



Deposit money bank credit to small and medium enterprises, socio-economic performance and economic growth in Nigeria

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Abstract

Small and Medium Enterprises (SMEs) have popularly been argued to contribute positively to economic growth of countries of the world through their positive effect on socio-economic development of the countries. However SME access to credit remains essential for SMEs continued positive contribution. In the case of Nigeria, unemployment and poverty are two major socio-economic performance indicators in which she has performed poorly over the years, despite efforts by the Nigeria government to boost credit availability to SMEs. In that light, this study explores, the relationship between SME credit and each of Unemployment and poverty respectively, using Pearson's correlation, and further examines the impact of Deposit money bank credit to SMEs on economic growth in Nigeria using Ordinary least squares regression. Data employed for this study was annual data from 1992 to 2015 obtained from the Central Bank of Nigeria Statistical Bulletin. The Pearson's correlation revealed a negative but insignificant relationship between SME credit and Unemployment, and a negative and highly statistically significant relationship between SME credit and poverty. The results of Ordinary Least Squares regression revealed that SME credit has a negative and highly statistically significant impact on economic growth in Nigeria. Based on the results of the study it is recommended that the Nigeria government should support SMEs with necessary training in risk management so as to increase SME capability to effectively manage the risk of their operations, the Nigeria government should increase provision of infrastructural facilities in order to reduce the operating costs of SMEs, and Nigeria deposit money banks should be equipped with necessary technology to effectively assess the creditworthiness of SMEs in applying for loans, amongst other recommendations.

Keywords: Small and Medium Enterprises; Unemployment; Poverty; Economic Growth; Deposit Money; Bank Credit

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1. Introduction

The achievement of economic growth and development is a major goal of Governments of many developing countries of the world. These developing countries face various socio-economic challenges including high rates of poverty and unemployment which have contributed to their present poor level of economic growth and development. While several strategies may have been developed by the developing country governments to address the various challenges, it is the case that small and medium scale enterprises have a significant role to play in supporting the activities of government in this regard and in that light have proved to be a major instrument employed by the developed nations to attain socio-economic development which they experience presently (Ogujiuba et al., 2004; Ihua, 2009). Historical facts show that prior to the late 19th century, cottage industries, mostly small and medium scale businesses controlled the economy of Europe (Wendrell, 2003). The status quo however changed following the Industrial Revolution and mass production was consequently introduced (Thomas, 2001). However In recent time, the small scale industrial sector is considered to be the backbone of modern day economy. In many economies, small and medium scale enterprises (SMEs) are the engine of economic growth, specifically, in countries such as Malaysia, Thailand, China, and India, where SMEs have been responsible for more than 70 percent of exports and this explains why these countries have been growing at a high rate (Kuteyi, 2013).

All over the world, small and medium scale industries are known to exist in countries of the world and most of them were established since the mid-1980s, with the inception of the structural adjustment program (SAP). Small and medium enterprises (SMEs) vary in definition ranging from reference to number of employees, value of total assets, value of capital, and value of sales (Ayyagari et al., 2003; Ekpeyong and Nyong, 1992; Macqueen, 2004). However in the case of Nigeria, the definition of small and medium scale enterprises in general is that of the National Council of Industries, which defines small and medium enterprises as business enterprises whose total costs excluding land is not more than two hundred million naira (N200, 000,000.00).

In Nigeria, the genesis of small and medium scale enterprises is traceable to the year 1945 when the essential paper number 24 of 1945 titled "A Ten year plan of development and welfare of Nigeria 1946" was presented (Aremu and Adeyemi, 2011). Since then, small and medium scale enterprises have risen in prominence over the years, with their importance expected to increase even further in the future.

In resolving the problems of poverty and unemployment in most developing countries Small and medium scale enterprises (SMEs) have proved to be a major intervention (Aremu and Adeyemi, 2011). Further in both developing and developed countries small and medium scale enterprises play important roles in the process of industrialization and economic growth, by significantly contributing to employment generation, income generation and catalyzing development in urban and rural areas (Hallberg, 2000; and Olutula, 2001). In addition, small and medium enterprises stimulate private ownership and entrepreneurial skills in addition to rural-urban migration. Therefore based on the aforementioned important roles played by small and medium enterprises (SMEs) amongst others, it is evident the significant contribution made by small and medium enterprises (SMEs) in countries of the world in boosting economic growth, reducing poverty and enabling the creation of wealth.

Governments of countries of the world and at various levels in realization of the significant contributions made by SMEs have sought to facilitate the performance of small and medium enterprises through a variety of policies including the provision of strong laws, regulation and markets for credit. While some have formulated policies aimed at facilitating and empowering the growth and development and performance of the SMEs, others have paid attention to aiding SMEs to grow through the provision of soft loans and other incentives of a fiscal nature in order to improve the socio-economic development of the economy such as reducing poverty, creating employment, improving human development, and raising social welfare of the people (Akingunola, 2011). However, a lot is still yet to be done especially as regards addressing the constraints of SMEs in accessing credit primarily from the bank system. This is especially the case in developing countries as Nigeria. SMEs in order to maintain or increase their contribution to overall socio-economic development in developing countries need productivity increases through adequate financing. This signifies the importance of capital which is of significant cost in sourcing, for SMEs development. Further other factors remain that adversely affect SME development and may be related to SMEs inability to access credit such as production equipment, efficient manpower, and disciplined management, hence highlighting the dire need of SMEs in Nigeria for access to significant credit. At present contributing to SME constraints to credit access are: often too short period for loan repayment (Abereijo and Fayomi, 2005), Severe pre-conditions to granting of loans (Storey, 1994; Berger and Udell, 1998), and unawareness by SMEs of criteria for granting loans employed by financial institutions in assessing loan applications. This is in spite of a host of mediums through which credit has been made available to SMEs over the years by the Nigeria Government with the most recent being Bank of Industry and recently renamed Bank of Agriculture. Consequently, SMEs in Nigeria lack of access to credit has affected the ability of the SMEs to contribute meaningfully to Nigeria's economic growth. The evident challenges of the Nigeria economy notably those of unemployment and poverty which have been persistent overtime till the present time, may have been addressed in the past if SMEs were provided the enabling conditions for their progress notably that of unrestricted access to credit.

While the challenges affecting SMEs in general are many, it is the case that SMEs especially those in Sub-Saharan Africa are particularly restricted in the extent to which they have been able to play an active role in the development of African countries as they tend to face more challenges in general to their progress than others in other continents of the world. Access to finance is particularly one of the major challenges for SMEs in African countries as Sacerdoti (2005) highlights that, SMEs in Sub-Saharan Africa are segregated against by banks when applying for loans especially on long term basis as they are considered highly vulnerable with high credit risk even where the banks have liquidity levels in excess of what is required by law. It is therefore the case that in Nigeria, as in other African countries, access to credit continues to remain a challenge affecting SMEs in addition to other challenges. Further in relation to SMEs challenge of access to credit from deposit money banks in Nigeria, which are also known as commercial banks, despite various Nigeria Government initiatives to make credit available as implemented by the Central Bank of Nigeria such as Nigeria Industrial Development Bank (established in 1962), Nigerian Bank for Commerce and Industry (NBCI) (established in 1973, Bank of Agriculture (originally incorporated in 1978), and Bank of Industry (incorporated in 2001), most SMEs in Nigeria have a capital base that is inadequate to meet the collateral requirements by the deposit money banks before loans are given out. Further in the situation where some SMEs are able to provide collateral, the

collateral often ends up being inadequate for the amount they needed to embark on their projects as SMEs assets-backed collateral are usually rated at 'destroy value' to ensure that in the event of loan default, the loan can realistically be covered as SMEs survival and growth over time is uncertain (Binks et al., 1992). Thus SME inability to access credit, specifically deposit money bank credit, is a concern for economic growth.

While a variety of studies have been performed on SMEs access to credit and economic growth both in Nigeria (Afolabi, 2013; Onakoya et al., 2013), and in other countries of the world (Brian and Shingirayi, 2014; Makorere, 2014; Chughtai, 2014) most of the studies stress improved access to credit for SME growth. With such credit access SMEs will be able to contribute to socio-economic development in developing countries like Nigeria which will ultimately boost the economic growth of the countries. However the credit market in countries of the world continues to get tighter and SMEs remain risky suggesting adverse consequences for economic growth as financial institutions limit lending to SMEs. This is evident in Nigeria where limited amounts of credit if any are lent to SMEs and this questions whether indeed such findings that SME credit boosts economic growth are valid with specific reference to Nigeria as found by studies as Chinweuba and Sunday (2015), and probably other African developing countries as highlighted by Sacerdoti (2005). The case of Nigeria is more so relevant given the initiatives of the Nigeria government to improve credit access of SMEs in recent time through the establishment of the Bank of Industry and Bank of Agriculture. Further studies such as Ayuba, and Zubairu (2015) and Uzonwanne (2015) using descriptive statistics in analyzing data used to arrive at their arguments that SMEs access to credit does boost economic growth highlights methodological concerns as descriptive statistics may not be appropriate to examine the effect of a policy variable of SME access to credit and thus informs the need for appropriate econometric tools for more credible analysis. Finally, in empirical studies exploring SME credit and economic growth, a further methodological concern is the measure of SME credit which is measured in absolute terms rather than employing SME credit as a percentage of total commercial bank private sector credit which will be more informative for empirical research of this nature.

Thus on the basis of the three aforementioned concerns of previous empirical studies, which highlights significant weaknesses of the studies, the present study is performed and seeks to address the weaknesses in contributing to knowledge and filling the identified research gap. To this end, we address the weaknesses by using as our measure of SME credit, SME credit as a percentage of private sector credit given by deposit money banks in Nigeria and in the use of Ordinary least squares regression in performing our data analysis in seeking for credible and reliable research findings. Further in relation to SMEs effect in contributing to socio-economic development in addressing unemployment and poverty as important features of developing countries as Nigeria, the present study explores the relationship between SMEs access to credit and unemployment and poverty in further contributing to knowledge, and in the realization that unemployment and poverty provide channels through which SMEs in accessing credit may affect Nigeria economic growth.

Therefore the present study explores how credit to SMEs by deposit money banks in Nigeria has contributed to economic growth in Nigeria and the association between SME credit by deposit money banks and selected socio-economic performance indicators in Nigeria. The study covers the period of 1992 to 2015. Further, in performing the present study in particular, we develop two hypotheses which are tested in the present study. Firstly, we examine the existence of a relationship as well as the strength of the relationship

between SME credit given by deposit money banks and socio-economic performance indicators of poverty and unemployment in Nigeria. Secondly, and related to the first hypothesis is the examination of the impact of SME credit given by deposit money banks on the economic growth of Nigeria.

The remainder of the paper is organized as follows: Section 2 reviews empirical literature on small and medium enterprise access to credit, and SME credit and economic growth in Nigeria, and data to be analyzed as well as techniques employed in analyzing data are explained in section 3. The empirical results are presented and discussed in section 4, while section 5 concludes the study.

1.1. Credit to small and medium scale enterprises by deposit money banks in Nigeria

Small and medium enterprises (SMEs) in Nigeria, like other SMEs in countries of the world have been faced with restricted access to credit for their expansion. With the poor development of the Nigeria stock exchange as a source of funds for firm growth, SMEs in Nigeria have had to resort to seeking credit from the Nigeria bank system or other non-bank sources so as to have the required funding for their activities. The Structural adjustment programme which Nigeria undertook from 1986 to 1993 further contributed to restricting the access of SMEs in Nigeria to credit as the Nigeria financial system was liberalized and consequently interest rates and exchange rates were allowed to rise as the Nigerian economy became market-oriented and government relinquished control over interest rates, exchange rates and other financial system indicators. Ofcourse, there have been further financial system challenges and from which it is inevitable that losers and winners will emerge. In the context of the Nigeria corporate sector, SMEs in general, including those in Nigeria were one of the most hit as banks tightened lending policies and hence further deprived SMEs of access by their tight lending policies. One of such financial system challenges in recent memory is the 2007 global financial crisis. The trend of SME credit by deposit money banks in Nigeria over time is depicted in Figure 1.

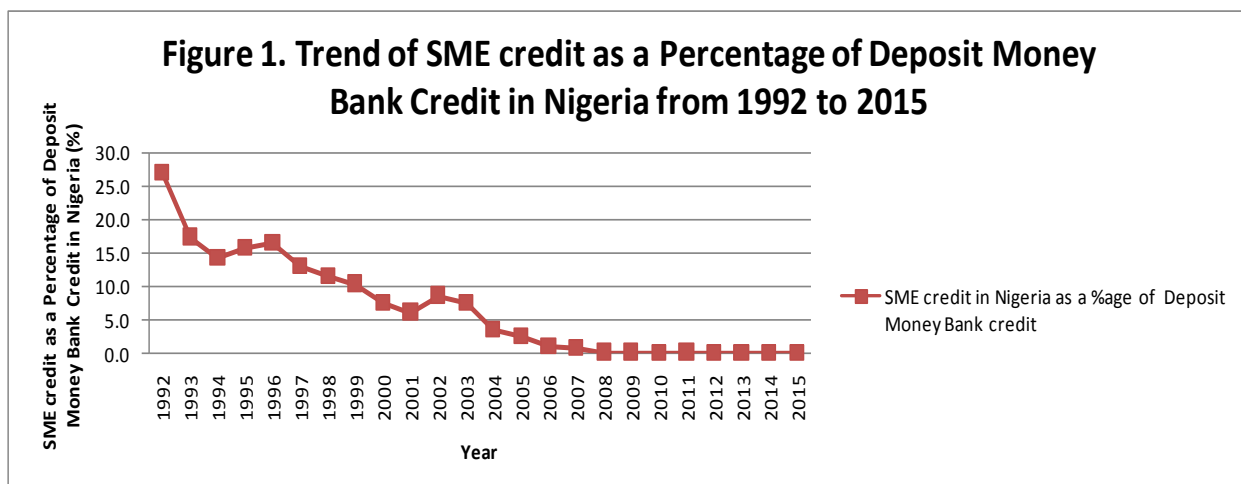


Figure 1. Trend of SME credit as a percentage of deposit money bank credit in Nigeria from 1992 - 2015

From the above diagram, it is observed that SME credit as a percentage of deposit money bank credit in Nigeria was at its highest in 1992 at 27%. However over the years deposit money banks in Nigeria have lent SMEs in Nigeria progressively less credit, eventually reaching 0.1% in 2010, where it has remained all through till 2014. Although slight rises in deposit money bank credit to SMEs are observed from the above diagram from 1994 to 1996 and from 2001 to 2002, the increases are only marginal and are the only anomalies observed from a general downward trend of SME credit by deposit money banks in Nigeria over the years from 1992 to 2015.

The Nigeria Government in its realization of the importance of promoting small and medium scale enterprises to achieve economic growth and development and to facilitate the achievement of macro-economic objectives through the industrial sector, has adopted different strategies and policies to increase credit availability. The strategies include:

- a) Providing local finance through its agencies - the Central Bank of Nigeria, Federal Ministry of Industries (Small-scale industry credit scheme - SSICs), Nigerian Industrial Development Bank (NIDB), Nigerian Bank for Commerce and Industry (NBCI).
- b) Facilitating and guaranteeing external finance through the World Bank, African Development Bank and other International Institutions willing to, and capable of assisting SMEs;
- c) The Bankers' committee initiative in collaboration with the Central Bank of Nigeria (CBN) on establishment of investment scheme for small and medium scale enterprises - Christened "small and medium industries equity investment scheme - SMIEIs, where banks are to set aside ten percent (10%) of their profit before tax for equity investments in small and medium industries (Oye, 2006).
- d) Funding and setting up industrial areas and estates (to reduce overhead costs).
- e) Provision of technical, training and advisory assistance programme through establishment of industrial development centres, etc.

Although the above initiatives had been severally embarked on by the Nigeria Government, much is left to be seen as the initiatives have yielded limited success. Central Bank of Nigeria (2006) highlights that small and medium enterprises is not a preferred sector by Nigeria financial institutions to advance credit on examination of the relationship between commercial banks total credit to small scale enterprises from 1992 to 2006. Further as highlighted by Adebusuyi (1997), funding of SMEs is mainly from personal savings representing 96.4 percent of funds while only 2 percent of funds are sourced from the formal sector. From the most recent Central Bank of Nigeria report, it is evident that SME access to bank credit in Nigeria has remained unchanged.

A number of specialized lending institutions in Nigeria have been established in the past as a deliberate government policy to support SMEs growth by providing credit. These include The Nigerian Bank for Commerce and Industry (NBCI), The Nigerian Industrial Development Bank (NIDB), Bank of Industry and Bank of Agriculture. The Bank of Industry and Bank of Agriculture are few of specialized lending institutions remaining in existence in Nigeria at present.

2. Literature review

Small and medium-sized enterprises (SMEs) are one of the major contributors to global economic growth and job creation. They are seen as the backbone of economic development for both developed and developing countries (Abor, 2007). SMEs constitute about 90% of all businesses in the European Union communities (European Union, 2003). Similarly, in developing countries, due to the lack of large firms, small and medium-sized enterprises (SMEs) have become the main engine for the needed economic growth and development (Floyd and McManus, 2005). Small and medium-sized enterprises (SMEs) in having no standard definition have been defined differently by various individuals and organizations, such that an enterprise that is considered small and medium in one country is viewed differently in another country. Some common indicators of small and medium-sized enterprises (SMEs) employed in the various definitions of SMEs include size of total assets, size of the labour force employed, size of annual turnover and size of capital investments.

Empirical literature on small and medium-sized enterprises (SMEs) access to credit and economic growth highlights that SME credit may be viewed as an input in the production process that yields economic growth consistent with a Neoclassical economic growth model. This argument is consistent with existing studies, highlighting a boost to economic growth as a result of financial development (See, King and Levine, 1992; King and Levine, 1993; Demirguc-kunt and Levine, 1999; Odedokun, 1996). Financial development will reduce the cost of access to credit especially for SMEs which at present are argued by a significant amount of finance literature to be credit-constrained. This highlights the long standing argument of Schumpeter (1961) that finance, in other words credit, was important for economic growth as credit drives investment. Therefore as small and medium-sized enterprises (SMEs) access credit and this credit is invested profitably, SMEs will experience a boost to their growth and the domestic economy will consequently experience a boost in its economic growth.

From the considerable amount of literature in existence on SMEs and economic growth, most studies focus on developing countries. Further, based on the literature, two strands of literature may be observed, one exploring the impact on small and medium enterprises (SMEs) access to credit on SMEs, and the other exploring the impact of SME access to credit on economic growth.

In relation to studies exploring the impact of small and medium enterprises (SMEs) access to credit on small and medium enterprises, Ayuba, and Zubairu (2015) analyze the impact of banking sector credit on the growth of small and medium enterprises (SME's) in Nigeria for the period of 1985 to 2010 using descriptive statistics. The study reveals that banking sector credit has significant impact on the growth of small and medium enterprises in Nigeria as it has positive impact on some major macro-economic variables of growth such as inflation, exchange rate, trade debts and so on. The study therefore recommends that financial lending institutions should relax the stringent conditions associated with credit facility in the funding of SMEs in Nigeria so as to encourage easy accessibility of loans which will help in improving SMEs financing and growth. Further, Uzonwanne (2015) analyses deposit money banks and financing of small and medium scale enterprises in Nigeria over the period of 1995 to 2012. The paper analyzes data in pursuit of its objectives using descriptive statistics and finds from the analysis that deposit money banks in Nigeria have been lacking in the financing of small and medium enterprises activities. On the basis of the findings, the study

recommended deposit money bank stability and sustainability such that the monetary authority should initiate policies that would redirect the channel of deposit money banks' credits so as to meet the borrowing needs of at least 65% of the medium and small scale enterprises in the economy. This it is argued will help to boost economic activities within the country because lack of capital retards investment.

The lack of access of small and medium enterprises (SMEs) to credit in countries of the world may be attributed to financing constraints. This is highlighted by Beck (2007) who surveys empirical research on SMEs financing constraints. The financing constraints faced by small and medium enterprises are argued to be more than those faced by large enterprises. Thus as highlighted by Beck and Demirguc-kunt (2006) SMEs face greater constraint and have less access to formal source of external finance, potentially explaining the lack of SMEs contribution to growth. Beck (2007) further highlights that obstructing SME access to finance are institutional obstacles whereby financial institutions and markets on account of difficulties in managing risk and transaction costs involved in SME lending are reluctant to reach out to SMEs especially in developing countries. Therefore government must play an active role in pursuing different policies and reforms that will encourage financial institutions and markets to lend to SMEs. This is so as Beck et al (2003) in investigating financial, legal and corruption problems facing SMEs in their access to credit using a survey covering 54 countries find that while small firms are constrained in their credit access, improvements in financial and institutional development weakens the constraining effects of financial, legal and corruption obstacles and it is the small firms that stand to benefit the most. SMEs in Africa are particularly more constrained than SMEs in other developing regions as highlighted by Beck and Cull (2014) who find evidence that enterprises in the regions are less likely to have a loan than in other developing regions of the world. Further, Terungwa (2012) highlights that poor risk management of SMEs constitutes a barrier to their access to formal sources of finance and hence they resort to significant informal source of finance. This could hinder the positive contribution of SMEs to economic growth and development and hence the need exists to sensitize registered SMEs regarding the benefits of good risk management and insurance of various businesses and agree on credit schemes that will incorporate a risk-sharing arrangement as a way of encouraging banks to channel funds to SMEs sectors. Thus this suggests that challenges experienced by SMEs in Africa in their access to credit must of a necessity be addressed if the SMEs are to grow and make a significant contribution to growth and development in African countries. However, the management skills including education levels in SMEs have an important role to play also in SME access to finance as highlighted by Zarook et al. (2013), who find in Libya in a survey of 600 SMEs in various regions that management experiences and education levels have significant positive effect on access to finance. Such management skills and education levels may aid to reduce the perceived riskiness of SMEs by lenders who aim to avoid the credit market risk of adverse selection.

Small and medium enterprises in having increased access to credit will be able to contribute to employment and wealth creation (Ayyagari et al., 2003) as well as industrial performance (Tawose. 2012). Thus employment, wealth creation and industrial performance are channels through which credit to small and medium enterprises may contribute to economic growth. Evidence further in support of the contribution of credit to SMEs to economic growth is provided by Beck et al (2005) who highlight a strong positive relationship between the relative size of the SMEs sector, economic growth, and poverty alleviation in a panel data sample of 45 countries. Further in Nigeria, Onakoya et al (2013) using a quarterly time series data from 1992 to 2009

on Real GDP, Loans to SMEs, and interest rate find from their estimated model, with Real GDP as the dependent variable, that loans to small scale entrepreneurs have a positive impact on economic performance of Nigeria. The study therefore concludes that the greatest or worst problem confronting SMEs in Nigeria is managerial capacity. Access to capital or finance while necessary for successful entrepreneurial development, is not a sufficient condition for successful entrepreneurial development.

Iloh and Chioke (2015) examine the relationship between commercial bank credit indicators and availability of credit facility to small and medium scale enterprises in Nigeria. Data were collated from the Central Bank of Nigeria (CBN) Statistical Bulletin for the period of 1980 to 2010 and data was tested for stationarity using Augmented Dickey-Fuller (ADF) unit-root test. Generalized least squares estimation method was used to estimate the model employed in the study in testing the stated hypothesis. The result of data analysis showed that commercial banks' credit to SMEs in Nigeria have significant effect on Nigeria economic growth by positively affecting gross domestic product. The finding further implied that SMEs financing is a great catalyst and a driving force for economic growth in Nigeria. Therefore, it is recommended that soft and short term loans should be made available to SMEs for business enhancement.

The loans to SMEs in Nigeria in the past are argued by Afolabi (2013) to have contributed to boosting Nigeria economic growth over the period of 1980 to 2010. Afolabi (2013) use Ordinary least squares to estimate the effect of commercial banks' credit to SMEs in addition to SMEs output, exchange rate of the Naira to the U.S Dollar and lending rate, on economic growth as measure by natural logarithm of Real Gross Domestic Product (GDP). The study revealed that SMEs output and commercial banks' credit to SMEs yield positive and significant impact on economic growth. However, it was recommended that government should implement policies that guide SMEs in accessing financial assistance from banks and other institutions.

Further, Oyeniran et al. (2010) find in Nigeria from 1981 to 2013 that investment in SMEs has a significant positive impact on economic growth and therefore recommended that investment in SMEs should be encouraged and priority should be given to SMEs to access credit, building capacity and infrastructural development so as to promote long-run socio-economic development. The findings regarding the positive effect of SME credit on economic growth are further consistent with findings in other developing countries of the world as Zimbabwe (Brian and Shingirayi, 2014), Tanzania (Makorere, 2014), and Pakistan (Chughtai, 2014).

Thus in light of the aforementioned studies, through SME access to credit, SMEs may make a significant contribution to economic growth in countries of the world. Okafor et al. (2016) investigating the impact of small and medium-sized enterprises (SMEs) on the growth of the Nigeria economy for the period of 1986-2014 used Ordinary least squares in a multiple regression model framework. They find that small and medium enterprises in addition to Oil revenue, and Inflation rate, have a positive and significant impact on the growth of the Nigeria economy in the short run, while in the long run the result showed that SMEs has a positive but insignificant effect on Nigeria economic growth. It was suggested that government should adopt policies that will increase budgetary allocation to SMEs and granting credit scheme obtainable by agricultural sector and also low interest rate on credit to SMEs has the capacity to stimulate and derive economic growth in the long run. With a boost to economic growth, economic development may consequently be realized as Opafunso and

Adepoju (2014) examine the impact of small and medium enterprises on economic development of Ekiti state in Nigeria using survey data over the period of 2006-2013 and using descriptive statistics and chi-square for their analysis. The study found that there is a positive and significant relationship that exists between small and medium enterprises and poverty reduction, employment level and improvement in the level of standard of living of the people of Ekiti state. Therefore Opafunso and Adepoju (2014) conclude that reduction in interest rate on loan given by banks will boost the performance of small and medium enterprises in Ekiti state and Nigeria at large. However the extent to which small and medium enterprises may contribute to country economic growth and development may critically depend on the extent to which Small and Medium Enterprise activities contribute to economic growth and development and the channel through which Small and Medium enterprises are able to make a valued contribution to the domestic economy. This may consequently explain the contrast in finding by Chinweuba and Sunday (2015) that SMEs do not make any significant contribution to Nigerian economic growth, although evidence is found of co-integration between SME and economic growth over the period of 1993-2011. Further, Uremadu et al. (2014) in analyzing banking system credit to small and medium scale enterprises (SMEs) and economic growth in Nigeria using co-integration Approach for the period of 1981 to 2013 find that while banking system credit to SMEs 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 which could explain the insignificant effect of Banking system credit to SMEs in contributing meaningfully to economic growth in Nigeria. It was recommended that the Nigeria government should intervene in more meaningful ways through articulated policies and programs that will promote funding of SMEs and reduce the level of lending rate to one digit in the economy.

3. Research methodology

Data for the present study, secondary data, were obtained from the Central Bank of Nigeria statistical Bulletin (2015) and annual report. Data employed in the analysis covered the period of 1992 to 2015 on account of data availability regarding SME credit given by Deposit money banks in Nigeria. Two models were employed in performing data analysis, in testing the formulated hypotheses of the present study.

The first model employed in testing the first hypothesis of the existence of a relationship as well as the strength of the relationship between deposit money bank credit to SMEs in Nigeria and socio-economic performance indicators of poverty and unemployment in Nigeria, employs Pearson's correlation. Pearson's correlation involves computing the coefficient of correlation, r , between SME credit (SMECREDIT) and poverty (POV) as in equation (1) below,

$$r = \frac{\sum[(SMECREDIT_t)(POV_t)]}{\sqrt{[\sum SMECREDIT_t^2][\sum POV_t^2]}} \quad (1)$$

where: SMECREDIT = SME credit as a percentage of private sector credit given by deposit money banks in Nigeria. POV = Poverty rate in Nigeria

Further the coefficient of correlation between SME credit (SMECREDIT) and unemployment (UNEMPT) was computed as in equation (2) below.

$$r = \frac{\sum[(SMECREDIT_t)(UNEMPT_t)]}{\sqrt{[\sum SMECREDIT_t^2][\sum UNEMPT_t^2]}} \quad (2)$$

where: SMECREDIT = SME credit as a percentage of private sector credit given by deposit money banks in Nigeria. UNEMPT = Unemployment rate in Nigeria, by definition $r = -1 \leq r \leq 1$. Further, a statistically significant r at the 1% or 5% levels of significance is indication of the significance of the strength of association between SMECREDIT and poverty (equation (1)) or between SMECREDIT and unemployment (equation (2)) as reported by the Pearson's correlation coefficient.

The second model employed in testing the second hypothesis of the present study where in we examine the impact of SME credit on the economic growth of Nigeria is built on the theoretical framework of the neoclassical economic growth model. The neoclassical economic growth model argues economic growth to be caused by capital, labour and technical progress. The model is one of exogenous growth as it argues technical progress as exogenous that is determined outside the model. The standard neoclassical growth model is developed by Solow (1957) in which output is expressed as a function of capital, labour and technical progress as below:

$$Y = f(K_t, L_t, A_t) \quad (3)$$

where Y is output, K is capital, and A is technical efficiency.

In building our model based on the neoclassical growth model above, SME credit as a percentage of private sector credit given by deposit money banks in Nigeria is modelled as an input to the production process of economic output resulting in economic growth. Such an argument is consistent with studies exploring the contribution of credit to economic growth such as Odedokun (1996). therefore we can think of economic growth being caused by labour, capital, credit to SMEs and other factors.

The study specifies the model in equation (4), which is a modification of the model of Afolabi (2013). Afolabi (2013) species economic growth as a function of SME output, bank credit to SMEs and a set of control variable namely exchange rate and Lending rate, however the present study replaces bank credit in the model of Afolabi (2013) with Nigeria Commercial bank credit to Small scale Enterprises as a percentage of total Nigeria commercial bank private sector credit, replaces exchange rate with trade openness and replaces lending rate with capital, while SME output is dropped from the model of Afolabi (2013) and inflation rate is included as an additional explanatory variable in the specified model. However GDP as in Afolabi (2013) is retained as the dependent variable in the specified model. Our specified model follows a standard growth regression form expressed as:

$$\text{LOG } Y_t = \alpha_0 + \alpha_1 \text{SMECREDIT}_t + \alpha_2 \text{TOPEN}_t + \alpha_3 \text{INFR}_t + \alpha_4 \text{Log Cap}_t + \mu_t \quad (4)$$

where: Y = Gross Domestic Product; SMECREDIT = SME credit as a percentage of private sector credit given by deposit money banks in Nigeria; TOPEN = Trade Openness; INFR = Inflation Rate; CAP = Capital; α_0 = intercept or constant; $\alpha_1 \dots \alpha_4$ = coefficients of explanatory variables; μ = Error term. The subscripts t refers to the time period of observations which in the case of the present study is 1992 to 2015.

Note that the coefficients of explanatory variables in the above model measure the marginal effect of changes in explanatory variables on economic growth as measured by Log of GDP. Further note that the

variables Trade openness, inflation rate and capital included in our above specified model are control variables which are included in the model on the consideration that they are among the proximate determinants of output in any economy.

3.1. Research hypotheses

The hypotheses for the present study are specified in null form below:

Hypothesis 1: H_0 : SME credit does not have a strong positive relationship with poverty and unemployment in Nigeria respectively

Hypothesis 2: H_0 : SME credit has a negative impact on the economic growth of Nigeria

3.2. Model estimation

While Pearson's correlation was employed in examining the existence of a relationship as well as the strength of the relationship between SME credit given by deposit Money Banks and socio-economic performance indicators of poverty and unemployment in Nigeria. Ordinary least squares regression was employed in estimating the impact of SME credit on the economic growth of Nigeria based on the model specified in equation (4) above.

4. Results and discussion

The results of empirical analysis of data are as presented in the present section.

4.1. Data descriptive statistics

All variables employed in the present study as well as their respective descriptive statistics are presented in Table 1 below.

Table 1. Summary Variable Descriptive Statistics

Variables	GDP (In Billions of Credit Naira)	SME (%)	Trade Openness (In decimals)	Inflation Rate (%)	Capital (In Billions of Naira)	Poverty Rate (%)	Unemployment Rate (%)
Mean	29231.66	6.89	0.372	19.68	2576.22	65.57	13.46
Median	15311.43	4.91	0.375	12.42	833.75	69.65	13.25
Maximum	94144.96	27.04	0.589	73.10	14112.17	88.00	25.70
Minimum	909.80	0.10	0.209	5.42	70.80	42.70	1.90
Observations	24	24	24	24	24	24	24

The above table highlights low values on average of GDP, SME credit, and Capital over the period of 1992 to 2015, while high values on average are observed with respect to Trade Openness, Inflation rate, Poverty rate and Unemployment rate.

4.2. Pearson's correlation results

The results of Pearson's correlation in examining the existence of a relationship as well as the strength of the relationship between Deposit money bank credit to SMEs and socio-economic performance indicators of poverty and unemployment in Nigeria, are as presented in Table 2.

Table 2. Pearson's Correlation of SME Credit, Poverty Rate and Unemployment Rate in Nigeria

Variables		SME Credit	Poverty Rate	Unemployment Rate
SME Credit	Pearson Correlation	1	-0.232	-0.824***
	Sig. (2-tailed)		0.275	0.000
	N	24	24	24
POVERTY	Pearson Correlation	-0.232	1	0.370
	Sig. (2-tailed)	0.275		0.075
	N	24	24	24
Unemployment Rate	Pearson Correlation	-0.824***	0.370	1
	Sig. (2-tailed)	0.000	0.075	
	N	24	24	24

*** Correlation is significant at the 0.01 level (2-tailed)

From Table 2 above, it is observed that, Pearson's correlation between SME credit as a percentage of private sector credit given by deposit money banks in Nigeria (SME Credit) and poverty rate shows a negative but insignificant correlation of -0.232 which is reflective of an insignificant weak negative correlation between SME credit and Poverty in Nigeria. The negative correlation suggests that increased deposit money bank credit to SMEs in Nigeria is associated with a reduction in poverty, and consequently where such SMEs are starved of credit, a rise in poverty is evident.

With regards to the relationship between SME credit as a percentage of private sector credit given by deposit Money Banks in Nigeria (SME Credit) and unemployment rate, the Pearson's correlation from Table 2 indicates a highly significant and strong negative correlation of 0.824, which is reflective of a significant strong negative correlation between SME credit and unemployment rate in Nigeria. The negative correlation suggests that increased deposit money bank credit to SMEs in Nigeria is associated with a reduction in unemployment, and consequently where such SMEs are starved of credit, a rise in unemployment is evident. The strong significance of the correlation indicates the high level of importance of the observed association between SME credit and unemployment.

Therefore on the basis of the evidence as provided from Table 2 above, SME credit as a percentage of private sector credit given by deposit money banks in Nigeria (SME Credit) has a negative association with both poverty rate and unemployment rate in Nigeria, however the relationship between deposit money bank credit to SMEs in Nigeria and unemployment rate is statistically significant and much stronger than the relationship between deposit money bank credit to SMEs in Nigeria and poverty rate.

4.3. Ordinary least squares model estimation results

The results of ordinary least squares regression in testing the second hypothesis of the present study are presented in Table 3 below.

Table 3. Summarized Ordinary Least Squares Regression Results

Dependent Variable	Log GDP
Constant	5.605*** (0.470)
SMECREDIT	-0.0675*** (0.0110)
TOPEN	1.158*** (0.431)
INFR	-0.00254 (0.00257)
Log Cap	0.593 (0.0492)
R-Squared	0.9887
Adjusted R-Squared	0.9864
Durbin-Watson	2.277
F-Statistic	418.519***
No. of Observations	24

*** , *** represents significance at 5% and 1% levels of significance*

The above table highlights that the estimated model has a R-squared of 0.9887, adjusted R-squared of 0.9864, Durbin Watson Statistic of 2.277 and highly statistically significant F-statistic of 418.59, all validating the estimated model and consequently the validity of the use of the results for drawing inference.

From Table 3 above, SME credit as a percentage of private sector credit given by deposit money banks in Nigeria (SME Credit) has a negative and statistically significant coefficient of -0.0675. The coefficient being highly significant given its 1% level of statistical significance gives credence to the high importance of credit to SMEs in Nigeria for Nigeria's economic growth. The coefficient of SMECREDIT interpreted means that a one unit increase in deposit money bank credit to SMEs as a percentage of total bank credit to the private sector in Nigeria will decrease economic growth of Nigeria by 0.0675%. This suggests that credit to the SMEs in Nigeria's private sector by deposit money banks in Nigeria have been resulting in a decline in Nigeria's economic growth and therefore has resulted in adverse consequences for the Nigeria economy. This may be attributed to the riskiness of SMEs in Nigeria as they face high costs of operation and are unable to compete favourably with large firm which may also be well established, in the Nigeria market amongst a variety of other risks of SME

operations. Thus, deposit money banks in Nigeria in granting credit to SMEs due to poor monitoring of the use of the loans by the SMEs, the SMEs use credit unprofitably and consequently, Nigeria's economic growth has suffered a decline. SMEs in Nigeria riskiness and hence their poor use of loans obtained from deposit money banks in Nigeria, may however not be un-associated with the SMEs characteristic poor risk management. This is given support by Terungwa (2012), who argues that poor risk management of SMEs constitutes a barrier to their access to formal sources of finance and hence they resort to significant informal source of finance which could hinder the positive contribution of SMEs to economic growth and development.

Our finding that deposit money bank credit to SMEs in Nigeria adversely affects Nigeria's economic growth significantly goes against the popular finding in Nigeria (See Onakoya et al., 2013; Iloh and Chioke, 2015; Afolabi, 2013; Edet et al., 2014), and other parts of the world (Brian and Shingirayi, 2014; Makorere, 2014; Chughtai, 2014), that deposit money bank or commercial bank credit to SMEs contributes to economic growth. Further our findings contrast to those studies arguing that SME credit by the Nigeria bank system does not significantly contribute to Nigeria's economic growth (Uremadu et al., 2014; Chinweuba and Sunday, 2015; Olufunso and Adepoju, 2014). The contrasting findings of the present study with existing studies may highlight the importance of measuring deposit money bank credit to SMEs using deposit money bank credit to SMEs as a percentage of total bank credit to the private sector as done in the present study, rather than employing SME credit as an absolute value as performed by virtually all of the existing studies, which is the strength of the present study

Other findings from our model estimation results include that of positive and significant impact of trade openness on economic growth, while the coefficients of inflation and capital are insignificant for Nigeria's economic growth over the period of 1992 to 2015.

5. Recommendations and conclusion

On the basis of the findings of the present study, a number of recommendations are made. Firstly, the Nigerian government should support SMEs with necessary training in risk management so as to increase SME capability to effectively manage the risk of their operations. Secondly, In line with arguments by Terungwa (2012), registered SMEs in Nigeria should be sensitized regarding the benefits of good risk management and insurance of various businesses and agree on credit scheme that will incorporate a risk-sharing arrangement as a way of encouraging banks to channel funds to SMEs sectors. Thirdly, the Nigeria government should increase provision of infrastructural facilities such as electricity, good roads, effective transport, market for locally produce goods, and training and awareness programs in order to reduce the operating costs of SMEs and by so doing Nigeria SME risks of operations will be reduced and enable SMEs to contribute positively to Nigeria's economic growth. Fourthly, Nigeria deposit money banks should be equipped with necessary technology to effectively assess the creditworthiness of SMEs in applying for loans especially as regards to the use of credit scoring used in banks in developed countries to assess creditworthiness of SMEs. This is essential as SMEs by nature are unable to provide hard information in the form of financial statements in applying for loans from banks which affects their favourable assessment as credit customers. Fifth, Nigeria deposit money banks

should maintain tight monitoring of borrowers in their use of loans borrowed so as to reduce their risk of loss on account of loans borrowed being used for unprofitable uses by borrowers.

In conclusion the present study has examined how deposit money bank credit to SMEs in Nigeria has contributed to Nigeria's economic growth over the period of 1992 to 2015. The results of Pearson's correlation highlight a negative relationship between Deposit money bank credit to SMEs in Nigeria and Nigeria's level of unemployment, and SME credit by Deposit money banks in Nigeria and Nigeria's level of Poverty. The results of Ordinary Least Squares indicate a negative and significant impact of SME credit by Deposit money banks in Nigeria on Nigeria's economic growth, where SME credit was measured as a percentage of Deposit money bank private sector credit in contrast to the measurement of SME credit by existing studies. The results of Pearson's correlation and ordinary least squares regression are consistent with each other, and taken together suggest that if SMEs in Nigeria can use efficiently, credit obtained from deposit money banks in Nigeria, they will through creating jobs and so reducing poverty, contribute positively to Nigeria's economic growth. Thus, SMEs in Nigeria have a central role to play in boosting Nigeria's economic growth and enhancing their capacity to continue playing this their central role is deposit money bank credit to the SMEs. This is essential for a better Nigeria economic growth performance in the future. However SMEs in Nigeria must also develop the capability to effectively manage the risk of their operations in reducing their riskiness if Nigeria's economic growth is to receive a full boost resulting from increased access of SMEs to deposit money bank credit in Nigeria.

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