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EDITORIAL COMMENT

The Ilorin Journal of Finance is a bi-annual publication of the Department of Finance, Faculty of Management Sciences, University of Ilorin, Ilorin, Nigeria. This edition of the journal consists of two (2) issues; I and II with the articles focusing on several topical issues in finance, banking, business and related areas in economics.

Issue 1 consists of seven (7) articles discussing various topics such as the credit quality of corporate bonds, working capital management in the consumer goods industry, capital structure theories, corporate governance and dividend policy, international financial reporting standards, public debt management and lastly, macroeconomic indicators and stock market returns.

Issue 2 has six (6) articles with diverse issues such as financial leverage and performance, impact of agricultural financing schemes on agricultural output, customer relationship and customer satisfaction in deposit money banks, foreign capital inflows and stock market development, oil rent and financial development and lastly spirituality and entrepreneurship development.

The different issues presented in this edition reflect the aim of the journal.

I wish to thank the various contributors and anonymous reviewers whose constructive reviews and criticisms have ensured the success of the journal. The unflinching support and efforts of the editorial members of the journal are also acknowledged.

I wish the readers a happy reading.

Dr. M.A. Ajayi
Editor-in-Chief
Ilorin Journal of Finance

ILORIN JOURNAL OF FINANCE

Aim and Scope: The aim of the journal is to publish original and quality research targeted at contributing to the development of theory and practice of finance, and growth of economies across the world. The scope covers areas in banking, finance, economics, accounting, business administration and other related fields in management sciences.

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IMPACT OF FINANCIAL INCLUSION ON ECONOMIC GROWTH IN NIGERIA

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Abstract

Globally, the financial sector of any economy is reputed to be the engine of growth and a catalyst for sustainable transformation. However, a large number of Nigerian population lack access to formal financial services. Hence, the study examined the effect of financial inclusion on economic growth in Nigeria. In line with this objective, the method of analysis used in the study was Autoregressive Distributed Lags (ARDL) models on the time series which covered from 2005 to 2018. The study revealed that there was an existence of a long-run relationship between financial inclusion and economic growth in Nigeria. The study concluded that financial inclusion is a relevant determinant of economic growth in Nigeria. The study, therefore, recommended that policy makers and the Nigerian government should further promote the collaboration between Deposit Money Banks (DMBs), Microfinance Banks (MFBs), credit union and cooperative societies so as to enhance the accessibility, availability and usage of financial services that would help produce an optimal and sustainable economic growth.

Introduction

Financial inclusion has been identified as an important strategy needed to stimulate growth. It is recognised as a genuine tool necessary to hasten the pace of development. Financial inclusion ensures the ease of access, availability and usage of formal financial system by all members of an economy (Sarma, 2008). Financial inclusion is aimed at increasing the number of the banked population and also people with accounts in other formal financial institutions, increasing the use of formal payment mediums, including Internet payments, mobile payments and also making available mediums through which financial services can be assessed.

An inclusive financial system provides an avenue for the actualisation of sustainable economic growth and development because of its ability to mitigate poverty, lessen income inequality and boosts income (Khan, 2011).

Despite the knowledge of the huge benefits from financial inclusion and the increase in banked population to benefit from formal financial services, about 60% of the adult population of Nigeria remain unbanked with reduction in the usage of banks' products and services (Enhancing Financial Innovation and Access [EFInA], 2019). This perhaps led the country off the track of achieving its Vision 2020 as argued by the Central Bank of Nigeria (CBN, 2018). Consequently, the unbanked do not have access to formal finance and are forced

to rely on a narrow range of some risky and expensive informal services which constraints their ability to participate fully in the market to increase their income and contribute to economic growth.

Over the years, several studies such as Nwafor and Yomi (2018) and Adetoso, Adegbola and Williams (2017) have carried out research on the impact of financial inclusion on economic growth in Nigeria using the various indicators and dimensions of financial inclusion individually. However, unifying the dimensions of financial inclusion helps to understand and give a comprehensive picture of the level of financial inclusion. This study constructs an index for financial inclusion using various indicators and dimensions to investigate the effect of financial inclusion on economic growth in Nigeria, which is the gap the study filled. The study further considered all other informal sources where financial services are available and can be accessed such as the credit union and cooperative societies in the dimensions of financial inclusion which is relatively underexplored in Nigeria. Therefore, assessing the effect of financial inclusion (using an index) on economic growth in Nigeria is of paramount importance.

The next section is the literature review. This is followed by methodology and discussions of findings. The last section covers the conclusion and recommendations of this study.

LITERATURE REVIEW

Conceptual Review

Financial Inclusion

Financial inclusion involves the provision of various high-quality financial products such as credit, savings, insurance, payments and pensions, which are necessary, appropriate and affordable for all adult population particularly, the low-income groups in the economy (EFInA, 2013). Financial inclusion is the proportion

of individuals and firms that use financial services. It has a multitude of dimensions, reflecting the variety of possible financial services, from payments and savings accounts to credit, insurance, pensions, and securities markets. Financial inclusion entails the increased provision of financial services with various choice of services geared towards the development of all levels of society (Nwaogwugwu, 2008). Financial inclusion is achieved when adult Nigerians have easy access to a broad range of formal financial services that meet their needs and are provided at an affordable cost (CBN, 2012). Provision of affordable financial services to owners of small, medium and large enterprises allows rural dwellers to earn an independent income and contribute financially to their households and communities. This allows families to have access to a decent standard of living which will reduce the level of poverty in the country.

Economic Growth

Growth occurs in an economy when there is a significant improvement in the rate of real per capita Gross Domestic Product over time. Economic growth is the sustained increase in the total output that is, goods and services produced in an economy within a specific period of time. Allen *et al.* (2014) argued that countries with high financial development and financial inclusion experience high growth rate. The economy may boom due to access to funds. During this period, financial institutions relax criteria, thereby, leading to increase in lending. During economic recession, however, funds are not readily available, non-performing loan increases and financial institutions ration out available funds which may limits its contribution to economic growth (Dell' Ariccia & Marquez, 2006). It is measured by the WDI as the annual percentage growth rate of GDP.

Theoretical Background Supply-Leading Hypothesis

This hypothesis was propounded by Schumpeter (1911) and later supported by McKinnon (1973), Shaw (1973), Fry (1988), and Bencivenga and Smith (1991). The supply-leading hypothesis contends that a well-developed financial sector increases the efficiency of intermediation, reduces information, transaction, and monitoring costs which then causes economic growth. The hypothesis holds that improvement in the financial sector leads to increase in mobilization of savings, diversification of risks, efficient allocation of resources, technological innovation which then result in faster and long-term economic growth (Schumpeter, 1911).

Empirical Evidence

Onaolapo and Odetayo (2012) studied financial inclusion in Nigeria from the perspective of microfinance banks using a survey design method. They found that access to financial services through microfinance institutions by less privileged people promotes employment generation, reduction in poverty and overall economic growth.

Babajide, Adegboye and Omankhanlen (2015) evaluated the impact of financial inclusion on economic growth in Nigeria over the period 1981 to 2012. Using the Ordinary least square, the result showed that financial inclusion is a significant determinant of the total factor of production, implying that it determines the final level of output in the economy.

Onaolapo (2015) assessed the effects of financial inclusion on economic growth in Nigeria from 1982 to 2012 using ordinary least square regression. The empirical results revealed that inclusive bank activities marginally determines national economic growth and financial intermediation.

Adetoso *et. al.* (2017) examined the role of financial inclusion in poverty reduction and economic growth in Nigeria for the period 2006 to 2015. Using panel data analysis ranging within a log-linear model specification framework, the regression result showed that the numbers of active ATM, bank branches and government expenditures were the most robust predictors for financial inclusion on poverty reduction. Evans and Lawanson (2017) investigated the causal links between financial inclusion and economic growth in Nigeria for the period 1981 to 2013 applying co-integration test and Granger causality test. The study established that there is bi-directional causality between financial inclusion and the aggregate economy, and that financial inclusion is a potent accelerator of economic growth.

Gretta (2017) evaluated the impact of financial inclusion on the growth of some developing countries in the Middle East and North Africa (MENA) and the BRICS region using a Vector Autoregression (VAR). The study showed the importance of financial inclusion in the MENA and BRICS region.

Lenka and Sharma (2017) examined the impact of financial inclusion on economic growth in India for the period 1980-2014 using Autoregressive Distributed Lag (ARDL) approach. The empirical results revealed that a unidirectional causality occur from financial inclusion to economic growth and that financial inclusion positively affect economic growth both on short and long term.

Okoye, Adetiloye, Erin and Modebe (2017) studied financial inclusion as a strategy for enhanced economic growth and development in Nigeria for the period 1986 to 2015. Using the Ordinary Least Square technique, the study revealed that credit delivery to the private sector has not significantly supported economic growth in

Nigeria but financial inclusion has promoted poverty alleviation in Nigeria through rural credit delivery.

Olaniyi and Alenoghena (2017) investigated the relationship between financial inclusion and GDP per capital in Africa using a Bayesian VAR model for 15 African countries for the period 2005 to 2014. The findings showed that financial inclusion has an insignificant but positive impact on GDP per capita.

Mohammed, Mensah and Gyeke-Dako (2017) examined financial inclusion and poverty reduction in Sub-Saharan Africa. Employing the Treatment Effects version of the Heckman Sample Selection Model and Propensity Score Matching (PSM) for robustness checks the results of the probit models showed that the net wealth benefit derived from financial inclusion (thus the use of accounts, savings, withdrawals and access to credit) significantly reduces poverty.

Nwafor and Yomi (2018) explored the relationship between financial inclusion and economic growth in Nigeria from 2001 to 2016. Employing Two-staged Least Squares (2SLS) estimator, the result revealed that financial inclusion has significant impact on economic growth in Nigeria and that financial inclusion have not been influenced by financial intermediation inclusion within the period under review.

Mwaitete and George (2018) assessed the effect of financial inclusion on economic growth in Tanzania for the period 2008-2015. The results of the regression analysis revealed that financial inclusion have a positive effect on the economic growth of Tanzania.

Kim, Yu and Hassan (2018) studied the relationship between financial inclusion and economic growth for 55 Organisation of Islamic Cooperation (OIC) countries from 1990-2013. Employing panel Granger causality tests, the results of the dynamic panel estimations revealed that financial

inclusion has a positive effect on economic growth.

Zhou, Gong, Luo and Xu (2018) investigated the interaction between inclusive finance, human capital and regional economic growth for 31 provinces from 2005 to 2015 using the fixed effect model. The result showed that inclusive finance and human capital have a significant positive promoting effect on regional economic growth.

Research Methodology

This study examined the effects of financial inclusion on economic growth in Nigeria. Secondary data was obtained from International Monetary Fund (IMF) database and the World Development Indicator for this study. The time-series data covered a period of eighteen (13) years from 2005 to 2018. Time series data are often non-stationary; hence stationarity was tested to avoid spurious regression. To achieve the objectives of this study, unit root test, co-integration and autoregressive distributed lags model (ARDL) technique were the estimation techniques employed.

Model Specification

To achieve the objective of this study, a model was formulated. The functional model is stated as:

$$EG = f(FI, MS, INTR, INFL) \dots \dots \dots (i)$$

$$EG = \beta_0 + \beta_1 FI_{t1} + \beta_2 MS_{t2} + \beta_3 INTR_{t3} + \beta_4 INFL_{t4} \dots \dots \dots (ii)$$

Econometrically, it can be written thus:

$$EG = \beta_0 + \beta_1 FI_{t1} + \beta_2 MS_{t2} + \beta_3 INTR_{t3} + \beta_4 INFL_{t4} + \mu_t \dots \dots \dots (iii)$$

The model can be transformed into ARDL form as:

$$\Delta \ln EG_t = \beta_0 + \beta_1 \Delta \ln EG_{t-1} + \beta_2 \Delta FI_t + \beta_3 \Delta FI_{t-1} + \beta_4 \Delta \ln MS_t + \beta_5 \Delta \ln MS_{t-1} + \beta_6 \Delta \ln INTR_t +$$

$$\beta_7 \Delta \ln INTR_{t-1} + \beta_8 \Delta \ln INFL_t + \beta_9 \Delta \ln INFL_{t-1} + \beta_{10} ECM_{t-1} + \mu_t \dots \dots \dots (iv)$$

Where:

EG= Economic Growth (Proxy with Growth of Gross Domestic Product)

FI= Financial Inclusion

X = Control variables

MS= Money Supply

INTR= Interest Rates

INFL= Inflation

Δ = notation for differencing

$\ln$ = notation for natural log

ECT= error correction term (residuals) obtained from estimation of equation (3.4)

μ = Error term

β_0 = Constant

β_1, β_2 and β_3 = Slope coefficient

Variables Description, Measurement and Sources

Financial Inclusion Index

Constructing an index for financial inclusion shows the level of inclusiveness of finance in the country and also the progress of financial inclusion policy in the country. It is a composite index constructed to include information on several dimensions of financial inclusion in order to produce a single number. Incorporating the various dimensions to produce a single number is necessary because using the dimensions individually may not give a comprehensive picture of the level of financial inclusion in the economy (Gupta, Chotia & Rao, 2014; Laha, 2015).

The financial inclusion dimensions include; accessibility/penetration, availability and usage of financial services. The accessibility to financial services is measured by the number of deposit account with commercial banks, Micro-finance Institutions (MFIS), credit union and cooperative societies per 1,000 adults. Number of loan account with commercial banks, mfis, credit union and cooperative

societies per 1,000 adults and number of mobile money account per 1,000 adults. The number of commercial banks branches, MFIs, credit union and cooperative societies per 100,000 adults, number of automated teller machines (ATMS) per 100,000 adults and mobile money agent outlets per 100,000 adults measures availability of financial services. Deposits with commercial banks, MFIs, credit union and cooperative societies per 1,000 adults, borrower at commercial banks, MFIs, credit union and cooperative societies per 1,000 adults and mobile money transaction per 1,000 adults measure usage of financial services (Abdulmumin, Etudaiye-Muhtar, Jimoh & Sakariyahu, 2019). Data were sourced from International Monetary Fund (IMF) Database (Financial Access Survey). The study hypothesised a positive relationship between financial inclusion and economic growth.

Principal Component Analysis (PCA) was employed to calculate the index as used in Abdulmumin *et al.* (2019). It was propounded by Karl Pearson in 1901. This estimation procedure reduces highly correlated variables into a set of values of linearly uncorrelated variables while still explaining the phenomenon with the same information as the original variables.

Money Supply

Money supply (M2)(Financial deepening index) implies the ability of financial institutions to mobilise savings for investment purposes. The growth of domestic savings provides the real structure for the creation of diversified financial claims. The logic here is that the more liquid money available to an economy the more opportunities exist for continued growth of the economy.

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This is measured by the WDI as the sum of currency outside banks, demand deposits other than those of the central government, the time, savings, and foreign currency deposits of resident sectors other than the central government, bank and

traveler's cheques and other securities such as certificates of deposit and commercial paper. Increase in availability of money in an economy provides more opportunity for economic growth.

Interest Rates

Real interest rate (%) is the lending interest adjusted for inflation as measured by the GDP deflator in the WDI. High interest rate may limit access to funds due to the fact that it becomes expensive, limit economic activities, and thus affects economic growth negatively.

Inflation

Inflation is the annual percentage change in the general price level of goods and services in an economy. The WDI proxied inflation with consumer price index. Inflation is used to measure socio-economic stability. High inflation rate may bring about uncertainty and risk which may have long-run negative impact on financial development and vice versa (Effiong, 2016).

DATA ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Unit root test

The unit root test is performed to determine the stationarity of the variables. The stationarity of the variables provides information on their order of integration. The order of integration of variables is necessary for co-integration test. The test is conducted using the Augmented Dickey-Fuller (ADF) unit root test. The test hypothesis is that the variable contains unit root. Table 1 presents the result of the ADF unit root test.

Table 1: ADF Unit Root Test Results

Variable	Level		First difference		Order of Integration
	Test statistic	p-value	Test statistic	p-value	
EG	-1.637348	0.7535	-2.821761	0.0676***	I(1)
FI	-4.538076	0.0073*	—	—	I(0)
MS	-5.549827	0.0009*	—	—	I(0)
INTR	-2.081697	0.5346	-5.536453	0.0005*	I(1)
INFL	-3.874811	-3.622033	—	—	I(0)

Note: * and *** indicate rejection of null hypothesis at 1% and 10% significance level respectively.

Source: Authors' computation (2019)

Table 1 shows that FI, MS and INFL are stationary at level while EG and INTR become stationary after first differencing. The unit root test confirms that the variables are mix of I(0) and I(1) series. This implies that the test for long-run relationship (cointegration) can only be conducted by performing Autoregressive Distributed Lag (ARDL) bounds test.

4.2 Cointegration Test

The Autoregressive Distributed Lag (ARDL) bounds test is performed to test for the presence of cointegration due to the combination of I(0) and I(1) series in the model. The bounds test involves two asymptotic critical value bounds depending on whether the variables are I(0) or I(1) or a mix of I(0) and I(1). The two asymptotic critical value bounds are lower bound values and upper bound values. According to Perasan, Shin and Smith (2001), the lower

bound values assume that the forcing variables $\{X_t\}$ are I(0) only, and the upper bound values assume that $\{X_t\}$ are purely I(1). The null hypothesis for the bounds test is stated as:

$H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$ (No co-integration)

To reject the null hypothesis at 5% significance level, the F-statistic must exceed the upper bound critical value. Conversely, null hypothesis is accepted if F-statistic falls below the lower bound critical value. If the F-statistic falls between the lower and upper bounds critical values, the evidence of co-integration is inconclusive. The maximum lag length for the ARDL model used for the bounds test is set at 4 and the Schwarz information criterion is used to determine the optimal lag length for each variable. Table 4.2 presents the result of the bounds tests.

Table 2: Bounds Test Results

Model 1 (Economic Growth)			
F-statistic	Significance level	Critical value bounds	
		Lower bound	Upper bound
6.24	1%	4.29	5.61
	5%	3.23	4.35
	10%	2.72	3.77

Source: Authors' computation (2019)

Table 2 shows that the F-statistic is greater than the upper bound critical values at 1% significance level, thus indicating that the null hypothesis can be rejected. This indicates that there is cointegration (long-run relationship) among the variables in the models.

4.3 Model Estimation Results

Based on the Akaike information criterion (AIC), an ARDL (1,1,1,1) model is estimated for Model 1. The regression results are presented in Table 3

Table 3: Regression Result for Economic Growth (EG) model

ΔEG	Coefficient	Std. Error	t-Statistic	Prob.
C	1.342947	1.729498	0.776495	0.4504
$\Delta EG(-1)$	0.662397	0.130043	5.093695	0.0002
$\Delta \ln FI$	1.095845	0.262094	2.373709	0.0305
$\Delta \ln FI(-1)$	1.254059	0.078383	3.017535	0.0082
$\Delta \ln MS$	1.236958	0.374690	2.899808	0.0334
$\Delta \ln MS(-1)$	-1.946168	0.458599	-2.334272	0.0234
$\Delta INTR$	-2.378903	1.121268	-2.917125	0.0393
$\Delta INTR(-1)$	0.546561	0.313721	1.742187	0.1034
$\Delta INFL$	-0.036185	0.045299	-0.798816	0.4377
$\Delta INFL(-1)$	-0.050960	0.043908	-1.160612	0.2652
$ECMEG(-1)$	-0.250002	0.109471	-2.283738	0.0385
R-squared	0.779214	F-statistic	10.744989	
Adjusted R-squared	0.695346	Prob(F-statistic)	0.000372	
Log likelihood	-69.77992	Durbin-Watson stat	2.049390	

Source: Authors computation (2019)

Table 3 shows that R-squared is 0.779, and this indicates that the model is of good fit. This implies that 77.4% of variations in economic growth (EG) are accounted for by financial inclusion (FI), money supply (MS),

interest rate (INTR) and inflation (INFL). The F-statistic of 10.744989 with a p-value of 0.000372 indicates that the model is statistically significant. This suggests the model is adequate and capable of making predictions.

Also, as indicated in Table 3, the coefficient of Financial inclusion is 1.095845 with a p-value of 0.0305, indicating that FI has a positive and significant effect on economic growth. The lagged value of FI also has a positive and significant effect on EG because it had a coefficient value of 1.254059 with a p-value of 0.0082. MS has a coefficient of 1.236958 with a p-value of 0.0334, suggesting that MS has a contemporaneous positive and significant effect on EG. The lagged value of MS had a coefficient of -1.946168 with a p-value of 0.0234, suggesting a significant negative lagged effect of MS. Turning to INTR and INFL, the contemporaneous value of INTR and INFL had a coefficient of -2.378903 and -0.036185 with a p-value of 0.0393 and 0.4377 respectively. This indicates that INTR had a negative but significant contemporaneous effect on EG while INFL had a negative and insignificant contemporaneous effect on EG. The lagged value of INTR and INFL had a coefficient of 0.546561 and -0.050960 with a p-value of 0.1034 and 0.2652, respectively. This indicates that INTR had a positive but insignificant lagged effect on EG while INFL had a negative and insignificant lagged effect on EG.

Discussion of Findings

Autoregressive distributed lags (ARDL) model was used to investigate the effects of financial inclusion on economic growth in Nigeria. The result of the study shows that financial inclusion is positively related to economic growth which is consistent with the study of Onaolapo (2015). This study is also consistent with the theory of supply-leading hypothesis which postulates that a well-developed financial sector provides services that improve the performance of any economy. It was also revealed that money supply is positively related with economic growth while the study shows an evidence of long run

equilibrium impact. This study further reveals that interest rate is a significant determinant of economic growth which is also consistent with Jelilov (2016). It was also revealed that inflation had a negative and insignificant relationship with economic growth. The findings of this study conforms with the studies of Nwanne and Okorie (2015), Onaolapo (2015), Kim, Yu and Hassan (2018) and Lenka and Sharma (2017).

CONCLUSION AND RECOMMENDATIONS

The study examined the effect of financial inclusion on economic growth in Nigeria over the period 2000-2018 using Autoregressive Distributed Lags model (ARDL). The findings of the study revealed that financial inclusion is a significant factor for economic growth in Nigeria. The study concluded that financial inclusion is relevant for determining economic growth in Nigeria. Based on the empirical findings, the study recommended that policy makers and the Nigerian government should further promote the collaboration between Deposit Money Banks (DMBs), Microfinance Banks (MFBs), credit union and cooperative societies, so as to enhance the accessibility, availability and usage of financial services that would help produce an optimal and sustainable economic growth. Secondly, government should provide incentives that would help improve the efficiency of these financial institutions in providing financial services for more population coverage which will simultaneously induce economic growth. Finally, this study recommends that Central bank of Nigeria (CBN) should ensure relative low interest rate are charged by financial institutions in Nigeria to encourage financial inclusion which in turns promotes economic growth.