TECHNOLOGICAL ADVANCES IN MICROFINANCE BANKS AND ECONOMIC GROWTH IN NIGERIA

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ABSTRACT

The study was designed to estimate growth implications of the intermediation activities of microfinance banks in Nigeria. The study covered the period 1992 to 2016. Model estimation was based on the technique of autoregressive distributed lag (ARDL) using data from the Central Bank of Nigeria statistical bulletin. Traditional intermediation functions of microfinance banks (deposit mobilization and credit creation) were adopted as explanatory variables while inflation and asset base were introduced as controlled variables. The result showed that while deposit mobilization significantly enhanced growth, microfinance banks' loans and advances impeded the growth process.

Keywords: Rural Financial Intermediation, Microfinance Banks, Financial Inclusion, Economic Growth.

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1. INTRODUCTION

Technology has revolutionized the payment system in the financial services industry. It has indeed redefined and has continued to redefine how financial industry operators and their customers interact with one another. In the digital world of today, technology is a critical component of the innovation needed to drive the operations of microfinance banks (MFBs) to higher levels of efficiency and sustainability. For instance, the use of mobile phones and point-of-sale (POS) payment platforms has found widespread application in the global payment system. Microfinance banks are mainly located in the rural areas as a deliberate strategy aimed at extending financial services to the rural dwellers who, hitherto, were excluded from formal financial services. The rural areas are often characterized by poor and inadequate infrastructure and the inhabitants have to contend with bad roads, irregular electricity supply and other infrastructural constraints and dwellers often have to travel long distances to access financial services.

Following the introduction of technological devices like mobile telephones and POS, rural dwellers can now do their transactions with ease anytime, anywhere thereby having more time to focus on their business and other vital engagements. Mobile phone subscribers can now apply for and access credit through their phones because advances in mobile communications technology enable field officers of MFBs to capture and transmit customer data to their head office on real-time basis thereby providing customers with current information on pending applications, account balance, and other inquiries. In Malaysia, for instance, the use of mobile-based digital devices fitted with specialized algorithms enable financial service providers to access and analyze information on customers' credit profile for informed lending decisions (Sitorus, Singh and Aziz, 2017).

In some instances, ownership of bank account is no longer a requirement to enjoy bank facility. For instance, in Kenya, Safaricom introduced the mobile money system (M-Pesa) in which mobile phone numbers serve as account numbers. Under the M-Pesa system, subscribers can access credit, transfer funds, pay bills/fees etc. on their mobile phones. Also in Tanzania, FINCA (2018) explains that 43 per cent of its transactions are done on mobile phones. FINCA offers micro-credit, savings and other financial products through a combination of brick and mortar banking, agent banking as well as mobile-based technology to remote/rural communities hitherto not served by conventional banks.

Application of technological innovations in microfinance banks' operations helps reduce the risk inherent in cash storage, movement, handling and other incidental risks as customers can pay bills/fees, repay loans, pay for purchases on their mobile phones. Technology adoption also helps to improve the operational efficiency of MFBs, facilitates financial inclusion through increased customer reach and also provides customers with product or service options. Provision of a wide range of financial products to a wider segment of the economy implies getting more people involved in economic activities thereby enabling them to improve their living conditions while simultaneously driving output growth.

Growth can be said to be inclusive when its process is focused on bringing the hitherto excluded economic agents into the mainstream of economic activities leading to increased

output. Conventionally, an economy is made up of rural and urban dwellers with the bulk of economic activities concentrated in the urban areas. To support and maintain the growth and conduct of economic activities in the urban areas, infrastructural development is also concentrated in these areas. The emerging skewed development pattern manifests in rural-to-urban migration and rural under-population while the urban areas become over-populated. Both outcomes have attendant adverse implications for growth and development

The role of finance in the growth process of an economy is widely acknowledged in finance and economic literature (Bagehot, 1873; Gurley and Shaw, 1955; Schumpeter, 1912; Mckinnon, 1973). Finance affects the real sector through two main channels, namely the capital accumulation and technological innovation channels. In the context of capital accumulation, financial savings is a major driver of the investment process. Except by engaging the option of deficit financing, investment can only be undertaken to the extent of capital available. On the technological innovation channel, finance is required to transform ideas into products. Without adequate funding, ideas, no matter how novel, remain what they are, just ideas. According to Adegbite (2015), majority of innovative projects executed during the industrial revolution in Europe had been conceived much earlier than the revolution era but could not be implemented due to lack of requisite funding.

One approach to mainstreaming the innovative and entrepreneurial talents of the rural population for national economic growth is financial inclusion. This strategy seeks to make financial services available to more members of the society (irrespective of status) at affordable costs. Okoye, Erin, Ado and Isibor (2017), George (2010) and Okoye, Adetiloye, Erin and Evbuomwan (2016) acknowledge the capacity of the rural population to contribute to economic growth and development. In spite of immense economic potentials of the rural population, they have largely been excluded from financial services by the conventional financial service providers on the ground that they cannot be profitably served. The microfinance banking model was introduced as an alternative channel for meeting the financial services needs of the rural population so as to productively engage their immense economic potential, improve their living condition and contribute to the national economy. The activities of microfinance banks (MFBs) are deemed suitable for the financial characteristics of the rural dwellers.

It was against the background of adverse implications of financial exclusion that the rural banking scheme was introduced in Nigeria in 1977. The scheme was designed to cultivate banking habit, mobilize rural savings, promote rural credit delivery and reduce rural-to-urban migration of both human and financial resources (Okafor, 2011). Under the scheme, commercial banks were mandated to establish branch offices in the rural areas to offer financial services to the rural dwellers. To deepen the impact of the scheme on the rural economy, the Central Bank of Nigeria (CBN) issued a policy directive requiring banks to set aside a minimum of 30 per cent of deposits mobilized by each rural bank to provide credit to prospective loan applicants from the community.

However, with the banking sector reforms that attended the introduction of the structural adjustment programme (SAP) in 1986, the Nigerian banking environment was liberalized and banking business became largely market-driven. In response to the reform, most of the rural branches were closed as they could not meet the profit expectations of their respective head offices. The Peoples Bank of Nigeria (PBN) was established in 1990 to sustain the participation of the rural population in mainstream economic activities through micro-credit delivery. However, owing to low capitalization, the bank cannot provide substantial amount of credit to finance sustainable projects and does not offer a wide range of financial services (Okafor, 2000). The Community Bank (CB) model was therefore introduced in 1991 to

provide a wide range of financial services thereby serving as a one-stop-shop to rural entrepreneurs. At inception, the CBs proved to be effective agents for savings mobilization and micro-credit delivery in the rural areas but over time there was an increasing propensity to channel local savings to portfolio investments outside their host communities for higher returns.

Against this background, formal microfinance banking model was introduced in 2005 "to enhance the access of micro-entrepreneurs and low income households to financial services required to expand and modernize their operations in order to contribute to rapid economic growth" (Central Bank of Nigeria, 2011). Unlike the conventional banks, microfinance banks (MFBs) target low income clients in the delivery of financial services like deposits, loans, fund transfer, insurance (micro) and a variety of non-financial services. The operations of MFBs are characterized by low level of savings and credits, de-emphasis on asset-based collateral and simplicity of operations.

Prior to the introduction of the microfinance banking model in Nigeria, all the rural banking initiatives operated on brick and mortar platform with a virtual absence of technology-based infrastructure support. The introduction of formal microfinance banking coincided with the era of tremendous advances in technology and microfinance bank operators thereby embraced wholesale application of technology-based innovations in driving their operations for enhanced performance. Service delivery to the rural communities is enhanced by both telecommunication satellites mounted by telecom operators in those areas and on-site communication gadgets installed by MFBs which enable communication between MFB customers and their banks through mobile phones and allied devices. Okoye, Omankhanlen, Okoh, Ezeji and Achugamonu (2019) identified technology as a major carrier of financial services. It is therefore expected that inclusion of the rural population in mainstream economic activities through access to financial services will enhance quality of rural life and contribute to growth of aggregate output.

This paper focused on analyzing the trend in the national output in Nigeria between 1992 and 2006 to determine the extent to which provision of microfinance services like credit and deposit facilities to the rural population have contributed to economic growth. Empirical literature on microfinance has focused largely on its development-oriented aspect, hence the imperative to explore its potential as engine of growth.

2. REVIEW OF RELATED LITERATURE

The microfinance banking model was formally introduced in Nigeria in December 2005 to drive inclusive participation of all economic units towards achieving rapid economic growth. The policy thrust of this banking model was to improve access of micro entrepreneurs and low income households to microcredit and other financial services necessary for the expansion and modernization of their operations. The rationale for a paradigm shift from conventional to the microfinance model for integrating this segment of the economic strata into mainstream economy is the uniqueness of their operations which include smallness of loans and savings, de-emphasis on collateral as a condition for credit delivery, and the simple nature of their operations.

With advances in technology, banks have continued to change their method of operations and service delivery in line with changing customer needs and sophistication (Okoye, Omankhanlen, Okoh and Isibor, 2018). Microfinance banks (MFBs) are not by any means an exception. Information and communication technology (ICT) devices are increasingly being deployed by deposit money and microfinance banks to enhance access by financially

excluded members of the society to financial services, a practice which according to Okoye, Adetiloye, Erin and Modebe (2016) supports the growth of economic activities.

In response to the growing popularity of microfinance, particularly among developing nations, scholars have over the years engaged research to determine the role of micro-credit in the economic health of a nation. Okafor (2000) defines micro-credit as an instrument for driving economic growth and balanced development because it empowers grassroots enterprises and therefore produces a derivative impact on the well-being and economic status of the poor. Studies that focus on the economic significance of the activities of microfinance institutions have largely focused on its poverty reduction or goal-oriented dimension. For instance, Agbaeze and Onwuka (2014) examined the role of micro-credit in combating the rising incidence of poverty in Nigeria using the multi-stage sampling technique that involved a random selection of five households from a previously selected sample of twenty-one communities. The Logit regression method was used to estimate the micro-credit impact on poverty while Foster, Greer and Thorbecke (1984) method was used to evaluate the intensity of poverty among the selected households. Evidence from the study indicated that access to micro-credit significantly reduced the level of poverty in the selected sample.

Another impact assessment of micro-credit on poverty reduction conducted by Chowdhury, Gosh and Wright (2002) produced strong empirical support for poverty alleviation capacity of micro-credit. The study was based on a survey of 954 households in Bangladesh and data gathered were analyzed using the logit regression technique. In evaluating the socio-econcmic effect of micro-credit on the rural population in Bangladesh, Hague, Rahman and Awal (2016) used survey data generated from 150 households selected from 4 rural communities. The study which specifically examined how rural consumption, income and savings respond to access to micro-credit produced evidence that access to credit enhances rural sector participation in economic activities thereby empowering the rural poor to acquire assets and improve on their living conditions. The work of Chavan and Ramakumar (2002) supports the income enhancement aspect of the finding in Hague, Rahman and Awal (2016) but showed that micro-credit has not significantly impacted technology acquisition.

The work of Appah, John and Soreh (2012) adopted purposive sampling technique in selecting a sample of 286 women in Bayelsa State, Nigeria who are actively engaged in small-scale business. Using the statistical method of Chi-square, ANOVA and descriptive statistics, the study produced evidence of strong association between microfinance and poverty reduction. The work of Kandemir and Aktas (2011) also produced empirical support for poverty-reduction impact of micro-credit in Turkey. The result showed that by the engagement of entrepreneurs through financial access, they create job opportunities, promote regional development, create markets for products and support value addition.

Agba, Ocheni and Nkpoyen (2014) investigated the impact of micro-credit on poverty reduction among low income workers who participate in microfinance schemes designed for workers in this category. Purposive sampling method was used to select 540 participants from 9 local government areas (LGAs) in Akwa-Ibom State, Nigeria. The study covered 3 LGAs from each of the 3 senatorial districts of the state. Six (6) communities were drawn (2 from each LGA) from each senatorial district and 30 respondents were drawn from each community. Data analysis was based on the Pearson Product Moment Correlation method. The result affirmed strong positive correlation between micro-credit and poverty reduction. It showed that workers' access to credit drives their participation in SMEs which promotes better living conditions.

Durrani, Usman, Malik and Ahmad (2011) examined how access to credit affects the economic and social conditions of the poor in Pakistan. Social and economic indicators examined in the study include income generation, improvement in life-style, standard or quality of accommodation, purchasing power, expansion of business facility, self-employment and technology adoption. Based on convenience sampling method, questionnaires were administered on a sample of 100 rural poor from a Pakistani district who have benefited from micro-credits. A response rate of 68 per cent was achieved and the Pearson correlation method was adopted. The study showed that access to credit alleviates poverty among the rural poor through consumption smoothing, better risk management, micro-business engagement, enhanced earning capacity and improved living standards.

Onwumere, Ibe and Ugbam (2012) examined how micro-credit from MFBs affects the poverty reduction and human capital development initiatives of the government. The study covered the period 1999-2008. Estimation was based on the method of ordinary least squares. Microfinance intermediation activity was represented as ratio of loans to deposits while poverty index (PI) and human development index (HDI) were used as proxies for development. The study showed non-significant negative effect of micro-credit on poverty reduction. However, the effect on human capital development was positive.

Onaolapo (2015) conducted a study on how rural financial intermediation impacts economic growth and development in Nigeria. The study presented evidence that economic development, represented as per capita income (PCI) is strongly driven by rural loans and the intermediation activities of the Agricultural Credit Guarantee Scheme Fund (ACGSF). It also produced evidence that private sector credit is a major driver of economic growth while broad money supply proved a great impediment to growth.

The work of Musomandera, Shukla and Luvanda (2015) examined the contribution of microfinance to the growth of women SMEs in Rwanda using a sample of 275 women entrepreneurs. Pearson correlation method was used to analyze data generated from the sample through the use of questionnaires. The result showed strong positive correlation between microfinance and the performance of women SMEs.

Babajide (2012) used panel data from a sample of 502 microfinance borrowers engaged in small-scale enterprises to investigate the effect of micro-credit on micro and small enterprises' growth in Nigeria. The study showed no evidence of strong growth-inducing effect of micro-credit on the operations of micro and small enterprises. The work of Ahmad, and Shah (2016) introduced a different dimension to microfinance literature by establishing the place of entrepreneurial capacity in the interaction between microfinance and micro, small and medium enterprises' (MSMEs) growth. By analyzing panel data on 15 countries from 2004-2015, the authors showed evidence of strong moderating effect of entrepreneurial capacity in the link between microfinance and MSMEs growth and therefore concludes that finance is not in itself a sufficient condition for growth.

Nwele, Ogbonna and Uduimo (2014), in their study, examined the extent to which the lending activities of microfinance institutions (MFIs) have impacted the performance of the Nigerian economy. They reported that micro-financing activities of MFIs did not significantly impact the performance of the rural economy, hence the spill-over effect on the national economy is quite minimal. Ayodele and Arogundade (2014) investigated the response of Nigeria's economic growth to the credit delivery role of microfinance institutions. They adopted microfinance banks' loan portfolio, assets and deposit liabilities as explanatory variables while economic growth was measured by movements in GDP. Model estimation was based on the method of ordinary least squares. The study showed that

microfinance bank lending has strong positive impact on economic growth. It however showed that assets and deposits did not significantly drive growth.

Agbola, Acupan and Mahmood (2017) estimated the capacity of microfinance to reduce poverty using education, health and living standards as proxies for poverty. A survey of 211 households in Philippines was undertaken out of which 105 were clients and 106 were non-clients of the selected rural (microfinance) bank. Empirical investigation was based on the method of analysis of variance (ANOVA). Though there was evidence that non-client households are poorer than client households, the result was not significant.

Donou-Adonsou and Sylwester (2017) conducted an impact assessment of the lending activities of MFIs and conventional banking institutions to determine how they affect economic growth using a panel of 85 developing countries. The study period covered 2002-2013 while empirical investigation was based on system-GMM technique. The study showed that microfinance loans significantly drive growth but there is no evidence of strong positive impact of bank loans on growth. In Murad and Idewele (2017), the authors investigated how economic growth in Nigeria is affected by the lending activities of microfinance banks using annual data for 1992-2012. The study produced significant short-run positive effect of microfinance loans and deposits on economic growth. However, in the long-run, only microfinance deposits showed strong positive impact on growth. Tripathi and Badugu (2015) examined how major activities of MFIs (deposit taking and credit creation) affect economic growth in India. The study which was based on exploratory research design showed that credit delivery and deposit mobilization activities strongly influence growth process.

3. METHODOLOGY

The study followed the *ex-post facto* design which allows for the explanation of an event from data or facts gathered over time on the event. The study was designed to estimate growth implications of the intermediation activities of all registered MFBs in Nigeria between 1992 and 2016. Data were collected from the statistical bulletin, a publication of the Central Bank of Nigeria, and model estimation was based on the technique of the autoregressive distributed lag (ARDL). Basic intermediation functions of MFBs (deposit mobilization and credit creation) and lagged GDP were adopted as explanatory variables while inflation and asset base were introduced as controlled variables.

3.1. Model Specification

The model estimated in the study is implicitly presented as follows:

$$GDP = f(INFLR, MFBD, MFBLA, MFBA, GDP_{t-1}) \tag{1}$$

GDP = Gross Domestic Product (proxy for growth)
INFLR = Inflation rate
MFBD = Microfinance bank deposits
MFBLA = Microfinance bank loans and advances
MFBA = Microfinance bank assets
GDP_{t-1} = Lagged GDP
The above model stated in econometric form is as in equation (2) below:

$$\text{Log GDP}_t = \beta_0 + \beta_1 INFLR_t + \beta_2 \text{Log MFBD}_t + \beta_3 \text{Log MFBLA}_t + \beta_4 \text{LogMFBA} + \beta_5 \text{Log GDPt} - 1 + \varepsilon_t \tag{2}$$

From the above model, β_0 is the constant of the model while $\beta_1 - \beta_5$ are the parameters of the independent variables, ε = Error term. The subscripts, t, refer to the time period of the

study which is 1992-2016. The variables, GDP, MFBD, MFBLA, MFBA and GDP$_{t-1}$, are transformed into logs to achieve standardized values of the variables in the model.

4. RESULTS AND DISCUSSION

Results obtained from the analysis of data are presented and discussed below:

4.1. Unit Root Test Results

To ascertain the time series state of the data, the Augmented Dickey Fuller (ADF) unit root test was conducted. This is to avoid spurious estimates associated with non-stationary series. The result is as presented in table 1.

Table 1 ADF Unit Root Test

Variables	ADF Test Stat.	Critical Value @ 5 per cent sig level	Remark
Log MFBD	-7.272044	-2.998064	Stationary at 1st difference I(I)
Log MFBLA	-6.284202	-2.998064	Stationary at 1st difference I(I)
INFLR	-4.665456	-2.998064	Stationary at 1st difference I(I)
Log GDP	-6.575438	-3.004861	Stationary at 2nd difference I(2)
Log MFBA	-6.648840	-2.998064	Stationary at 1st difference I(I)

Source: Researchers Computation, 2018

From the result, it was observed that none of the variables was stationary at level. At the first difference, all the variables except GDP became stationary. It was at second differencing that GDP showed stationary trend. Thus, at the second difference, the null hypothesis of non-stationary trend is rejected for all the variables. Since the variables were not of same order of integration, the autoregressive distributed lag method of estimation was adopted.

4.2. Regression Analysis

The regression estimates showing how the independent variables individually affect economic growth are presented in table 2 as follows:

Table 2 Autoregressive Distributed Lag (ARDL) Model Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LGDP(-1)	0.646895	0.165747	3.902908	0.0025
LGDP(-2)	0.377995	0.174513	2.165997	0.0531
LINFLR	0.108808	0.025930	4.196183	0.0015
LINFLR(-1)	0.038982	0.027735	1.405484	0.1875
LMFBA	0.195926	0.139530	1.404183	0.1879
LMFBA(-1)	0.065521	0.102014	0.642276	0.5339
LMFBA(-2)	-0.397099	0.131036	-3.030454	0.0114
LMFBD	0.081333	0.115342	0.705143	0.4954
LMFBD(-1)	-0.079532	0.108404	-0.733664	0.4785
LMFBD(-2)	0.457334	0.133096	3.436123	0.0056
LMFBLA	-0.308493	0.071361	-4.323008	0.0012
C	-0.556386	0.271129	-2.052107	0.0647
R-squared	0.999409	Mean dependent var		9.835019
Adjusted R-squared	0.998818	S.D. dependent var		1.275795
S.E. of regression	0.043867	Akaike info criterion		-3.109438
Sum squared resid	0.021167	Schwarz criterion		-2.517006
Log likelihood	47.75853	Hannan-Quinn criter.		-2.960443
F-statistic	1690.685	Durbin-Watson stat		2.050505
Prob(F-statistic)	0.000000			

Source: Researchers' computation, 2018

The variables' coefficients shown in table 2 indicate the response of the dependent variable (Log GDP) to a unit change in an independent variable when other variables remain unchanged. The constant of the above model (-0.556386) is negative and statistically significant at the 1 per cent level. This implies that when all independent variables remain unchanged, gross domestic product (GDP) declines by -0.5564 units. The coefficient for inflation rate (Log INFLR) is 0.108808, positive and statistically significant at 1 per cent. The implication of this result is that a unit increase in current year inflation rate will give rise to a 0.1088 unit increase in current year gross domestic product. The coefficient for one-period lagged inflation rate, (INFLR (-1)), is 0.038982, positive but statistically non-significant. The result indicates that as inflation rate is increased by 1 unit, current year's gross domestic product will increase by 0.03898 units, though not significant.

The coefficient for Microfinance bank assets (Log MFBA) is 0.195926 but statistically not significant. The implication of this result is that a unit rise in current year Microfinance bank assets will give rise to a 0.1959 units rise in current year Gross domestic product (GDP). The coefficient for a one-period lagged microfinance bank assets (Log MFBA (-1)) is 0.065521, positive but also statistically non-significant, an indication that as one-period lagged microfinance bank assets is increased by 1 unit, current year GDP growth will increase by 0.0655 units. The coefficient for two-period lagged Microfinance bank assets (Log MFBA (-2)) is -0.397099, negative and statistically significant at 5 per cent. This indicates that a unit increase in two previous years' Microfinance bank assets will give rise to a 0.397099 unit decrease in current year GDP growth.

The coefficient for Microfinance deposits (Log MFBD) is 0.081333, positive and statistically non-significant, indicating that a unit increase in current year microfinance deposits will give rise to 0.081 unit increase in current year GDP growth. Also, the coefficient for one-period lagged Microfinance bank deposits (Log MFBD (-1)) is -0.079532, negative and statistically non-significant, implying that a unit rise in previous year's MFB deposits will lead to a 0.0795 unit decrease in current year GDP growth. The coefficient for a two-period lagged Microfinance bank deposits (MFBD (-2)) is 0.457334, positive and statistically significant at the 5 per cent which indicates that a unit increase in two previous years' microfinance bank deposits will produce a 0.457 unit increase in current year GDP growth

The coefficient for Microfinance loans and advances (Log MFBLA) is -0.308493, negative and statistically significant. This suggests that a unit increase in current year microfinance loans and advances will decrease current year GDP growth by 0.3085 units.

The coefficient for one period lagged gross domestic product (Log GDP (-1)) is 0.646895, positive and significant at 1 per cent. This means that previous year's gross domestic product positively and significantly affects the present level of national output at 1 per cent. As Gross domestic product proxies economic growth, it implies that a unit increase in previous period's economic growth will produce a 0.6469 units increase in present period economic growth. The coefficient for two-period lagged gross domestic product (Log GDP (-2)) is 0.377995 but not statistically significant at 5 per cent. This means that two previous years' gross domestic product negatively affects present gross domestic product though the severity is not significant.

The R –squared of 0.999409, shown in lower segment of table 2, indicates that 99.94 per cent of changes in current gross domestic product is explained by changes in the independent variables. The adjusted R-squared of 0.998818 is marginally lower than the R-squared further indicating a good fit for the estimated model. The Durbin-Watson statistic which tests for serial correlation is 2.050505 and indicates the absence of serial correlation in the model.

Finally, the F-statistic of 1690.685 is statistically significant at the 1% level indicating strong joint explanatory power of the independent variables.

4.3. Co-integration Test of Variables

To further validate the use of our data for policy decisions, the co-integration test for long-run cohesion or stability was conducted using the autoregressive distributed lag (ARDL) Bounds test. The F-stat from the bounds test is computed to investigate whether the regressors have jointly and significantly explained the phenomenon under investigation. The results of ARDL Bounds test for co-integration is presented in table 3.

Table 3 ARDL Bounds Test for Co-integration

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	11.48144	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: Researchers' computation, 2018

Evidence of co-integration between economic growth and microfinance bank variables is established if the computed F-Statistic is greater than the upper bound of the 5 per cent critical value. From table 3 it was observed that the computed F-statistic of the bounds test which is given as 11.48144 is greater than the upper bound and lower bound critical values at 5% level of significance. Since the computed F-statistic is greater than the Pesaran critical value for the upper bound 5% level of significance, we conclude that there is co-integrating relationship between economic growth and micro-financing activities in Nigeria.

5. CONCLUSION AND RECOMMENDATIONS

The empirical results show that microfinance banks' deposits play active role in driving the wheels of economic growth in Nigeria. This suggests that microfinance banks are effectively mobilizing rural deposits, an activity that helps to track rural commercial transactions thereby enhancing tax collection by the government and in the process growing the national income. Through financial inclusion rural entrepreneurs can be profiled for tax purposes as their financial transactions provide a guide for tax assessment. The result also shows that microfinance banks' loans and advances did not support economic growth within the context of our study. Poor credit administration and management may largely account for the negative impact of MFBs loans on growth by turning these institutions into conduits for channeling deposits into non-bankable business proposals.

It was further observed that lagged values of GDP significantly promote output growth in the present period. There is also evidence that investment in microfinance bank assets was an impediment to growth during the period under review, an indication of heavy investments in unproductive assets. Finally, growth was also shown to be enhanced by the general price level (measured by the level of inflation).

Based on the above results, we conclude that rural financial intermediation, an essential component of financial inclusion, is significant for enhanced economic growth. Prudent allocation and management of MFBs loans and advances as well as asset investments is strongly advocated.

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