Investigating the nexus between Non-Performing Loans in the Nigerian Banking System and Lending to Micro-Small Medium Enterprises

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Abstract:
Micro-Small and Medium Enterprises (MSMEs) constitute vital ingredients for the lubrication of the development process of any economy. Therefore, Micro-Small and Medium Enterprises are bedrocks of emerging economies as they exact vital roles in promoting and sustaining growth and development. However, in Nigeria MSMEs are facing myriad of challenges and difficulties in funding their activities. Rising trends in Non-performing loans (NPLs) adversely affected availability of loans and advances to economic agents in the Nigerian economy thereby constraining financial intermediation and economic activities hence growth. The study investigated the nexus existing between NPLs in the Nigerian banking system and lending to MSMEs sub-sector in Nigeria from 1981-2015. Time series data used in the study were collected from annual statistical bulletin of the Central Bank of Nigeria (CBN). These data were subjected to descriptive and inferential methods. The results of the graphical presentations indicated irregular fluctuations in NPLs. The graphs indicated positive trends in respect to lending to MSMEs and the productivity of MSMEs. The estimated OLS results showed negative nexus between non-performing loans and lending to MSMEs. This negative nexus led to concomitant low MSMEs productivity in Nigeria. The study recommended that CBN should increase its financial surveillance over the sectors and also ensure timely resolutions of the NPLs challenges CBN should increase arrays of financial intervention that would address paucity in funds in the MSMEs sub-sector

Keywords: Non-performing loans, Micro-small medium enterprises, MSMEs productivity, banking system, credit
Umoren, Aniefiok Akpan et al. Investigating the nexus between Non-Performing Loans in the Nigerian Banking System and Lending to Micro-Small Medium Enterprises

Introduction:
In any economy, private, public or multilateral conglomerate needs credits for its operations, expansion and growth so as to achieve its operational and financial sustainability either in the short or long run. Furthermore, entrepreneurs exist in varying ramifications. These may be micro, small, medium and large. Micro-small and medium scale entrepreneurs (MSMEs) constitute the majority of different forms of business operators. They dominate the business landscape in many of the emerging economies. They are ubiquitous in all sectors of these economies namely agriculture/forestry, fishing ,hunting, manufacturing, wholesale/retail trades, repairs, accommodation, food services activities services, mining and quarrying, construction, water supply, sewage, waste management services and remediation, transport and storage, information and communication, administrative and support services, education, art and entertainment, recreation (Small Medium Enterprises Development Agency of Nigeria, (SMEDAN) 2013). In recognition of their proliferations and contributions, various studies alluded to MSMEs as the engines room of any economy as well as mechanism for stimulating indigenous technologies (Ilegbinosa. and Jumbo.2015;Taiwo, Falohun and Agwu, 2016). These assertions were not unconnected with the plethora of vital roles ascribed to MSMEs in many of these emerging economies. Ilegbinosa et al (2015) maintained that SMEs contributed about 50% to gross domestic product (GDP) in developed and developing economies such as United State of America (USA), China and India. Many of the other roles ascribed to MSMEs in emerging economies like Nigeria included; driving of growth and development via employment generation. SMEDAN (2013) documented that MSMEs created about 84.02% work force in Nigerian labour market in 2013. MSMEs increased employment by creating job opportunities thereby distributing incomes in different sectors of the economy. These contributed to values addition in investments portfolios and national outputs. In fact, SMEDAN (2013) documented that about 48.47% of GDP in Nigeria in 2013 was contributed by MSMEs. This sub-sector also contributed about 7.27% to Nigerian export trade in 2013. MSMEs also developed viable relationship with consumers by creating products and services produced or marketed by them. SMEs nursed and cultivated deep consumer relationship which business and economic growth hinged upon. MSMEs are seen as vital foundation of stable national economy as regards job creation at minimal cost and creating channels for income distribution in the nation In recognition of the vital roles played by the MSMEs in Nigeria and other emerging economies,, many financial interventions by Federal and State Government, multinational development agencies/institutions, the Central Bank of Nigeria (CBN) and many non-governmental organizations were initiated, packaged, launched and implemented at various strata of the Nigerian economy.

Globally, various empirical studies on major contributions of MSMEs have been documented in literature. In a study stressing the important roles played by SMEs in emerging economy such as Ghana, Ahiabor (2013) maintained that the highest contribution to GDP in that nation came from SMEs in 2015. In fact, economic growth of Ghana was driven by SMEs which accounted for about 90% of employment.

In spite of all these, MSMEs in many economies faced immense challenges/difficulties which included poor access to finance, skill gap and poor infrastructures. Eze, and Okpala, (2015) documented the inability of SMEs to access credits from banks in Nigeria despite the existence of various financial inventions .The study concluded that access to credit by SMEs continued to be a major challenge that constrained them from achieving their roles in the economy. Furthermore, the challenges confronting MSMEs seemed multidimensional. Ekpenyong (1997) and Utomi (1997) identified inadequate capital and inaccessible credits as the twin challenges of MSMEs. These challenges have persisted unabated over the years.

Furthermore, various studies showed that the introduction of public policies coupled with the establishment of many development financial institutions with arrays of funding intervention programmes, schemes and projects that were directed to enhance credit access by the MSMEs seemed not significantly ameliorating the issues of poor access to credits.(SMEDAN, 2013). In spite of all these policies and funding outlets created by the Government, multinationals and non-governmental organizations, there existed a huge supply- demand

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Page | 20779
gaps. Taiwo, Falohun and Agwu, (2016) reported that Nigerian banking system developed high risk appetite against lending to SMEs because they were seen as high risk conduits for credit purveyance. CBN, (2008) reported that commercial and microfinance banks’ loans and advances to SMEs decreased over the years. This behavioural stance constituted a critical challenge to MSMEs’ sources of finance. Consequently, MSMEs resorted to owner’s capital as their major source of business finance. Evbuomuon (2012), in a study’s results indicated that owners’ capital constituted the main source of finances for SMEs in Nigeria while loans/advances from the banking system were the minor sources of finances. According to Taiwo et al (2016) in Nigerian, loans/advances to SMEs declined from 48% in 1992 to 22.22% in 1994. The decline continued to 0.2% in 2008, a year epitomized with global financial melt down.. The study maintained that the decline might not be unconnected with lack of collateral and high interest rates. The decline in value of loan/advances granted to MSMEs indicated the deterioration in their vital roles performed in the economy.

Many scholars in development and financial economics attempted to analyse the determinants of NPLs in the banking system without considering the effects of NPLs on lending to SMEs despite their vital direct and indirect linkages exhibited by these drivers in the economy. The decline in the financing scenario might be linked with the banks’ failures which culminated to financial crises which engulfed the banking system. Many empirical studies documented that the major cause of the banking system’s crises was due to rising NPLs (Umores, Nwosu and Akpam, 2016; Umores, 2015; Badar and Javid, 2013.).

Over the years, MSMEs had faced arrays of challenges which had not received the needed attention and outcry for financing that would have ensured effective and efficient operation, expansion and growth. However, the results of a survey conducted by SMEDAN in 2013 confirmed the views of several studies that MSMEs were alluded to as engines room of the Nigerian economy (Onigbogu and Nwakoby, 2015). Their additions to the growth of gross domestic product and workforce showed significant improvement. However, their contributions to export trade were not very significant due to poor access to credits from the banking system, poor macroeconomic conditions and infrastructure. Public and multinational interventions in the MSMEs sub-sectors seemed not yielding the needed results. In spite of the increased financial interventions in the banking system yet these interventions seemed to have been adversely poisoned by the prevailing upsurge in the levels of toxic assets (NPLs) in the Nigerian banking system.

In light of the abysmal decline in loans/advances granted to MSMEs in 2008 and thereafter coupled with the decline in vital roles played by MSMEs in the economy, critical questions permeating development finance thought arose: To what extent did non-performing loans affect lending to MSMEs in Nigeria during the study period? How could MSMEs increase their roles in inclusive growth paradigm? How could MSMEs amplify their roles in the development process?

Available records indicated that not much study had been conducted to unravel the nexus existing between non-performing loans in the banking system and lending to MSMEs. Therefore, investigating the relationship between NPLs and lending to MSMEs was the main issue which the study sought to address. In view of the above, the study is directed to fill the identified research gap. Therefore, the specific objective of the study was to investigate the nexus existing between NPLs in the banking system and granting of loans/advances to MSMEs in Nigeria from 1981 to 2015. Thus, the study sought to provide address the research questions as stated above.

The core significance of the study was to provide reference materials for policy makers and other stakeholders on the best platform that NPLs issues could be resolved as to enhance credit flows to MSMEs. This would accelerate inclusive economic growth and sustainable development financing in Nigeria. Ultimately this would facilitate price and monetary stability as well as conserve the nation’s external reserves.

**Conceptual Framework: Non-Performing Loans in Nigerian Banking System:**

Legally, a loan/advance or credit facility is referred to as a contractual promise between two parties in which one party, the creditor, agreed to provide a sum of money to a debtor/beneficiary, who promised to return the said amount to the creditor either in one lump sum or in many instalments over
a specified period of time. The agreement might include provision of additional payments of rental charges on the funds advanced to the borrower for the time in which the funds were in the hands of the debtors. (Authur and Sheffrin 2003). The additional payments which were in the form of interest charges, processing fees, commissions, appraisal and monitoring fees, among others, were usually paid in addition to the principal amount granted. These additional payments when made in accordance with the loan contract constituted income to the lender or the creditor. A loan might therefore be considered as non-performing if payment of both principal and interest charges were not up to date beyond ninety days as agreed between the creditor and debtor. These non-repayments of loans over a prolong period of time ranging from 90 days and beyond constituted Non-performing Loans (NPLs) Umoren et al, (2016); Umoren, (2015); Badar and Javid (2013) maintained that the major causes of NPLs in the banking system included: excessive credits creation by the banks, insider abuses, political influences, relaxed credit conditions and policies as well as poor loan recovery strategies, business cycles, volatility in banks’ specific and macroeconomic factors which included gross domestic products, inflation, interest rate and liquidity of the banks. In another contribution, Amediku (2006) conceptualized NPLs as financial facilities which payments of principals and interests were past due by 90 days. The 90 days criterion was time period widely adopted by various nations to ascertain whether the loan facility was NPLs.

In Nigeria, as in other emerging economies, the crucial roles of the banking system included provision of loans and advances to agriculture, industry, services and external sectors. However, this intermediation function of the banking system was clouded with arrays of challenges. Prominent among them was rising levels of NPLs. Various empirical studies alluded to the views that high proportion of NPLs to total loans and advances in the banking system was the main cause of financial crisis both in developing and developed nations. This was reported in prints and electronic media. The banking system is a component of the financial system (Umoren, 2015; Badar, et al, 2013). For instance, in Indonesia, over sixty (60) banks collapsed during the late 1990’s East Asian financial and banking crisis. This affected a large population of Sub-Saharan African nations in the 1990s which was followed by a rapid accumulation of NPLs (Fofack 2005). According to Inekwe, (2013), NPLs in Nigerian banking system in 1989 was N2.9billion while as at August 2009, prior to the Central Bank of Nigeria’s intervention, it was N2.508 trillion. He observed that the continuous rise in NPLs with inherent effects was unhealthy for the banking system because of the ultimate effect on its intermediation function which seemed to hinder the flow of loan facilities to the MSMEs and other drivers of the economy. The existence of sudden or prolonged high levels of NPLs was an indicator of dismal, poor and unsound performance conditions in the banking system. On the other hand, low NPLs suggested a better and sound banking system. Umoren,(2015) maintained that NPLs exhibited inverse relationship with loans/advances but a direct link with liquidity; Badar et al, (2013) stated that NPLs had direct effects on liquidity and profitability. These collectively might affect the financial system hence the financing of the MSMEs sub-sector. Zeng, (2012) documented that NPLs in banks indicated pollution in the financial system whose continued existence could cause great harms and damages to economic growth and social welfare. According to CBN (2010) and CBN (2009), NPLs fuelled the banking system crises which affected the system from 1980 to 2016. In the mid-1990s, the financial system was at the verge of collapse due to the existence of rising levels of NPLs.

Micro-Small Medium Scale Enterprises:

Conceptually, several definitions and classifications have been adopted in gaining in-depth understanding of micro-small and medium enterprises globally. In Nigeria, SMEDAN, (2013) defined and classified MSMEs using dual criteria of employment and assets excluding land and building. Therefore, micro-enterprises (ME), are enterprises with less than 10 employees and total assets base of less than N5million naira while small scale enterprises (SSE) have 10 to 49 employees with total assets base of 5 to 50 million naira. Medium scale enterprises (MSE) have 50 to 199 employees with total assets base of 50 to 500 million naira. In operational classification, employment criterion is adopted to resolve the typological conflict. In Nigeria, about 98% of the MSMEs are made up of micro-entrepreneurs and 1% is for SMEs respectively (Efina, 2015).
Umoren, Aniefiok Akpan et al. Investigating the nexus between Non-Performing Loans in the Nigerian Banking System and Lending to Micro-Small Medium Enterprises

Globally, MSMEs contributed vital roles in both developed and developing economies. In a study on bank lending and its impact on SMEs in Nigeria, Agwuamb and Ekeinabor, (2017) alluded to the significant roles played by SMEs in Nigeria. These included among others as mechanism for stimulating indigenous enterprises in different sectors of the economy thereby creating employment opportunities, development of local technologies, initiating the bedrock for national economic stability, contribution of additional output to the gross domestic product over time. MSMEs create jobs creation at minimum cost. In fact, MSMEs create channels for reducing income disparity in Nigeria. SMEDAN, (2013) documented that MSMEs contributed 48.47% and 84.02% to gross domestic product and workforce respectively in Nigeria. About 7.30% of Nigerian export trade was contributed by MSMEs in 2013.

Theoretical Framework:

The theoretical framework on which the study hinges was the supply leading hypothesis. This stipulated that the existence of financial institution and the supply of funds/financial assets with their related financial services in advance of demand for these assets/services would encourage efficient allocation of scare resources from surplus units to deficit units thereby culminating to growth process in other units of the sectors with arrays of multiplier effects on the economy. This hypothesis maintained that the transfer of resources from one sector to another would promote and stimulate positive responses among MSMEs in modern economic sectors of a national economy. More so, the hypothesis maintained that activities of financial institutions were useful instruments that enhanced productive capacity of MSMEs. The hypothesis implied that nations with more developed financial resources/services tended to grow faster. Schumpeter (1934) supported the finance-led causal relationship between MSMEs’ finances and a nation’s economic growth. Therefore, the supply leading hypothesis presented a window of opportunities that could improve real growth using financial resources. Therefore as MSMEs had new and improved access to financial resources, their expectations, aspirations and horizons dilated consequent upon new available channels of funds. This would enable MSMEs to think big and see big picture hence increased impetus to innovate and grow, Levine (1997) maintained that the finance-led theory that supported economic growth in the real sector also stimulates development. However, the substantial critic seemed to be that the supply-led theory was useful in traditional community which hinged on backward economy. Mckinnon (1973) noted that a farmer could provide his/her own savings to increase small commercial fertilizer that he adopted and the return on marginal new investment could be estimated. He observed that the difficulty/impossibility of a poor/peasant farmer financing operation from his current savings, the total amount required for investment so as to use the new technology which was a necessary element for enhancing the SMEs and the banking system which included among others collateral, bankable business plans and accurate account keeping were greatly prevalent due to high level of poverty among these traditional cultivators. In light of the above, theoretical framework, the supply leading hypothesis provided the most veritable platform and a lucid explanation for investigating the nexus between non-performing loans and banking system’s lending to MSMEs in Nigeria.

Literature Review:
Micro-Small Medium Enterprises and NPLs in Nigerian Banking System:

Various studies alluded to the key roles that the banking system played. These crucial roles predominantly included among others; the provision of loans and advances to the different economic agents in various sectors namely: agriculture, manufacturing-industry, mining and power, financial, services and others. These sectors are connected in a web-like lobe linking each other thus exhibiting direct or indirect influences among themselves. There existed direct and indirect linkages among the banking system, agricultural and industrial sectors of any economy over time. Vogel (1994) observed that these linkages were strong in development because they played major roles in agriculture led industrialization process. These linkages were driven by MSMEs in all these sectors. Studies by ( ) maintained that SMEs contributed over 50% of the Nigerian gross domestic product hence SMEs were vital economic agents to the growth and development process in the economy. Therefore, it was very essential to note that the performance of the SMEs had direct and indirect effects on the economy. The recent experiences of global financial crisis suggested that the state of the banking system and performance of

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Page | 20782
the real economy as driven by SMEs were strongly interconnected (Jakubik and Schmieder 2008). Many development economists alluded to the banking system as the foundation of the key institutional mechanism for financial intermediation. The banking system mobilized resources from surplus units and channelled the same to the deficit units by granting loans and advances to the chains of economic agents in agriculture, manufacturing-industrial and other sectors. Soludo, (2009) maintained that the Nigerian banking system accounted for over ninety (90) per cent of the financial sector’s assets. Dabwor (2010) argued that the system lubricated the economic growth and development process. Aguwamba and Ekeinabor (2017), studied the trend of commercial banks credits to MSMEs in Nigeria. The results indicated that an increase in banks credits allocation to MSMEs would increase MSMEs’ contribution to total GDP. Furthermore, Aguwamba and Ekeinabor (2017); Onigbogu and Nwakoby, (2015) observed the dismal performance of SMEs due to poor funding, low education, weak governance supports. These studies noted the funding challenges of SMEs in Nigeria and concluded that it was due to inability of SMEs to satisfy loan pre-conditions required by the banking system’s credit policy. Poor compliance with credit policy might culminate to creation of NPLs in the banking system. The existence of high NPLs constrained the availability of loanable funds for agricultural, manufacturing and other sectors’ activities. Brownbridge, Harvey, and Fritz, (1998) maintained that these conditions contributed to high NPLs ratio. The existence of high levels of NPLs constituted a major challenge in banks’ credit administration to MSMEs in all economies.

Non-performing Loans and Banking System in Nigeria:

Literatures on non-performing loans (NPLs) definition were awash with various definitions and contextual differences resulting to changes in NPLs levels within individual countries rather than a financial jurisdiction. A loan facility was said to be non-performing when a borrower was 30, 60, or 90 days delinquent in making a payment (CBN 2010, CBN 1991). Another consideration of a non-performing loan could happen when a loan granted by banks to beneficiaries in a specific sector such as agriculture or manufacturing- industry was re-negotiated or restructured. In all these instances, the loan was not making interest for the banks, such loan was said to be non-performing for that specific sector. When non repayment of loan existed, the value of that loan as asset declined. Hence, NPLs were indicative of the quality of financial assets granted to customers that became risky, and could become lost. Hou and Dickson (2007) argued that NPLs were important indicators to evaluate status of portfolio in the banking system. Higher rates of NPLs indicated higher credit risk which represented higher default risk. In Nigerian banking system, huge proportion of these loans/advances were not repaid as when due.

Hou and Dickson (2007) defined NPLs as loans that no longer produced income for the banks that owned them. In another definition, Obamuyi (2007) maintained that a loan was considered performing if principal and interest was obliged as covenant in the contractual repayment schedule and otherwise it was default which might grow to NPLs. Conceptually, NPLs seemed simple enough to understand in theory, but in practice it might be liable to different interpretations. In Nigeria, loans and advances granted by the banking system to economic agents were deemed non-performing when they were not generating incomes for the lenders. At a time when a loan was classified as non-performing by a lender, and when it became a bad loan depended on the prevalent local banking regulations. (Badar and Javid 2013; IMF 2009; and CBN 1991).

NPLs can also be described as inability of loan beneficiaries to meet contractual terms of the loans. The loan beneficiaries being delinquent were placed in non-accrual basis. Though there seemed to be no global standard definitions of the concept of NPLs at practical stage but Saba et al. (2012) defined NPLs as sum of borrowed money upon which debtors had not made their scheduled payments for at least ninety (90) days. NPLs were either in default or near default. Saba et al2012) stated that, in a situation of NPLs, the odds that they would be repaid in full were deemed to be significantly minimal. However, should the defaulters (debtors) commence repayments again; the NPLs became re-performing loans even if the debtors had not caught up with all the missed portions of the agreed payments.

In Nigeria, NPLs consisted of loans in three categories namely standard, bad and doubtful; and lost. (CBN 2010 CBN1991). These were segmented
Umoren, Aniefiok Akpan et al. Investigating the nexus between Non-Performing Loans in the Nigerian Banking System and Lending to Micro-Small Medium Enterprises

based on the degree of collectability difficulty. NPLs were identified as credit facilities in respect of which interests and/or instalments of principal had remained past due for specific period of time. NPLs were classification adopted by financial institutions globally to refer to loans that were in danger of default as the borrower negated in the loan covenant. However, Shyamala (2012) argued that classification of what constituted NPLs had changed with the narrowing of prudential norms. He pointed out that NPLs existed when interest and or instalments of principal due remained unpaid for more than 180 days.

In Nigeria, and all over many financial jurisdictions, banks usually reported their ratio of NPLs to total loans as a measure of banking system performance’s indicator. Therefore, a proper understanding of the nexus between NPLs and lending to MSMEs would indicate different implications. Low levels of NPLs indicated a relatively stable financial system and perhaps greater latitudes to grant more facilities to MSMEs whereas high levels of NPLs might prove otherwise thus propelling stagnation and financial distress which called for deep concern from bank management and regulatory authorities. A low ratio pointed to low losses while increasing ratio signified increasing write off of bad loans.

Materials/methods:

Study Area and Data Source: The study was conducted in Nigeria. The data were collected from the statistical bulletins of the Central Bank of Nigeria (CBN). Regressions, descriptive as well as the inferential statistics were used in achieving the objectives of the study.

Model specifications:

In the study of NPLs in the Nigerian banking system and lending to MSMEs from 1981–2015, quantitative analysis of NPLs ratios utilizing multiple regression equation models at level of the specified variables was used. The model was estimated for the study period. The specified models for the analysis were as stated below: Banking system non-performing loans were denoted as BNPLs. This is the dependent variable as shown in functional form below:

\[ BNPL_t = f(CSMEs, TLADEt, UEMRt, RSMEST, BINTR, BLQRt) \]  

(1)

This was transformed into econometric model as: expressed below:

\[ BNPL_t = \delta_0 + \delta_1 CSMES_t + \delta_2 INTR_t + \delta_3 UEMR_t + \delta_4 BLQR_t + \delta_5 TLADE_t + \delta_6 SGDP_t + \epsilon_t \ldots \ldots (2) \]

This explicit function was further transformed into logarithm as stated below:

\[ \text{LnBNPL}_{t} = \delta_0 + \delta_1 \text{LnCSMES}_{t} + \delta_2 \text{LnINTR}_{t} + \delta_3 \text{LnUEMR}_{t} + \delta_4 \text{LnBLQR}_{t} + \delta_5 \text{LnTLADE}_{t} + \delta_6 \text{LnSGDP}_{t} + \epsilon_t \ldots \ldots (3) \]

Where:

- BNPLs\(_t\) = Annual non-performing loans rate in the banking system over time in %
- INTR\(_t\) = Annual interest rates charged by the banks over time (%)  
- SGDP\(_t\) = Annual productivity of MSMEs over time
- TLAD\(_t\) = Total annual credits granted to the economy in Naira (₦)
- BLQR\(_t\) = Annual banking system liquidity ratio (%)  
- UEMR\(_t\) = Annual unemployment rates over time expressed in %  
- CSMEs\(_t\) = Annual loans/advances granted to MSMEs over time in Naira as a proxy for lending to MSMEs in the economy.
- Ln=natural logarithm;

\[ \delta_1 - \delta_6 = \text{parameter coefficients} \]

\[ \delta_0 = \text{intercept}; \epsilon_t = \text{Stochastic error term} \]

Analytical Techniques:

SMEDAN, (2013) documented MSMEs’ contribution to Nigerian GDP as 48.5%. Other study indicated SMEs contribution to GDP as about 43.05%, this study adopted average MSMEs’ contribution of 46%. Therefore, MSMEs’ productivity (SGDP) was obtained by multiplying 0.46 by total GDP in Nigeria in order to obtain annual output contributed by MSMEs. The result was divided by the total annual loans/advances granted by the banking system to MSMEs in that given year. The variables chosen for the study were subjected to descriptive and analytical statistics. Ordinary least squares (OLS) analysis was used to examine the properties of the data.
Umorden, Aniefiok Akpan et al. Investigating the nexus between Non-Performing Loans in the Nigerian Banking System and Lending to Micro-Small Medium Enterprises

Results and Discussion:

Result of Augmented Dicky Fuller Unit Root Tests:

Emerging analyses in Economics literature have indicated that ordinary least squares (OLS) method cannot be applied to time series data unless it is ascertained that data series involved in the regression models were stable. In order to ensure that data used in the study did not unnecessary fluctuate, unit root tests were conducted to ascertain the stationarity using Augmented Dickey Fuller (ADF) unit root tests as given by Dickey and Fuller (1981). Running regression with non-stationary data often produced spurious results that might not be reliable. The results of the unit root tests are shown in table 1.

Table 1: Result of Unit Root Tests for Banking system’s Non-performing loans and Lending to MSMEs (Augmented Dickey Fuller Test for unit root)

<table>
<thead>
<tr>
<th>Logged Variables</th>
<th>With Intercept</th>
<th>Intercept and Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>At Level</td>
<td>1st Diff</td>
</tr>
<tr>
<td>LnBNPL_{st}</td>
<td>-1.205</td>
<td>-6.416**</td>
</tr>
<tr>
<td>LnSGDPr</td>
<td>-1.282</td>
<td>------</td>
</tr>
<tr>
<td>Ln INTR_{t}</td>
<td>-2.811</td>
<td>-5.423**</td>
</tr>
<tr>
<td>Ln UEMR_{t}</td>
<td>-2.923</td>
<td>-5.744</td>
</tr>
<tr>
<td>Ln CSMES_{t}</td>
<td>-3.010</td>
<td>-9.492***</td>
</tr>
<tr>
<td>LnTLADE_{t}</td>
<td>-0.687</td>
<td>-8.871***</td>
</tr>
<tr>
<td>LnBLQR_{t}</td>
<td>-4.449</td>
<td>-5.744**</td>
</tr>
</tbody>
</table>

Note: OT means order of integration. Critical value (CV) is defined at 1% significance level and asterisks *** represent 1% significance level. Variables are as defined in equation 1.

Evidence from the unit root test in Table 1 showed that all the variables under study were non-stationary at level. The results of the ADF’s unit root tests showed that, BNPLs and MSME lending were non-stationary at levels but stationary (at 1% significance level) at first difference for the ADF equation that contained intercept; intercept and trend.

Results of Descriptive Statistics on banking non-performing loans, MSMES Lending and Unemployment Rates (1981-2015)

The results from the descriptive statistics were presented in Table 2 below. The results showed that, the mean non-performing loans from the banking system, loans /advances to MSMEs, total loans/advances to the economy, productivity of the MSMEs, unemployment rates, interest rates and liquidity ratios during the period of the study were 24.71%, N133459.6 billion, N2947835 billion, 14.30, 8.42, 20.29 and 46.23% respectively while the maximum and minimum non-performing loans from the banking system, loans /advances to MSMEs, total loans/advances to the economy, productivity of the MSMEs, unemployment rates, interest rates and liquidity ratios during the period were 45.40%, 3838321. 13568879, 201.000, 36.090 23.90, 36.09 and 65.100 respectively whereas the minimum non-performing loans from the banking system, loans /advances to MSMEs, total loans/advances to the economy, productivity of the MSMEs, unemployment rates, interest rates and liquidity ratios during the period were 3.50%, 185.000, 8604.800, 8604.800, 0.10000, 1.80000, 10.00000 and 25.80 respectively. All these statistics indicated the structural behaviour of the variables in the study.
Umoren, Aniefiok Akpan et al. Investigating the nexus between Non-Performing Loans in the Nigerian Banking System and Lending to Micro-Small Medium Enterprises

The skewness of a variable is an indication of its symmetry of deviation of that variable under study from normal distribution with an expected value of zero. Kurtosis is an indicator of the degree of flattening of a distribution with an expected value of three (3) while Jarque Bera statistics indicates the normality or otherwise of a given distribution. The results of the descriptive statistics showed that BNPLs was less than zero hence negative skewness. Kurtosis was less than 3 hence platykurtic while the Jarque Bera of 2.33 denoted that its data were normally distributed. The details are as depicted in table 2.

### Table 2: Results of Descriptive Statistics on BNPLS. MSMES Lending and Unemployment Rates (1981-2015)

<table>
<thead>
<tr>
<th>Statistics</th>
<th>BNPLS</th>
<th>CSMES</th>
<th>SGDP</th>
<th>INTR</th>
<th>LQR</th>
<th>TLADE</th>
<th>UEMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>24.71314</td>
<td>133459.6</td>
<td>423.3746</td>
<td>20.29457</td>
<td>46.12571</td>
<td>2947835.970588</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>26.70000</td>
<td>16366.50</td>
<td>71.54000</td>
<td>20.86000</td>
<td>46.50000</td>
<td>449054.377500</td>
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<tr>
<td>Maximum</td>
<td>45.40000</td>
<td>3838321.3793.880</td>
<td>36.09000</td>
<td>65.10000</td>
<td>13568879</td>
<td>23.90000</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>3.500000</td>
<td>185.0000</td>
<td>0.590000</td>
<td>10.00000</td>
<td>25.80000</td>
<td>8604.8000</td>
<td></td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>13.30142</td>
<td>645066.0</td>
<td>886.1377</td>
<td>6.080770</td>
<td>10.29733</td>
<td>4387704.624304</td>
<td></td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.204581</td>
<td>5.648028</td>
<td>2.820898</td>
<td>0.296998</td>
<td>0.132419</td>
<td>1.275869</td>
<td></td>
</tr>
<tr>
<td>Kurtosis</td>
<td>1.802435</td>
<td>32.94544</td>
<td>10.14318</td>
<td>2.972007</td>
<td>2.477741</td>
<td>3.006372</td>
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<tr>
<td>Jarque Bera</td>
<td>2.335633</td>
<td>1493.815</td>
<td>120.8301</td>
<td>0.515688</td>
<td>0.773779</td>
<td>3.480102</td>
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</tr>
<tr>
<td>Probability</td>
<td>0.311045</td>
<td>0.000000</td>
<td>0.023781</td>
<td>0.000000</td>
<td>1.000000</td>
<td>0.008670</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors’ computations

**Correlation matrix:**

This analysis broadly supported a priori signs in the variables under study though the magnitude of the variables might not be very high. The correlation matrix was presented in Table 3. The results showed that BNPLs exhibited negative associations with loans/advances to MSMES, loans/advances to the economy, and unemployment however the NPLs exhibited positive associations with interest rates and liquidity.

### Table 3: Results of Correlatives Statistics on Non-Performing Loans. Micro-Small Medium Enterprises’ Lending and Unemployment Rates in Nigeria (1981-2015)

<table>
<thead>
<tr>
<th></th>
<th>LNNPL</th>
<th>LCNSMES</th>
<th>LNSGD</th>
<th>LNNTR</th>
<th>LNLQR</th>
<th>LNTLADE</th>
<th>LNUEMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>LNNPL</td>
<td>1.000000</td>
<td>-0.326475</td>
<td>0.023781</td>
<td>0.212121</td>
<td>0.044809</td>
<td>-0.750442</td>
<td>-0.451517</td>
</tr>
<tr>
<td>LCNSMES</td>
<td>-0.326475</td>
<td>1.000000</td>
<td>-0.815611</td>
<td>0.590399</td>
<td>-0.141036</td>
<td>0.680230</td>
<td>0.234898</td>
</tr>
<tr>
<td>LNSGD</td>
<td>0.023781</td>
<td>-0.815611</td>
<td>1.000000</td>
<td>-0.650708</td>
<td>0.215909</td>
<td>-0.356407</td>
<td>-0.110809</td>
</tr>
<tr>
<td>LNNTR</td>
<td>0.212121</td>
<td>0.590399</td>
<td>-0.650708</td>
<td>1.000000</td>
<td>-0.411171</td>
<td>0.201756</td>
<td>0.007270</td>
</tr>
<tr>
<td>LNLQR</td>
<td>0.044809</td>
<td>-0.141036</td>
<td>0.215909</td>
<td>-0.411171</td>
<td>1.000000</td>
<td>-0.086286</td>
<td>0.028713</td>
</tr>
<tr>
<td>LNTLADE</td>
<td>-0.750442</td>
<td>0.680230</td>
<td>-0.356407</td>
<td>0.201756</td>
<td>-0.086286</td>
<td>1.000000</td>
<td>0.469884</td>
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<tr>
<td>LNUEMR</td>
<td>-0.451517</td>
<td>0.234898</td>
<td>-0.110809</td>
<td>0.007270</td>
<td>0.028713</td>
<td>0.469884</td>
<td>1.000000</td>
</tr>
</tbody>
</table>

Source: Authors’ computations
Figure 1 showed BNPLs and SGDP’s trends in the banking system from 1981 to 2015. The results in Figure 1 showed that the fluctuations in MSMEs’ productivity were rapid and characterized with several spikes and troughs from 1981 to early 1990s. The trends in BNPLs and SGDP became stable in the late 1990s though there was slight instability in both variables from 2005.

Figure 2 showed the BNPLs and CSMEs trends in the banking system from 1981 to 2015. The results in Figure 2 showed that the peak in CSMEs trend in 2011. This might have been due to banking system consolidation coupled with increased innovative banking products and interventions offered to MSMEs.
Estimated OLS Relationship between BNPLs and MSMEs Lending in Nigeria:

The results of the regression estimation were presented in Table 4. The estimated OLS results of the relationship between non-performing loans and MSMEs’ lending in Nigeria as shown in table 4 confirmed a priori expectations that non-performing loans in the banking system exacted negative relationship with lending to micro-small and medium enterprises in Nigeria from 1981-2015. Furthermore, the results showed that the relationship among non-performing loans, productivity of MSMEs as well as unemployment rates were not significant. However, the OLS estimates also showed significant relationship between non-performing loans and interest rates and credits to economy. The results suggest that non-performing loans did not constitute significant influence on loans/advances to MSMEs, unemployment rates, productivity of MSMEs, liquidity of the banking system. The results indicated that there existed inverse relationship between BNPLs, MSMEs productivity (SGDP), loans/advances to MSMEs, (CSMEs), credits to the economy and unemployment rates (UNEMR). Furthermore, the results of the OLS estimates indicated that BNPLs exacted positive relationship with interest rates (INTR) as well as liquidity (BLQR). Therefore, high interest rates of the banking system tended to propel higher non-performing loans rates in the banking system over time. The implication was that NPLs increased due to increase in interest rates over time. The upsurge in NPLs rates tended to reduced CSMEs, TLADE, SGDP. Also, increased liquidity implied unnecessary credit expansion to unqualified loan customers thus exacerbating high NPLs thereby de-accelerating loanable funds. This impacted negatively on financial intermediation thereby constraining lending to MSMEs in the economy.

The negative relationship between NPLs and CSMEs, might confirmed the a priori stance that NPLs reduced volume and amount of loans/advances granted to MSMEs. This might be due to the reduction in available loanable funds in the banking system. It could also be due to the erosion of capital profile of these banks in the banking system which might be associated with increased provision for loss or increased accumulated bad and doubtful debts. These collectively militated against the creation of money which could inhibit financial intermediation and inclusive economic growth. Many of the MSMEs would have been highly excluded financially from the financial system. With MSMEs being poorly financed due to rising NPLs in the banking system, unemployment rates might increase thus constraining MSMEs in contributing to generation of employment opportunities and adding values to gross domestic products thereby inhibiting economic growth and development process over the period. This could restrain MSMEs contribution to inclusive growth perspective.

The figures of the regression model were predicted with the help of R-squared, F-statistics and the number of significant relationship between NPLs and the explanatory variables. The estimated results for the equation model showed R-squared value of 0.730072, that is 73.00% while adjusted R value was 0.6700; that is 67.00% respectively. This might suggest that 73.00% of the variation in lending to MSMEs could be explained by the existence of rising trends in NPLs rates in the Nigerian banking system during the period under study. The F-statistics of the model was 15.222 with a p-value of 0.0000. Therefore, since the probability of the F-statistics of our estimated model was less than 0.005, it could be deduced that the explanatory variables had significant nexus on non-performing loan rates in the Nigerian banking system. This indicated that the OLS model was fit and proper for the study. The low values of the standard errors in the OLS estimates indicated that some degree of confidence could be placed on the estimated results as in table 4. The regression line or intercept; C =1.329 and it was positive. This implied that assuming that all the variables in the study were held constant non-performing loans rates would be 1.328/positive. The result of the OLS estimates implied that NPLs would increase as a result of increase in liquidity and interest rates. NPLs rates reduced MSMEs productivity, credit to the economic agents as well as credits to MSMEs. NPLs had negative relationship with unemployment rates. Therefore, with the prevailing rising non-performing loans rates in the banking system, MSMEs’ access to credits continued to decline thus employment opportunities that would have been created by MSMEs continued to reduce. Thus, the roles of MSMEs in depopulating the Nigerian
labour market and creating wealth declined. Therefore, the policy implications of the findings is that NPLs should be resolved as to include MSMEs in deeper financial inclusion through sustainable development financing which would create robust economic activities that propel inclusive growth and sustainable development in Nigeria. Umoren, et al

**Conclusion and Recommendations:**

The results of the study showed that there existed negative nexus between non-performing loans in the banking system and lending to MSMEs which might have resulted to low productivity of the MSMEs in Nigeria from 1981 to 2015. However, the level of nexus seemed not to be very significant which might be attributed to the unwillingness of the banking system to inject more credits to these MSMEs because of perceived inherent apathy that MSMEs were risky channels in credit business. Based on the findings of the study, it is recommended that more efforts be geared towards the quick resolution of the NPLs issues by the monetary authority and regulators using macro and banks’ specific strategies. The Central bank of Nigeria should increase its surveillance on the financial and real sectors of the economy as to enable it take more robust and informed decisions to intervene more in these sectors in order to fix challenges of the banking system and real sector. This would enhance better business relationships between MSMEs and the banking system. Efforts should be geared towards the adoption of modern reformed packages/changes in the financial and real sectors with appropriate governance, the existence of minimal loan defaults would be achieved and this may lead to low non-performing loan thus improved financial intermediation and inclusive growth in Nigeria.

**References**


Umoren, Aniefiok Akpan et al. Investigating the nexus between Non-Performing Loans in the Nigerian Banking System and Lending to Micro-Small Medium Enterprises

Case of CBZ Banks Limited in Zimbabwe


