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The Impact of Financial Inclusion on Economic Growth in Nigeria: an Econometric Analysis

Samuel Stephen WAKDOK
*Corresponding author email id: sammyybest@yahoo.com

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Abstract **– Financial Inclusion as a strategy has become a policy issue around the world including Nigeria, and it has been perceived as a transmission mechanism for poverty eradication and a means of pursuing inclusive Economic Growth. This study examined the Impact of Financial Inclusion Economic Growth in Nigeria using an econometric analysis. The finance-growth theory was adopted as the theoretical framework. The data extracted from secondary sources for econometric analysis covered the period between 1990 and 2014 while the Error Correction Model was used to test the hypotheses. Based on empirical analysis, the study concluded that Financial Inclusion has a positive and significant impact on Economic Growth in Nigeria through financial deepening variables which are influenced by financial inclusion variables such as broad money, credit to private sector, loan deposit of the rural area and liquidity ratio of commercial banks. It is therefore recommended for Policy makers and regulators to ensure that adequate efforts are put in place to guarantee adherence by the banks to the various rules, regulations and policies guiding their activities. The Regulators need to make sure that all financial inclusion variables are geared towards growing the level of economic activities in the country which will in turn lead to inclusive economic growth.**

Keywords **– Economic Growth, Financial Inclusion, Financial Services, Per Capita Income, Poverty.**

I. INTRODUCTION

Economists have diverse opinions on the role of the financial sector in economic development. Some evident researchers consider that the operation of the financial sector purely responds to economic development, adjustment to varying demands from the real sector and is, therefore, overstated. (Levine R. , 2006). Notwithstanding their intrinsic differences, financial institutions strengthen economic prosperity. Financial markets and institutions help to relieve the effects of information and transaction costs that check direct pooling and investment of the savings of the society. While precise hypothetical models stress the importance of divergent institutional systems financial systems can take, especially the fundamental functions that they perform (Levine 1997).

According to Sanusi 2011, the financial system was said to have been acknowledged globally to play a catalytic part in the economic development of nations, likewise it plays a crucial part in the mobilization and allocations of savings for industrious use, affords arrangements for monetary administration and the base for managing liquidity in the system. It has been established in the literature that a financial system in which banks are its main component offers links for the diverse sectors of the economy and buoys a high level of specialization, expertise, economies of scale and a promising environment for the execution of numerous government policies, such as non-inflationary growth, exchange rate stability, balance of payments equilibrium and full employment ((Sanusi, 2011). Hence, this is firmly a function of an all-inclusive financial system.

The concept of financial inclusion was introduced in the early 2000s and its source could be traced to a research finding which stressed poverty and low level of economic growth as a direct result of financial exclusion. The motivation for financial inclusion is designed at ensuring all adult members of the society have easy access to extensive financial products, personalized towards their needs and provided at reasonable costs. Such products include payments, savings, credit, insurance and pensions (Onaolapo, 2015).

The objective of this paper is to ascertain the impact of financial inclusion on economic growth in Nigeria. The study of financial development and its effect on Economic Growth and Development have great worth to scholars, researchers, policy makers and investors. From an academic point of view, it can be concluded that most of the previous works in this field have concentrated on assessing how Investment affects Economic Growth, while some studies examined the impact of Financial Liberalization on Economic Growth. This study forecasts the major effects of financial inclusion on the economy and considered it imperative to be investigated as distinct from other works.

2.1 Review of Related Literature

Financial inclusion is said to be a process that assures the ease of access, availability and usage of the formal financial system by all members of an economy. According to Martinez 2011, financial access as an imperative policy tool engaged by the government in a belligerent and stimulating growth based on its aptitude to facilitate efficient allocation of productive resources which in turn reduce the cost of capital. This process as it is also known as an inclusive financing system can meaningfully improve the day-to-day management of finances, as well as diminish the growth of informal sources of credit (such as money lenders), which are often found to be unfair (Martinez, 2011).

Hence, an inclusive financial system is now generally known as a policy importance in many countries with creativities coming from the financial regulators, the government and the banking industry. Legislative dealings have also been initiated in some countries leading to such monitoring frameworks in countries like United States, France, United Kingdom, South Africa etc. Countless of these regulatory frameworks were planned as a way for improving the economic welfare of low-income groups such as rural women being able to buy sewing machines and establish small businesses, artisans having access to wider financial services with the capacity to increase or stabilize income and thus build resilience against economic shocks. A well-functioning financial system propels economic

growth, builds a platform for financial intermediation by providing savings, credit, payment, and risk management products to people with a wide range of needs. Financially inclusive systems permit an easy broad-based access to financial services by making custom-built financial products obtainable at a reasonable price without rigorous documentation, mostly to the poor or other vulnerable groups within the economy.

Onaolapo 2015, asserted that without financially inclusive systems, the poor would rely on their inadequate savings for future investments and micro or small businesses will not be capable of pursuing favourable growth prospects because they will have to depend on their meagre earnings, which is the cause of the persistent income disparity and encumbrance to the economic growth of most developing countries (Onaolapo, 2015).

For over a decade, the Nigerian economy experienced stable growth with an average growth rate of Gross Domestic Product (GDP) at 7%. The economy was also rebased in 2014 and became the biggest economy in Africa, contributing 41% to the West African sub region's GDP and contributing 14% to the continent's GDP ahead of South Africa and Egypt (Lonel, 2016). Regardless of all the resources, Nigeria is confronted with an uneven dispersal of income, which has widened the inequity between the rich and the poor. More than half of the country's affluence is encumbered by only 10% of the population (Awe, A.A and Olawumi, O.R , 2012).

In 2012, 67.1% of the Nigerian populace was said to be living below the poverty level even with increasing growth in GDP (NBS, 2012). Ironically, economic analysts have defined the rise in GDP as "exclusive" because it did not transform into somewhat tangible socio-economic improvement in terms of employment opportunity, poverty reduction and improvement in the general living conditions of the people.

Consequently, with the above consideration, the governments of Nigeria and other emerging economies have made financial inclusion their core concern. This is validated by the nascent strategic approach to financial inclusion, attached with regulatory improvements and new funding mechanisms, as pronounced by the Federal Government of Nigeria in 2011. The Nigerian Government did set a target of reaching full inclusion by 2020. The Financial Inclusion Strategy is considered significant in accomplishing Central Bank of Nigeria's (CBN's) goals such as safeguarding external reserves and protecting the international value of the Naira. These goals among others which are attached to achieving economic growth are assumed to be realistic, as financial inclusion brings about better access to finance for micro small and medium scale enterprises, leading to increased productivity, greater non-oil export and subsequently stabilize demand for the Naira. Hence, investigating its outcome on economic growth in Nigeria will enhance research and knowledge.

Financial Inclusion can also be defined as a practice or situation which permits easy access to, or convenient use of formal financial systems by all members of the economy. It refers to a development where all citizens of a country do not have distress in opening bank accounts, can afford to access credit; and can easily, conveniently and consistently use financial system products and facilities without difficulty. It is the process which ensures that a person's monetary inflow is maximized, out-going is controlled and can exercise informed choices through access to plain financial services (Nguena and Abimbola, 2013).

According to the Centre for Financial Inclusion, Financial Inclusion is seen as "a state in which all who can use financial facilities have access to a complete set of quality services, provided at cheap prices, in a fitting method, and with dignity for the customers. Furthermore, it signifies a state where financial services are provided by a variety of providers, mostly private sector operators, and reach everyone who can use them, including the poor, disabled, rural, and other excluded populations" (Centre for Financial Inclusion, 2010).

Financial exclusion has been exhibited visibly in Nigeria with the majority of money in the economy residing outside the banking system. The problem of financial exclusion has consequently been a foremost economic challenge which has received the attention of various governments over the past decades. Sarah Alade the then Central Bank of Nigeria's Deputy Governor on Economic Policy speaking at the inauguration of the National Financial Inclusion Steering Committee in 2015, noted that the exclusion rate for women was 42.7 percent about 21.4 million compared with the rate of men, which stood at 35.8 percent representing 15.6 million. The rate among those in the age bracket of 18 and 25 years was 47.8 percent (14.0 million), while rural dwellers had exclusion rate of 47.8 percent (28.6 million); (Alade, S, 2015).

Over the years, the government and monetary authorities introduced different policies aimed at deepening financial inclusion in the economy. These policies went from many institutional involvements such as the formation of Community and Microfinance banks to particular policies and programmes calculated to expedite access of the financially excluded people to formal financial services. The Private Banks also engaged in improvements and activities aimed at attracting more people into the Financial Inclusion process, though their levels of involvement have always been influenced by the extent of their profitability (CBN, National Financial Inclusion Strategy, 2012).

2.2 Theoretical Framework

The finance-growth theory is adopted for the theoretical framework in this study because the Finance-Growth nexus believes that financial development creates a dynamic productive environment for growth through 'supply leading' or 'demand-following' effect. This theory also recognize the lack of access to finance as a critical factor responsible for persistent income inequality as well as sluggish growth. Hence, access to a safe, easy and affordable source of finance is acknowledged as a pre-condition for quickening growth and reducing income disparities and poverty which create equal opportunities, enables economically and socially excluded people to integrate better into the economy and actively contribute to the development and shield themselves against economic shocks. (Serrao, Sequeira, and Hans 2012).

One of the major challenges facing Financial Inclusion in Nigeria is the very low financial literacy rate particularly among the rural dwellers making banking and other financial services challenging for the operators. In addition, information and telecommunication knowledge is still low in the country, making access to financial services difficult. Inadequacy and inappropriateness of awareness campaign sometimes inhibit the level understanding of financial transactions and the ability of the illiterate to take advantage of the possibilities in financial services. Critical to awareness is the difference in the language of the target population and the language of education and therefore reduces the effectiveness of communication. An uninformed population cannot effectively use financial services (Migap et al, 2015).

3.1 Data Sources and Models Specification

This paper tested three hypotheses as a mean of achieving the objective of the study. Therefore, three models were established. The first and third models were adopted from the work of Onaolapo, 2015, while the second one was adopted from Evans and Adeoye, 2016. Data sources included various issues of Central Bank of Nigeria Statistical Bulletins, Nigerian Bureau of Statistics and Nigeria Deposit Insurance Corporation (NDIC) Statement of Accounts and Annual Reports of various issues

The first model investigated the impact of Financial Inclusion on Economic Growth in Nigeria.

GDP = δ0 + δ1DF1 + δ2DF2 + δ3LDR + δ4LQR+μt.....(3.1)

Where,

GDP is the gross domestic product in the country;

DF1 represents the ratio of Broad Money to GDP (M2/GDP);

DF2 represents the ratio of Credit to Private Sector to GDP (CPS/GDP);

LDR represents loan-to-deposit ratio and;

LQR represents Liquidity ratio of commercial banks

The aprori expectation is given $\delta_1, \delta_2, \delta_3 > 0$ and $\delta_4 < 0$

The second model sought to ascertain the determinants of Financial Inclusion in Nigeria. Hence, given the scope of this study and the objective to be achieved, the study adopted a model used by Evans and Adeoye 2016 and the proposed determinants of financial inclusion is explicitly stated in the below equation;

$$FINC = \rho_0 + \rho_1 GDPC + \rho_2 M2GDP + \rho_3 CREDIT + \rho_4 IUSERS + \rho_5 LITR + \mu_t \ldots (3.2)$$

Where,

FINC is financial inclusion (number of depositors with commercial banks per 1,000 adults);

GDPC is GDP per capita;

M2GDP is money supply (% of GDP);

CREDIT is the credit to MSMEs (% of GDP).

IUSERS is the number of internet users,

LITR is adult literacy rate, and

The apriori expectation is given as $\rho_1, \rho_2, \rho_3, \rho_4$ and $\rho_5 > 0$

Lastly, the third model examined the relationship between Financial Inclusion and poverty eradication in Nigeria. Per capita income (PCI) has been used by many researchers as a proxy for capturing poverty since it measures the economic well-being of the citizens of the country. Also, for the financial inclusion variables in relation to poverty eradication, the number of Commercial bank branches (NCBB), Bank loan to rural areas (BLRA), Demand deposits from rural areas (DDRA) and the Central Bank Agricultural credit guarantee scheme fund (ACGSF) were used. Hence, the model is presented below as:

PCI= α0 + α1NCBB + α2BLRA + α3DDRA + α4ACGSF + μt …… (3.3)

Where, PCI is per capita income

NCBB is the number of commercial bank branches

BLRA represents Bank loan to rural areas

DDRA represents Deposits from rural areas

ACGSF represents Agricultural credit guarantee scheme fund

The aprori expectation is given $\alpha_1, \alpha_2, \alpha_3$ and $\alpha_4 > 0$.

3.2 Data Presentation[1] and Analysis

The result from Table I revealed that, all the variables are not stationary at level i.e. the null hypothesis that the variables are not stationary cannot be rejected given the asymptotic critical values which are less than the calculated values of ADF, this necessitated the researcher to take their first difference. However, they are stationary at first-order difference. After all the variables have been transformed to their first difference all the variables became stationary. Hence, we reject the null hypothesis that the variables are not stationary with the asymptotic critical values that are greater than the calculated values of ADF and we conclude that the variables are said to maintain stationarity at an integration of order one, I(1).

3.2.1 Johansen Co-integration Tests

Having established that the variables are integrated of the same order, we conducted the co-integration tests using the Johansen-Juselius maximum likelihood procedure to determine the co-integrating rank of the system and the number of common stochastic trends driving the entire system. The result from the trace and maximum Eigen-value statistics and their critical values at five per cent (5%) are presented for the three models in the Tables I, II, and III respectively.

From Tables II, III, and IV the co-integration test results revealed that long run relationship exists among all the variables examined. Specifically, from model one the result presents one cointegrating equation from both trace statistic and max-Eigen statistic. For model two, there exists long run relationship among financial inclusion variable, GDP per capita, broad money, credit and internet users with trace and max-Eigen statistic reporting two cointegrating

[1] See Appendix for data presentation.

equations. While the result from model three showed four cointegrating equations at 5% level of significance according to trace statistic and three cointegrating equations based on the max-Eigen statistic result.

Hence, with the above results and for the fact that the study looked at single or direct relationship between the dependents and explanatory variables from all the model, we proceeded to estimate the model using Error Correction Model (ECM).

3.3 Estimation of the Error Correction Model

According to the Granger Representation theorem, when variables are cointegrated, there must also be an error correction model (ECM) that describes the short-run dynamics or adjustments of the cointegrated variables towards their equilibrium values. ECM consists of one-period lagged cointegrating equation and the lagged first differences of the endogenous variables. The result of each models is presented accordingly as follows,

3.3.1 Results of Error Correction Model One

The first model examined the impact of financial inclusion on economic growth in Nigeria and the result presented in the table V depicts positive and significant relationship between the financial inclusion variables and economic growth variables. At 2.006440, the Durbin Watson statistics shows the absence of auto–correlation given its value that is between 1.8 and 2.2. We therefore reject the null hypothesis of the presence of autocorrelation among the disturbance terms in the model and accept the alternative hypothesis that there is no autocorrelation between the error terms. The fitness of the model is confirmed by the F-statistic which is significant at 5 percent given the value of 0.002898, this led to rejection of the null hypothesis that all the explanatory variables introduced in the model are not jointly significant in explaining the variations in gross domestic product which measures economic growth and conclude that they are simultaneously significant.

The error correction term, ECMt-1, was significant at 5% with a very high feedback of 74%. It is also negatively signed, showing that the adjustment is in the right direction to restore the long run relationship. This confirms also that any disequilibrium in the short run can be0 fixed back with a speed of 74% in the long run. The coefficient of determination (R^2) explains 63% of the variations in the dependent variable which is above 50% and even after taking into consideration the degree of freedom, the adjusted coefficient of determination (adjusted R^2) still explains 51% variation in the dependent variable.

The outcome of the diagnostic tests as shown in table VI is satisfactory. Under the null hypothesis that the residuals are normally distributed, the JB test for residual normality assumption is not disrupted. Table VI also shows that the error process could be pronounced as normal for the relationship between financial inclusion and economic growth in Nigeria. The B-G test which is noted to have stronger statistical power showed the absence of serial correlation. Also, the absence of white heteroskedasticity and specification error was authenticated. The results of the tests suggest that the model is well specified, and hence the results are credible.

3.3.2 Results of Error Correction Model Two

The second model examines the determinants of Financial Inclusion in Nigeria and the result presented in table VII depicts positive and significant relationship between the Financial Inclusion and the proposed variables that determine it. At 2.026445, the Durbin Watson statistics shows the absence of auto–correlation given its value that is between 1.8 and 2.2. We can therefore we reject the null hypothesis of the presence of autocorrelation among the disturbance terms in the model and accept the alternative hypothesis that there is no autocorrelation between the error terms. The fitness of the model is confirmed by the F-statistic which is significant at 5 percent given the value of 0.001889 which led to rejection of null hypothesis that all the explanatory variables introduced in the model are not jointly significant in explaining the variations in financial inclusion.

The error correction term, ECMt-1, was significant at 5% with a little high feedback of 28%. It is also negatively signed, showing that the adjustment is in the right direction to restore the long run relationship. This confirms also that any disequilibrium in the short run can be fixed back with a speed of 28% in the long run. The coefficient of determination (R^2) explains 65% of the variations in the dependent variable which is above 50% and even after taking into consideration the degree of freedom, the adjusted coefficient of determination (adjusted R^2) still explains 54% variation in the dependent variable. Also, a unit increase in gross domestic product per capital, broad money, credit to private sector and number of internet users will lead to on the average 0.0006, 6.18, 9.96 and 1.33 increase in financial inclusion respectively.

The outcome of the diagnostic tests as shown in table VIII is satisfactory. Under the null hypothesis that the residuals are normally distributed, the JB test for residual normality assumption is not disrupted. The table also shows that the error process could be pronounced as normal for the relationship between financial inclusion and commercial banks' activities in Nigeria. The B-G test which is noted to have stronger statistical power showed the absence of serial correlation.

3.3.3 Results of Error Correction Model Three

The error correction model estimated result presented in Table IX revealed a positive and significant relationship between the dependent variable PCI and independent variables NCBB, BLRA, DRA and ACGSF. At 2.006095, the Durbin Watson statistics does not propose evidence of auto–correlation. This value is between 1.8 and 2.2 which suggests the absence of autocorrelation. Therefore we reject the null hypothesis of the presence of autocorrelation among the disturbance terms in the model and accept the alternative hypothesis that there is no autocorrelation between the error terms.

The fitness of the model is confirmed by the F-statistic which is significant at 5 percent given the value of 0.009064 which led to rejection of null hypothesis that all the

explanatory variables introduced in the model are not jointly significant in explaining the variations in per capita income which captured the poverty level and concluded that they are simultaneously significant.

The error correction term, ECMt-1, was significant at 5% with a low feedback of 19.03%. It is also negatively signed, showing that the adjustment is in the right direction to restore the long run relationship. This confirmed also that there is a strong relationship between poverty eradication indices and financial inclusion variables such as number of commercial bank branches, bank loan to rural area, deposit from rural area and agricultural credit guarantee scheme.

The outcome of the diagnostic tests as shown in table X is satisfactory. Under the null hypothesis that the residuals are normally distributed, the JB test for residual normality assumption is not disrupted. The table also shows that the error process could be pronounced as normal for the relationship between financial inclusion and poverty eradication in Nigeria. The B-G test which is noted to have stronger statistical power showed the absence of serial correlation. Also, the absence of white heteroskedasticity and specification error was authenticated.

Appendix
Data Presentation:

Table I: Unit Root Test Result

VARIABLES		**ADF @ LEVEL H_0: Variable is not Stationary**	**ADF @ FIRST DIFFERENCE H_0: Variable is not Stationary**	**ORDER OF INTEGRATION**
DRA		-1.069066	-3.069066**	I(1)
BLRA		-2.105233	-3.628710**	I(1)
LDR		-1.745296	-3.745296**	I(1)
LSSE		-1.517757	-4.975554***	I(1)
PCI		-2.292505	-4.003175***	I(1)
NCBB		-1.431053	-3.530042**	I(1)
ACGSF		-0.870704	-5.480920***	I(1)
RGDP		-1.956349	-3.637373**	I(1)
DF1		-1.903212	-4.479097***	I(1)
DF2		-1.772625	-4.850807***	I(1)
LQR		-2.348806	-4.641538***	I(1)
FINC		-0.203145	-5.082718***	I(1)
GDPC		-2.212883	-4.141655***	I(1)
M2GDP		-1.903212	-4.479097***	I(1)
CREDIT		-1.091476	-4.024098***	I(1)
IUSERS		-1.357126	-4.375763***	I(1)
CRITICAL VALUE	**1%**	-3.769597	-3.752946	
	5%	-2.991878	-2.998064	
	10%	-2.635542	-2.638752	

Source: Authors' computation, 2016.
Note: ***denote significance at 1% level.
**denote significance at 5% level.

Table II: Johansen Cointegration Test for Model One

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.792253	83.88358	69.81889	0.0025
At most 1	0.639112	47.74060	47.85613	0.0513
At most 2	0.439239	24.29927	29.79707	0.1881
At most 3	0.379292	10.99470	15.49471	0.2118
At most 4	0.001135	0.026126	3.841466	0.8715
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.792253	36.14298	33.87687	0.0264
At most 1	0.639112	23.44133	27.58434	0.1554

At most 2	0.439239	13.30457	21.13162	0.4246
At most 3	0.379292	10.96857	14.26460	0.1558
At most 4	0.001135	0.026126	3.841466	0.8715
Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Authors' computation, 2016.

Table III: Johansen Cointegration Test for Model Two

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.904108	91.02195	47.85613	0.0000
At most 1 *	0.619685	37.09772	29.79707	0.0060
At most 2	0.336253	14.86236	15.49471	0.0621
At most 3 *	0.210484	5.435705	3.841466	0.0197
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.904108	53.92422	27.58434	0.0000
At most 1 *	0.619685	22.23536	21.13162	0.0349
At most 2	0.336253	9.426654	14.26460	0.2524
At most 3 *	0.210484	5.435705	3.841466	0.0197
Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Authors' computation, 2016.

Table IV: Johansen Cointegration Test for Model Three

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.870822	111.8097	69.81889	0.0000
At most 1 *	0.720083	66.78535	47.85613	0.0003
At most 2 *	0.650452	38.77357	29.79707	0.0036
At most 3 *	0.473681	15.64904	15.49471	0.0474
At most 4	0.067113	1.528370	3.841466	0.2164
Trace test indicates 4 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.870822	45.02433	33.87687	0.0016
At most 1 *	0.720083	28.01178	27.58434	0.0441
At most 2 *	0.650452	23.12453	21.13162	0.0259
At most 3	0.473681	14.12067	14.26460	0.0526

At most 4	0.067113	1.528370	3.841466	0.2164
Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Authors' computation, 2016.

Table V Results of Error Correction Model (Model One)

Dependent Variable: D(GDP)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1897.221**	301.3792	6.295130	0.0000
D(DF1)	272.5445**	809.2153	2.969114	0.0001
D(DF2)	51.80468**	119.3473	2.303803	0.0450
D(LDR)	10.66005**	24.37117	2.286216	0.0382
D(LQR)	75.31294**	212.9724	2.827836	0.0018
ECM(-1)	-0.738002**	2.175480	-2.947798	0.0090
R-squared	0.626203	Mean dependent var		1819.613
Adjusted R-squared	0.516263	S.D. dependent var		2056.918
S.E. of regression	1430.612	Akaike info criterion		17.58905
Sum squared resid	34793055	Schwarz criterion		17.88527
Log likelihood	-196.2741	Hannan-Quinn criter.		17.66355
F-statistic	5.695847	Durbin-Watson stat		2.006440
Prob(F-statistic)	0.002898			

Source: Authors' computation, 2016.

Table VI: Summary of Diagnostic Tests for the ECM Model One

TEST	**GDP**
Jarque-Bera Normality	0.923 (0.21)
Breusch-Godfrey (B-G)	.942 (0.23)
Heteroskedasticity	0.75 (0.43)
Ramsey Reset	0.92 (0.23

Note: The probability is given in parenthesis while the F-statistics are above the probability value.
Source: Authors' computation, 2016.

Table VII: Results of Error Correction Model (Model Two)

Dependent Variable: D(FINC)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13.39739	14.64142	0.915034	0.3730
D(GDPC)	0.000689**	0.001497	2.174009	0.0266
D(M2GDP)	6.186919**	14.02251	2.266478	0.0224
D(CREDIT)	9.962805**	39.47631	3.962370	0.0010
D(IUSERS)	1.332305**	3.917716	2.940555	0.0091
ECM(-1)	-0.278935**	0.584282	-2.094690	0.0289
R-squared	0.646221	Mean dependent var		15.89130
Adjusted R-squared	0.542169	S.D. dependent var		72.37278
S.E. of regression	48.96976	Akaike info criterion		10.83974
Sum squared resid	40766.63	Schwarz criterion		11.13596
Log likelihood	-118.6570	Hannan-Quinn criter.		10.91424

F-statistic	6.210528	Durbin-Watson stat		2.026445
Prob(F-statistic)	0.001889			

Source: Authors' computation, 2016.
Note: **denote significance at 5% level.

Table VIII: Summary of Diagnostic Tests for the ECM Model Two

TEST	**GDP**
Jarque-Bera Normality	0.741 (0.32)
Breusch-Godfrey (B-G)	1.32 (0.12)
Heteroskedasticity	0.99 (0.43
Ramsey Reset	0.86 (0.33

Note: The probability is given in parenthesis while the F-statistics are above the probability value.
Source: Authors' computation, 2016.

Table IX: Results of Error Correction Model (Model Three)

Dependent Variable: D(PCI)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17470.07	45851.15	2.624555	0.0238
D(NCBB)	24.73794	68.85469	2.783364	0.0449
D(BLRA)	0.020192	0.046927	2.324073	0.0001
D(DRA)	-0.257463	0.617638	-2.398940	0.0052
D(AGGSF)	0.003092	0.008107	2.622177	0.0226
ECM(-1)	-0.190309	0.511406	-2.687242	0.0018
R-squared	0.764109	Mean dependent var		21056.87
Adjusted R-squared	0.728357	S.D. dependent var		38932.97
S.E. of regression	43149.91	Akaike info criterion		24.40975
Sum squared resid	2.98E+10	Schwarz criterion		24.70731
Log likelihood	-262.5072	Hannan-Quinn criter.		24.47984
F-statistic	45.29201	Durbin-Watson stat		2.006095
Prob(F-statistic)	0.009064			

Source: Authors' computation, 2016.
Note: **denote significance at 5% level.

Table X: Summary of Diagnostic Tests for the ECM Model Three

TEST	**GDP**
Jarque-Bera Normality	0.811 (0.24)
Breusch-Godfrey (B-G)	1.02 (0.19)
Heteroskedasticity	0.81 (0.51)
Ramsey Reset	0.89 (0.29

Note: The probability is given in parenthesis while the F-statistics are above the probability value.
Source: Authors' computation, 2016.

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AUTHOR'S PROFILES

Samuel Stephen Wakdok is a Ph.D. student of Economics at the Nigerian Defence Academy, Kaduna; Africa's Premier Military University. He holds a Master of Science (2017) in Economics from the Nile University of Nigeria, Abuja and a Bachelor of Science in Economics (2002) from the University of Jos, Nigeria. Having worked in two of Nigeria's biggest banks for over a decade, he is now the Deputy Program Manager of the Kaduna State Economic Transformation Program-for-Results. His research interests are Financial Inclusion, Conflict and Peace Economics, Digital Finance and Sustainable Resources.