

The Nexus between Financial Inclusion and Economic Growth: Evidence from Nigeria

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Abstract: - This research work focused on the relationship between financial inclusion and economic growth in Nigeria. Two hypotheses were formulated, corresponding data (spanning from 2001 to 2016) were obtained and tested using Two-staged Least Squares Regression Method. Findings revealed that financial inclusion have significant impact on economic growth in Nigeria and that financial industry intermediation have not influenced financial inclusion within the period under review. It was recommended that Nigerian banks should develop financial products to reach the financially excluded regions of the country as this will increase GDP per capital of Nigeria and consequently economic growth.

Keywords: Financial Inclusion; Economic Growth; Financial Intermediation;

I. INTRODUCTION

Financial access is a very vital tool which government uses in stimulating economic growth because of its ability to expedite efficient allocation of productive resources, thus reducing the cost of capital. This practise can also be referred to as an inclusive financing system as it to a great level improves the daily activities pertaining to management of finances, and as well as reduces the growth of non-formal sources of credit (such as money lenders), which are often found to be manipulative or exploitative (Onaolapo, 2015). In recent times, Financial inclusion has assumed greater level of importance owing to its apparent prominence as a driver of economic growth. Financial inclusion is a situation where financial services are provided by arrange of providers, mostly the private sector, to spread to everyone who could use them. Precisely, it means a financial system that serves as many 5people as possible in a country. Financial inclusion is also perceived as the delivery of financial services at affordable costs to some disadvantages and low income segment of the economy (Harley, Adegoke and Adegbola, 2017). In recent times, financial Inclusion has assumed acritical development policy priority in many countries, particularly in developing economies (Sharma, 2015). Agreed that millions of individuals are left out from formal financial services worldwide, there exists a possible loss of deposits or savings, loss of investible funds and an associated loss of capacity of the worldwide economy to generate wealth. Generally, the low and middle income earners make up the largestpercentage of the populace and therefore controlsa huge portion of the economy's idle fund; though, held in small volumes in the

hands of each ofthe several million members of this group therefore, harnessing and accruing these resources offers a huge basis of cheap long-term investable capital. Access to financial services allows the poor to save money outside the house safely, and helps in alleviating the risks faced by the poor as a consequence of economic shocks (Wahiba and Weriemmi, 2014). Therefore, providing access to financial services is gradually becoming an area of concern for every policymaker for the understandable reason that it has far reaching economic and social implications. Financial inclusion has therefore become an explicit strategy for accelerated economic growth and is considered to be critical for achieving inclusive growth in a country (Karlan, Ratan and Zinman, 2014). This realisation, in the recent past, was the major impetus for the adoption ofpolicies and measures aimed at growing global financial inclusion as a means of promoting world economic prosperity(Lusardi andMitchell, 2014). Absence of financial inclusion is expensive to society and the individual. As far as the individual is concerned, absence of financial inclusion forces the unbanked into non-formal banking sectors characterised by high interest rates and small amount of available funds. Due to the fact that the non-formal banking structure is not enshrined into any legislative framework, any disagreement between lenders and borrowers cannot be dealt with legally (Dupas, Karlan and Ubfal, 2016). Borrowers are greater danger of being overcharged interest or manipulated. As far as the social benefits are concerned, financial inclusion increases the amount of available savings, increases efficiency of financial intermediation, and allows for tapping into newbusiness opportunities. Historically, the main reason why many European countries embraced universal banks under the supports of the state was the fear that market based competitive banking would not free the social benefit from comprehensive financial inclusion and instead cause social costs from rural-urban migration(Hariharan and Marktanner, 2013). State backed universal banking has contributed to massive economic branching out in rural areas than is the case in more competitive banking environments. Lack of financial inclusion is noticed in countries with great income disparities and this has led to the marginalisation of the poor because of unequal economic opportunities and monopolized markets. Democracy as a factor favours financial inclusion through established institutions as democracy is a vehicle that corrects many of the determinants of financial inclusion through redistribution. Fundamentally,

financial inclusion is complementary to economic growth two of them contribute significantly to poverty alleviation. Financial sector development; a driver of economic growth indirectly lessens poverty and inequality while suitable financial services for the poor can boost their welfare. Therefore, inclusive financial system is a genuine way for economic development and growth because of its ability to ensure improvement in the provision of efficient services, creation of saving opportunities and acceleration of capital creation among the poor (Dupas, Karlan and Ubfal, 2016). The role for banks in the financial inclusion procedure is critical and cannot be overstated. There exists a universal belief that financial inclusion process cannot be carried out or undertaken without the banks. There are views also that only an inclusive financial system will promote financial inclusion while the banks remain the critical agent of achieving this through the provision of efficient and key financial services. Hence, most countries today formulate their financial inclusion strategies in a manner that growth in rural areas should be facilitated by banks. Banks on their own part should deploy core banking solution (CBS) that will enhance the volume and form of services required in capturing the low income and rural population. The banks must also sustain a multi-channel approach using handheld devices, mobiles, cards, micro-ATMs, branches and kiosks after their deployment, with appropriate structures to ensure seamless integration with the banks' core banking solutions. Government on their own part should ensure that appropriate policies are implemented to boost and aid technological research and inventions that ensure that financial services are not just easily accessed but also cheaply available when needed.

II. THEORETICAL FRAMEWORK

Investment Theory: People and organizations anticipate future cash needs, and expect that their earnings in the future will not meet those needs and that is why they invest. Another motivation for investment is the desire to increase wealth that is to make money grow. The desire to become wealthy in the future can make you willing to take big risks. The dividends from these kinds of investments may not be economic, and thus they are difficult to compare and evaluate. For most investors, charitable goals aside, the key measure of benefit derived from a security is the rate of return. Financial Inclusion disproportionately benefits the poor population in the sense of lowering collateral requirements and borrowing costs (Schmeid, 2013).

Human Capital Theory: this states that other things being equal, personal incomes vary according to the amount of investment in human capital; that is, the education and training undertaken by individuals or groups of workers. Human capital arises out of any activity able to raise individual worker productivity. In practice full-time education is, too readily, taken as the principal example (Schmeid, 2013). For workers, investment in human capital involves both direct costs, and costs in foregone earnings. Workers making the

investment decisions compare the attractiveness of alternative future income and consumption streams, some of which offer enhanced future income, in exchange for higher present training costs and deferred consumption. Returns on societal investment in human capital may in principle be calculated in an analogous way. People need access to credit in order to invest in their human capital; e.g. via schooling, university etc. to find eventually a well paid job (Schmeid, 2013).

Firm-behavior Theory: In the theory of the firm, the behavior of a particular business entity is said to be driven by profit maximization. This theory governs decision making in a variety of areas including resource allocation, production technique, pricing adjustments and quantity produced. Financial inclusion has the positive external effects that the cost of capital is reduced. This can lead to a rise of production and hence generate employment opportunities (Schmeid, 2013).

III. EMPIRICAL FRAMEWORK

Harley, Adegoke and Adegbola (2017), carried out an empirical study on the role of financial inclusion in economic growth and poverty reduction in a developing economy using panel data analysis ranges from 2006 to 2015 within a log linear model specification framework. The methodology they applied to the study was extracted from the literatures they came across. From their regression result, the records of active ATM, bank branches and government expenditures selected from three Africa countries were the most robust predictors for financial inclusion on poverty reduction in a developing economy. According to them, one percent increase on ratio of active ATM will lead to about 0.0082 percent increase in the gross domestic product and a reduction of poverty in developing economy. According to them an indicator shows that most of the ATM in developing economy are outdated and thus required a technological upgrade to have a significant impact in rural areas. Their coefficient of determination was very high as it showed that about 92 percent of the total variations in real growth rate of gross domestic product are explained by all the independent variables in the model. Consequently, the researchers recommended that Government should focus on poverty reduction through focus on infrastructural development that will enhance banking services.

Gretta (2017), in his work on Financial Inclusion and Growth studied the impact of financial inclusion on the growth of the economies in developing countries such as the Middle East and North Africa (MENA) and the BRICS region and tried to identify the various channels of transmission between financial literacy, financial intermediaries and growth. The study applied a VAR regression in order to quantify the relationship between financial inclusion in terms of financial activities, financial literacy and growth and to study its impact on the economic growth in the MENA region. His findings showed the importance of financial inclusion in the MENA and BRICS region.

Okoye, Adetiloye, Erin and Modebe (2017), in their study; financial inclusion as a strategy forenhanced economic growth and developmentinvestigated the outcome of financial inclusion on economic growth anddevelopment in Nigeria over the period 1986 to 2015 using the Ordinary Least Squarestechnique. They measured Financial inclusion in the study using loan to deposit ratio,financial deepening indicators, loan to rural areas, and branch network. Measures offinancial deepening adopted in the study are ratios of private sector credit to GDP andbroad money supply to GDP. Economic growth was proxied by the researchers as growth in GDP oversuccessive periods while per capita income was adopted as a measure of poverty,hence an index of development. The study showed that credit delivery to the privatesector has not significantly supported economic growth in Nigeria and that financial inclusionhas promoted poverty alleviation in Nigeria through rural credit delivery. The study recommended that the monetaryauthorities should deepen financial inclusion efforts through enhanced credit delivery tothe private sector as well as strengthen the regulatory framework in order to ensureefficient and effective resource allocation and utilization.

Babajide, Adegboye and Omankhanlem (2015), investigated the impact of Financial Inclusion on economic growth in Nigeria. Their study aimed at highlighting the determinants of Financial Inclusion and its impact on economic growth. Their study made use of secondary data sourced from world development indicators and ordinaryleast square regression model was employed in analyzing the data. Their result shows that Financial Inclusion is a significant determinant of the total factor of production, aswell as capital per worker, which invariably determines the final level of output in the economy. The study recommended that natural and economicresources should be adequately harnessed, as alternative means of revitalization and diversification of Nigeria’s oil-dependent monocultural economy.

Onaolapo (2015), in his study examined the effects of financial inclusionon the economic growth of Nigeria (1982-2012).According to the researcher, data for the study were collected fromsecondary sources like Statistical Bulletins of the Central Bank of Nigeria (C.B.N.),Federal Office Of Statistics (F.O.S.) and World Bank. Primary data used for the study consisted of some bank parametres as Branch Network, Loan to Rural Area, Demand Deposit, Liquidity Ratio, Capital adequacy, and Gross Domestic Product. Ordinary least square was employed in analysing the data. Theoverall results of the regression analysis show thatinclusive Bank financial activities greatlyinfluenced poverty reduction(R2=0.74) but marginally determined national economic growthand Financial IntermediationthroughenhancedBank Branch Networks, Loan To RuralAreas, and Loan To Small Scale Enterprise givenabout 50% relatedness between variables on either sides of theequations.

Olaniyi (2015), in his study the effects of economic and financial development onfinancial inclusion in Africa

provided empirical evidence on the effects of economic and financial development onfinancial inclusion in Africa, using panel FMOLS for the 2005-2014 period. His study shows thateconomic growth has a significant positive impact on financial inclusion, meaning that Africancountries with higher economic growth have more inclusive financial systems.GDP per capitahas a significant positive impact on financial inclusion. That is, income is an important factor inexplaining the level of financial inclusion in Africa. He established in this study, thatboth economic and financial development promote financial inclusion, though the effectsof economic development are much stronger. Also, inflation is negatively linked to financialinclusion, and as well insignificant across all specifications. Deposit interest rate is positivelylinked to financial inclusion, though insignificant. The low deposit interest rates in Africancountries do not encourage inclusive financial systems. Population, though positive, isinsignificant. Internet has positive significant impact onfinancial inclusion, meaning that internetaccess is indispensable in a fast-moving and digital African economy. Literacy is also statisticallysignificant, meaning that adult literacy is an important factor in explaining the level of financialinclusion in Africa. As well, Islamic banking presence and activity are associated with higherfinancial inclusion.

IV. RESEARCH METHODOLOGY AND DATA ANALYSES

The research design employed by the researcher is ex post-facto research which aims at determining or establishing or measuring the relationship between one variable and another or the impact of one variable on another. The nature of data for analysis of this study is secondary and was obtained from the Central Bank of Nigeria Statistical Bulletin, 2016. A regression model has been employed, the essence of regression is to use a mathematical equation to express the nature of the relationship existing between variables and ultimately to use this equation to predict the of value one variable given a specific value of the other variable.

The following is a multiple regression model

$$Y = b_0 + b_1X_1 + b_2X_2 \dots + \mu$$

Where

Y = the variable we are trying to predict; b_0 = the intercept; b_1 = the slope; X_1, X_2 = the variables used to predict Y; μ = the error term.

The intercept (b_0) is the value of the dependent variable when the independent variable is equal to zero while the slope of the regression line (b_1) represents the rate of change in Y as X changes. Because Y is dependent on X, the slope describes the predicted values of Y given X.

The above model can thus be applied in this study as

$$\blacktriangle \text{GDP} = b_0 + b_1\text{FD1} + b_1\text{FD2} + b_3\text{BDR} + b_4\text{BLR} + \mu \dots \dots \dots \text{Eqn. (I)}$$

$$BDR = b_0 + b_1LDR + b_2LSSE + b_3BLR + \mu$$

..... Eqn. (II)

Where

- ▲ GDP – Percentage change in GDP/GDP growth rate
- FD1 – Financial Deepening Index expressed as Broad Money Supply to GDP
- FD2 – Financial Deepening Index expressed as Bank Credit to GDP
- BDR – Commercial Banks Deposit From Rural Areas
- BLR – Commercial Bank Loans to Rural Areas
- LDR – Commercial Bank Loan to Deposit Ratio
- LSSE – Commercial Bank Loan to Small and Medium Scale Enterprises

Techniques of Data Analysis

The Techniques of data analysis employed by the researchers is the Two-staged least square regression with the aid of Statistical Package for Social Sciences (SPSS) version 22.0. The aim of using this method is because two-staged least squares minimizes the squares of the residuals, the formulas for obtaining the estimates of the beta coefficients, standard errors are all based on this principle. The aim of using this method is to minimize the error in our prediction of the dependent variable, and by minimizing the residuals, error will be minimized. By using the "squares" the researcher is precluding the problem of signs thereby giving positive and negative prediction errors the same importance.

Data Presentation and Analyses

Table 4 Necessary Data Analyses from 2001 to 2016

Year	▲GDP%	M2/GDP	CPS/GDP	BLR	BDR	LDR	BSME
2001	17.92914	15.60486	9.40433	16875.9	12341	65.625	52428.4
2002	39.31713	13.28918	8.211023	14861.6	8942.2	62.775	82368.4
2003	17.37789	14.6819	8.243662	20551.8	11251.9	61.85	90176.5
2004	30.22004	12.3075	8.207608	64490	34118.5	68.625	54981.2
2005	28.56993	11.84515	8.255015	18461.9	16105.5	70.8	50672.6
2006	28.70452	13.25046	7.991697	3118.6	24274.6	63.6	25713.7
2007	15.11704	15.53975	11.15335	3082.3	27263.5	70.775	41100.4
2008	18.67685	20.45106	17.72666	13411.81	46521.48	80.92796	13512.2
2009	13.09488	21.25097	20.65553	3296.227	15590.5	85.66147	16366.49
2010	23.31844	20.20598	18.59843	20.79	16555.98	74.2	12550.3
2011	15.32281	19.32743	16.92602	20.18407	19980.3	44.77372	15611.7
2012	13.86707	19.37614	20.42738	19.72322	22579.97	42.31292	13863.46
2013	11.6834	18.92846	19.66704	20.5	739923.3	37.965	15353.04
2014	11.17588	19.85464	19.23741	396.4025	868947.8	61.88793	17424.3
2015	5.729041	20.07681	19.83693	62073.75	36192.15	68.55679	11307.82
2016	7.801301	21.29056	20.7733	94077.22	39012.55	75.9275	12047.88

Source: CBN Statistical Bulletin, 2016

Decision Rule: Reject H₀ if p-value ≤ .05, otherwise Do not Reject H₀.

Table 4.1 Model Summary

Equation 1	Multiple R	.803
	R Square	.645
	Adjusted R Square	.516
	Std. Error of the Estimate	6.353

Table 4.2 ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Equation 1	Regression	806.748	4	201.687	4.997	.015
	Residual	443.994	11	40.363		
	Total	1250.741	15			

Table 4.3 Coefficients

		Unstandardized Coefficients		Beta	T	Sig.
		B	Std. Error			
Equation 1	(Constant)	57.243	15.982		3.582	.004
	FD1	-2.344	1.784	-.877	-1.314	.216
	FD2	.283	1.142	.172	.248	.809
	BLR	-6.623	.000	-.206	-1.093	.298
	BDR	-7.141	.000	-.210	-.995	.341

The Multiple R of .803 shows that there is a strong positive relationship between the independent variable proxied by [FD1, FD2, BLR, BDR] and the dependent variable proxied by GDP. The R-square of .645 shows that only 64.5% of the variation in the dependent variable can be explained by the independent variables. The Adjusted R-square of .516 shows that about .129 (12.9%) of the variation in the dependent variable is explained by other factors/variables excluded from the model, representing a minute deviation in prediction. The adjusted error of 6.353 shows that model fit is good as it

denotes an insignificant error in prediction. The slopes of [-2.344, 2.83, -6.623, -7.141] shows that at every unit increase in the independent variable, the dependent variable will increase by [-2.344, 2.83, -6.623, -7.141] respectively. The ANOVA table however shows that the model fit is significant at a statistical significance of .015 while variables independently were found to be non-significant. The model when replaced with its values from SPSS output, will be $\Delta \text{GDP} = 57.243 - 2.344\text{FD1} + 2.83\text{FD2} - 6.623\text{BLR} - 7.141\text{BDR} + 6.353$.

Table 4.4 Model Summary

Equation 1	Multiple R	.484
	R Square	.234
	Adjusted R Square	.043
	Std. Error of the Estimate	262191.468

Table 4.5 ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Equation 1	Regression	252033311719.720	3	84011103906.573	1.222	.344
	Residual	824932389774.045	12	68744365814.504		
	Total	1076965701493.765	15			

Table 4.6 Coefficients

		Unstandardized Coefficients		Beta	T	Sig.
		B	Std. Error			
Equation 1	(Constant)	683374.160	351163.148		1.946	.075
	BLR	-1.140	2.520	-.121	-.452	.659
	LDR	-7018.772	5385.337	-.349	-1.303	.217
	BSME	-2.592	2.597	-.252	-.998	.338

The Multiple R of .484 shows that there is a strong positive relationship between the independent variable proxied by [LDR, LSSE, BLR] and the dependent variable proxied by BDR. The R-square of .238 shows that only 23.8% of the variation in the dependent variable can be explained by the independent variables. The Adjusted R-square of .043 shows that about .195 (19.5%) of the variation in the dependent variable is explained by other factors/variables excluded from the model, representing a minute deviation in prediction. The slopes of [-1.140, -7018.772, -2.592] shows that at every unit increase in the independent variable, the dependent variable will increase by [-1.140, -7018.772, -2.592] respectively. The ANOVA table however shows that the model fit is statistical non-significance at a p-value of .344 while variables were independently found to be non-significant. The model when replaced with its values from SPSS output, will be $BDR = 683374.160 - 1.140BLR - 7018.772LDR - 2.592BSME + 262191.468$

V. HYPOTHESES TESTING

H_0 : Financial inclusion has no significant impact on economic growth in Nigeria.

The P-value on which basis the researcher can reject the null hypothesis that financial inclusion has no significant impact on economic growth in Nigeria is .015. Since p-value < .05, the null hypothesis is thereby rejected and we conclude alternately that financial inclusion have significant impact on economic growth in Nigeria.

H_0 : Financial industry intermediation have not influenced financial inclusion within the period under review.

The p-value on which basis the null hypothesis can be rejected is .344. Since the p-value > .05, the null hypothesis will not be rejected and the researcher conclude in affirmation that financial industry intermediation have not influenced financial inclusion within the period under review.

VI. CONCLUSION AND RECOMMENDATION

The importance of financial inclusion is globally acknowledged due to its strategic role of bringing integrity and stability into financial systems as well as its role in fighting poverty in a sustainable manner. It is more germane in the case of Nigeria as a developing economy to use financial inclusion as a dais solely not for growing the financial sector but more as an engine for driving an inclusive economy.

The study recommends that:

1. Nigerian banks should develop financial products to reach the financially excluded regions of the country as this will increase GDP per capital of Nigeria and consequently economic growth.
2. The CBN should help reduce the high interest rate of banks as this would help ensure an increased financial intermediation.

3. Banks should plant sub-bank branches and ATM outlets as this will help include the financially excluded regions of Nigeria.

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