequately built and well fitted for this study. More so, the D.w Stat of 2.289445 attest that the model is free from the autocorrelation problem. A cursory analysis of the significance of the coefficients of the parameter estimates of the individual variables in the model revealed that the coefficient of the first Lag of the independent variable and that of the third Lag of LNDMB are both statistically and a-priori significant as expected. Meaning that there is a causal effect running from the Lag periods of LNGDP and LNDMD to the Real GDP of Nigeria. The findings further denote that coefficients of LNSV is a-priori plausible but statistically no significant at 5% probability level. Finally, the estimates of LNCR and that of LNL are neither statistically nor theoretically significant contrary to what is envisaged in the literature.

Table 4: Result of the ECM ARDL Model

Variable	coefficient	Std. error	t-Statistics	P-Value
Ect-1	-0.392294	0.086295	-4.545960	0.0002

Inferences from table (4) above symbolizes that the error correction term (ECT) of -0.392294 with a corresponding P-Value of 0.0002 confirms that there is a long-run causality among the model variable, more so the causality is statistically significant. Most importantly, the ECT again indicates that the short run disequilibrium in the model is corrected by an annual adjustment speed of 39% in the long-run, thereby ascertaining that there is convergence of equilibrium in the long run.

Conclusion

This study explored the nexus between financial inclusion, monetary policy and economic growth in Nigerian. To empirically dissect the relationship, the paper adopted Phillips-Perron unit root test, the ARDL short run framework and ARDL Error Correction Model (ECM) tests. The unit root result ascertained that the variables in the model were not integrated of the same order which necessitated the deployment of the ARDL framework. The findings from the ARDL short run test result revealed that collectively the model variables significantly influence economic growth in Nigeria, but on the significant of the individual variable, the coefficient of LNDMB is both theoretically and statistically significant at 5% probability level to elicit economic growth in Nigeria. Nevertheless, the coefficients of LNCR and LNLR are yet to significantly impact on the economic growth of Nigeria which attest to the fact that the Nigerian financial system is still evolving and not yet fully inclusive. Although evidence from the Bound test were indeterminate in ascertaining whether there is long –run association among the variables or not, the ARDL ECM test result affirmed that this is a long-run association among financial inclusion, monetary policy and economic growth in Nigeria.

Fundamentally, the importance role of financial inclusion as a catalyst for the overall well-being of Nigerian economy is a function of the continuous expansion in the Branches of the DMBs into all nooks and cronies of the country in order to bring on board all adults that are currently financially excluded from the nation formal financial mainstream. Even with the monetary authority, noble policies and programs of financial inclusion, there are indeed embedded challenges in the financial system and the Nigerian macroeconomic environments that inhibit the total inclusion of the adults populace that are financially excluded.

To address the foregoing, the paper admonished the Central Bank of Nigeria to periodically review the instruments of monetary policy and strategies, so as to provide the DMBs and other non-Bank financial institutions the latitude to increase financial services to the public and the financially vulnerable populace, as such, the CBN should significantly reduce the monetary policy rate (MPC) to a single digit, reduce the cash reserve ratio, the liquidity rate and prudential guidelines. Such reductions would correspondingly lead to a decrease in the costs of financial services rendered by operators in the Nigerian financial system thereby promoting financial inclusion. The banking sector should increase its deposit net by expanding its operations into the hinterlands where bank presence is needed.

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