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# Banking System Credit to Small and Medium Scale Enterprises (SMEs) and Economic Growth in Nigeria: A Co-integration Approach

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***Abstract:*** *This study examined the impact of banking system credit to small and medium scale enterprises (SMEs) and economic growth in Nigeria using annual data covering 1981 to 2013 periods. The study employed ordinary least square (OLS) and co-integration econometric method with the use of sequential modified LR test statistic as lag length selection criteria to conduct its tests and analysis. The results revealed that the banking system credit to SMEs though gradually increased yearly as a result of increase in population and hence economic activities, the credit to SMEs as a percentage of total credit to the private sector declined yearly. Banking system credit to SMEs was not significant and thus did not contribute meaningfully to economic growth in Nigeria. Total credit to the private sector was statistically significant and positive at 5% level of significance. While lending rate has negative and significant impact on economic growth in Nigeria. The need for the government to intervene in a more meaningful way through articulated policies and programmes that will promote funding of SMEs and reduce the level of lending interest rate have been recommended. This will stimulate and rejuvenate SMEs development and sustainability in Nigeria***.**

***Keywords:*** *Banking System, Credit, SMEs, Economic Growth, Lending Rate, Collateral Security, Indigenous Technology.*
***JEL-*** *Classification: G01, G21, G28, F43.*

## I. Introduction

The contributions which small and medium scale enterprises make to the economic growth process have been well documented ( Mambula, 2002). Small and medium scale enterprises (SMEs) generate more direct job per naira of investment than do larger enterprises. They serve as a training ground for developing technical and entrepreneurial skills and by virtue of their greater use of indigenous technological capabilities they promote local inter-sectoral linkages and contribute to the dynamism and competitiveness of the economy.

Prior to the 1970s, the small and medium scale enterprises (SMEs) belonged to the past but this view has since changed because the contributions of SMEs to industrial and economic growth of countries have been recognised internationally (Nnanna, 2001).

Since Nigeria's independence in 1960, Nigeria's national development plans (1962-1985, 1986-1990, 1991-2000, 2001-2010) had laid emphasis on the strategies of government led industrialization through the development of local manufacturing industries. This was in recognition of the important role the small and medium scale enterprises play in industrial strategic plans of the government and the overall growth of the economy.

Despite the expected role of SMEs to economic growth, the contributions of SMEs to the Nigerian economy appear to be insignificant. While SMEs employed about 70 percent of industrial labour force, it only accounted for 10 – 15 percent of total industrial output with a capacity utilization of slightly above 30 percent, which is a reflection of low productivity of SMEs. Ihyembe (2000) attributed poor access to credit as the only reason to this low performance. Ihyembe (2000) also reported that the absence of capital could frustrate the taking off of any business and since personal savings or contributions from family members and peer groups were not always enough, providing bank credit to SMEs would enable the SMEs provide necessary capacity building, infrastructure and raw materials to large scale industries. Due to diverse financial as well as non-financial and behavioural factors, small and medium scale enterprises rely more heavily on short term funding and this makes them more prone to volatile economic situations. Under such circumstances, banks have to request for more reliable collateral security to guard against loan default. Mambula (2002), revealed lack of financial support as number one constraint in developing small businesses in Nigeria because of the

cumbersome procedure for securing business loans from banks and excessive collateral security demanded by the banks.

This study is carried out to examine the contributions of banking system credit to SMEs and their impact on the growth and development of Nigerian economy. This paper is structured into five sections. Chapter 1 presents introductory analysis of the paper. Chapter 2 is the review of related literature. Chapter 3 is research methodology. Chapter 4 is data presentation, analysis and results while Chapter 5 is summary of findings, conclusions and recommendations.

**1.1 Statement of the Problem**

The deregulation of the Nigerian financial system since 1986 resulted to high interest rates, persisting liquidity crisis and credit rationing in favour of large companies. The policy somersault that characterised the post-deregulation period left Nigerian SMEs under severe financial stress and extreme financing gaps. A good business environment or investment climate will encourage private firms to be well managed and efficient, be profitable to grow, create jobs, increase the rate of economic growth and reduce poverty. Abereijo and Fayomi (2005), argued that the challenges which Nigerian banks have to tackle before a successful implementation of SMIEIS include those that relate to cash flows, investment structuring, monitoring/value enhancement, liquidity and exit strategies. Small and Medium Industries Equity Investment Scheme (SMIEIS) is a voluntary initiative of bankers' committee which requires all licensed banks to set aside 10 percent of their profit before tax (PBT) for equity investment in, and promotion of SMEs. Despite the existence of programmes and policies on financial support for SMEs in Nigeria, very few small and medium scale businesses receive financial assistance (credit) when they need it. This has constrained the development of their businesses and hence their performance. Mambula (2002) found that 75 percent of small firms he studied in Nigeria considered lack of financial support as a major constraint militating against the growth of small business. The study found that small business owners consider procedures for securing credit from banks cumbersome and the acceptable collateral for such loans excessive. On the other hand, banks argued that most small business owners that apply for loans do not present acceptable investment or business plan and feasibility study. In the light of the un-credit worthiness of most SMEs as viewed by the banking system, this study has become necessary to ascertain how banking system credit to the small and medium scale enterprises has imparted on economic growth in Nigeria. Specifically, this study is set to achieve the following aims: (1) to ascertain the effect of banking system credit to SMEs on the Nigerian economy. (2) to ascertain whether bank credit to private sector, positively influence the growth of economic activities in Nigeria. (3) to assess the implications of high bank lending rates on Nigeria's economic growth over the years. The working hypotheses for estimating the impact of banking system credit to small and medium scale enterprises on the economy of Nigeria are stated thus: (1) $H_O1$: Banking system credit to SMEs has no significant effect on economic growth in Nigeria. (2) $H_O2$: Total Bank credit to the private sector does not significantly influence the level of gross domestic product in Nigeria. (3) $H_O3$: High Bank lending rates have not significantly and negatively influenced growth in Nigerian economy. By the time the study is concluded discoveries there-from will either confirm or dispute these propositions.

## II. Conceptual Framework

According to United Nations Environment Programme, UNEP (2003), while some countries preferred to group small enterprises into three, that is, micro, small and medium or very small, small and medium enterprises, some other countries adopt two categories of small and medium. As a result, authors from different countries have come up with different definitions of SMEs based on the peculiarity and classifications used in their countries and the guidelines approved by their governments. This is because there are no uniform criteria to measure SMEs in terms of cash flow, number of employees, availability of plant and machinery, market share, sales turnover and fixed capital investment (Ogechukwu, 2011).

In order to minimize the controversy likely to be generated by the ambiguity in conceptual definitions, numerous authors have reduced the criteria to be considered for SMEs definition into two (Altman et al, 2008; Henschel 2009). These are theoretical and operational definitions. Henschel (2009) specifically pointed out that theoretical definitions of SMEs considers qualitative criteria such as autonomy, personal comprehensibility as well as the financial and personal engagement of at least the owner and that operational definitions of SMEs should look at quantitative criteria like annual turnover, number of employees and cash flows.

According to UNEP (2003), European Union submits that micro firms are those which employ less than 10 employees and with an annual turnover of about 2million Euros, small firms employ less than 50 employees and with about 10 million Euros as their annual turnover while medium-sized firms employ less than 250 employees with an annual turnover of 43 million Euros. Henschel (2009) reported that an SME in the United Kingdom is a company that employs less than 250 workers, while in the United States of America the figure is less than 500 employees. In South Africa, small businesses are categorized into four, namely; micro enterprises, very small enterprises, small enterprises and medium enterprise (Smith and Watkins, 2012). The

authors further put it that the differentiating factor between these categories is the number of employees. However, UNEP (2003) pointed out that, advancement in information and communication technology (ICT) could make SMEs definitions that took number of employees into account less relevant.

In Nigeria, a number of definitions of SMEs have been made available. Fatai (2012) opined that different authors, institutions, government agencies and policies have suggested different ways to define SMEs at various times over the years. These definitions seem to consider the various features of SMEs and the current economic situation of the country. Ogechukwu (2011) stated that different authors, scholars and schools have different ideas as to the differences in capital outlay, number of employees, sales turnover, fixed capital investment, available plant and machinery, market share and the level of development, differences in these factors reflect in the available definitions of SMEs. The table below presents a summary of some of the definitions used in Nigeria.

**Table 1:** SMEs Definitions in Nigeria.

| Organization | Year | No of employees | Capital |
|---|---|---|---|
| The Small Scale Industries Association of Nigeria. | 1973 | Not more than 50 | ₦ 60,000 (pre-sap value) |
| The third material development plan | 1975-1989 | Less than 10 | ₦ 600,000 |
| The Federal Government | 1980 | Not specified | ₦ 150,000 |
| The Central Bank of Nigeria | 1995 | Not specified | less than ₦ 500,000 |
| Federal Ministry of Commerce and Industries | 2003 | Not more than 50 | ₦ 250,000 |

Source: Authors compilation (2014)

There has been no clear cut definition of SMEs in Nigeria, however, it varies over time from organization to organization. Various organizations or institutions in Nigeria had at specific times, defined SMEs in different ways, but the definitions have as common measures fixed assets, gross output, and the number of employees.

**2.1 Review of Related Literature**

The need for SMEs growth in Nigeria is beyond question, but access to finance is one of the factors standing in the way of its growth. As a financing tool, equity has distinct advantages over debt for the development of SMEs, however equity financing in Nigeria presently comes with significant challenges as could be seen from the low response from the SMEs industrialists to apply for the fund, and the 'foot-dragging' of the banks in seeking for and investing in SMEs.

Given the prominent role played by the SMEs sector in nation building, plethora of studies have assessed the performance of the sector in the light of the various policies and programs adopted to stimulate the growth of the sector.

Ogujiuba, et al. (2004) studied credit availability to small and medium scale enterprises in Nigeria and its importance to new capital base for banks. The study employed a conceptual analytical framework using theoretical and statistical comparative cross-sectional data to analyze the SMIEIS program in Nigeria vis-à-vis capital base of banks in ascertaining whether it offers an effective means of solving the problem of funding small and medium scale businesses in Nigeria, and its attendant implication for financial stability in the system. The results of the study confirmed government need to urgently address the problem of financial intermediaries cum stability in the system as a national priority, and to build institutions that would drive the reform process.

Abereijo and Fayomi (2005) examined the innovative approach to SME financing all over the world, especially the private equity financing, so as to identify the best practices and lessons to be learnt. It also reviews the small and medium industries equity investment scheme (SMIEIS) in Nigeria. It was discovered that there were still many challenges that the banks in Nigeria need to tackle before a successful implementation of the scheme. These include those challenges that relate to cash flow, investment structuring, monitoring/value enhancement, and liquidity and exit strategies.

Dionco-Adetayo et al. (2006) analysed the enterprise promotion policy programs influencing the development of small scale industries. Specifically, the study aimed at identifying the programs for promoting small scale industries, appraising them in meeting the objectives, and examining the effects of these programs on business growth. The study was conducted in Lagos state where industries and commercial activities were highly concentrated. The independent variables, development of small scale industries were measured according to manpower size, business structure, and technological development; while the dependent variable, programs on enterprise promotion policy were operationalised and measured by statements using Likert scale method. The descriptive and inferential analyses of the data collected through questionnaire revealed that enterprise promotion programs were focused on fostering small scale industries in terms of technical, extension, training, technology adaptation and commercialization, and information services. The level of awareness of these various

programs was low and therefore hindered small scale industries the opportunity to avail such services, thus affecting the enterprises' growth and development.

Asikhia (2009) examined the attitude of the business owners to microfinance banks so as to uncover areas of necessary modification in the policy before it becomes moribund like SMIEIS. Primary data was employed by the study and analyzed using factor analysis, correlation, regression and simple percentage analysis. The study observed that every action of the business owners were gauged by the expectations conceived before commencement of banking relationship, it was these expectations and not the present relationship that determines their future decisions. The study therefore recommended that the effectiveness of microfinance banks business management skills as a development strategy was contingent in delivering both financial and business counseling to the operators.

Babagana, (2010) examined impact of the role played by micro finance banks MFBs) in promoting the growth of SMEs in Nigeria. An empirical study was carried out using Garu Micro Finance bank in Bauchi, Bauchi State being one of the most successful Micro- Finance Banks in North East sub region to determine impact of the role of MFBs in promoting small and medium enterprises growth. Out of the total number of employees in the bank, 15 members of staff whom constitute the middle and management staff were used as respondents. Questionnaire was developed and distributed to them which they all filled and returned. The study revealed that MFBs have contributed to the promotion of small and medium enterprises growth in Nigeria.

Akingunola (2011) assessed specific financing options available to SMEs in Nigeria and their contribution to economic growth via the investment levels. The Spearman's Rho correlation test was used to determine the relationship between SMEs financing and investment level. The analysis reported a significant Rho value of 0.643 at 10%. This indicated that there was significant positive relationship between SMEs financing and economic growth in Nigeria via the investment level. Descriptive statistics were equally used to appraisal certain financing indicators. The paper later proffered that accessibility to relative low interest rate finances should be provided to small and medium enterprises in Nigeria in order enhance economic growth.

Hassan and Olaniran (2011) examined how assistance institutions have contributed to the development of small and medium enterprises (SMEs) in Nigeria, with special reference to Industrial Development Centre (IDC), Osogbo, Nigeria. Survey research was used in order to carry out the study and three hundred and forty (340) respondents from university students, trade union congress and private entrepreneurs in Nigeria were sampled. Four research questions were generated from the literature review, questionnaire on developing small business entrepreneurs through assistance institutions, and the responses elicited from respondents were numerically quantified, tabulated and analyzed using the Likert Scale. The analysis of the study showed that assistance institutions in Nigeria, especially IDC, have really contributed immensely to the promotion of small and medium enterprises as well as entrepreneurship development generally. The study also examined some problems confronting SMEs in the developing nations like Nigeria. Based on the findings, the study recommended that efforts should be made to commercialize the products of IDC so as to meet the demand of the people. The study also recommended that special fund should be set aside to encourage entrepreneurs who may be financially handicapped after training on SMEs development.

Obasan and Arikewuyo (2012) studied the effect of pre-post bank consolidation on the accessibility of finance to SMEs in Nigeria.This study was carried out to ascertain whether bank consolidation exercise in Nigeria had improved accessibility of finance to SMEs in Nigeria or not. This study uses empirical analysis (Ordinary Least Square). The study found out that banks' consolidation has failed to foster a vibrant and competitive SMEs sector that could enhance job creation and economic growth in Nigeria, thus the need for government intervention. This study, therefore, submits that the government should evolve a workable policy at directing banks to channel finance to SMEs so that bank can play an active developmental role to achieve economic growth and development in Nigeria.

Ahiawodzi and Adade (2012) examined the effect of access to credit on the growth of Small and Medium Scale Enterprises (SMEs) in the Ho Municipality of Volta Region of Ghana by using both survey and econometric methods. The survey involved a sample of 78 SMEs in the manufacturing sector from the Ho Municipality. The specified econometric model has firm growth as t he dependent variable, and the independent variables include access to credit, total current investment, age of the firm, start-up capital, education level and annual turnover of the firm. Both survey and econometric results show that access to credit exerts a significant positive effect on growth of SMEs in the Ho-Municipality of Ghana.

Yusuf and Dansu (2013) examined the relationship between business risks and the sustainability of SMEs in Nigeria. They assert that SMEs, face a number of risks that requires objective and conscious risk management efforts. Primary data were generated from fifty (50) SMEs in Lagos State. Data analysis and hypotheses testing were done with the use of Chi-square and descriptive statistics. The results revealed that standard risk management strategy by SMEs would result to their sustainability.

**2.2 Main Sources of Financing SMEs in Nigeria**

The importance of finance to business organisations cannot be over-emphasized. Business finance is however, not easy to source especially in respect of SMEs. Yet they require funds from every source available to meet their asset needs, working capital needs, and for expansion. Accordig to Ekpenyong and Nyong (1992), there is wide consensus in Nigeria that government policies are skewed in favour of the formal sector to the detriment of the informal sector. This skewness is to the great disadvantage of SMEs in Nigeria since they are more disposed to the funds of the informal sector (Ohanga, 2005).

The commercial banks, merchant banks, micro-finance banks and development banks constitute the formal sources of finance to SMEs. The financial system in Nigeria is not in short supply of liquidity, but banks have been very reluctant to grant loans to SMEs, which they regard as a high-risk sector. Most of these banks would rather pay the penalty imposed for not meeting the minimum credit requirement tothis preferred sector of the economy than actually run the risk of exposure to the risk. According to Ojo (1984), the sources of investment fund for SMEs include owner's savings and assistance from banks, government institutions, local authorities, co-operative societies, relatives and friends, and money lenders. Findings of the study showed that almost all the funds came from personal savings (96.4%) with about 3% from the informal sector and 0.21% from the formal financial institutions. This trend was further established by 1983/84 study by the Nigerian Institute for Social and Economic Research (NISER). NISER findings showed that about 73% respondents raised their funds from personal savings, while only about 2% obtained their funds from the formal financial institutions.

**2.3 Small and Medium Industries Equity Investment Scheme (SMIEIS)**

The Small and Medium Industries Equity Investment Scheme (SMIEIS) was established in 2001 by the federal government in recognition of the need to improve the performance of SMEs via equity capital. Small and Medium Industries Equity Investment Scheme (SMIEIS) was introduced to make access to cheap sources of fund possible by SMEs Nigeria. The scheme was instituted in response to the Federal Government's concern and policy measures for promotion of small and medium enterprises, as vehicles for rapid industrialization, sustainable economic growth and development, poverty alleviation and employment generation (Anyanwu et. al., 2003). It was a fund pooled together by the participating banks with the objectives as noted by (Anyanwu, et. al. 2003). These objectives include the following:

1. Eliminating/ reducing the burden of interest and other financial charges for the entrepreneurs.
2. Stimulating economic growth through evolution of local technology for capable and suitable Nigerians.
3. Ensuring output expansion, income redistribution and productivity of intermediate goods meant to strengthen inter and intra-industrial linkages.
4. Easing the flow of funds for the establishment of new and viable small and medium industrial (SMI) projects.
5. Providing financial, advisory, technical and managerial support.
6. Consulting to the entrepreneurs, and
7. It will also generate employment.

SMIEIS was initiated to provide solutions to the dearth of long-term finances to SMEs in Nigeria. Through the scheme, banks were expected to jump-start the development of the real sector of the economy by financing SMEs. The scheme covered enterprises, except trading/merchandising and financial services, in the following sectors- agro-allied, information technology and telecommunications, manufacturing, educational, service, tourism, solid minerals and construction. It provides for the funds invested by the banks to be in the form of equity investment and venture capital in eligible firms. Banks are allowed to take up to a maximum of 40% equity holdings subject to a limit of N200 million per enterprises. A consortium of banks can jointly invest in an enterprise subject to the 40% equity holding limit. The scheme also provides for the allocation of 90% of the entire amount set aside by the banks to the real sector, while the remaining will be allocated to micro/cottage enterprises (Udoh, et.al, 2011; Ughulu, 2007).The key stakeholders of SMIEIS are the Federal Government, the Central Bank Nigeria (CBN), the Banker's Committee, Individual Banks, Independent Fund Managers, the Securities and Exchange Commission (SEC) and the various SMEs promoters (Ughulu, 2007). Small and Medium Industries Equity Investment Scheme (SMIEIS) as at June 2009, a total amount of N28,204,078,746.00 had been set aside by the banks. Only it was set aside in 2009 by the government because it was not enforced and supervised.

**2.4 Banking system in Nigeria and the Problems of SMEs Financing**

Countries all over the world, no matter the stage of their development recognise the importance of promoting small and medium scale firms as the engine of growth and industrialization. Past studies of SME development and their problems have concluded that they suffer from identical weakness in developing countries. There are three major problems affecting the growth of SMEs; namely: inadequate access to finance; unfavourable macroeconomic environment and poor infrastructure facilities. The inability of banks to provide

the required credit to SMEs, led to the reliance entrepreneurs on personal savings and assets for their working capital needs thus making it difficult to operate at full capacity and increase output and sales. The shortage of finance also limits investment in research to improve technology and to expand operations. The source of major risk to banks in Nigeria are lack of information on the SMEs true financial condition and performance, the judicial system reportedly inefficient, banks cannot easily enforce contracts, the business environment is generally risk prone due to fluctuations and uncertainty in output sales which often leads to bad debts. As a result of the foregoing, banks resort to heavy asset-based lending rules.

## III. Model Specification

The model employed in this study to evaluate the impact of banking system credit to small and medium scale enterprise (SMEs) on economic growth in Nigeria is based on empirical methodology of previous research works (Aremu and Adeyemi, 2011; Afolabi, 2013). Their empirical model followed a standard growth model of the form expressed below;

$RGDP = \alpha_0 + b_iX_i + e$ (1)

Where:

RGDP = Real Gross Domestic Product

Xi = set of control variables depicting credit activities of banks to small and medium scale enterprises

$\alpha_0$ = intercept or constant

$b_i$ = parameters or coefficients of explanatory variables

e = error term

The present study recognised the fact that lending rate, and total bank credit to private sectors influences liquidity and direction of credit in an economy. They therefore have been included as control variables in the model hence the model is specified as follows;

$InRGDP_t = \alpha_0 + b_1InBCrTSMEs_t + b_2InTBCrTPS_t + b_3InRBCrTSMEs_t + b_4InBLR_t + e_t$ (2)

Where:

RGDP = Real gross domestic product

BCrTSMEs = Small and medium scale enterprise financing proxied by total bank credit to SMEs

RBCrTSMEs= Banks credit to SMEs as a percentage of total credit to the private sector

TBCrTPS = Total bank credit to private sector

BLR = Banks' lending rate

In = log = Natural logarithm

$\alpha$ = constant

$b_1$ to $b_4$ = coefficients to be estimated

e = stochastic variable or error term

The time series data for this study were sourced from the Central Bank of Nigeria (CBN) statistical bulletin (various years) and annual abstract of statistics from the National Bureau of Statistics (NBS). All variables are in their logarithmic form.

## IV. Data Analysis and Results

### 4.1 Analysis of Data

The variables used in the analysis comprised of real gross domestic product (RGDP) as the dependent variable and commercial banks aggregate loans and advances (credit) to SMEs, commercial banks Aggregate loans (credit) and advances to the private sector, commercial banks loans to SMEs as a percentage of total credit and lending interest rate as the dependent variables. The data is presented in Table 6 in the appendix 1 below. Given the global recognition of the role of SMEs in industrial and economic development of a nation, like Nigeria, one would have expected a progressive increase in credit allocation to the SMEs. Over the years however, as shown in Table 6, the aggregate loans and advances extended by commercial banks to SMEs between 1981 and 2013 as a percentage of credit allocated to the private sector shows that between 1981 and 1986 the percentage of credit allocated rose from 21 percent to 27 percent. This period falls within the time government has not mandated commercial banks to assign a given percentage of their total credit to SMEs. From 1986 to 1992, the percentage witnessed a sporadic increase from 9.3 percent in 1986 to 27.04 percent in 1992 and within the period the credit allocated to SMEs rose to 20.4 million naira. This was the period government directed commercial banks to mandatorily allocate a fixed percentage of their total credits to the SMEs. This mandatory credit allocation was however abolished in 1996 and this explained the downward trend experienced in credit allocation to the SMEs from 16.6 percent in 1996 to 0.13 percent in 2013.

The lending rate has constantly remained high with recorded lowest rate of 7.75 percent in 1981 and recorded high of 29.80 percent in 1992. The all time high double digit lending rate implies that most entrepreneurs may not be able to access the loan since the cost of capital will certainly be higher than the expected return on investment. The implication of this poor level of credit allocation to the SMEs in Nigeria is

that logically the SMEs will also contribute minimally to the gross domestic product. There is therefore need to take positive measures to check this downward trend in credit allocation to SMEs in Nigeria. Generally and based on past literature reviewed in this work, the major reasons adduced for the poor level of credit allocation to SMEs apart from government policy include lack of collateral securities, high interest rates, exchange rate fluctuations, high cost of processing small loans, delays in disbursement of fund, high risks of default associated with the SMEs sector. Similarly most previous research studies on African entrepreneurship have concluded that training programmes for entrepreneurs have been far and far between and different in content than what is needed. The training has been urban-centered and given by people unfamiliar with the actual needs of African entrepreneur.

**4.2 Unit Root Test**

We investigated the time series properties of the order of integration for the variables employed in the model by performing stationarity tests. Most time series variables are non- stationary and using non – stationary variables in the model might lead to spurious regression (Granger and Newbold, 1977). The first step was to determine the order of integration of the variables, that is, we tested whether they are stationary in the levels or whether they are to be differenced once or more before they become stationary. This was carried out using the Augmented Dickey Fuller (ADF) test statistic to investigate the presence or otherwise of unit root. All the variables were not stationary at the levels except lending interest rate which was stationary at 5 percent level of significance. However, all the variables were stationary at first difference as summarized in Table2 below.

**Table 2: Unit Root Test Result**

| Variable | at level | 1st difference | order of integration |
|---|---|---|---|
| In RGDP | 0.8160 | 0.0008* | I(1) |
| In TBCrTPS | 0.9504 | 0.0007* | I(1) |
| In TBCrTSMEs | 0.0890*** | 0.0000* | I(1) |
| In RDCrTSMEs | 0.9774 | 0.0004* | I(1) |
| In BLR | 0.0246** | 0.0001* | I(0) |

Note: * significant at 1%, ** significant at 5%, *** significant at 10% level of significance. Maximum initial values are = 3.6537, -2.9571, and – 2.6174 for 1 percent, 5 percent and 10 percent levels respectively.
Source: Arthors' compilation (2014) from E-views 8.0 WIN

**4.3 Co-integration analysis**

The Johansen co-integration test was used to test the existence or otherwise of long run equilibrium relationship among variables. Before proceeding to the results of the co-integration test, we considered first, the optimal lag length for the VAR specification. This is presented in Table3 below.

**Table3. VAR lag order selection criteria for the model**

Endogenous variables: InRGDP, InTBCrTSMEs, InRBCrTSMEs, InTBCrTPS, InBLR

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|---|---|---|---|---|---|---|
| 0 | -161.1441 | NA | 0.000256 | 11.59614 | 11.92618 | 11.69951 |
| 1 | 2.840078 | 237.4943* | 1.02e-07 | 3.666202 | 6.306497 | 4.493109 |
| 2 | 40.85774 | 36.70670 | 4.27e-07 | 4.423604 | 9.374158 | 5.974056 |
| 3 | 174.0275 | 64.28886 | 1.58e-08* | -1.381208 | 5.879605 | 0.892788 |
| 4 | 4821.426 | 0.000000 | NA | -318.5121* | -308.9410* | -315.5146* |

LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Note: the LR lag length selection criteria, which is 1 was used for the analysis because the other criteria did not produce result in running the co-integration test. Based on the optional lag length the study carried out the

Johansen procedure to ascertain the number, if any of co-integrating relationships. In equation 2. Both the maximum eigen value and the trace statistics are reported in Table 4 below.

**Table 4: co-integration test (Johansen method)**

| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 0.05 Critical Value | Prob.** |
|---|---|---|---|---|
| None * | 0.765149 | 159.7075 | 125.6154 | 0.0001 |
| At most 1 * | 0.692005 | 114.7946 | 95.75366 | 0.0013 |
| At most 2 * | 0.571976 | 78.28676 | 69.81889 | 0.0090 |
| At most 3 * | 0.508669 | 51.98092 | 47.85613 | 0.0195 |
| At most 4 * | 0.314480 | 15.85344 | 15.49471 | 0.0441 |

Trace test indicates 4 co integrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Co-integration Rank Test (Maximum Eigen value)

| Hypothesized No. of CE(s) | Eigen value | Max-Eigen Statistic | 0.05 Critical Value | Prob.** |
|---|---|---|---|---|
| None* | 0.765149 | 49.91299 | 46.23142 | 0.0488 |
| At most 1* | 0.692005 | 45.50780 | 40.07757 | 0.0196 |
| At most 2* | 0.571976 | 36.30584 | 33.87687 | 0.0324 |
| At most 3 | 0.508669 | 22.02977 | 27.58434 | 0.2188 |
| At most 4 | 0.314480 | 11.70492 | 14.26460 | 0.1222 |

Max- eigen value test indicates 2 co integrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

The co-integration with the trace test giving 4 co-integrating equations at the 5 percent level of significance. While the maximum eigenvalue indicated 2 co-integration equations at the 5 percent level of significance. Once there is a co-integration vector, a long run relationship is concluded (Gujarati, 2003). The models were normalized on the real gross domestic product variable (RGDP) in order to obtain the long- run parameter estimates, all data were in their logarithmic forms. This is presented in the regression analysis results in Table 5, below

**Table 5.0 OLS Regression Analysis Result**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -0.406649 | 1.441306 | -0.282139 | 0.7801 |
| InTBCrTPS | 0.650809 | 0.278467 | 2.337113 | 0.0274 |
| InTBCrTSMEs | 0.012143 | 0.124217 | 0.097757 | 0.9229 |
| InRBCrTSMEs | 0.224354 | 0.130899 | 1.713952 | 0.0984 |
| InBLR | -0.019390 | 0.010941 | -1.772007 | 0.0486 |

| | | | |
|---|---|---|---|
| R-squared | 0.994640 | Mean dependent var | 14.34662 |
| Adjusted R-squared | 0.993403 | S.D. dependent var | 2.354617 |
| S.E. of regression | 0.191241 | Akaike info criterion | -0.284728 |
| Sum squared resid | 0.950906 | Schwarz criterion | 0.032713 |
| Log likelihood | 11.69802 | Hannan-Quinn criter. | -0.177919 |
| F-statistic | 804.1576 | Durbin-Watson stat | 1.151503 |
| Prob(F-statistic) | 0.000000 | | |

The equation for the regression model is given as;

$InRGPD = \alpha_0 + b_1InTBCrTPS + b_2InTBCrTSMEs + b_3InRBCrTSMEs + b_4InBLR + e$
From the analysis above, $\alpha = -0.406649$, $b_1 = 0.650809$, $b_2 = 0.012143$, $b_3 = 0.224354$, $b_4 = -0.019390$.

Therefore, the linear regression equation obtained from the data is;

RGDP = -0.406649 + 0.650809TBCrTPS + 0.012143BCrTSMEs + 0.0224354RBCrTSMEs + 0.00194BLR + e

The implication of this is that 1 percent increase in total bank credit to SMEs will lead to 1.21 percent increase in RGDP; while 1 percent increase in lending rate will lead to a decrease in real gross domestic product by 1.94 percent. The multiple correlation co-efficient (R) of 0.9973 indicates a strong positive linear relationship between the independent variables and the dependent variables since the value is close to 1. While the coefficient of determination ($R^2$) of 0.9946 indicates that about 99.46 percent of the variance in the dependent variable RGDP can be explained by variations in the independent variables. This figure increases the goodness of fit of the model and because of the high value of 99.46 percent; this model is a good fit. From the F-distribution table, the critical value obtained at $\alpha = 0.05$, d.f = 4 and d.f.D = 32 is 2.80. Since F (=804.16) is greater than the critical value (2.80), and also since the p-value (=0.000) is less than $\alpha$ (=0.05), the decision is to reject the null hypothesis. This implies that there is a significant relationship between the dependent variable RGDP and the four independent variables.

**4.4 Test of Hypotheses**

**Ho1:** Banking system credit to SMEs has no significant effect on economic growth in Nigeria.

The reported estimates of t-value of 0.097757 and p-value of 0.9229 indicated that credit to SMEs by banks has no significant effect on economic growth in Nigeria at both 5% and 10% levels of significance. This implies that SMEs are not adequately funded in Nigeria. However, ratio of banking system credit to SMEs in Nigeria (RBCrTSMEs) had significant effect in our test results.

**Ho2:** Total bank credit to the private sector does not significantly influence the level of Gross Domestic Product in Nigeria.

The result revealed that bank credit to the private sector has a t-value of 2.3371 and a p-value of 0.0274. This indicated that bank credit to private sector has positive and significant relationship with economic growth at 5% level of significance. It in fact lead to growth in our model.

**Ho3:** Lending rate has no significant impact on economic growth in Nigeria.

The reported estimates of t-value of -1.7722 and p-value of 0.0486 indicated that lending rate has negative and significant relationship with economic growth in Nigeria. This implies that high lending rate discourages entrepreneurship and reduces investments. This result is in line with our a prior expectations. This has serious negative implications on industrial development and growth in the real sector of the economy.

## V. Conclusion and Recommendations

This study investigated the impact of banking system credit to small and medium scale enterprises on economic growth of Nigeria using the ordinary least square (OLS) estimation techniques. Annual data spanning from 1981 to 2013 were tested for stationarity, and co-integration analyses were carried out. The study revealed that the banking system credit to SMEs though gradually increased from year to year as a result of increase in population and hence economic activities, the credit to SMEs as a percentage of total credit to the private sector declined yearly. Banking system credit to SMEs was not significant and thus did not contribute meaningfully to economic growth in Nigeria though bank credit to SMEs as a percentage of total credit to the private sector had a positive and significant effect on growth. Total credit to the private sector was not significant at 5% level of significance, and high lending rate has significant and negative impact on economic growth in Nigeria.

Financing small and medium scale enterprises are critical to the promotion of sustainable economic growth and poverty reduction in Nigeria. The factors identified in this study that militate against adequate funding of small and medium scale enterprises in Nigeria include; non articulated government policies, the problem of collateral security required by banks, poor development of indigenous technology and high lending interest rates.

The need for the government to intervene in more meaningful ways through articulated policies and programmes that will promote funding of SMEs and reduce the level of lending rate to one digit in the economy has been recommended. This will stimulate and rejuvenate SMEs development and sustainability in Nigeria in the years ahead.

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## Appendix 1

**Table: 6.** Loans and Advances to Small and Medium Scale Enterprises by commercial banks and lending rate in Nigeria (1981-2013)

| Years | RGDP N'M | TBCrTPS N:M | TBCrTSMEs N'M | RBCrTSMEs % | BLR % |
|---|---|---|---|---|---|
| 1981 | 47,619.66 | 8,604.80 | 185.00 | 2.1 | 7.75 |
| 1982 | 49,069.28 | 10,277.00 | 206.70 | 2.0 | 10.25 |
| 1983 | 53,107.38 | 11,100.00 | 351.30 | 3.2 | 10.00 |
| 1984 | 59,622.53 | 11,550.60 | 705.70 | 6.1 | 12.50 |
| 1985 | 67,908.55 | 12,170.30 | 972.20 | 8.0 | 9.25 |

| | | | | | |
|---|---|---|---|---|---|
| 1986 | 69,146.99 | 15,701.00 | 3,587.30 | 9.3 | 10.50 |
| 1987 | 105,222.84 | 17,531.90 | 1,445.30 | 20.46 | 17.50 |
| 1988 | 139,085.30 | 24,602.30 | 5,090.00 | 20.69 | 16.50 |
| 1989 | 216797.54 | 28,108.80 | 5,789.50 | 20.60 | 26.50 |
| 1990 | 267,549.99 | 28,640.80 | 5,900.00 | 22.90 | 25.50 |
| 1991 | 312,139.74 | 32,912.40 | 7,572.30 | 23.80 | 20.01 |
| 1992 | 532,613.8`3 | 75,456.30 | 20,400.00 | 27.04 | 29.80 |
| 1993 | 683,869.79 | 88,821.00 | 15,462.90 | 17.41 | 18.32 |
| 1994 | 899,863.22 | 143,516.80 | 20,552.50 | 14.32 | 21.00 |
| 1995 | 1,933,211.55 | 204,090.60 | 32,374.50 | 15.86 | 20.18 |
| 1996 | 2,702,719.13 | 254,853.10 | 42,302.10 | 16.60 | 19.74 |
| 1997 | 2,801,972.58 | 311,358.40 | 40,844.30 | 13.12 | 13.54 |
| 1998 | 2,708,430.86 | 366,544.10 | 42,260.70 | 11.53 | 18.29 |
| 1999 | 3,194,014.97 | 449,054.30 | 46,824.00 | 10.43 | 21.32 |
| 2000 | 4,582,127.29 | 587,999.90 | 44,542.30 | 7.58 | 17.98 |
| 2001 | 4,725,086.00 | 844,486.20 | 52,428.40 | 6.21 | 18.29 |
| 2002 | 6,912,381.25 | 948,464.10 | 82,368.40 | 18.68 | 24.85 |
| 2003 | 8,487,031.57 | 1,203,1 99.00 | 90,176.50 | 7.49 | 20.71 |
| 2004 | 11,411,066.91 | 1,991,146.40 | 54,981.20 | 3.62 | 19.18 |
| 2005 | 14,572,239.12 | 1,991,146.40 | 50,672.60 | 2.54 | 17.95 |
| 2006 | 18,564,594.73 | 2,609,289.40 | 25,713,70 | 0.99 | 17.26 |
| 2007 | 20,657,317.67 | 4,820,695.70 | 41,100.40 | 0.85 | 16.94 |
| 2008 | 24,296,329.29 | 7,799,400.10 | 13,512.20 | 0.17 | 15.14 |
| 2009 | 24,794,238.66 | 9,667,876.70 | 16,366.50 | 0.17 | 18.99 |
| 2010 | 33,984,754.13 | 9,571942.30 | 14,259.50 | 0.15 | 17.59 |
| 2011 | 37,543,654.70 | 9,523,961.30 | 38,321.15 | 0.21 | 16.02 |
| 2012 | 40,544,781.13 | 10,071,002.55 | 14,699.95 | 0.13 | 16.79 |
| 2013 | 42,396,592.81 | 11,136,723.48 | 16,268.15 | 0.13 | 16.72 |

Source: Central Bank of Nigeria Statistical Bulletin (2013)