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2021 - 31(3) DOI: 10.2478/sues-2021-0012

FINANCIAL SYSTEM AND SMES ACCESS TO FINANCE: A MARKET-ORIENTED APPROACH

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(Received: February 2021: Accepted: May 2021; Published: July 2021)

Abstract: The study uses a market-oriented approach to investigate the relationship between the financial system and SMEs access to finance in Nigeria between 1995 and 2019. Both indicators from the capital and money markets are used as independent variables while some macroeconomic variables such as inflation rate, interest rate and exchange rate are also used. The study made use of Auto-Regressive Distributed Lag to explore the long and short-run relationship and the result shows that the capital market has a more significant impact on SMEs access to finance than the money market. Variables such as inflation rate, exchange rate and interest rate all have a significant influence on access to finance by the SMEs. it is recommended that the money market as an important aspect of the financial system in Nigeria should be made to devote more credit to the SMEs sector as it has shown from this study that the bulk of the credit going into the private sector from the money market might not go into the SMEs sector. The inflation rate should also be controlled as well as reducing the lending rate and guide against unreasonable currency devaluation to promote access to finance by the SMEs in Nigeria.

Keywords: SMEs, Finance, Money market, Capital market.

JEL Classification: L22, L25, L26.

1. Introduction

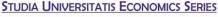
The main aim of this study is to investigate the effect of the financial system in Nigeria which comprises both money and capital market on access to finance of SMEs.

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The Small and Medium Scale Enterprises SMEs across the globe are seen as the engine room of growth and an important part of the real sector of any economy where sustainable development can be achieved. In terms of productive sector analysis, SMEs contribute about 50% to the GDP of Nigeria and employ over 70% of the entire labor force of the country (NBS, 2019). The recent downturn in the Nigerian economy due to the COVID 19 pandemic has further emphasized the relevance of the sector in bringing the economy back on track after the devastating effect of the pandemic on the economy.

Despite numerous contributions of the SMEs to nation-building as a whole, the sector is confronted with diverse problems in Nigeria and the most severe out of this problem is inadequate funding. According to the survey conducted by SMEDAN in 2018, about 65% of new SMEs in Nigeria die before their third anniversary and the main factor responsible for their early exits from business is lack of access to sustainable and adequate finance. The major role of the entire financial system in any nation is fund appropriation through financial intermediation. The financial system is meant to make funds available to the productive sectors of the economy and ensure that there is sustained impressive performance. In Nigeria, the most serious challenge facing the SMEs is lack of access to finance despite the existence of a virile financial system that can boast of one of the capital and money markets in Africa.

Within the last two decades, Nigerian banks which are the main players in the money market have continued to lead other bans in Africa in terms of various performance ratings across the globe. In recent times Access bank of Nigeria joined the ten banks in the Whole of Africa with the largest asset. Zenith, First, GTB and UBA are other banks from Nigeria thus making the ranking be dominated by Nigerian Banks (World Bank, 2018). In terms of the capital market, after the JSE (Johannesburg Stock Exchange) in South Africa, NSE (Nigeria Stock Market) remains the most valuable capital market in the entire continent of Africa. Notwithstanding, the SMEs in Nigeria has been struggling to keep pace in terms of growth rates with counterparts across the continent. Stringent conditions for credit allocation, high lending rates among others are some of the impediments to access to finance by the SMEs in Nigeria especially from the money market where short-term loans can be accessed (Oke & Aluko, 2015). The picture here, calls for an assessment of the roles of the two markets in making the SMEs have access to easy, adequate, and affordable finance.

However, series of efforts have been made by stakeholders to improve access of the SMEs to finance in Nigeria. For instance, the governments have established some development banks like the Bank of Industry, Bank of Agriculture, and Microfinance Banks among others to make funds available to the SMEs with less cost and less stringent conditions. Apart from this, some credit allocation schemes



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championed by SMEDAN and the government have been put in place to improve access to finance by SMEs. These efforts appear not to be working owing to the persistent fall in the performance of the SMEs and their incessant exits from business due to lack of funds. Could these two markets in the financial system of Nigeria be held responsible for the problems confronting the SMEs regarding access to finance? This is a pertinent question to be answered by this study.

Several studies have assessed issues relating to finance and their source in Nigeria but many of them did not focus on the two markets namely the capital and the money markets (Oke & Aluko, 2015; Eferakeya, 2014). Although Oke & Aluko, (2015) have investigated the role of the commercial banks in making funds available to the SMEs their conclusion could not represent the position of the entire financial system since the capital market is excluded from their analysis. In another perspective, Oladepo & Ajoseh (2015) focused on the capital market alone leaving out the money market; again their conclusion could not represent the role of the entire financial system.

Consequently, this study in a single analysis assesses the general effect of the financial system on the funding of SMEs' by focusing mainly on both the influence of money and capital markets which are the most important players in the Nigerian financial sector. The rest of the paper is divided into the literature review, methodology, results, and discussion, conclusions, and recommendations.

2. Literature review

Several studies have investigated issues relating to funding of the SMEs as well as their sources and accessibility. Few relevant ones are reviewed under this subsection.

The study of Adegboye & Iweriebor, (2018) is one of the few relevant empirical studies that investigated the relationship between access to finance and performance of the SMEs. However, in the study, innovation and productivity are used to measure the performance of SMEs. The data for the study were collected from the World Bank and logistic regression was used to estimate the relationship. Access to finance was basically divided into two namely; internal and external finance. The results show that external finance has a significant impact on innovation that is, research and development R & D. Finally, the study concluded that Access to finance might discourage productivity among the SMEs in Nigeria. Rather than focusing on the impact of access to finance on SMEs performance, Gbandi & Amissah, (2014) in their study examined various approaches to the finance of SMEs. Various options of finance such as cooperatives, microfinance, equity finance and other financial institutions were considered by the study. A survey of 50 SMEs in Nigeria was conducted and the result shows that





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identification of the appropriate source of finance for SMEs is very critical to access to finance by the SMEs.

From another perspective Obokoh, Monday, & Ojiako, (2016) in their study took a look at the impact of microfinance loans on the access to finance of the SMEs in Nigeria. 300 SMEs from the Niger Delta region were used and questionnaires were used to obtain information from them. The descriptive and the inferential statistics used show that there is a positive and significant contribution from the microfinance bank to the access to finance of the SMEs of the selected region. In addition, difficult loan process, high-interest rate and poor business pan still hinder access to finance in these banks.

Looking at another source of finance entirely different from the money market, Oladepo & Ajoseh, (2015) focused their attention on the capital market and they investigated how the operations in the stock market affect the SMEs financing in Nigeria. The reforms of the Security and Exchange Commission SEC were the main tool used in the study. The impact of these reforms was investigated on providing more access to finance to SMEs in Nigeria. From the reviewed literature it was concluded that the participation of SMEs at the capital market in Nigeria is not encouraged and there is the need for the Nigeria Stock exchange NSE to develop a framework through which SMEs in Nigeria can participate more in the capital market to finance their businesses

The attention of Tagoe, Nyarko, & Anuwa-Amarh, (2005) was on financial sector liberalization in Nigeria. The influence on the financial management of SMEs in Nigeria was investigated in their study. The study was pure desk research that made use of previous literature on the subject matter, Findings from the study show that despite the financial liberalization, SMEs in Nigeria are still confronted with myriads of challenges in accessing finance. These challenges range from lack of affordable bank credit to cumbersome loan process, request of unrealistic collateral for loans, inadequate business records. Furthermore, it was also discovered that investors also consider the risk attached to the loans before taking the step to financing any SMEs and this has affected the access to finance of many SMEs in Nigeria.

In the study of Oke & Aluko, (2015) the role of the commercial banks in financing SMEs in Nigeria was investigated between the years 2002 and 2012. Ten commercial banks were used as samples and data on SMEs finance were extracted. These data were analyzed using the panel data estimating technique. The result shows a positive and significant relationship between commercial banks and finance of the SMEs in Nigeria. The study concluded that commercial banks are very important in the finance of SMEs in Nigeria.

Eferakeya, (2014) access the effect of bank credit on the finance of SMEs from a different perspective by analyzing the effect of bank consolidation on credit

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availability for the SMEs in Nigeria Secondary data were used and they were extracted from the CBN statistical bulletin. The result shows that bank consolidation has reduced access to finance by the SMEs. The post bank consolidation era in Nigeria showed a fall in credit availability to the SMEs compared to the pre bank consolidation era.

Gaps in the literature

It was discovered from the review of the literature that none of the studies investigated the combined effects of the two markets namely, the money market and capital market on SMEs access to finance in a single study. For instance, Oke & Aluko, (2015) and Eferakeya, (2014) all concentrated on the money market only while Oladepo & Ajoseh, (2015) concentrated on the capital market only. Since the financial system comprises both markets, this study will be investigating the combined effect of the two in a single study to access the impacts of the financial system on SMEs access to finance.

3. Methodology

This aspect of the paper discusses the research method adopted for the study. Precisely, it explains the method of analysis embraced to achieve the objective of the study.

Research Design

This study is an explanatory one that uses secondary data and applies the quantitative method of analysis to achieve the objectives of the study. The research philosophy for this study revolves around positivist which is a research philosophy that believes that research operates with objectivity in the execution of their research work. In other words, there are no predetermined outcomes expected by the researcher.

Theoretical framework and model

This study is anchored on the theory of financial intermediation. Studies are applying the theory of financial intermediation (Shittu, 2012; Dabwor, 2009; Nwaogwugwu, 2008; Rajan & Zingales, 1998; Winkler, 1998). In a recent study, Shittu (2012) applied the theory of financial intermediation on a study that seeks to examine the impact of financial intermediation on economic growth in Nigeria.

Model Specification

Based on the chains of relationship that should exist between finance options and SMEs performance, the financial intermediation theory emphasizes the importance of the two markets in promoting firms' performances. In this study, both the money market and capital market which constitute the financial system are proxied in the model by credit to the private sector and stock market capitalization respectively. In addition, other macroeconomic variables that describe the financial system such





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as inflation rate, exchange rate and interest rate (lending rate) are included as control variables. To capture SMEs access to finance, credit to the SMEs is used and it is the dependent variable for the model.

$$SMEsL_t = f(Financial\ system_t)$$
(1)

More explicitly the model is expressed as follows;

$$SMEsL_t = \beta_0 + \beta_1 MMKTCP + \beta_2 STKMKT + \beta_3 INF + \beta_4 INTR + \beta_5 EXR + \mu_i \dots (2)$$

Where SMEsL is SMEs loan or credit, MMKTCP is money market credit to the private sector, STKMKT is the Stock market capitalization, INF is the inflation rate, INTR is the lending rate, EXR is the exchange rate.

Sources of data

Data on all the variables are sourced via the global economics data from the World Bank, 2019 edition.

Estimating Technique

The approach to the analysis of data is based on the objective of the study which is about the impacts of the financial system on SMEs access to finance in Nigeria. The impact analysis is done using cointegration analysis and estimation of the regression model. The idea of cointegration is to enable the study to investigate both the short and long-run impacts. The Auto-Regressive Distributed Lag (ARDL) approach is adopted for the study. This is because of its convenience in usage. For instance, ARDL relaxes the stringent assumption that all variables in the model should be integrated of order one that is I(1). This is one of the shortcomings of the Johansen approach to cointegration analysis (Okunade & Karakus, 2001). ARDL accommodates I(0) variables and the cointegration test is done through the bound testing. The following are steps to be followed in ARDL estimation.

Unit root test

As a pre-condition for cointegration analysis, this study carries out a unit root testing for the time series data. A unit root indicates that the time series under investigation is non-stationary while the absence of a unit root means that the time series data is stationary. To determine the order of series, this study uses the unit root test known as the Augmented Dickey-Fuller (ADF).

ARDL cointegration bound testing

The ARDL bound test involves the computation of the F statistics and the critical values for the distribution. The critical values are computed for both lower and upper bounds. However, these critical values also appear for 1%, 5%, and 10%

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statistical levels of significance. Conventionally, the 5% statistical significance shall be the guide for decision-making on the existence of cointegration in the model. The computed F statistics value is compared to the critical values. The null hypothesis of no cointegration is accepted if the F statistics value is less than critical values at both upper and lower bound for a 5% statistical level of significance and otherwise it is rejected.

ARDL Long and Short-run Regressions

The ARDL estimation divides the estimated equation into two, namely the long and short-run coefficients. The first set of estimated parameters presents the short-run relationships among the variables while the second estimated coefficients are the short-run relationships among the variables.

Diagnostics

The following diagnostic tests will be carried out, namely; normality test, serial correlation and heteroskedasticity of the model.

Serial correlation and Heteroskedasticity test

The benchmark null hypotheses that are tested for the serial correlation and heteroskedasticity test are:

- H_0 : $\alpha = 1$, no serial correlation and heteroskedasticity in the model.
- H_1 : $\alpha < 1$, there is serial correlation and heteroskedasticity in the model.

Serial correlation means similarity between observations as a function of the time lag between variables. It is a mathematical tool for finding repeating patterns, such as the presence of a periodic signal obscured by noise, or identifying the missing fundamentals in frequencies. Heteroskedasticity, on the other hand, refers to the circumstance in which the variability of a variable is unequal across the range of values of a second variable that predicts it.

Normality test

This test is necessary to investigate the distribution of the residual of the estimated panel model. For a robust estimated model, it is expected that the residual should be normally distributed. This will clear any issues relating to the biasedness of the observations used in the model. The JARQUE BERRA statistics are used in the study to test for normality. A probability value that is greater than 5% indicates that the residual of the estimated panel model is normally distributed and otherwise it is not normally distributed.





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4. Results and discussions

The discussion of the relationship between SMEs access to finance and the financial system begins with the assessment of the time-series properties of the variables included in the regression model. The descriptive statistics of the variables are discussed using table 1:

Table 1 Descriptive statistics

| | EXR | INF | INTR | MMKTCP | SMESL | STKMKT |
|--------------|----------|----------|----------|----------|----------|----------|
| Mean | 142.8260 | 14.74400 | 18.35320 | 10.71760 | 45555.53 | 31.44160 |
| Maximum | 306.9200 | 72.80000 | 24.77000 | 19.60000 | 282016.0 | 84.89000 |
| Minimum | 21.88000 | 5.400000 | 15.14000 | 6.150000 | 10747.89 | 2.210000 |
| Std. Dev. | 81.99821 | 13.08466 | 2.390155 | 3.482424 | 55442.13 | 23.94759 |
| Observations | 25 | 25 | 25 | 25 | 25 | 25 |

Source: Authors computation, 2021

Note: SMESL is SMEs loan or credit, MMKTCP is money market credit to the private sector, STKMKT is the Stock market capitalization, INF is the inflation rate, INTR is the lending rate, EXR is the exchange rate.

The mean value of SMEs loan which is a proxy for SMEs access to finance is 45555.53. This figure is closer to the minimum limit of 10747.13 than the maximum limit thus. Indicating that the average SMEs loan during the period under review might be very low. Again, money market credit to the private sector, which is one of the variables used to proxy the financial system and has a mean of 10.71760. Similarly, the value is closer to the minimum limit of 6.15000 than the maximum limit. This is an indication that credit to the private sector from the money market is also very low during the period under review. The stock market capitalization is another variable used to proxy the financial system. It has a mean value of 31.44160 and minimum and maximum values of 2.210000 and 84.89000. In the same vein, the mean is closer to the minimum limit than the maximum thus showing a low stock market performance on the average during the period under consideration. It should also be noted that their variances showed the same pattern of distribution as they are all closer to the minimum limit showing the data on all these variables are less widely dispersed.

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Table 2 Correlation matrix

| Table 2 Correlation matrix | | | | | | |
|----------------------------|-----------|-----------|-----------|----------|----------|----------|
| Covariance | | | | | | |
| Correlation | EXR | INF | INTR | MMKTCP | SMESL | STKMKT |
| EXR | 6454.758 | | | | | |
| | 1.000000 | | | | | |
| INF | -307.1473 | 164.3601 | | | | |
| | -0.298201 | 1.000000 | | | | |
| INTR | -77.99527 | 7.599619 | 5.484326 | | | |
| | -0.414540 | 0.253123 | 1.000000 | | | |
| MMKTCP | 118.2856 | -12.80193 | -3.541336 | 11.64219 | | |
| | 0.431494 | -0.292658 | -0.443188 | 1.000000 | | |
| SMESL | 1500755. | 41248.95 | -32222.08 | 3368.830 | 2.95E+09 | |
| | 0.343870 | 0.059230 | -0.253289 | 0.018175 | 1.000000 | |
| STKMKT | 754.0155 | -95.56903 | -39.46675 | 45.97121 | 154788.5 | 550.5474 |
| | 0.399984 | -0.317703 | -0.718245 | 0.574211 | 0.121441 | 1.000000 |

Source: Authors computation, 2021

Note: SMESL is SMEs loan or credit, MMKTCP is money market credit to the private sector, STKMKT is the Stock market capitalization, INF is the inflation rate, INTR is the lending rate, EXR is the exchange rate.

The figures of correlations shown in table 2 are evidence that there is no issue of multicollinearity among the variables. The correlation coefficients are within the acceptable regions and suitable for further estimation. Furthermore, the results show that a positive correlation s shown for both money and capital market indicators with the SMEs loan. This implies that a direct relationship exists between SMEs loan and money market credit to the private sector, in the same vein a direct relationship is also obtained between capital market performance and SMEs loan.

Table 3 Unit root test

| Variables | Statistics | Order of integration |
|-----------|------------|----------------------|
| SMEsL | -3.168739 | I(0) |
| MMKTCP | -4.250808 | I(1) |
| STKMKT | -4.395555 | I(1) |
| EXR | -4.682593 | I(1) |
| INTR | -4.780661 | I(1) |
| INF | -5.341446 | I(0) |

Source: Authors' computation, 2021.

(*) Statistical significance at 10%,(**) Statistical significance at 5%,(***) Statistical significance at 1%.

Note: SMESL is SMEs loan or credit, MMKTCP is money market credit to the private sector, STKMKT is the Stock market capitalization, INF is the inflation rate, INTR is the lending rate, EXR is the exchange rate.





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The results of the unit root test show that all the variables are the integration of order one and zero that is I(1) and I(0). While SMESL and Inflation are stationary at levels, the remaining variables are stationary at first difference. This is a clear indication that ARDL is suitable to estimate the relationship between the financial system and SMEs access to finance. The next step is the cointegration test *Cointegration test*

The next stage of the analysis is the cointegration test. As earlier discussed, the result of the unit root test shows that the bound test approach of the ARDL is suitable for conducting the cointegration test. The results are presented in Table 4.

Table 4 ARDL bound test for cointegration

| ARDL Bounds Test | | |
|-----------------------|----------|----------|
| Test Statistic | Value | K |
| F-statistic | 16.63497 | 5 |
| Critical Value Bounds | | |
| Significance | I0 Bound | I1 Bound |
| 10% | 2.26 | 3.35 |
| 5% | 2.62 | 3.79 |
| 2.5% | 2.96 | 4.18 |
| 1% | 3.41 | 4.68 |

Source: Authors' computation, 2021.

Note: ARDL is Auto-Regressive Distributed Lags.

The idea behind cointegration is that if a variable is not stationary; a linear combination of the variable can be stationary. Table 2 shows the results of the cointegration test to ascertain if there exists a long or short-run relationship between the financial system and access to finance by the SMEs in Nigeria. The null hypothesis is that there is no long-run relationship among the variables. However, considering the results as presented in table 4, the F statistics value is 16.63497, which is greater than the critical values at 5% for both lower and upper bound tests. The result implies that the null hypothesis is accepted and hence we conclude that there is a long-run relationship between the financial system and access to finance by the SMEs in Nigeria. However, the ARDL regression is presented next.

ARDL regression short and long-run estimations

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After the establishment of cointegration, the coast is clear to run the short and long run forms of the relationship between the financial system and SMEs access to finance in Nigeria, The result is presented in Table 5

Table 5 ARDL estimated regression

| ARDL Cointegrating And Long Run Form | | | | | |
|---|-------------|------------|-------------|--------|--|
| Cointegrating Form | | | | | |
| | | | | | |
| Variable | Coefficient | Std. Erroi | t-Statistic | Prob. | |
| | | | | | |
| D(LSMESL(-1)) | 0.199725 | 0.170276 | | 0.2792 | |
| D(LSTKMKT) | -0.282587 | 0.239221 | | 0.2761 | |
| D(LSTKMKT(-1)) | -1.888872 | 0.262918 | -7.184274 | 0.0002 | |
| D(LMMKTCP) | -2.167123 | 0.812641 | -2.666765 | 0.0322 | |
| D(LINTR) | 4.841714 | 2.680247 | 1.806443 | 0.1138 | |
| D(LINF) | 1.021985 | 0.355392 | 2.875657 | 0.0238 | |
| D(LINF(-1)) | -0.483918 | 0.556473 | -0.869616 | 0.4133 | |
| D(LEXR) | 0.520551 | 0.443238 | 1.174429 | 0.2786 | |
| D(LEXR(-1)) | -0.709515 | 0.422583 | -1.678994 | 0.1370 | |
| CointEq(-1) | -1.775591 | 0.235216 | -7.548783 | 0.0001 | |
| | | | | | |
| Cointeq = $LSMESL - (1$ | | | CP + 6.5062 | | |
| *LINTR + 0.9251*LINF + 0.8182*LEXR -12.4471) | | | | | |
| Long Run Coefficients | | | | | |
| | | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. | |
| | | | | | |
| LSTKMKT | 1.313523 | 0.263202 | 4.990547 | 0.0016 | |
| LMMKTCP | -2.619839 | 0.492829 | -5.315924 | 0.0011 | |
| LINTR | -6.506161 | 1.943721 | -3.347270 | 0.0123 | |
| LINF | -0.925061 | 0.301510 | -3.068095 | 0.0181 | |
| LEXR | 0.818234 | 0.158286 | 5.169347 | 0.0013 | |
| С | -12.447065 | 6.411580 | -1.941341 | 0.0934 | |

Source: Authors' computation, 2020.

Note: ARDL is Auto-Regressive Distributed Lags.

The result of the long and short-run relationship between the financial system and SMEs access to finance is presented in table 5. The result has shown that their relationship is more significant in the long run than in the short run. Both money market and capital market variables failed to have a significant positive impact on





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SMEs access to finance in the short-run period. All the coefficients failed to pass the test of statistical significance.

On the contrary, in the long run, the coefficient of capital market is 1.313523 and it is significant at 5%. The implication is that capital market performance exerts a significant positive impact on SMEs access to finance. The implication is that an improved capital market is very vital for SMEs to have more access to finance. The result is similar to the findings of (Oladepo & Ajoseh, 2015) which also concluded that the Nigerian stock market has been playing important roles in making funds available to the SMEs sector in Nigeria on a long-term basis.

However, the situation is not the same with the indicator of the money market. The credit of the private sector by the financial institution failed to have a positive significant impact on SMEs access to finance. The coefficient is -2.619839 and it significant at 5% therefore instead of the positive relationship the money market shows a negative relationship. The implication is that the amount of credit going to the private sector from the money market is not going into the SMEs. Although Oke & Aluko,(2015) and Eferakeya,(2014) got a contrary result to this and this might not be unconnected with the proxy used for the money market by their study. Their study made use of bank performance while this study used credit to the private sector.

Moreover, other variables used as control variables such as exchange rate, inflation rate and interest rate all have a significant impact on SMEs access to finance. For instance, the coefficient of interest rate is -6.506161 and it is significant at 5%. This is an indication that a unit fall in lending rate will lead to about 6.5 rises in SMEs loans. This result underscores the importance of a reduction in the lending rate to improve access to finance by the SMEs. Apart from the fact that this in conformity with apriori, expectation, and many authors have also obtained similar results.

Again, the inflation rate has been shown to also have a negative and significant impact on SMEs loans. The coefficient of the inflation rate is -0.925061 and it is significant at 5% thus implying that a unit rise in inflation rate in Nigeria tends to reduce the value of the SMEs loan by about 0.9 units. The result further shows how inflation is very discouraging to SMEs access to finance. According to Obokoh, Monday, & Ojiako (2016), the real value of credit facilities reduces as inflation rises and this has been making it difficult for many private firms to repay their loans and consequently reducing their access to finance from the money market.

The exchange rate shows a positive relationship with a coefficient of 0.818234 and it is significant at 5%. The implication is that currency depreciation reduces access to finance by the SMEs significantly. Fall in the value of currency makes importation more expensive and many of the SME's source their raw materials and other input from abroad therefore all these items become more expensive during



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devaluation of currency and hence reduce the real value of the loan obtained from the money market. This makes repayment of loans difficult and also reduces their access to finance. Adegboye & Iweriebor (2018) also obtained the same result from their studies.

Finally, the error correction term is negative and significant. The value is -1.775591 this shows that the feedback from past disequilibrium is about 177% which is a good and fast adjustment process to equilibrium whenever there is disequilibrium.

Post Estimation test

To further validate all the results in the estimated model, some diagnostics are conducted. Their results are presented in the following tables:

Table 6 ARDL Heteroscedasticity Test

| Heteroskedasticity Test: Breusch-Pagan-Godfrey | | | | | |
|--|----------|----------------------|--------|--|--|
| • | | | | | |
| F-statistic | 1.237208 | Prob. F(10,21) | 0.3247 | | |
| Obs*R-squared | 11.86341 | Prob. Chi-Square(10) | 0.2943 | | |
| Scaled explained SS | 8.083964 | Prob. Chi-Square(10) | 0.6206 | | |

Source: Authors' computation, 2021.

Note: ARDL is Auto-Regressive Distributed Lags.

Following the result in table 6, all the three tests of heteroscedasticity indicate values greater than 5% which implies that. The null hypothesis of no heteroscedasticity is accepted. Therefore, it is concluded that the estimated model does not have a problem.

Table 7 Serial correlation test

| Breusch-Godfrey Serial Correlation LM Test: | | | | |
|---|----------|---------------------|--------|--|
| | | | | |
| F-statistic | 0.335913 | Prob. F(2,19) | 0.7188 | |
| Obs*R-squared | 1.092853 | Prob. Chi-Square(2) | 0.5790 | |

Source: Authors' computation, 2021.

The autocorrelation test is conducted using the breusch Godfrey approach and the result are presented in table 7. Both probabilities are also greater than 5% thus implying that the null hypothesis of no serial correlation in the estimated model is accepted.



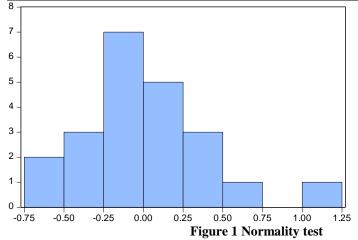


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Series: Residuals Sample 1998 2019 Observations 22 -1.81e-14 Mean Median -0.0477961.230787 Maximum -0.746537 Minimum Std. Dev. 0.421636 Skewness 0.879302 **Kurtosis** 4.589281 Jarque-Bera 5.150293 Probability 0.076143

Source: Authors' computation, 2021.

The probability of the JARQUE BERA is 0.076143 which shows that the error term of the estimated model is normally distributed. The implication is that the estimated model does not suffer from any problem of bias.

5. Conclusions and recommendations

Considering the results from the analysis it is obvious that SMEs access to finance is affected by the financial system in diverse areas.

Firstly, the capital market which is an important aspect of the financial system in Nigeria has a positive and significant impact on SMEs access to finance. The findings further underscore the importance of an efficient and effective financial market in SMEs development of any country. This assertion has been empirically affirmed by the findings of this study. It is concluded from this study that the Nigeria Stock Exchange play important role in making fund available for the finance of the SMEs in Nigeria,

Secondly, findings have shown that the money market which comprises the banks mainly has not played enough roles in mobilizing funds for the SMEs in Nigeria. The credit made available to the private sector by the money market in Nigeria has not influenced the SMEs access to finance significantly during the period under review. Raising from this result and findings it is not out of place to conclude that all the credit that has been released for the private sector in Nigeria during the period by the money market under review is not having the expected impact on the funding of the SMEs. This is an indication that these loans to the private sector might not go into SMEs.

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Thirdly, it is concluded from the study that the inflation rate depreciates the value of loans to the SMEs and this has the effect of reducing the accessibility of the SMEs to finance. In addition, it is concluded from the study as expected that a high lending rate is a disincentive to access to finance by the SMEs. More importantly, it is shown from the analysis that currency devaluation or depreciation might not be helpful for access to finance by the SMEs.

Based on the foregoing it is recommended that the money market as an important aspect of the financial system in Nigeria should be made to devote more credit to the SMEs sector as it has shown from this study that the bulk of the credit going into the private sector from the money market might not go into the SMEs sector. The inflation rate should also be controlled as well as reducing the lending rate and guide against unreasonable currency devaluation to promote access to finance by the SMEs in Nigeria.

Acknowledgments

The authors thank the anonymous reviewers and editor for their valuable contribution.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Authors Contribution

The two authors of the study worked together to develop this article.

Disclosure Statement

The authors have not any competing financial, professional, or personal interests from other parties.

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