MICROFINANCE BANKS AND ECONOMIC GROWTH IN NIGERIA (1992-2018): AN AUTOREGRESSIVE MODEL

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Abstract

This study investigates the effect of microfinance banks on economic growth in Nigeria from 1992-2018 using annual time series data. It adopts autoregressive (AR) model, Granger causality test and correlation analysis test as methods of analysis. The AR model results reveal that microfinance loans, microfinance deposits, microfinance investments, government expenditure and inflation rate have positive effect on economic growth in Nigeria. However, only microfinance investment and government expenditure are statistically significant. This implies that though microfinance loans, microfinance deposits and inflation rate have positive impact on the economy of Nigeria over the study period but they are not significant determinants of economic growth in Nigeria. There is unidirectional causality running from economic growth to each of microfinance loans, and microfinance deposit. A bidirectional causality was also confirmed between microfinance investment and economic growth; and, also between government expenditure and economic growth. The study therefore concludes that microfinance banks have positive impact on the economic growth in Nigeria with the latter Granger-causing the former. There is a need for government of Nigeria to empower microfinance banks through funding and capacity building to facilitate increased microfinance investments in the economy. Government of Nigeria should create enable environment for economic growth which will further enhance the performance of the microfinance in Nigeria.

Introduction

Government over the years have established different programmes and policies targeted at alleviating poverty, developing small and medium enterprises and serving as veritable source of funding to economically active poor with the ultimate desire to raise the economic capacity of the country. A case in point in Nigeria is the microfinance policy. According to Central Bank of Nigeria [CBN] & Nigeria Deposit Insurance Corporation [NDIC] (2011), microfinance is a policy tool which facilitates access to financial and social services by the economically active poor, low income population and vulnerable groups. And it has been adopted by Nigeria's government as one of the effective policies for achieving economic growth in the country. Thus, microfinance finance was formally launched in Nigeria via its microfinance policy, regulatory and supervisory framework for Nigeria on 15th December, 2005.

Microfinance has evolved as an economic development approach intended to benefit low-income people. Specifically, microfinance banks (MFBs) provide savings facilities, credit facilities, payment system to individuals, business firms. MFBs combine a social mission (provision of financial services to the low-income population) with a financial objective that drives the institution to achieve self-sufficiency. Thus, MFBs are attracting private sources of capital, including deposits and commercial loans for on-lending and private investors (CBN & NDIC, 2011).

MFBs in promoting economic growth in Nigeria is embattled by problems such as repayment problems, inadequate finance, high operating cost, inadequate experienced credit staff, and problem of illiteracy (Ayodele & Arogundade, 2014; Ezeudu & Emori, 2017). Problems of macroeconomic instabilities like high inflation, exchange volatility, also constitute another crops of problems that tend to militate against the contribution of microfinance banks to economic growth of Nigeria. Considering the problems and others, will the sub-sector be able to fulfil its roles in enhancing growth in Nigeria? Thus, an attempt is made in this study to empirically investigate the impact of

microfinance banks on the economic growth of Nigeria between 1992 to 2018 within the autoregressive model. The study also aimed at ascertaining the direction of causality between microfinance banks and economic growth in Nigeria in the period under investigation.

Literature Review

Microfinance is the provision of a wide range of financial services such as savings, loans, payment services, money transfers, and insurance to poor and low-income persons, households and their microenterprises (CBN & NDIC, 2011). The term also encompasses the provision of financial and non-financial services as well as the management of small amounts of money through a range of products and a system of intermediary functions that are targeted at low income clients (Anane, 2012). According to Ojo (2009) cited in Babarinde, et al. (2019), microfinance is an economic development approach that involves providing financial and non-financial services through institutions to low-income clients, such as micro, small and medium-scale enterprises where the market fails to provide appropriate services. Abdulmajeed, et al. (2019) define microfinance banking as the business of carrying out microfinance services without collateral security.

Micro finance institutions are institutions that have emerged to apply sound economic principles in the provision of financial services to low income earners and small-scale enterprises (Ezeudu, 2010). Microfinance services are provided by three types of institutions, namely, formal institutions, such as microfinance banks, rural banks and deposit money banks; semi-formal institutions, such as non-government organizations and cooperatives; and, informal sources such as Rotating Savings and Credit Associations (ROSCA), daily savings collectors, money lenders and shopkeepers (CBN & NDIC,2011). Microfinance banks are companies licensed to carry on the business of providing micro-finance services such as savings, loans, domestic fund transfers and other financial services that economically active poor, micro-enterprises and small and medium enterprises need to conduct or expand their businesses as defined by the regulatory guidelines (CBN, 2013).

MFBs are important in that they provide financial services to the active poor, for their entrepreneurial activities; ensures savings mobilization, create employment opportunities, enhance participation of the poor in the socio-economic development and resource allocation, promotes of saving culture, extends credit to customers. Furthermore, microfinance enables poor people to expand their businesses, increase their revenues (Ezeudu, 2010; CBN & NDIC,2011; Ibrahim, 2013). The guidelines for MFBs provides for three categories of MFBs, which are unit, state, and national MFBs, which are to serve a local government area, state and the nation at large respectively. Each of them are to actualize the aim of microfinance banking, most importantly, to achieve sustainable economy growth via poverty alleviation through provision of financial services to the economically active poor.

Economic growth often measured as gross domestic product, or gross national product, either in nominal or real terms, simply refers to a persistent increase in the productive capacity of country which lead to increase in goods and services. Theoretically, microfinance banks are to involve in savings mobilization, employment creation, investments and provide non-financial services targeted at the economically active poor, thereby stimulating economic growth of the country. The extent to which this postulate has empirical reality has been examined by researchers. Thus, this study reviews some empirical evidence in extant literature on the nexus between microfinance banks and economic growth and the results are presented in table 1.

Table 1: Summary of Empirical Literature

Author and year	Focus	Methods	Findings

Okwoli, et al. (2013).	MFBs and rural development in Nigeria(2007- 2012).	Desk research	MFBs have positive impact on rural transformation and development in Nigeria.
Eigbiremolen and Anaduaka (2014)	The place of microfinance in the Nigeria economy (1992-2012)	Ordinary Least Square (OLS) and Granger causality	Microfinance loans and advances have significant positive impact on the Nigeria economy with a unidirectional causality running from economic growth to microfinance operations.
Ayodele and Arogundade (2014)	Impact of microfinance on economic growth in Nigeria.	OLS	Except for deposit liability which has negative impact, asset base and loan and advances have positive impact on economic growth in Nigeria.
Sultan and Masih (2016)	Relationship between microfinance and economic growth in Bangladesh(1983-2013)	Autoregressive distributed lag (ARDL) model	Microfinance has significant impact on domestic growth, with a bi-directional relationship between microfinance and growth in Bangladesh.
Apere (2016)	Impact of MFBs on economic growth in Nigeria (1992-2013).	Error correction model (ECM)	MFBs loans and domestic investment have positive and significant effect on the growth of Nigeria's economy
Murad and Idewele (2017)	Impact of microfinance institutions on economic growth of Nigeria(1992-2012)	ECM	Microfinance loans have significant positive impact on economic growth in Nigeria in the short run but the reverse is the case in the long run. Microfinance investment has a significant impact on economic performance in Nigeria in the long run.
Ezeudu and Emori (2017)	Empirical analysis of holistic activities of microfinance banks in Nigeria (1992-2015)	OLS	MFBs' total assets, and microfinance loans and advances have positive impact on economic growth in Nigeria. However, microfinance banks' deposits impacted negatively on economic growth in Nigeria.
Otiwu, et al. (2018)	The relationship between financial inclusion and economic growth in Nigeria: The microfinance option (1992-2013)	OLS and Johansen Cointegration	MFBs' loans and advances significantly contribute to economic growth. Microfinance deposits inversely affect economic growth. Long-run relationship was confirmed among the variables.
Ezeanyeji, et al. (2020).	Nexus between microfinancing, poverty alleviation and Nigeria's economic growth(1992-2018)	ARDL	MFBs' loan and advances do not significantly affect economic growth in Nigeria.

Source: *Author's compilation from literature review, (2020).*

The outcome of the review of empirical evidence in table 1 indicates that while most studies tend to affirm the positive impact of microfinance on economic growth, some studies still concluded otherwise. The use of OLS is common among the methods employed in the study. Measures of microfinance employed by different researchers also give different results. For instance, Okwoli, et al. (2013), and Sultan and Masih (2016) found a positive relationship between microfinance and economic growth. However, Ezeanyeji, et al. (2020) concluded that microfinance and economic growth are inversely related. With these conflicting results, it seems the debate is not yet conclusive on the nexus between microfinance banks and economic growth.

Methods

The study is based on ex-post facto design. The study employed secondary data on an annualized basis obtained from CBN statistical bulletin ranging from 1992 to 2018. The relevant data are microfinance loans and advances, microfinance investment, microfinance deposit, inflation rate and real gross domestic product. The population and the sample size of the study are the Microfinance banks in Nigeria.

To examine the effect of microfinance banks on economic growth in Nigeria, the study adopts the AR model where economic growth is expressed as a linear function of its lagged value, microfinance loans, microfinance investments, microfinance deposits, and inflation rate as a control variable.

Before the AR model estimation, the augmented Dickey-Fuller (ADF) unit root test was applied to the annual time series. The test was performed at level, first difference and second difference. Once a variable becomes stationary at a stage of the test, it is needless carrying further test of unit root at a higher level than that at which stationarity was attained. The ADF unit root test equation is specified thus:

$$=+ \text{ , where } \epsilon \sim \text{IID}(0, {}^2) \tag{1}$$

H_O : (non-stationarity, that is, presence of unit root)
H_1 : (Stationarity, that is, no presence of unit root)
Where y in equation 1 represents each of the variables in the specified model; is the error term; is the stationarity coefficient; and are parameters to be estimated.
The autoregressive model of order one (AR (1)) is specified in equation 2:
$$=+ ++ +++ \tag{2}$$

Where: = Real domestic product in years t; = first year lag of real gross domestic product; = microfinance loans in years t; = microfinance investments in years t; = microfinance deposit liabilities; = inflation rate in years t; = stochastic error terms in years t; t= time series in years from 1992-2018.

Theoretically, MFL, MFIV, MFD, are expected to be positively negatively signed with RGDP while INFR is expected to be negative if the rate is higher than the tolerable level but could be positive if the rate is within tolerable bound capable of stimulating economic activities.

Furthermore, the study also examined the direction of causality between microfinance banks and economic growth in Nigeria. The pairwise Granger causality test equations are stated thus:

$$=+ \;+ + \tag{3}$$
$$=+ \;+ + \tag{4}$$
$$=+ \;+ + \tag{5}$$
$$=+ \;+ + \tag{6}$$
Where , and are assumed to be uncorrelated,

Results and Discussion

4.1 Summary Statistics: In order to get insight into descriptive features of the data, the summary statistics are estimated and presented in table 2.

Table 2: Summary Statistics

Variables	RGDP	MFL	MFIV	MFD	INFR	GEX

Mean	40970.95	51734.56	59247.78	55868.40	19.11036	2577.435
Maximum	69810.02	207963.3	277773.3	201721.8	72.83550	7813.741
Minimum	19620.19	135.8000	118.4000	639.6000	5.388008	92.79740
Std. Dev.	18860.93	69134.97	101247.9	62309.73	17.61091	2276.168
Skewness	0.313415	1.300893	1.315777	0.998393	1.912689	0.635597
Kurtosis	1.533590	3.275413	2.977656	2.786881	5.439409	2.190859
Jarque-Bera	2.861183	7.700786	7.791271	4.536646	23.15727	2.554472
Probability	0.239167	0.021271	0.020330	0.103486	0.000009	0.278807
Observations	27	27	27	27	27	27

Source: *Author's computation using Eviews 10, (2020).*

Table 2 describes the properties of the variables of study. It can be seen that real gross domestic product(RGDP), inflation rate(INFR) and government expenditure(GEX) are not widely dispersed from their average values since the S.D. of the series are less than their mean values. However, the MFL, MFIV, MFD, have greater dispersion from their averages. RGDP over the period of study ranges between ₦19620.19billion and ₦ 69810.02b while INFR is between 5.38% and 72.83%. The minimum microfinance loans(MFL), microfinance investment (MFIV) and microfinance deposits(MFD) over the period of 27 years was ₦135.800b, ₦118.400b, and ₦639.600b respectively; and the maximum values for the trio are ₦ 207963.3b, ₦277773.3b, and ₦201721.8b respectively. The minimum and maximum GEX was ₦92.797b and ₦7813.741b. All the series are positively skewed. Only two of the series (MFL and INFR) have their kurtosis of above 3, implying the platykurtic nature of the series. Others variables are leptokurtic in nature. The p-values of the Jargue-Bera(JB) statistics of the series indicate that RGDP, MFD, and GEX are normally distributed while the other variables (MFL, MFIV and INFR) do not pass the normality test since their respective p-value is less than 5% level of significance.

Correlational Analysis: To examine the strength and direction of relationship among the variables as well observe the data for any multicollinearity problem, correlational analysis was employed. The result of the analysis presented in the form of matrix is presented in table 3.

Table 3: Correlation Matrix

Correlation/ p-values	RGDP	MFL	MFIV	MFD	INFR	GEX
RGDP	1.000000					
	(-----)					
MFL	0.804468	1.000000				
	(0.0000)	(-----)				
MFIV	0.8022615	0.768282	1.000000			
	(0.0000)	(0.0000)	(-----)			
MFD	0.791502	0.78918	0.730712	1.000000		
	(0.0000)	(0.0000)	(0.0000)	(-----)		
INFR	-0.475809	-0.297662	-0.239772	-0.355399	1.000000	
	(0.0121)	(0.1316)	(0.2284)	(0.0689)	(-----)	
GEX	0.73130	0.819758	0.8044221	0.64303	-0.442048	1.000000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0210)	(-----)

NB: Numbers in parentheses are probability values.
Source: *Author's computation using Eviews 10, (2020).*

Table 3 indicates that except for inflation rate (INFR) which are negatively correlated with economic growth (RGDP), all other explanatory variables have strong and positive significant relationship with RGDP. Generally, all the variables correlate well, ranging from a coefficient of 0.23 to 0.80 and thus do not suffer multicollinearity problem.

4.3 Augmented Dickey-Fuller (ADF) Unit Root Test: Stationarity test is key in time series analysis. This is necessary to avoid spurious result of regressing non-stationary over another. Table 4 reports the ADF unit root at level, first difference and second difference.

Table 4: ADF Unit Root Test's Results
Null Hypothesis (HO): There is a unit root

Series	ADF at Level		ADF at 1st Difference		ADF at 2nd Difference		I*(d)*
	Test Stat.	Prob	Test Stat.	Prob	Test Stat.	Prob	
RGDP	-2.534170	0.3104	-1.925071	0.6118	-4.730059	0.0055***	I(2)
MFL	0.239455	0.9969	-5.415387	0.0011***			I(1)
MFIV	-0.939170	0.9357	-5.342533	0.0012***			I(1)
MFD	0.317742	0.9975	-6.400731	0.0001***			I(1)
INFR	-2.001585	0.5733	-5.022770	0.0028***			I(1)
GEX	-0.580900	0.9717	-4.917764	0.0030***			I(1)
Critical Values	1%: -4.356068		5%: -3.595026		10%: -3.233456		

*** denotes rejection of HO at 1% level of significance.
Source: *Author's computation using Eviews 10, (2020).*

Table 4 shows that none of the variables is stationary at level but almost all the variables became stationary after first differences. Only RGDP was stationary at second difference. Since the variables are of mixed orders of integration, it is safe to apply the autoregressive model to the series.

4.4 VAR Lag Order Selection Criteria: The study determined the optimum lag for the AR model before actual estimation of the AR model. The result of the VAR lag order selection criteria is presented in table 5.

Table 5: VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-135.7005	NA	0.002183	10.90004	11.19037	10.98365
1	-2.209781	195.1019*	1.31e-06*	3.400752*	5.433062*	3.985984*

* indicates lag order selected by the criterion; LR: sequential modified LR test statistic (each test at 5% level); FPE: Final prediction error; AIC: Akaike information criterion; SC: Schwarz information criterion; HQ: Hannan-Quinn information criterion.
Source: *Author's computation using Eviews 10, (2020).*

Table 5 indicates that all the criteria suggest the choice of lag 1 in the model estimation for the series. Hence, the AR model was estimated at lag 1 based on AIC.

4.5 ARDL Bound Test for Co-integration: In order to determine any evidence of long run relationship among the variables, the study employed the auto-regressive distributed lag(ARDL) bound test for co-integration. The result of the test is presented in table 6.

Table 6: ARDL Bound Test for Cointegration

HO: There is no long run relationship among the series

	F statistics value=24.33311			
Significance Level	Lower bound I(0)	Upper Bound I(1)	Decision	
10%	2.46	3.46	Reject the null hypothesis of no co-integration	
5%	2.947	4.088		
1%	4.093	5.532	Cal. F-stat.>I(1) at all levels	

Source: *Author's computation using Eviews 10, (2020).*

In table 6, the HO of no-cointegration in the Bounds test for co-integration is rejected since the calculated F-statistics (24.33311) exceeds the upper bound values at all levels of significance. This implies that there is evidence of long run relationship between microfinance banks measures and economic growth in Nigeria during the period of investigation. Otiwu, et al. (2018) also found a similar evidence in their study of the relationship between financial inclusion and economic growth in Nigeria (the microfinance option).

4.6 AR Model Estimation: The results of the AR model of the relationship between microfinance banks and economic growth in Nigeria, is presented in table 7.

Table 7: AR Model Result
Dependent Variable: LRGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.758513	0.248010	31.28313	0.0000
LGDP(1)	0.349936	0.558691	0.626349	0.5385
LMFL	0.003360	0.099147	0.033892	0.9733
LMFIV	0.052355	0.018156	2.883615	0.0095***
LMFD	0.092392	0.106633	0.866449	0.3971
LGEX	0.178214	0.047910	3.719792	0.0015***
INFR	0.002094	0.001258	1.664858	0.1123
R^2	0.987707			
Adjusted R^2	0.983825	F-statistic	254.4345	0.000000
		Durbin-Watson	1.555968	

Source: *Author's computation using Eviews 10, (2020).*

The AR model result in table 7 indicates all the explanatory variables are positively signed with GDP. However, only microfinance investment and government expenditure are statistically significant. This implies that, though, microfinance loans, microfinance deposits and inflation rate have positive impact on the economy of Nigeria over the study period but they are not significant determinants of economic growth in Nigeria.

Microfinance banks investment with a coefficient of 0.052355 and a p-value (0.0095) of less than 1%, implies that 1 per cent increase in Microfinance investment is associated with 5.23% increase in economic growth in Nigeria. This finding is line with theoretical expectation and also concur with the findings of Apere (2016), and Murad and Idewale (2017). Similarly, government expenditure with a coefficient of 0.178214 and a p-value (0.0015) of less than 1%, implies that 1 per cent increase in government expenditure is associated with 17.82% increase in economic growth in Nigeria. This finding is line with theoretical expectation.

The positive impact of microfinance deposits on economic growth in Nigeria confirmed in this study is consistent with the findings of Eigbiremolen and Anaduaka (2014), Ayodele and Arogundade (2014), Apere (2016), Otiwu, et al. (2018). The findings in this study that microfinance deposits have positive impact on the economy of Nigeria is not consistent with the findings of Ayodele and Arogundade (2014), and Otiwu, et al. (2018) when they found an inverse relationship between microfinance deposits and economic growth in Nigeria.

The model's coefficient of determination (R2) of 98% implies that the variations in economic growth are jointly and simultaneously determined by its 1-year lagged value, microfinance loans, microfinance investment, microfinance deposits and inflation rate over the period. The model is regarded to have a good fit considering its F-stat (254.4345) and p-value (0.0000) which is statistically significant at 1%. The model has little or no serial correlation problem considering it D.W stat (1.555968) of roughly 2.

4.7 Post-Estimation Diagnostic Tests: Some diagnostic tests were carried out on the AR model estimated. The results of the various tests are reported in this sub-section.

4.7.1 Normality Test: Presented in figure 1 is the result of the normality test of the model.
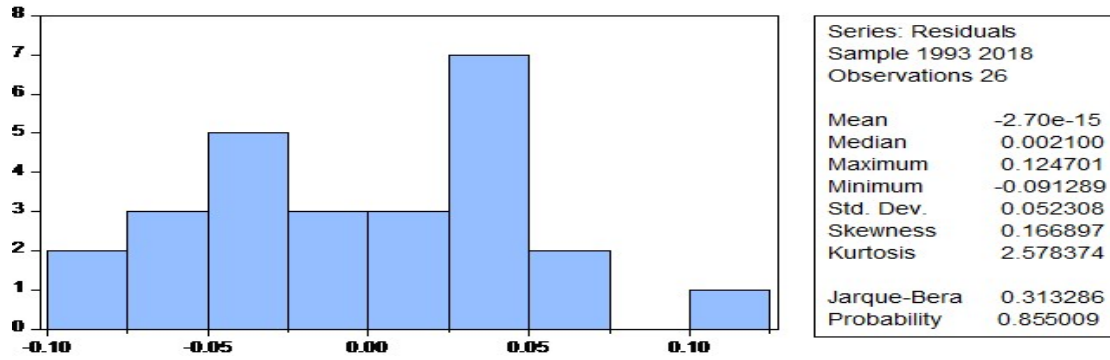

Series: Residuals	
Sample 1993 2018	
Observations 26	
Mean	-2.70e-15
Median	0.002100
Maximum	0.124701
Minimum	-0.091289
Std. Dev.	0.052308
Skewness	0.166897
Kurtosis	2.578374
Jarque-Bera	0.313286
Probability	0.855009

Fig. 1: *Normality Test*

Source: *Author's computation using Eviews 10, (2020).*

As revealed in the normality statistics in fig. 1, the skewness of roughly 0 (0.1668) as well mesokurtic nature (with kurtosis value of roughly 3, that is 2.5783) of the model's residuals affirms the normality of the series. Formally, the J-B statistics (0.3132) with its p-value (0.855009) exceeding 10% level of significance confirms the normality of the model.

Serial Correlation Test: The study also tested for autocorrelation among the variables in the model via the Breusch-Godfrey serial correlation LM test, the result of which is presented in table 8.

Table 8: Breusch-Godfrey Serial Correlation LM Test

HO: There is no serial correlation			
F-statistic	0.928195	Prob. F(2,17)	0.4144
Obs*R-squared	2.559671	Prob. Chi-Square(2)	0.2781

Source: *Author's computation using Eviews 10, (2020).*

Since the HO in table 8 is not rejected due to the fact that the p-value of the test statistic is more than the level of significance at 1%, 5% and 10% respectively; it can be concluded that there is absence of serial correlation among the variables in the model.

4.7.3 Heteroscedasticity Test: The study also tested for heteroscedasticity among the variables in the model estimated via the Breusch-Pagan-Godfrey heteroscedasticity test, the result of which is presented in table 9.

Table 9: Breusch-Pagan-Godfrey Heteroscedasticity Test

HO: There is no heteroscedasticity			
F-statistic	1.085351	Prob. F(6,19)	0.4060
Obs*R-squared	6.636643	Prob. Chi-Square(6)	0.3558

Scaled explained SS	2.796977	Prob. Chi-Square(6)	0.8339

Source: *Author's computation using Eviews 10, (2020).*

4.7.4 Model Stability Tests: The study tested for parameter stability of the nexus among the variables in the model via the CUSUM of Squares test, the result of which is presented in figure 2.
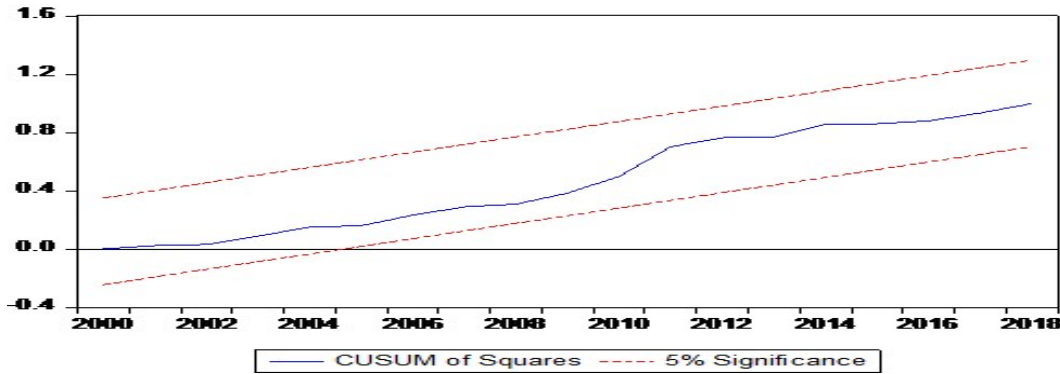

Fig. 2: *CUSUM of Squares Stability Graph*

Source: *Author's construction using Eviews 10, (2020).*

Figure 2 shows that the model CUSUM of Squares graph plots within 5% significance. This implies that the model does not suffer from structural break but is stable over time.

Furthermore, individual variables in the AR model estimated were tested for any element of structural break. Figure 3 is the combined results of the CUSUM of Squares tests for each variable.
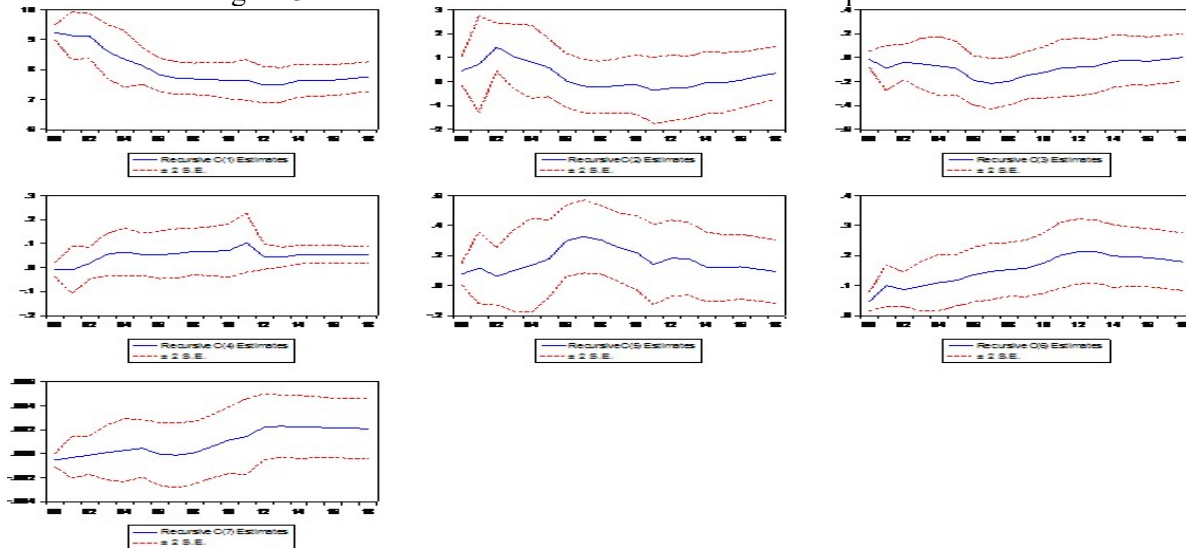

Fig. 3: *CUSUM of Squares Stability Graph*

Source: *Author's construction using Eviews 10, (2020).*

The CUSUM of Squares test for each variable in figure 3 shows that the graph for each variable does not cross the lower and upper critical limits. It can be concluded that the estimates are stable and there is no any structural break. Hence the results of the AR model estimated are considered reliable and efficient.

4.8 Granger Causality Test: The study ascertained the direction of causality between microfinance banks and economic growth in Nigeria via the pairwise Granger causality test. Table 9 contains the results of the test.

Table 9: Results of Pairwise Granger Causality Test

Null Hypothesis:	F-Statistic	Prob.	Decision	Causality
LMFL does not Granger Cause LRGDP	0.16819	0.6855	Accept	No

LRGDP does not Granger Cause LMFL	28.3841	2.E-05	Reject	Yes
LMFIV does not Granger Cause LRGDP	7.04068	0.0142	Reject	Yes
LRGDP does not Granger Cause LMFIV	10.2899	0.0039	Reject	Yes
LMFD does not Granger Cause LRGDP	1.56149	0.2240	Accept	No
LRGDP does not Granger Cause LMFD	17.3122	0.0004	Reject	Yes
LGEX does not Granger Cause LRGDP	14.8070	0.0008	Reject	Yes
LRGDP does not Granger Cause LGEX	3.37520	0.0791	Reject	Yes
LMFIV does not Granger Cause LMFL	2.60118	0.1204	Accept	No
LMFL does not Granger Cause LMFIV	0.14885	0.7032	Accept	No
LMFD does not Granger Cause LMFL	0.85170	0.3657	Accept	No
LMFL does not Granger Cause LMFD	0.05257	0.8207	Accept	No
LGEX does not Granger Cause LMFL	5.17746	0.0325	Reject	Yes
LMFL does not Granger Cause LGEX	2.27753	0.1449	Accept	No
LMFD does not Granger Cause LMFIV	0.20966	0.6513	Accept	No
LMFIV does not Granger Cause LMFD	1.56766	0.2231	Accept	No
LGEX does not Granger Cause LMFIV	2.50126	0.1274	Accept	No
LMFIV does not Granger Cause LGEX	0.39668	0.5350	Accept	No
LGEX does not Granger Cause LMFD	6.07598	0.0216	Reject	Yes
LMFD does not Granger Cause LGEX	3.22495	0.0857	Reject	Yes

Source: *Author's computation using Eviews 10, (2020).*

Table 9 reveals that there is unidirectional causality running from economic growth to microfinance loans, and from economic growth to microfinance deposit, as well as from government expenditure to microfinance loans. Eigbiremolen and Anaduaka (2014) also found unidirectional directional causality running from economic growth to microfinance growth in Nigeria. In the same vein, there is bidirectional causality between a pair of each of government expenditure and microfinance deposit; microfinance investment and economic growth; and, government expenditure and economic growth. Sultan and Masih (2016) found a bidirectional causality between microfinance and economic growth in Bangladesh.

Conclusion and Recommendations

The paper examined the impact of microfinance banks on the economic growth of Nigeria from 1992 to 2018 using annual times series. Correlation analysis, AR Model as well as pairwise Granger causality tests were employed in the analysis.

The study found that except for inflation rate which is negatively correlated with economic growth, all other explanatory variables (microfinance loans, microfinance investments, microfinance deposits) have strong and positive significant relationship with economic growth. There is also an evidence of long run relationship between microfinance banks measures and economic growth in Nigeria. The AR model result indicates that all the explanatory variables are positively signed with economic growth. However, only microfinance investment and government expenditure are statistically significant. This implies that though microfinance loans, microfinance deposits and inflation rate have positive impact on the economy of Nigeria over the study period but they are not significant determinants of economic growth in Nigeria. Furthermore, the paper confirms unidirectional causality running from economic growth to microfinance loans, and from economic growth to microfinance deposit, as well as from government expenditure to microfinance loans. However, there is bidirectional causality between a pair of each of government expenditure and microfinance deposit; microfinance investment and economic growth; and government expenditure and economic growth. The study thus concludes that microfinance banks have positive impact on the economic growth in Nigeria with the latter Granger-causing the latter.

There is a need for government of Nigeria to government of Nigeria to empower microfinance banks through funding and capacity building to facilitate increased microfinance direct and portfolio

investments in the economy. The use of fiscal policy as relates to the use of its expenditure pattern to influence economic activities will go a long way in accelerating the rate of economic growth in the country. The Government of Nigeria should create enabling environment and programmes in the economy capable of stimulating growth and development that will further enhance the performance of the microfinance sub-sector in Nigeria.

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