

## Financial Inclusion and Investment in Nigeria

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### Abstract

*This study examines the relationship between financial inclusion and investment in Nigeria. Many studies have focused on examining the relationship between financial inclusion and economic growth, however, economic growth cannot be achieved without sustainable investment guaranteed by financial inclusion. This study thus seeks to bridge this gap and fill the lacuna. Annual time series data was obtained from the CBN statistical bulletin and for the period 1981-2015. The study makes use of the autoregressive distributed lag (ARDL) bound co-integration test and error correction model. The outcomes of the study show that not all the three criteria for financial inclusion (availability, accessibility and affordability) guarantee investment in the Nigerian economy. This study recommends that private individuals should have uncomplicated access to credit and fair distribution of commercial banks in the rural setting of the state.*

**Key words:** financial inclusion, investment, gross capital formation, autoregressive distributed lag model

**J.E.L. classification:** G20, G21, J016

### 1. Introduction

Prior to financial inclusion was financial exclusion which according to Kodan and Chhikara (2013) is not only a physical access caused by the changing topography of financial services but also includes all types of people who make little or no use of financial services. Financial exclusion refers to the inability of individuals to access, and or effectively use, financial products which can help them to participate in the range of activities that constitute social life. Before the recent efforts made at promoting financial inclusion, the Nigerian economy was largely a cash-based economy with significant proportion of the narrow money stock in the form of currency outside the banking system (Omojolaibi, 2017). However, awareness is now being created by the government and financial institutions on the advantages of financial inclusion. Financial inclusion in today's economy is gaining attention more than ever before and Cull et al (2014) affirmed that global and national-level policy makers have been embracing financial inclusion as an important development priority.

Financial inclusion is a term commonly used to represent the deliberate attempt which makes the poor, marginalised people and those vulnerable to low economic power to engage in formal economic process through ownership and usage of formal financial service at regular interval (Aina and Oluyombo, 2014). Also, World Bank (2012) defines financial inclusion as the range, quality and availability of financial services to the underserved and financially excluded.

According to Kama and Adigun (2013), giving access to the hundreds of millions of men and women (all over the world) who are presently excluded from financial services would provide the possibilities for the creation of a large depository of savings, investable funds, investment and therefore global wealth generation. When low-income earners are given access to financial services, accumulation of capital will occur and ultimately lead to rise in investment because low income earners contribute a larger share of the population in developing countries. Access to

financial services should be with little or no cost, this is very pertinent if the less privileged in the society will benefit.

Inclusive growth is the desire of any government and a major way to achieve this is to ensure that financial services are made available to the masses. However, achieving financial inclusion is still a global challenge as 54.0 per cent of adults worldwide are being financially excluded (without access to financial services); in developing countries, worse situation prevails where as much as 70.0 per cent financial exclusion levels exist. Also, Chauvet and Jacolin (2017) noted that access to credit has been identified as one of the main obstacles to the development of private sector in developing countries. Despite the growth of commercial banks over the years, Dashi et al (2013) noted that about 2.5 billion adults in the world still lack access to formal financial service. This might be due to poor concentration of banks in rural areas and a greater concentration in urban areas. Chauvet and Jacolin (2017) rightly asserted that banks tend to concentrate where there are lower-risk public and foreign firms.

Financial inclusion is critical to the attainment of poverty reduction, removal of barriers to economic participation of rural dwellers, women, youths and those at the bottom of poverty (Nwankwo and Nwankwo, 2014). When rural dwellers are have stress-free access to financial services, sustainable economic growth and development will be ensured. Fadun (2014) asserted that financial inclusion can be used as a tool to alleviating poverty and also enhancing income redistribution in the country. Nwankwo and Nwankwo (2014) also noted that financial inclusion is critical to the attainment of poverty reduction, removal of barriers to economic participation of rural dwellers, women, youths and those at the bottom of poverty; it will also help pave way for sustainable economic growth by providing financial services to individuals and communities that traditionally have limited or no access to the formal financial sector as evidenced in Nigerian rural dwellers.

However, more than reducing poverty, financial inclusion is key in ensuring financial stability and growth in the economy. It is an integral part of financial development. Financial development has been shown to improve the proportion of innovative and productivity-enhancing investment projects, to reduce transaction costs, and more generally to improve the allocation of capital and risk management (Chauvet and Jacolin, 2015). In developing countries and Nigeria in particular, private savings constitutes the main source of capital accumulation for investment purposes and when investment expenditure exceeds the level of savings, the private and the public sectors borrow from financial institutions (Egoro and Obah, 2017).

Financial inclusion in the economy has many potential benefits. Financial inclusion reduces liquidity constraints and encourages investment (Chavet and Javolin, 2015). Banco Central do Brazil (2010) noted that financial inclusion is today widely considered as a right of all citizens to social inclusion, better quality of life and a tool for strengthening the economic capacity and capabilities of the poor in a nation. As a result of these advantages, policy makers have recognized financial inclusion as a basic necessity for the citizenry. It is also hoped that widening financial inclusion will reduce the cost of cash management, and defend the strength of the local currency, while promoting a sound financial system in the economy (Mbutor and Uba, 2013).

Many studies have examined the relationship between financial inclusion and economic growth (Kama and Adigun, 2013; Chauvet and Jacolin, 2017; Alliance for Financial Inclusion, 2013), however, few have been able to establish the relationship between financial inclusion and investment. Investment is an integral part of economic growth and only when individuals have access to credits in the economy can they make short and long-term investments that can contribute to economic growth. Also, Adigwe et al (2015) mentioned that governments have been trying to lift the country out of the economic crisis without achieving success as desired because each of these governments have not focused much attention on investment especially foreign direct investment which will not only guarantee employment but will also impact positively on economic growth and development. For financial inclusion to impact on economic growth, it must pass through some channels; however, most studies undermine these channels and focus on the impact of the former on the latter. Investment is one of the channels through which financial inclusion pass through to impact economic growth; thus, this study seeks to examine the relationship between financial inclusion and investment in Nigeria. Moreover, Sarma (2008) noted that financial inclusion should be available, accessible and affordable to all people in the economy. Scholars have mostly

researched on one of the three of these characteristics or at most two without carrying out research to capture these three characteristics (Omojolaibi, 2017; Chauvet and Jacolin, 2017; Fadun, 2014). This study, however, examines if availability of commercial banks, access to financial services (measured by deposits with commercial banks) and credit to private sector (which measures financial services' affordability) influence investment in the economy.

The remaining part of the paper is structured as follows: section 2 presents the review of relevant literature. Section 3 describes the theoretical framework and methodology used in the study, Section 4 reports the empirical findings while section 5 concludes with policy implications.

## **2. Review of relevant literature**

### **2.1 Review of theoretical literature**

Early economic development theories believe that there is a need to have a developed and effective financial system that can tap into savings and channel funds into a wide variety of business activities. Modern development theories however advocate that financial development is a must for economic growth to occur. Also, modern development theories have shown that not having access to finance is very much responsible for persistent income inequality and slower economic growth rate. When the economy has a developed financial system, creation of access to funds will be enhanced and where there is an underdeveloped financial system, there will also be a restriction to access to funds with people constrained by the availability of their own funds (Kodan and Chhikara, 2013).

Although financial liberalization coupled with financial inclusion can enhance the efficiency with which saved resources are channeled into productive use, the effect on the quantity of savings is theoretically ambiguous (Bandiera et al, 2000). A liberalized financial system that is competitive will naturally be characterized by improved savings opportunities, and this includes higher deposit interest rates, savings with a wider range and in many cases more banks and bank branches, as well as other financial intermediaries.

Campbell and Mankiw (1990) remarked that it is rationale to say all households don't have access to the credit markets, thus, consumption smoothing over a period of time may not come easily to households. Consequently, current income determines consumption decisions for such liquidity-constrained households. On theoretical grounds, it has been shown that relaxing of liquidity constraints will be connected with a consumption boom and reduction in aggregate saving. To be more specific, Campbell and Mankiw hypothesized that there are two types of households in the economy: One type of household,  $\lambda$ , is liquidity constrained and their consumption is entirely determined by the evolution of current income and the remaining type  $(1 - \lambda)$ , has free access to capital markets and thus can smooth their consumption intertemporarily. This type of theoretical development led these authors to challenge the implicit Mckinnon-Shaw assumptions that were based on a homogenous household set in which it was assumed that all relevant households had free access to capital markets within the domestic economy (Gemech and Struthers, 2003).

The McKinnon-Shaw hypothesis propounded that in a situation where financial intermediaries fail to function at their full capacity and savings are not channeled to investment efficiently (mainly as a result of government regulations and restrictions), the development of the economy as a whole will be threatened. Savings is responsive to interest rates; if high interest rates are removed, savings will increase which will thus stimulate investment and in the long run, encourage economic growth. Also, financial liberalization policies will lead to reduction in credit controls and enhance competition and efficiency of commercial banks.

McKinnon (1973) and Shaw (1973), analysed the benefits of reducing the impact of financial repression on domestic financial system especially in developing countries. When financial restrictions are removed in such countries, interest rates will grow toward their competitive market equilibrium. When artificial ceilings are placed on interest rates, savings will be reduced, capital accumulation will drop and allocation of resources will not be efficiently carried out. When interest rates are not allowed to adjust automatically so that the market can be cleared, other forms of clearing will take place which are not "non-market". Some of these "non-market" forms are rationing of credits through auctions, quantitative restrictions and even through different bidding

systems which are often times open to corrupt practices and partiality. Therefore, not only will the quantity of savings and investments be low or irregular but also the level of activity which occurs will be of low quality. It is thus obvious that if interest rates are not allowed to clear the market, overall level of savings and investments will be repressed. Liberalization is assumed by the early hypotheses of McKinnon and Shaw will be associated with higher real interest rates and this will stimulate saving. Savings' response to interest rate is the underlying assumption; higher saving rates will finance a higher level of investment, thus leading to higher growth. Therefore, in line with this view, one should expect to see higher saving rates accompanied with higher levels of investment and growth when financial liberalization takes place.

As cited by Kodan and Chhikara, Schumpeter (1912) challenged the fact that well-functioning banks stimulate technological innovation by identifying and funding potential entrepreneurs. Thus, the financial sector if developed does not only lead to promotion of aggregate investment and output but also in the attainment of finance-led industrialization. Therefore, in theories where entrepreneurship is being stressed, the extent to which talented poor individuals have access to external funds is determined by the financial market.

Banerjee and Newman's model (1993) also states that occupational choices of individuals are limited by the endowments they have initially. The occupational choices' structure in turn decides the amount they can save and the risks they can bear, having long-run implications for growth and income distribution. As a result, these models show that not having access to finance may be the critical mechanism whereby persistent income inequality or poverty traps are generated coupled with low growth rates.

Rashid and Intartaglia (2017) stated that provided perfect conditions exist in the market, households that are endowed will be able to borrow from the credit market when they want to implement investment projects. However, since this is not always the case, financial services should be made available to the poor so that they will be able to borrow funds which they could not previously borrow. Unfortunately, due to the risk involved, banks prefer to lend out to corporate firms so as to reduce the risks that come along with investment projects.

## **2.2 Review of empirical literature**

According to Beck and Torre (2006), access to financial services all over the world based on modern economic and social agenda hinges on two major reasons: many theoretical and empirical literature that explains the significance of a financial system that is well-developed to guarantee economic growth and development; and having access to financial services which is seen as a public good will foster participation by citizenry. However, in a situation where the economy lacks a developed financial system, availability of funds will be low and even when available, it will be at a ridiculously high costs. Economic activities to be financed under this type of system will be few and in the long run, low economic growth will result (Kodan and Chhikara, 2013). Thus, an economy with a well-established financial system and institutions will introduce appraisal techniques and effective methods of gathering information which will enable them to finance the minor activities of the private sector, thus, promoting investment in the economy. When external funds are made available to prospective entrepreneurs, new competitors will be encouraged to enter into the market and increased competition will lead to better service delivery.

Levine and Zervos (1998); Beck and Levine (2004); and Levine (2005) have shown that financial development impacts economic growth positively. When the financial system is developed, economic agents will find it impossible to exploit investments that are profitable which will then lead to effective allocation of resources. A well developed financial system will also encourage income share of labour if labour is the main source of income for the poor. Since financial development stimulates economic growth, the demand for labour might as well be raised (Rashid and Intartaglia, 2017).

Adigwe et al (2015) carried out a study to examine the effect of foreign direct investment on economic growth in Nigeria. Using time series data, data for the study was collected from CBN Statistical Bulletin from 2008 to 2013. Pearson Correlation was used to test the hypothesis and the findings revealed that there is a significant relationship between foreign direct investment, exchange rate and economic growth. This indicated that economic growth in Nigeria is directly

related to foreign direct investment and exchange rate. The paper recommended that there is need for government to be formulating investment policies that will be favorable to local investors in order to compete with the inflow of investment from foreign countries.

Kama and Adigun (2013) also researched on the issues and challenges with financial inclusion in Nigeria. Using descriptive statistics, the paper reviewed experiences of other jurisdictions in the achievement of financial inclusion. More importantly, the various country experiences showed that, though financial inclusion may have become a general phenomenon, its nature, form and challenges differ among jurisdictions and as such cannot be addressed by a single product or "one size fit all" approach. Nations should therefore implement initiatives that take into consideration the peculiarities of their environments and most critically its local people. The study recommended a systematic approach that aligns responsibility and institutions among all stakeholders in the financial inclusion process to guarantee sustainability.

Chauvet and Jacolin (2017) examined the relationship between financial inclusion, bank concentration, and firm performance in 79 developing and emerging countries. With the use of firm-level data, they found that financial inclusion, i.e., the distribution of financial services across firms, has a positive impact on firm growth. This positive impact was magnified when bank markets were less concentrated, a proxy for more competition among banks. They also found that more competitive banks favour firm growth only at high levels of financial inclusion, while bank concentration is particularly favorable to foreign and state-owned firms and increases firm growth at low levels of financial inclusion. In countries with limited financial deepening, the quality of the banking system (financial inclusion and bank competition) may be as important in promoting firm performance as its overall size.

Focusing on the advantage of savings on growth in an economy, Egoro and Obah (2017) researched on the effect of national savings on economic growth in Nigeria from 1990 to 2015. Secondary data was adopted and sourced from CBN statistical bulletin. Ordinary Least Square with the aid of E-view version 9 was used to determine the effects of National Savings on Gross Domestic Product. The result showed that there is a positive and significant relationship between National Savings and Gross Domestic Product in Nigeria. The study recommended amongst others that export commodities could be manufactured for established international market so as to strengthen Nigeria's term of trade and induce savings; and proper financial market development that would be able to meet the saving needs of the surging business world.

Looking at the role of governance in financial inclusion, Omojolaibi (2017) carried out a study on the impact of financial inclusion and governance on economic growth via three channels: investment in infrastructure, per capita GDP and income inequality. Using Generalised Method of Moment (GMM) estimation technique for the analysis, three major findings were made, viz: financial inclusion and governance indices have statistical relevance in determining infrastructural investment in Nigeria; governance indices and commercial bank deposit significantly increase per capita GDP; and financial inclusion has the tendency to bridge the gap between the rich and the poor and reduce the prevalence of poverty in the economy. The study recommended that more measures should be taken to address financial exclusion of low-income groups from financial services if income inequality will be reduced and per capita GDP increased.

Investigating the sustainability of financial inclusion to rural dwellers in Nigeria, Nwankwo and Nwankwo (2014) used descriptive study and content analysis. The study observed that the sustainability of financial inclusion to rural dwellers in Nigeria remains the mainstream for economic growth in any country. The study recommended that collaboration between Deposit Money Banks (DMBs), Microfinance Banks (MFBs) and Communication services providers should be promoted for enhanced intermediation of financial service; also, rural dwellers should be educated on the importance of banking as it would facilitate the success of CBN financial inclusion policy.

Kodan and Chhikara (2013) carried out a theoretical and quantitative study on financial inclusion and economic growth. The log linear regression model was used to evaluate the leading contributor in the value of financial inclusion index among all the three variables used: depth or penetration, availability and usage; the depth ratio emerged as leading contributor. The study recommended that policy makers around the world should strive to surge the level of financial

inclusion for an optimal, sustainable, inclusive economic growth and development of the economies by focusing on removing the regional imbalances.

In summary, most of these studies examine the relationship between financial inclusion, economic growth and poverty reduction. This study builds on existing literatures to examine if financial inclusion in Nigeria affects gross capital formation or not.

### 3. Theoretical framework and methodology

This study builds on McKinnon-Shaw's Liberalization hypothesis as a catalyst for higher saving because the theory that financial inclusion ensured as a result of financial liberalization will lead to higher levels of investment and growth. The hypothesis indicate that banks issue credit to individuals not as a result of expected investment returns but transaction costs and risk of default perceived.

Moreover, the McKinnon-Shaw model noted that Investment (I) has a negative relationship with real interest rate (r) while savings (S) are a positive function of the real interest. If real return on bank deposits increases demand for money, investment ratio will also increase. In sum, when financial liberalization operates, savings (S) equal investment (I).

Autoregressive Distributed Lag Models (ARDL) will be used to estimate the long run relationship amongst the variables. This technique has the ability to make use of variables stationary at level and first difference but not second difference. Although ARDL models have been made use of in econometrics for many years now, recently, they have gained popularity as a method of examining cointegrating relationships between variables from the work of Pesaran and Shin (1998) and Pesaran et al (2001).

From the literature, financial inclusion is often proxied by credit made available to the private sector, deposits with commercial banks and concentration of commercial banks in the country; and Gross capital formation used as proxy for investment. Thus, a functional model which expresses gross capital formation (GCF) as a function of the credit to private sector (CPS); private deposits with commercial banks (DEP); and number of commercial banks' branches in rural and urban areas in Nigeria (COM) is presented below:

$$GCF = f(CPS, DEP, COM) \text{-----} (1)$$

$$\text{LogGCF} = \beta_0 + \beta_1 \text{logCPS}_{t-1} + \beta_2 \text{DEP}_{t-1} + \beta_3 \text{COM}_{t-1} + \sum a_i \Delta \text{logGCF}_{t-i} + \sum b_i \Delta \text{DEP}_{t-j} + \sum c_k \Delta \text{COM}_{t-k} + U_t \text{-----} (2)$$

Where

GCF= Gross Capital Formation

CPS= Credit to Private Sector (affordability measure)

DEP= Private Deposits with Commercial Banks (Availability measure)

COM= Number of Commercial Banks' Branches (Accessibility measure)

$\beta_0$  is the constant,  $\beta_1$ ,  $\beta_2$  and  $\beta_3$  are coefficients of elasticities, log represents the logarithm of variables, and U the disturbance term in time t.

The establishment of cointegrating relationship amongst the variables is done following the Bound Test Approach. The error correction model associated with long run estimates is analysed to obtain short run dynamic parameters

$$\text{Log GCF}_t = \beta_0 + \beta_1 \text{logCPS}_{t-1} + \beta_2 \text{DEP}_{t-1} + \beta_3 \text{COM}_{t-1} + \psi \text{ecm}_{t-1} \text{-----} (3)$$

Where  $\beta_0$  is the constant,  $\beta_1$ ,  $\beta_2$  and  $\beta_3$  are coefficients of elasticities and  $\psi \text{ecm}_{t-1}$  is the speed of adjustment to equilibrium. It is expected that all the independent variables will have a positive relationship with the dependent variable.

This study uses secondary time series data from the CBN Statistical Bulletin (2016) for the period 1980-2015.

### 4. Empirical findings

#### 4.1 Unit root test

Being a time series study, the Augmented Dickey Fuller (ADF) test was conducted to determine the stationarity of the variables used. The findings of this study can be used both in the short run and in the long run if the data are stationary.

Table no. 1: ADF Unit Root Test

Variables	ADF TEST AT FIRST DIFF	MACKINNON CRITICAL VALUE			ORDER OF INTEGRATION
		1%	5%	10%	
LOGGCF	-3.7011	-4.2529	-3.5485	-3.2071	I(0)
LOGCPS	-4.1713	-3.6463	-2.9540	-2.6158	I(1)
DEP	-5.3263	-3.6999	-2.9763	-2.6274	I(0)
COM	-4.1352	-3.6463	-2.9540	-2.6158	I(1)

Source: Computed by the Authors

The ADF Unit root test shows that the gross fixed capital formation and deposits with commercial banks are stationary at level at 95% level of confidence while the credit to private sectors and concentration of commercial banks are stationary at first level. For the maximum lag selection, we selected the maximum dependent and dynamic regressors lags using Akaike Information Criterion (AIC).

Following this test is the Co-integration test which measures the existence of a long term relationship among the variables in the model.

#### 4.2 Johansen co-Integration test

Johansen and Juselius (1992) established a procedure in estimating a co-integrated system which involves two or more variables. This will aid researchers to test if more than one cointegrating vectors exist in the multivariate system.

Table no. 2: Summary of the estimated result

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.51049	48.85403	47.85613	0.0402
At most 1	0.338506	25.2805	29.79707	0.1517
At most 2	0.204145	11.6431	15.49471	0.1749
At most 3 *	0.117047	4.10795	3.841466	0.0427

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

Source: Computed by the Authors

The result of the Johansen co-integration test shows two co-integrating equations which reveal that there is a long term relationship amongst variables in the model . The implication is that the null hypothesis of no co-integration among the variables should be rejected at five (5) percent level of significant; LOGGCF, LOGCPS, DEP and COM have long-run relationship.

#### 4.3 Autoregressive distributed lag model

Since the variables are stationary of order I(0) and I(1), the autoregressive distributed lag model will be used to estimate long run form of the model and error correction model (ECM). The error correction test needs to be carried out to determine the speed of adjustment between the variables.

Table no. 3: ARDL Long run form and bounds test

Dependent Variable: LogGCF			
	Max Lag	Lag Order	F Statistic
	2	(2, 2, 0, 0)	4.1553*** (k=3)
<b>Significant level</b>		Lower I(0) Bounds	Upper I(1) Bounds
<b>1%</b>		3.65	4.66
<b>5%</b>		2.79	3.67
<b>10%</b>		2.37	3.20
<b>R Squared</b>	0.9857		
<b>Adjusted R Squared</b>	0.9817		
<b>F-statistics</b>	246.1647***		
	0.000		
Stability and diagnostic tests			
	<b>T-Stats</b>	<b>p-value</b>	
<b>Ramsey Tests</b>	0.8709	0.3924	
<b>Normality Tests</b>	0.5132	0.7737	
<b>Heteroscedasticity</b>	2.3808	0.0519	
<b>Correlation Tests</b>	0.0285	0.9719	

Note: k is a number of variables. \*\*\*, \*\* and \* are 1%, 5% and 10% of significant levels, respectively.

Source: Computed by the researchers

From the analysis above, the F-statistic is greater than the upper critical bound at 5% significance level if GCF is used as a predicted variable. This confirms that the variables are cointegrated within period under study. Gross capital formation, credit to private sector, deposits with commercial banks and concentration of commercial banks are cointegrated for long-run relationship in Nigeria.

Four diagnostics tests carried out in the model are Ramsey test, Normality, Heteroscedasticity and Correlation; provided the probability value for each of the test is larger than 5% level of significance level. The results reveal that the coefficients are not statistically significant. Correlation test reveals that the p-value is not significant which shows the absence of serial correlation; this implies that the residuals are not serially correlated. Giving the significance of the p-value in the heteroscedasticity test, we cannot reject the null hypothesis of homoscedasticity against the alternate of heteroscedasticity. The normality test shows that the regression residual is normally distributed since the p-value is greater than 0.5. The diagnostic tests thus show that the specifications of the models are well stated and normally distributed with zero mean and constant variance. The models are thus robust and reliable for further analysis.

Table no. 4: Long run coefficients showing long-run Elasticities

Dependent Variable: LOGGCF				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGCPS	0.859237	0.163585	5.252532	0.0000
DEP	-0.000479	0.000367	-1.305109	0.2037
COM	0.000838	0.00052	1.612211	0.1195
C	12.66504	0.622706	20.33873	0.0000

Note: \*\*\*, \*\* and \* are 1%, 5% and 10% of significant levels, respectively.

Source: Computed by the researchers



Credit to private sector is statistically significant and has a positive and long run relationship with gross capital formation. A percentage increase in credit to private sector will increase gross capital formation by 86%. This implies that when financial services are affordable for citizens to get, investment will increase rapidly. Of course, the role of credit cannot be overemphasized in investment decisions. This is consistent with findings from Ojimadu et al (2016), Omankhanlen (2012), and Lucky and Uzah (2016) and conforms to the apriori expectations of this study. However, deposits with commercial banks show a negative relationship with gross capital formation, although this result is not statistically significant; a unit increase in deposits will dampen investment by -0.05%. Thus, deposits that are not conduit for investment will further diminish investment negatively. This again is consistent with Kodan and Chhikara (2013). Again, this means that deposits from individuals are not for investment purposes most of the time; individuals prefer to deposit with banks for safekeeping and not for the purpose of medium-term or long-term investment. Concentration of commercial banks show a positive relationship with gross capital formation; a unit increase in number of commercial banks will increase gross capital formation by 0.08%. This implies that the higher the number of banks, the higher the chances of easily accessing the commercial banks and financial services. This will ultimately lead to high investment in the economy.

Table no. 5: Error correction model

Dependent Variable: LOGGCF				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOGGCF(-1))	0.306809	0.146035	2.100932	0.0459
D(LOGCPS)	-0.067886	0.350659	-0.193597	0.8481
D(LOGCPS(-1))	-0.773243	0.386213	-2.002113	0.0562
CointEq(-1)*	-0.487443	0.099291	-4.909228	0.0000

Source: Computed by the researcher via E-views Software

Since there is a cointegrating relationship among the variables, table 5 above shows the speed of adjustment of the variables towards their long run equilibrium. The error correction term has a negative sign and is statistically significant, in consistency with theoretical expectation. The ECM in the above is -0.49 which implies that a deviation from equilibrium level in the current year will be corrected by 49% in subsequent years. Apparently, it will take about 4 years to ce

## 5. Conclusions and recommendations

This study examines the relationship between investment as measured by gross capital formation and financial inclusion (credit to private sector, deposits with commercial banks and commercial banks' branches concentration, which represent affordability, accessibility, and availability measures respectively). It is important to understand the relationship between investment and financial inclusion because of the role the duo play in economic growth. The co-integration test shows there is a long run relationship among the variables. Credit to private sector is positively related to gross capital formation and this conforms to apriori expectations. The importance of credit to private sector cannot be undermined in investment purposes. This therefore needs to be sustained for sustainable investment in the economy. In a country like Nigeria where corrupt practices are not found wanting, monitoring agencies that can be relied upon should be set up to ensure equity in giving out credit to private sector. Also, the private sector should be enlightened on the advantage of investment so that gross capital formation in the economy will be enhanced.

Deposits with commercial banks show a negative relationship with gross capital formation which could be as a result of low deposits from the citizenry. Research has shown that rural areas have dearth of commercial banks and so deposits from these areas may be low. Also, in a country like Nigeria where poverty level is high, people prefer to keep at home the little cash at their disposal rather than deposit in banks. Citizens should thus be properly orientated on the merits of depositing with commercial banks and having access to financial services.

Although number of commercial banks' branches show a positive relationship with gross capital formation, it is advisable that banks' branches are evenly distributed such that those in urban city and rural settlements will have access to financial services without discrimination.

In sum, availability and affordability of financial services is encouraging in Nigeria; however, there is a need to ensure stress-free accessibility to financial services which will be reflected on the deposits by private individuals. It is thus as a results of this, that researchers (Fadun, 2014; Omojolaibi, 2017; Rashid and Intartaglia, 2017; Nwankwo and Nwankwo, 2014) have reported that financial inclusion leads to economic growth and poverty reduction in Nigeria. Nevertheless, there is a need to sustain these measures as investment will only translate to sustainable economic growth if financial services are always available, accessible and affordable at every time and every place for the citizenry.

Some limitations should be taken note of in this study. Aside credit to private sector, deposits with commercial banks and commercial banks concentration, there are other proxies for financial inclusion such as number of ATM machines, commercial banks per 100,000 adults, formally banked adults, etc. The financial inclusion indicators used in this study are the most appropriate in examining relationship with investment. Further studies can also investigate the effect of financial inclusion on the dynamics of investment (i.e. changes in investment over time).

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