

Effect of Financial Inclusion on Small and Medium Scale Enterprise in Nigeria

Atueyi Chidi L.¹, Nkechukwu, G.C. (P.hD)² and Jacobs Chineze J.³

¹Department of Banking and Finance, Chukwuemeka Odumegwu Ojukwu University, Igbariam, Anambra State, Nigeria | Phone: 08036354014

²Senior Lecturer, Department of Banking and Finance, Chukwuemeka Odumegwu Ojukwu University, Igbariam, Anambra State, Nigeria | Phone: 08033418719

³Department of Entrepreneurship Studies, Chukwuemeka Odumegwu Ojukwu University, Igbariam, Anambra State, Nigeria | Phone: 07036860589

Abstract: This study examined the effect of financial inclusion on small and medium enterprises in Nigeria from 1981 to 2019. Data used in this study are secondary data sourced from the Central Bank of Nigeria Statistical Bulletin. ARDL was used to analyze the data. The variables are on performance of small and medium scale enterprise, commercial bank deposit to rural areas, monetary policy rate, commercial bank loan to rural areas and lending rate. The study employed preliminary statistical test of (Augmented Dickey Fuller) ADF for unit root analysis, Johansen co- integration approach to establish long-run relationship for the data, and Error Correction Model. The findings indicate that commercial bank loan to rural areas has positive significant effect on small and medium scale enterprise in Nigeria, commercial bank deposit to rural areas has positive significant effect on small and medium scale enterprise in Nigeria. The study concludes that financial inclusion has significant impact on small and medium enterprises in Nigeria. Based on the findings the study recommends that, monetary authority should compel commercial banks to spread its payment machine (ATM, POS) across rural areas to ensure access to financial service. Commercial banks should also reduce borrowing rate especially for small and medium enterprises in the rural areas to enable expansion of their business.

Keywords: Financial inclusion, small and medium enterprises, commercial bank loan, commercial bank deposit, lending rate, monetary policy rate

I. INTRODUCTION

Financial inclusion is an intervention strategy that seeks to overcome the market friction that hinders the markets from operating in favour of the poor and underprivileged (Aduda & Kalunda, 2016). Central Bank of Nigeria (CBN, 2019), financial inclusion is the delivery of formal financial services in a reliable, convenient, affordable, continuous, and flexible manner to those without access to financial services. The objective of financial inclusion should be advantaging the poor majority who initially do not use formal financial services (Sarma & Pais, 2018).

Financial inclusion offers incremental and complementary solutions to tackle poverty, to promote inclusive development and to address MDGs (Aduda & Kalunda, 2016). Financial inclusion aims at drawing the unbanked population into the formal financial system so that they have the opportunity to access financial services ranging from savings, payments, and transfers to credit and insurance. In this study, financial inclusion means making available required financial services in a reliable and convenient manner to micro and small medium enterprises by the financial institutions.. Quality; measures describing capacity of the financial products and services to match clients' needs, the range of options available to customers, and clients'

awareness and understanding of financial products and impact; which looks into the influence of inclusion on the enterprises' outcomes, such as an enterprise's level performance or human capital investments (World Bank, 2018).

According to Pierre, (2014) Organizational performance encompasses three specific areas of firm outcomes: (1) financial performance (profits, return on assets, return on investment, etc.); (2) market performance (sales, market share, etc.); and (3) shareholder return (total shareholder return, economic value added, etc.). However, it has been critiqued that financial measures lack predictive ability to explain future performance, reward short-term or incorrect behaviour, provide little information on root causes or solutions to problems, and give inadequate consideration difficult to quantify intangible assets such as intellectual capital. As a result, many firms are supplementing financial metrics with a diverse set of non-financial performance measures that are believed to provide better information on strategic progress and success (Ittner 2013). Small and Medium Enterprises (SMEs) play an important economic role in many countries. Many governments and development organizations have focused on the promotion of SMEs as a way of encouraging broader participation in the private sector (Kushnir, 2014).

To cover substantial ground towards financial inclusion in third world countries, there is need for financial institutions to focus their attention towards the low-income market which Prahalad and Hart (2012) argue that the low-income market presents a prodigious opportunity for the world's wealthiest companies to seek their fortunes and bring prosperity to the aspiring poor and demonstrates that there is a huge opportunity in serving the lower market segment. Nigeria has witnessed technological innovations such as phones, automated teller machines (ATMs), e-banking and agency banking, and mobile phone money transfer services this have transformed the Nigeria financial sector landscape since 2002. In particular, Mobile phone in Nigeria has allowed expansion and access to financial services to previously underserved by improving access to credit and deposit facilities, allowing more efficient allocation of credit, facilitating financial transfers, and boosting financial inclusion. Agency Banking, microfinance institution and mobile banks have also gone a long way in extending financial services to millions of poor people at relatively low cost (Aduda & Kalunda, 2016).

Statement of the Problem

Over the past decades, financial inclusion and small and medium scale enterprises have attracted significant attention from finance and development experts and have been debated extensively. Several studies were carried out on financial inclusion and small and medium scale enterprises though with mixed findings. Studies carried out outside Nigeria by authors such as Afful, Hejkrlik, and Doucha, (2015) in Ghana, Sawaya, and Bhero, (2017) in mozambique, Akinyi (2014) Kenya, Dingela, and Khobai, (2017) South Africa reveal that there is a positive relationship between financial inclusion and small and medium scale enterprises. While Etemesi (2017) in Nairobi, Rjoub (2017), in Kenya, Bawuah, Yakubu, and Alhassan (2014) Ghana show a negative relationship between financial inclusion and small and medium scale enterprises.

The studies in Nigeria by authors such as Nwosa and Oseni (2013) Ikpor, Eze, and Obaji (2017), Owolabi and Nasiru, (2017), Owolabi and Adegbite (2014) and Uduakobong. (2014) show that there exist a negative relationship between financial inclusion and small and medium scale enterprises. Imoughele, and Ismaila, (2014) John-Akamelu and Muogbo (2018) Amadasu, (2017), Owolabi and Adegbite (2014), Mbam.,(2012) and Abusomwan, and Arodoye, (2017) show that there exist a positive relationship between financial inclusion and small and medium

scale enterprises.

In light of the above explanation, it is evident that the empirical studies which focus on the link between financial inclusion and small and medium scale enterprises show mixed results and this may be attributed to the estimation methodologies and quantities and span of data used as well as the direction of causality. In Nigeria, there are few empirical studies that focus on the effect of financial inclusion and small and medium scale enterprises using time series data. In addition, these studies do not examine the short-run and long-run effect of financial inclusion and small and medium scale enterprises. While a significant number of empirical studies included used panel and cross-section data to examine the relationship between financial inclusion and small and medium scale enterprises, there is no consensus on the findings. This may be due to the fact that these countries have different measurements of financial inclusion. The current study, therefore, complements the previous empirical studies by using annual data of 2018, unit root test, stability test, causality test, co-integration and error correction model approach with a view of shedding light on this important relationship, by focusing on the effect of financial inclusion on small and medium scale enterprises in Nigeria.

Objectives of the Study

The aim of this research shall be to investigate the effect of financial inclusion on small and medium scale enterprise in Nigeria. Specific objectives are to:

- i. Analyze the effect of commercial bank loan to rural areas on small and medium scale enterprise in Nigeria
- ii. Determine the effect of commercial bank deposit from rural areas on small and medium scale enterprise in Nigeria
- iii. Evaluate the effect of lending rate on small and medium scale enterprise in Nigeria
- iv. To evaluate the effect of monetary policy rate on small and medium scale enterprise in Nigeria

Scope of the Study

This work will investigate the effect of financial inclusions on small and medium enterprises in Nigeria economy. This study shall be restricted to the period between 1981 and 2018. The variables were, performance of small and medium scale enterprises, lending rate, monetary policy rate, Commercial bank loan to rural areas, and Commercial bank deposit from rural areas growth.

II. REVIEW OF RELATED LITERATURE

Conceptual issues

Small and Medium Scale Enterprise

The definition of SMEs varies from country to country. For instance, European Union (EU) defines a small enterprise as one which has a headcount of less than 50 employees and a balance sheet and turnover each of which is not more than 10 million Euros. A medium-size enterprise has headcount of less than 250, and a turnover of not more than 50 million Euros or a balance

sheet of not more than 43 million Euros.. In Great Britain, Small Scale Industries include those with an annual turnover of two million pounds or less and with less than 200 paid employees. This definition makes no reference to capital Investment.

Different scholars have given different definitions to SMEs. Some attempt to use the capital asset while others use skill of labor and turn over level. Others define SMEs in terms of their legal status and production method. Danger of using size to define the status of firm is that in some sectors all firms are regarded as small while in other sectors of the economy, they possibly no firms which are small.

In Nigeria, According to the Central Bank Nigeria's (CBN) Credit Guidelines, a small Scale Industry is any manufacturing or service enterprise whose annual business turnover does not exceed ₦500,000 ceiling which was imposed on the Agricultural Credit Guarantee Scheme (ACGS) and not more than ₦1 million (one million Naira). SMEDAN (2009) found that SMEs represents 90% of the enterprises in Nigeria and Culkin and Smith (2000) also found that small businesses employ 53% of the private workforce and accounts for 47% of sales and 51% of private sector gross domestic product and also argued that SMEs make up the largest business sector in every world economy. Yet SMEs tend to face significant constraints in accessing credit and other financial services, owing to geographical distance from financial centers, affordability, lack of collateral, poor or nonexistent credit history and other non-price barriers.

Small and Medium Scale Enterprise Performance

This comprises the actual output or results of small and medium scale enterprises as measured against its intended outputs (or goals and objectives). According to Richard (2009) small and medium scale enterprises performance encompasses three specific areas of business outcomes. These include financial performance (profits, return on assets, and return on investment), Product market performance (sales, market share) and Shareholder return (total shareholder return, economic value added). Generally, small and medium scale enterprises performance involves identifying outcomes that it wants to achieve, creating plans to achieve those outcomes, carrying out those plans, and determining whether the outcomes were achieved

Financial Inclusion

Definition of financial inclusion by Oruo (2013) is used to operationalized the concept of financial exclusion. It is, therefore, viewed as the ability of some individual to access and use basic financial services. Such services include savings, loans, and insurance in a manner that is reasonably convenient, reliable and flexible in terms of access and design. According to Nwanko and Nwanko (2014), the traditional idea of financial inclusion is the provision of access to and usage of diverse, convenient, affordable financial services. Access to and use of financial services is one of the major drivers of economic growth. Financial Inclusion covers sustainable, relevant, cost-effective and meaningful financial services for the financially underserved population especially rural dwellers. World Bank (2012) described financial inclusion as the range, quality and availability of financial services to the underserved and financially excluded.

According to FATF (2011), financial inclusion is about providing access to an adequate range of safe, convenient and affordable financial services to disadvantaged and other vulnerable groups, including low income, rural and undocumented persons, who have been underserved or excluded from the formal financial sector. It is also, on the other hand, about making a broader range of financial services available to individuals who currently only have access to basic financial products. Centre for Financial Inclusion (2013) also described financial inclusion as a state in which all people who can use financial services have access to a complement of quality

financial services, provided at affordable prices, in a convenient manner and with dignity for the clients. Clark (2013) asserted that financial inclusion helps people to diversify or increase income stream in the house, provides liquidity/cash flow; absorbs shock of adversity by building assets which enables client to cope with loss through consumption smoothing, thus avoiding the sale of productive assets. It increases income when the credit is used for an income-generating activity and that activity generates returns in excess of the loan instalment repayments, while it builds asset when the credit-financed investment does not generate a significant net profit but create an asset since the investment remains with the clients (Nwanko and Nwanko, 2014).

Theoretical review

Financial Intermediation Theories Financial intermediation is seen as the extent to which financial institutions bring deficit spending units and surplus spending units together (Ndebbio, 2004). Arguments point out that, banks are able to effectively monitor borrowers and thus play the role of delegated monitoring (Diamond, 1984). Diamond (1984), asserts that intermediaries provide services by issuing secondary financial assets to buy primary financial assets. If an intermediary provided no services, investors who buy the secondary securities issued by the intermediary might as well purchase the primary securities directly and save the intermediary's costs. In theories stressing entrepreneurship, financial market imperfections determine the extent to which talented but poor individuals can raise external funds to initiate projects.

Thus, the evolution of financial development, growth and intergenerational income dynamics are closely intertwined. Finance influences not only the efficiency of resource allocation throughout the economy but also the comparative economic opportunities of individuals from relatively rich or poor households; access to finance attempts to reduce market frictions. Information asymmetry is a situation where by the one party has more or better information than the other (Chibba, 2009). Dermirguc-Kunt and Levine (2009) argue that reducing financial market imperfections to expand individual opportunities creates positive incentive effects. These models show that lack of access to finance can be the critical mechanism for generating persistent income inequality or poverty traps, as well as lower growth. In summary, the theoretical models cited above point out five main roles that financial intermediaries play namely: acquisition of information on borrowers, provision of risk reduced agreements, accumulating capital, improve corporate governance and ease the transaction process.

Empirical studies

Nwosa and Oseni (2013) examines the impact of rural banks loan on the performance of SMEs in Nigeria for the period spanning 1992 to 2010. The study employed an error correction modeling technique and observed that rural banks loan to the SME sector had insignificant impact on manufacturing output both in the long and short run. Based on the findings, the study recommended the need for greater deliberation and conscious effort by the government in ensuring that loans are given to ultimate users. There is also the need for moderation of collaterals and interest rate attached to rural banks loan to SMEs, to make it more attractive to stakeholders in the SMEs sector, manufacturing output is measured by the output of the sector over the period of study; labor force is measured by the total working population; capital stock is proxy by gross capital formation; rural bank loan to SME sector is measured by the yearly amount of bank loan advanced to the sector; interest rate is measured by monetary policy rate,

Data on manufacturing output, gross capital formation, bank loan to SME sector, and interest rate.

The study by Imoughele and Ismaila (2014) employed Co-integration and Error Correction Modelling (ECM) techniques to investigate empirically the impact of rural bank loan on Nigeria's Small and Medium Scale enterprises (SMEs) between 1986 and 2012. The results revealed that SMEs and selected rural bank loan have a long run relationship with SMEs output. The variables were on SMEs, rural bank loan to Small scale enterprises, Savings and Time deposit with Commercial rural banks, Exchange rate of naira, Interest rate, number of commercial bank and Total government expenditure. The study also reveals that savings time deposit and exchange rate have a significant impact on the performance of SMEs in Nigeria. Furthermore, commercial bank credit to SMEs, total government expenditure and bank density has direct but insignificant impact on the country SMEs output this may be connected with stringent policy in accessing credit facility and the crowd out effect of government expenditure in the economy. The study also shows that interest rate has adverse effect on SMEs output. The study recommended among others that interest rate on credit facility granted to SMEs should be drastically reduced, commercial banks should grant soft loan to this important sector of the economy and also reduced stringent policy in supply of credit to SMEs and monetary authority should encourage commercial bank to set up more branches in the rural areas in order to encourage rural occupant to save and have access to credit facility.

John-Akamelu and Muogbo (2018) examined the role of commercial rural banks in financing small and medium size businesses in Nigeria. The main objective of the study is to examine the role of commercial rural banks in financing SMEs in Nigeria. Structured questionnaire were distributed to the respondents which includes the commercial banks staff and selected SMEs staff in Anambra State Nigeria. Three research hypotheses were tested using the chi-square. However, the 109 questionnaire administered to the bankers and SMEs were analyzed and presented in tables with the use of percentage and chi-square method. Therefore, the study found that small and medium size businesses encounter problem in the procurement of loans from commercial banks; also commercial rural banks have contributed immensely to the development of SMEs through their loans and advances. The research therefore recommended that for small & medium enterprises to survive, there have to be collective effort between them and banks. Also the government should engage more in the development of small & medium size enterprises by creating and embarking on various incentives to encourage both small scale enterprises and commercial rural banks.

Ikpor, Eze, and Obaji (2017) Examined effect of rural Bank Lending on small and medium scale enterprises lending in Nigeria. It is based on this, the study employed time series data from 1992 to 2013 to examine the impact of rural bank lending on small and medium scale enterprises (SMEs) lending in Nigeria using Augmented Dickey-Fuller (ADF) unit root test, Johansen co-integration test and vector error correction model techniques. The unit test results indicated that all the variables were non stationary at level but became stationary after first difference. The Johansen co-integration test showed evidence of long run relationship between small and medium scale enterprises lending and rural bank lending. The vector error correction model results revealed that lending to small and medium scale enterprises leads to economic growth in Nigeria. Also, the study found that bank lending rate does not impact on SMEs lending in Nigeria. The implication of these results is that lending to small and medium scale enterprises is crucial to the growth of Nigerian economy. The policy recommendation is that SMEs should

be redefined in order to have greater access to fund, lowering of rural bank lending rate from the prevailing rate; stringent collateral security requirement should be relaxed to increase SMEs access to formal financial institutions, and encouragement of financial institutions to lend to SMEs by providing guarantees, interest rate subsidies. These will enhance credit availability to SMEs which will boost their productivity.

Etemesi (2017) analysed the effects of rural commercial banks and growth of small and micro enterprises operating in Nairobi Central Business District. The study sought to answer the following research questions; How does collateral requirements by commercial banks affect growth of SMEs? How does financial information required by Commercial Banks at the appraisal stage affect growth of SMEs, How does interest rates charged by Commercial Banks affect growth of SMEs? and how has interest rates capping affected uptake of credits by SMEs? This study used descriptive survey research design and targeted a population of 838 respondents operating SMEs in the Nairobi Central Business District. A sample size was computed using Yamane (1967) formulae. 225 respondents were interviewed from each shop selected. Questionnaires were used to obtain important information about the population. The study used both primary and secondary data. Primary data is the information the researcher obtained from the field. Primary data was collected using semi-structured questionnaires. The questionnaires were administered using the drop and pick method. Descriptive statistics such as means, standard deviation and frequency distribution was used to analyze the data. In addition to descriptive statistics regression was conducted to establish the effects of credit access and growth of SMEs. Quantitative technique was used to analyze the closed-ended questions where a computer program (SPSS software) and MS Excel was used.

Rjoub (2017), examined that effect rural bank credit on small and medium scale enterprise in Kenya from 1985-2015, the stud used ordinary least square method for its analysis, the variables were on commercial bank rural deposit, rural loan, interest rate, inflation rate and small and medium scale enterprises. The study also found a strong positive correlation between SMEs growth and development and knowledge on financial information where the correlation coefficient was 0.633. More so a strong negative correlation between SMEs growth and development and high interest rates was found as the correlation coefficient was - 0.602. Lastly the study also found a strong negative correlation between SMEs growth and development and interest rates capping (correlation coefficient = -0.648). The study concludes that Collateral requirement has been one of the major hindrances for SMEs access to credit from commercial banks. Majority of the SMEs owners do not have sufficient collateral which is a major requirement for credit access. The current banks' lending rates have discouraged many SMEs owners to go for short term and long loans for their businesses, SMEs owners were not satisfied with the lending terms because of high interest rates, short repayment period and long-time taken to process the credit facility. Interest rate capping in Kenya has led to a high degree of exclusion from small loans for SMEs and that Interest rate capping is harmful to SMEs, interest rate caps reduce returns on saving which ultimately reduce both the quality and quantity of investment. The study recommends for revision of loan interest rates with a view of accommodating all borrowers at different economic levels.

Akinyi (2014) determines the effect of bank financing on the financial performance of SMEs in Nairobi County, Kenya. This research was conducted through a descriptive research design. The descriptive research design was considered appropriate as it enables description of the characteristics of certain groups, estimation of the proportion of people who have certain

characteristics and making of predictions. This study used quantitative, secondary data. The secondary data sources were obtained from the KPMG Top 100 SMEs survey in Kenya over a period of 5 years (2009-2013). The data was collected based on the information about the variables. Quantitative data was analyzed by descriptive analysis while qualitative data through content analysis. The study provides information to policy makers, scholars, academicians and investors on the effect of bank financing on the financial performance of SMEs. From the findings, the study established that bank financing and SMEs' size positively affected the SMEs' financial performance while SMEs' tangibility had an inverse relationship with the SMEs' financial performance. The study concludes that there exists a significant positive relationship between bank financing and the financial performance of SMEs based in Nairobi County, Kenya. The study recommends that the CBK should continuously reform the terms of bank financing to increase SMEs' access to access credit from the financial institutions.

Dogarawa, (2017) assessed the impact of bank recapitalization on both credit availability to and equity investment in SMEs in Nigeria. The study formulates three hypotheses and applies three sets of simple regression to analyse banks aggregated secondary data extracted from various Central Bank of Nigeria(CBN)'s publications over the period 2001 through 2008. The study couldn't find evidence that bank recapitalization has significant impact on credit availability to SMEs but confirms that it has significant impact on banks' equity investment funds under Small and Medium Enterprises Equity Investment Scheme (SMEEIS). The study therefore, recommends that the Federal Government should come up with credit guarantee scheme to motivate banks to grant more credit to the SMEs. Also, CBN should facilitate the emergence of smaller banks that will provide an alternative to the preference of megabanks to finance big-ticket transactions at the expense of small borrowing such as that of SMEs. Furthermore, CBN should embark on awareness campaign to sensitize SMEs on SMEEIS and the requirement for accessing the funds in view of the gap observed between funds available and funds disbursed under the scheme.

Oke, and Aluko, (2015) examined the impact of commercial banks in financing small and medium scale enterprises (SMEs) in Nigeria between 2002 and 2012. A sample of ten (10) commercial banks is drawn for the study and individual bank data and macroeconomic time series annual data were collected. Using panel data regression analysis, the results reveal that commercial bank has significant impact on SMEs' financing as deduced from the results of constant effect, fixed effect and random effect models which show that commercial banks credit to SMEs, the ratio of credit to SMEs to total credit in the economy and equity of commercial banks explain a substantial proportion of changes that arise in SMEs' financing. This study suggests that commercial banks are capable of making SMEs grow.

2.5 Gap in Literature

In brief, the relationship between financial inclusion and the performance of small and medium enterprise has been explained based on literature from previous researchers. However, it is noted that the researchers obtained different result for the relationship between the financial inclusion and the performance of small and medium enterprise. The reason behind inconsistency result may be due to the researchers conducted their studies in different country and thus, the data and policies are different. Therefore, we would like to examine the significant relationship for financial inclusion and the performance of small and medium enterprise to get the accurate result as compared to the previous finding by other researchers.

Throughout the discussion above, those findings have declared that there are correlated between the financial inclusion and the performance of small and medium enterprise. This chapter also reviewed the theoretical framework between financial inclusion and the performance of small and medium enterprise. However as the first of its kind the study analyzed detailed effect of financial inclusion and the performance of small and medium enterprise in Nigeria between the period of 1981-2018 For the next chapter, this study will discuss the methodology and technique that will be use for the estimation of the relationship of financial inclusion and the performance of small and medium enterprise for the study in Nigeria.

III. METHODOLOGY

Research design

Quantitative *Ex-post facto* research design will be employed and usually involves the study of independent and dependent variables in which the researcher has no control over the variable.

Sources of Data

Data for the study will be obtained from secondary sources notably from publications of the Central Bank of Nigeria (CBN), Statistical Bulletin, and World Bank data (various issues) between 1981 and 2018. The following data were sourced: performance of small and medium scale enterprises, commercial deposit to rural area, and commercial bank loan to rural areas, lending rate, and monetary policy rate

Model Specification

The fundamental and linear equation, which forms the model is drawn from the theoretical literature and empirical literature reviewed in the previous chapter. It is observed that there is a causal link between financial inclusion and small and medium scale enterprises. In this section, we pursue the same objective further by specifying our model. The model is then used to verify the effective view of the financial inclusion and small and medium scale enterprises in Nigeria. The approach is to modify the model by specifying a multiple regression equation made up of financial inclusion as a function of performance of small and medium scale enterprises. The model used in this research work is a modification of the model used by Rjoub (2017), who studied the effect of financial inclusion on small and medium scale enterprises in Ghana. His model specified that $SMEs = f(CBRD, RL, INT, INFL)$.

Where

SMEs = Performance of Small and medium scale enterprises

CBRD = commercial bank loan to rural dwellers

RL = Rural loan

INT= interest rate

INFL= inflation rate

The above model is modified in line with the objectives of this study, Thus, we have

$PSMEs = f(CBL, CBD, LR, MPR)$

Where

PSMEs = Performance of Small and medium scale enterprises

CBL = Commercial bank loan to rural areas

CBD = Commercial bank deposit to rural area

LR= Lending rate

MPR= Monetary policy rate

f=Functional Notation

The above model can be transformed in an econometric form as :

$$PSMEs = b_0 + b_1 CBL + b_2 CBD + b_4 LR + b_5 MPR$$

The above can be restated in its log form as

$$\log PSMEs = \log b_0 + b_1 \log CBL + b_2 \log CBD + b_3 \log LR + b_4 \log MPR + \mu$$

Where Log = Natural Logarithm Variables

Method of data analysis

The evaluation technique applied here is the use of the econometric estimation method of the Ordinary Least Square which Koutsoyiannis (1997) remarked as the “Best Linearly, Unbiased Estimator (BLUE). The estimates of these models were obtained through the statistical package of E-view. Therefore, diagnostic statistics like the coefficient of determination, adjusted R-square, T-test, F-statistics, Durbin Watson and Standard error test shall be employed to test the plausibility of our parameters, and Unit Root Test was also conducted to check the stationarity of variables.

IV.RESULTS AND DISCUSSION

Unit Roots Test Result

The knowledge of the time series properties of the variables of interest is important in order to obviate the possibilities of spurious regression. This was implemented using the conventional – Augmented Dickey-Fuller (ADF) unit root test. For convenience, table 4.1 is a tabular presentation of the abridged unit-root tests carried out on the variables.

Table 4.1: Abridged Presentation of Augmented Dickey-Fuller (ADF) Test

Variables	ADF-Statistic	Critical Value			Order of Integration
		1%	5%	10%	
LNPSMES	-6.644065	-3.646342	-2.954021	-2.615817	1(2)
LNCBL	-5.477292	-3.646342	-2.954021	-2.615817	1(1)
LNCBD	-4.522169	-3.632900	-2.948404	-2.612874	1(1)
LR	-5.904707	-3.951125	-2.951125	-2.614300	1(1)
MPR	-6.332162	-3.639407	-2.951125	-2.614300	1(1)

Source: Author’s Compilation with the use of E-views 9 Output

The test results for ADF showed that commercial bank loan to rural areas (LNCBL), commercial bank deposit to rural area (LNCBD), lending rate (LR) and monetary policy rate (MPR) were not stationary at levels but were significant at first difference. Hence, by taking their first difference they became stationary. While the performance of small and medium scale enterprise (LNPSMEs) is stationary at second difference. This indicates that the series have different order of integration, that is, 1(1) and 1(2) respectively. According to Ouattara (2004), the bounds test approach is valid only when the variables are a mix of I(0) and I(1). Therefore, we can safely go ahead with the bounds test.

The Results of ARDL Cointegration Test

The critical value of the ARDL Bound testing depends on selected lag length; for this reason, the optimal lag (p) was determined empirically based on Hannan Quinn Criterion (HQC). The critical values reported in Pesaran, *et al.*, (2001) are equally adopted. The table 4.3 reports the result of the ARDL approach to co-integration form.

Table 4.3: Abridged Presentation of ARDL Bound Test

Null Hypothesis: No Long-run Relationships Exist		
Test Statistic	Value	K
F-statistic	5.890188	4
Critical Value Bounds		
Significance	10 Bound	11 Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	2.25	4.49
1%	3.74	5.06

Source: Author’s Compilation Using E-views 9 Output

From the result from table 4.3 above, it can be viewed that the bound test F-statistics of 5.890188 is greater than the upper bound critical value 4.01 at 5% level of significance. This indicates that there is a long run relationship among the variables. The ARDL models fulfill the assumptions of normality, ARCH, and functional forms of models. The findings note that error terms are normally distributed, there is no evidence of ARCH, and models are well articulated. This confirms that our findings are more reliable and consistent than previous ones. The implication of this result is that deviation may occur among the variables but that is for the short run whereas equilibrium holds in the long-run for them.

The ARDL bound test is supplemented with the Johansen System cointegration as reported in table 4.4 below. The results of the Johansen test also supported that of the ARDL test that long-run relationships exist among the variables of the study. This is because both the Trace Statistics and the Max-Eigen value Statistics indicate three cointegrating equations at the 5% level of significance. In passing, it could be concluded that there exist long-run relationship between the variables of the study following both the ARDL and the Johansen approaches.

Having established the existence of a long-run relationship, we then used the Akaike Information Criteria (AIC) for the model selection. In total, 2048 ARDL model specifications were considered. An ARDL (4, 1, 1, 0, 0) was finally selected based on the AIC. Figure 4.1 shows how well some other specifications performed. The next step is the estimation of the short-run and long-run parameters of the

ARDL (4, 1, 1, 0, 0) model. Table 4.4 shows the results of the long run coefficients for the ARDL (4, 1, 1, 0, 0) model.

Table 4.4 Abridged Presentation of Estimated Long-run Coefficients Based on ARDL (4, 1, 1, 0, 0)

Regressor	Coefficient	Std. Error	t-Statistic	Prob.
Dependent Variable: LNPSMEs				
LNCBL	1.243937	0.416299	2.988087	0.0068*
LNCBD	-0.083140	0.386059	-0.215356	0.8315
LR	-0.272751	0.280973	-0.970738	0.3422
MPR	0.097713	0.351356	0.278103	0.7835
C	3.320074	5.304915	0.625849	0.5379
R-squared = 0.759229				
Adjusted R-square = 0.486149				
S.E of regression = 5.014816				
F-statistics = 2.282728				
Prob (F-statistics) = 0.051236				
Durbin Watson = 1.776161				

Source: Author’s Compilation Using E-views 9 Output

Note: * denote statistical significance at the 1% level.

Based on table 4.4, the results revealed that, the constant term is positive, even though it does not have any economic meaning; it meets our a priori expectation. Therefore, this shows that regardless of change on the explanatory variables, the economic growth will be increased in the study. The parameter estimate for commercial bank loan to rural areas (LNCBL) showed that it relates positively with performance of small and medium scale enterprise and it’s statistically significant. The function thus shows that, one percent increase in the LNCBL, hold other variables constant, will increase the performance of small and medium scale enterprise by 124 percent. Also, monetary policy rate (MPR) was found to be positive and statistically insignificant. The function thus shows that a one percent change in MPR, leads to 9.77 percent increase in the performance of small and medium scale enterprise in Nigeria. Furthermore, the long-run effect of commercial bank deposit to rural area (LNCBD), lending rate (LR) has a negative and statistically insignificant respectively with performance of small and medium scale enterprise in Nigeria in Nigeria. The function thus shows that a one percent change in LNCBD and LR lead to 8.3% and 27.27% decrease in the performance of small and medium scale enterprise in Nigeria. In other words, commercial bank deposit to rural area and lending rate has insignificant negative effect on LNPSMEs in Nigeria. Lending rates lead to decline in LNPSMEs in Nigeria in the long-run. Increase in lending rates deteriorates LNPSMEs in Nigeria.

In the ARDL bound test, the coefficient of determination R^2 measures the goodness of fit of the fitted regression line to a set of data. The R^2 of the model 0.759229 shows that the explanatory variables (commercial bank loan to rural areas (LNCBL), commercial bank deposit to rural area (LNCBD), lending rate (LR) and monetary policy rate (MPR)) explained 75.9% of the total variation in performance of small and medium scale enterprise (LNPSMEs) in Nigeria. While about 24.1% are accounted for by variables outside the model. Coincidentally, the goodness of fit of the regression remained too low (48.6%) after adjusting for the degree of

freedom. The result revealed that, the overall regression model is significant. This is evidenced by the probability of *f*-statistic is 0.051236, which is equal to 0.05%. The value of Durbin Watson is 1.77 in the model. By implication, there is evidence of positive serial correlation among the explanatory variables in the model.

The next step is to analyse the short run dynamics of the effect of financial inclusion on the performance of small and medium scale enterprise in Nigeria. Short-run dynamics of the equilibrium relationship are obtained through the error correction model and the results are presented in table 4.5 below. The CointEq(-1) measures the speed at which the endogenous variable adjusts to change in the explanatory variables before converging to its equilibrium level.

Table 4.5: Abridged Presentation of Short Run Results and Diagnostics and Stability Test Results

Dependent Variable: INRGDP				
Regressor	Coefficient	Std. Error	t-Statistics	Prob.
D(LNPSMEs(-1)	0.743146	0.196395	3.783928	0.0010*
D(LNPSMEs(-2)	-0.375267	0.228293	-1.643796	0.1144
D(LNPSMEs(-3)	0.270260	0.208278	1.297589	0.2072
D(LNCBL)	0.045380	0.084624	0.536261	0.5972
D(LNCBD)	-0.068804	0.065930	-1.043591	0.3080
C	0.497524	0.735881	0.676094	0.5060
D(LNCBL(-1)	0.166971	0.094289	1.770856	0.0904
LNCBD(-1)	-0.001992	0.049945	-0.039876	0.9686
LR(-1)	-0.010744	0.0026154	-0.410803	0.6852
MPR(-1)	-0.027123	0.035659	-0.760620	0.4550
LNPSMES(-1)	-0.141796	0.079419	-1.785409	0.0880
Coineq(-1)	-0.121888	0.075171	-1.621472	0.1192
Diagnostics and Stability Test Results				
Test	F-statistic	Degree of Freedom	Probability	
Normality Test (Jarque-Bera Statistics)	1.111443	-	0.573658	
Serial Correlation (Breush-Godfrey Serial Correlation LM Test)	1.577829	F(2,20)	0.2311	
ARCH Test (Autoregressive Heteroskedasticity Test)	0.088272	F(1,30)	0.7684	
Heteroskedasticity Test (Breush-Pagan-Godfrey)	0.677266	F(10,22)	0.7337	
Model Specification Test (Ramsey RESET Test)	2.922762	F(1,21)	0.1021	

Source: Author's Compilation Using E-views 9 Output

Notes: - *denote statistical significance at the 1% level.

- Dependent Variable is D(LNPSMEs).

The coefficient of Coineq(-1) that is, Error Correction Mechanism (ECM) is negative statistically significant at 5 percent level. This is in line with economic and econometrics expectations. The ARDL-ECM corrects 72.18% of the total error that occurs in the model. The diagnostic tests showed that the model is free of serial correlation problems, the model has no ARCH effects, the residual is normally distributed, there is no heteroscedasticity problem, and there is no functional form misspecification in the model. This gives us assurance that the results from the model are reliable, efficient and will be suitable for forecasting and policy and decision making.

Finally, to inspect the stability of the short run and long run coefficients in the model, CUSUM and CUSUMSQ plots are drawn. Figure 4.2 displays the plot of cumulative sum of recursive residuals while Figure 4.3 displays the plot of cumulative sum of squares of recursive residuals. Both CUSUM and CUSUMSQ are within the critical bounds of 5 percent. Therefore, it can be safely inferred that the model is structurally stable.

Figure 4.3: Plot of Cumulative Sum (CUSUM) of Recursive Residuals

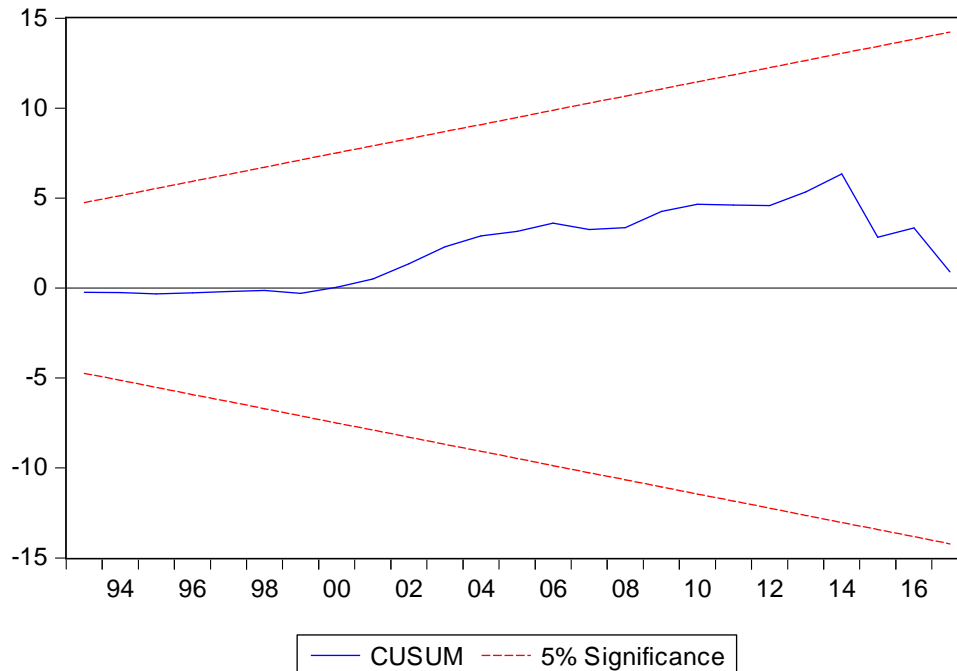
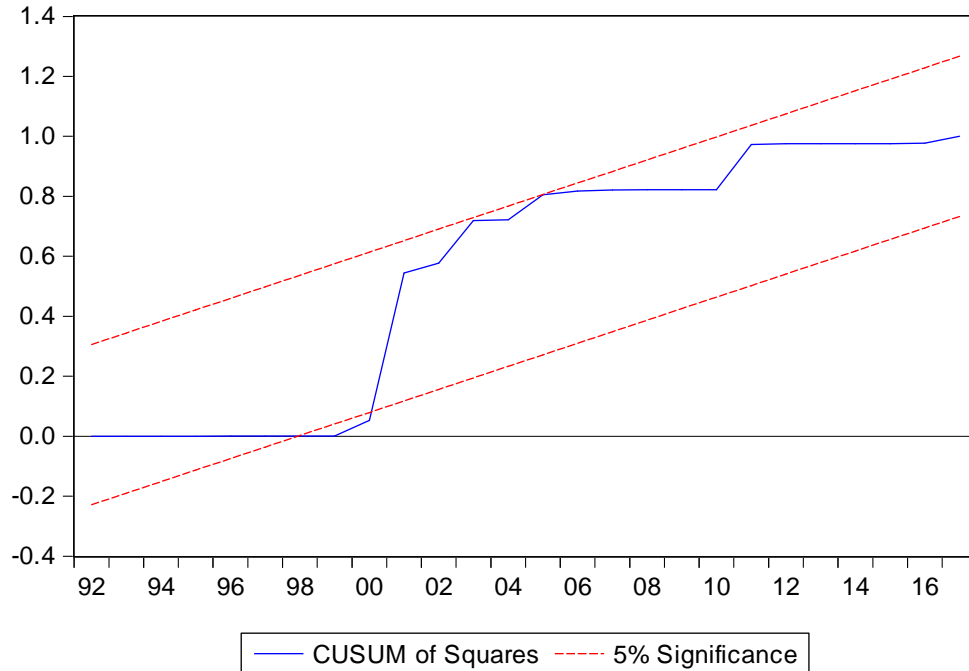


Figure 4.4: Plot of Cumulative Sum of Squares (CUSUMQ) of Recursive Residuals



Test of Hypotheses

1. Commercial bank loan to rural areas has no significant effect on small and medium scale enterprise in Nigeria.

The t-statistics of Commercial bank loan to rural areas is 2.988087 with the p-value of 0.0068 which is less than 5% level of significant. Thus, the research rejects the null hypothesis and concludes that commercial bank loan to rural areas has positive significant effect on small and medium scale enterprise in Nigeria.

2. Commercial bank deposit from rural areas has no significant effect on small and medium scale enterprise in Nigeria.

The t-statistics of commercial bank deposit from rural areas is -0.215356 with the p-value of 0.8315; it is statistically insignificant at 5% level. The research rejects the alternative hypothesis and concludes that commercial bank deposit from rural areas has no significant effect on small and medium scale enterprise in Nigeria. This finding is in line CBN objectives for the establishment of Microfinance banks.

V. CONCLUSION AND RECOMMENDATIONS

In conclusion, the results of the study revealed that, all the indicators of financial inclusion, were also found to promote the performance of small and medium scale enterprises in Nigeria. The implication of this result is that, while SMEs could be an important promoter of economic growth, it is also necessary to propel its performance by ensuring provision of financial inclusion such as agricultural loan, rural loans, low interest rate as well as high deposit rate. Based on the findings of this study, it is recommended that various arms of government in Nigeria should continue and intensify their efforts towards promoting small and medium enterprises in Nigeria.

The government should also focus more on the policies that ensure financial inclusion in Nigeria. For example, various attempts have been made on restructuring commercial banks in Nigeria in the past. Monetary authority should compel commercial banks to spread its payment machine (ATM, POS) across rural areas to ensure access to financial service. Commercial banks should also reduce borrowing rate especially for small and medium enterprises in the rural areas to enable expansion of their business.

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