

Credit Flow versus Small and Medium Enterprises Growth: Do Banks Play Intermediating Role?

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Abstract

Nations of the world undoubtedly exploit small and medium enterprises (SMEs) as the hub of sustainable economic development because of the indispensable role of SMEs in job and wealth creation. In all these, banking institution is expected to midwife the SMEs growth process through financial intermediation role. It is against this backdrop that this study is motivated to investigate the role of banks and other intervening factors that affect credit flow to SMEs in Nigeria. In this study, quantitative research design anchored on ordinary least square techniques was adopted in our research methodology. Arising results from the estimated model reveal that though Nigerian banks contribute significantly to the growth of SMEs via enhanced credit flow; exchange rate, banking density and banking system development have negative significant influence on the flow of loan to SMEs sector in Nigeria. Again, prime lending rate as proxy for interest rate shows positive effect on the flow of loan to the sector. The implication of these findings is that despite the fact that banking sector development has improved the level of prime lending rate, yet the flow of credit to SMEs generally has not been positively impacted because banks exhibit reluctant behavior in their credit allocation to the SMEs sector. We therefore recommend that Nigerian government should adopt policy measure that will make cost of capital affordable and attractive to domestic investors. The establishment of more bank branches in the rural areas for easy access to credit is also the suggestion of this study.

Key words: Credit flows, Banking system, SMEs, Growth, Financial intermediation.

1.0 Introduction

Financial intermediation and mobilization of funds from the excess unit to the deficit unit of the economy through extension of credit to different economic agents have remained age-long fundamental roles of bank. These banking roles facilitate the transfer of purchasing power to investors including small and medium scale enterprises (SMEs). The important of SMEs in economic development though less researched rea, cannot be overemphasized. For instance, Neusser (1998) argues that nations of the world cannot achieve economic development without the growth of SME, because it is the hub of economic growth, which requires sustainable development, especially in terms of job and wealth creation. The success of bank lending and recovery process is anchored on “realizable collaterals” that are convertible to cash in the event of default. Nevertheless, this has been the root cause of small and medium scale enterprises deficiency in accessibility of finance from the financial institution worldwide (Neusser, 1998). Essentially, institutions of lending need to boost their capability in supplying banking services to small and medium enterprises through a marketable medium, which would reduce cost and minimize risk exposure (Levine, 2003). No doubt, banks have the function to select the most worthy borrowers for efficient management of scarce resources (Udechukwu, 2003).

However, more than twenty years after independence, the subjugation in the Nigerian banking system, has been vindicated in ceiling on cost of capital, credit expansion, discriminatory credit policies and restraint on entry into banking business. These situations inhibit function of the banking system, restrict its capacity to create and gather together savings, and ease the flow of credit to the sector and the whole economy (Okpukpara, 2010). For several years, Nigerian financial system has under gone various financial reforms aimed at addressing the challenges of financial sector by way of enhancing the flow of credit to SMEs sector and the entire economy. The capability of the banking system to stimulate economic growth and increase the flow of credit to small and medium enterprise depends largely on the level of banking development in the country (Kolawole, 2008). Absence of strong financial system has remained the barrier to the flow of credits to SMEs and the entire economy. The productive sectors of the economy are perhaps limited by poor access to credit market because the Nigeria financial system is still developing. In a well developed financial system for instance, there is a widespread access to credit facilities and it is relatively cheap and easy for small and medium enterprises to access credit with which to set up a business or expand the existing ones (Nzotta, 2004).

The Nigerian SMEs seem to be characterized with a couple of limiting factors. Instances abound; first, majority of Nigerian banks are urban-base due to the level of financial development. As a result, there is poor bank branch network linking the rural areas where majority of SMEs are operating; hence, the SMEs find it difficult

to have access to bank credit. Second, the number of banks in the country is grossly inadequate compared to her population, because of low banking density which hitherto hinders SMEs access to funds. Third, proximity of banks to business enterprises according to Peterson and Rajan (1994) encourages relationship lending between banks and SMEs to overcome the problem of asymmetric information. It mitigates the effect of collateral issues associated with bank credit, but this is not the case with in the Nigerian banking system. In lending relationship, financial institutions gather facts through frequent getting in touch with the SMEs owner, and in their local areas on a different level to utilize the facts in their assessment regarding the flow and conditions of loan to the enterprise. Investigation recently uphold for the value of financial institution relationship to the business enterprises, in both fund flow and credit condition such as price of loan and security requirements (Petersen and Rajan, 1994, 1995; Berger and Udell, 1995).

Additionally, the interest rate structure is yet another significant determinant of credit flow to SMEs and overall investment activities (Park, 2008). However, interest rate on bank loans in the country seem to be on the high side, coupled with the shortness of repayment period, high collateral security and inflationary pressure on bank loans, which have constrained the credit flow to small and medium enterprises (Olorunshola, 2003). Meanwhile, in recognition of these constraints and the importance of small and medium scale enterprises, Central Bank of Nigeria (CBN) is empowered to improve the flow of credit to the sector of the country. The understanding has been fruitful over the years in the bank policies. These includes Small and Medium Industry Equity Investment Scheme, Bank of Industry, Small and Medium Credit Guarantee Scheme (SMCGS), Refinancing and Rediscounting Facilities (RRF) and also the reforms in the banking sector such as bank recapitalization, consolidation, among others. All these policies were aimed at strengthening and repositioning financial institutions to effectively and efficiently discharge their intermediary roles (Nmachi, 2010).

However, the policy reforms and initiatives of government over the years show that the SMEs sectors are still having limited access to bank credits to grow their business. It is against this background that this study is motivated to evaluate these critical factors that affect credit flows to SMEs in Nigeria.

2.0 Review of Related Literature

2.1 Conceptual Review

Various authors and policy makers who have made attempt to define SMEs have no common point at which a business venture could be termed as SMEs. Therefore, accordingly, there is no generally acceptable definition of SMEs. The justification of SMEs at any point is to meet a specific purpose at the prevailing circumstances in that period. For instance, in developing countries, irrespective of the fact that small business ventures are innumerable and complex to count, it ought to be a standard measurement of defining of SMEs. Some measures often applied to the conceptualization of SMEs are the capital of the business, quantity of sales and number of employees. Hence, definitions of SME vary among countries, which arise because of variation in the manufacturing establishment at various point of financial advancement in the region. For instance, an enterprise that is expressed as a micro or medium in an efficiently and technologically developed country like Japan, Germany and the United States of America due to her level of capital strength and stylish expertise, can be categorized as intermediate or big in an emerging economy like Nigeria. The business enterprises or SMEs in Nigeria and world over are classified into sole proprietorship, partnership and private enterprises. These enterprises involve in the manufacturing and farm production such as fishery, poultry, bakery, and textile among others. Other areas of SMEs are the engineering section such as construction of roads and bridges, building technology; and other services as transport services and hotel business.

Again, definition of SMEs changes overtime, due to changes in the level of government policies, market power and level of capitalization, size of the enterprise, size of the work force, turnover and volume of local raw materials involved. It is, however, important to note that an effort to define small and medium enterprises (SMEs) is generally diverse and sometimes conflicting. Different organizations may possibly accept different explanation contingent on the guiding principle focus in that country. In 1991 for instance, the Nigerian Bank for Commerce and Industry (NBCI), officially defined small and medium enterprises as those with capital asset that do not exceed seven hundred and fifty thousand naira only (N750, 000), exclusive of the cost of land with operational funds.

The Central of Bank Nigeria (CBN, 1991) categorized SMEs as an economic sector in Nigeria and consequently defines it as any business venture with income of five million naira (N500,000,000). The National Council on Industry described SMEs as industrial setting with total operational cost no more than five hundred thousand or fifty thousand US dollar (N500, 000) and excluding cost of land. Whereas Small scale are assumed to be a business with total investment cost with running capital not beyond five million naira (N5000,000) but exclusive of cost of land. And Medium scale is a business arrangement whose funds investment exclusive of cost of land which does not surpass two hundred million naira (N200,000,000) but together with operational

capital. Large scale business on the other hand is a business which total plan cost without cost of land but with operational capital above two hundred million naira (N200,000,000) only. Aluko (2002), described SMEs as those venture that employed up to fifty workers not including domestic activities. He further explained that Small businesses are sole proprietorship or individually owned and operates with a small number of employees with comparatively low volume of sales. He added that Small-scale businesses are normally owned as corporation or partnership. Kadiri (2012) established that SMEs serves as a medium for job creation, national development, poverty reduction and economic growth. SMEs globally, are the key employers of work forces as compared to the major industries including the cosmopolitans.

In early 1990s in Nigeria, diverse institutions in the economy accepted different definition on SMEs sector. These various institutions of government such as the Research Centre for Industrial Development (RCID), the Nigerian Bank for Commerce and Industry (NBCI), and the National Council on Industry (NCI) restructured the business ventures to bring in standardization and hence to be reviewed every four years. According to Mike *et al.*, (2012), this definition as revised at a meeting held at Markudi Benue State during the 13th National Council on Industry in 2001. The recent small and medium enterprises definitions accepted in the meeting were:

**Small/Cottage Industry:* A business enterprise with a sum of funds used not more than one and a half million naira (₦1,500,000) including capital outlay but excluding cost of land and workforce of not greater than 10 employees.

**Small Scale Industry:* A business with amount of over one million, five hundred thousand naira only (₦1.5) but not greater than fifty million naira (₦50, 000,000), including capital investment but excluding cost of land and a workforce ranging from 11 to 35 employees.

**Medium Scale Industry:* A business which employed over fifty million naira only, (₦50, 000,000) and not more than two hundred million naira only (₦200, 000,000), including operational funds with cost of land and workforce ranging from 101 to 300 employees.

**Large Scale Industry:* A manufacturing setting with a total running capital of over two hundred million naira only (₦200,000,000) working capital, and exclusive of cost of land and work forces of over 300 staff (Mike and Lawal, 2012). Therefore, because of inconsistent and the existing circumstances such as changes in government policies and other factors, it is not easy to sum up SMEs explanation in one short statement.

However there are many number of small medium enterprises spread all over the country ranging from artisan, in the form of craftsmen, construction technology, manufacturing and production, farming / farm production, fashion and designers, whole sales shops and retail of goods and services. The SMEs can be summarized as sole proprietorship, partnership and legal entity or corporate organization. However, 85% of SMEs operate in Nigeria under the first two of the above. Hence, SME have the following features as; low initial capital, easy entry and exit, high content of local input for production, high potential for employment opportunity, owners' commitment is mostly required among other.

2.2 Bank Market Competition and credit flow

Banking deregulation in Nigeria increased banking completion and allowed the new entry of more banks in the industry. It made the banking system more competitive and perhaps productive. As matter of fact, banks began contending with each other both in the interest rates and lobby depositors and borrower. Peterson and Rajan (1995) have conceded the attributes that militated against macro-business financing rivalry. Which is modeled "relationship effect" this boosts bank-market power that is less competitive and enhances its capability to build lending affiliation with small firm owners.

Theoretically, lower interest rates are imperative as it reduces moral hazard associated with the higher rates of interest. Higher bank-market rivalry brings about higher credit accessibility and it reduces high charges of interest rate by monopolistic banks. Consequently, a market devoid of asymmetric information, negotiator has ideal facts on the quality of products deal. Although, there is a less credit accessibility in the market power effects, because of higher price for loan. For banks to invest in the acquisition of soft information, there is the need to establish a close tie with borrowers over-time; since higher bank market application may amplify incentives and would ease the accessibility of credit in existence of asymmetric information. This also revealed that building close relationship with institutional creditors are essential for small enterprises and appears to work greater in the course of quality rather than price.

However, pro-bank concentration theory disagrees that economies of scale compel banks merger and acquisition, such that rising bank competition improves bank competence (Demirguc-Kunt and Levine, 2000). Boyd and Runkle (1993) reviewed 122 US bank holding companies and the result showed a contrary relationship between bank-size and the instability on investments return. However, these outcomes anchored on voluntary consolidation are unlike the just completed bank consolidation exercise in Nigeria. Though, some hypothetical opinion and country assessments recommend that a less banking density with many small banks are more prone to banking failure and hence reduces the flow of funds to the productive sector than the intense banking sector with a small number of bigger banks (Demirgüç-Kunt and Levine, 2000). This is partly, for the reason that less market banking density outcomes showed an improved rivalry amongst banks. Promoter of the “bank concentration theory” contends that superior banks can better expand its selection so that banking scheme with a small number of huge banks will be inclined to reduce amount of fragility in credit allocation than financial systems with many small financial institutions (Allen and Gale, 2003). A highly spirited financial system may perhaps boost returns; hence reduce instability in the bank. Higher profit offers a defense against unfavorable shocks and enhances the authorization worth of the bank, sinking inducement for bankers to take unnecessary peril. Moreover, the control of banks will be greater effective and the risk of corruption is less in a clustered banking system because a small number of bigger banks are easy to supervise than numerous small banks (Beck, Demirguc-Kunt, and Levine, 2003).

2.3 Empirical Literature

Many studies have investigated the small and medium scale enterprise funding and growth. Their views are articulated in this empirical review as follows: Aliyu (2013) carried out a study to verify the “impact of credit flow to the private sector (ICFPS) on the real sector of Nigeria with a view to appraise the significant input of ICFPS to real sector development in Nigeria” from 1986-2010. The study used aggregate time series data with multiple regression analysis techniques. Based on the coefficient of determination R^2 that reveals 96.1% variation between the ICFPS and real sector development in Nigeria. Aliyu established that there is a positive significant effect of funds flow to the private sector on the real sector of Nigeria. He suggests that the growth of the real sector is deeply controlled by flow of funds to the private sector. He proposed that the Nigerian government should increase the funding of the real sector as to enhance flow of funds through the financial sector development because of its strategic importance in creating and stimulating development in the country.

Additionally, Akingunola (2011) assessed on the “specific financing options available to SMEs in Nigeria and contribution with economic growth via investment level” from 1986-2010. The result arising from the study shows some level of significant; implying that there is significant positive relationship between SMEs funding and economic growth in Nigeria via investment level. He recommends that access to relative low interest rate funds should be obtainable to small and medium scale enterprises in the economy to boost economic growth. Also Philip (1987), in his empirical study discovered that there is a positive significant relationship existing between bank loans and SMEs development in Nigeria. Further, Oluseye (2013) who investigated the “effect of SMEs financing on economic growth in Nigeria” reveals that deposit money bank loans to SMEs, interest rate and exchange rate of naira to U.S dollar demonstrated positive and significant impact on economic growth. Dickey and David (2001) studied “impact of commercial bank loan on the growth of SMEs in both developing and developed countries” from 1986-2003. OLS method used in the study shows that small and medium enterprises as long as a nation can circumvent financial crisis, financial institutions loan create a drastic development so long as the policy makers who try to take advantage of the bank loan without adequate precaution of the monetary policies guideline in place do not exploit pre-relationship.

In a related study, Kolawole (2008) investigated “how financial liberalization reform has improved access to external finance for Small and Medium Scale Enterprises (SMEs) in Nigeria” from 1980-2004. In study, Kolawole (2008) employed new coding rule and principal component analysis (PCA) correlation as an instrument to estimate the financial liberalization constituents with the ratio of SMEs credit to GDP, to establish the degree of flow of credit to SMEs during the pre liberalization and after liberalization period. Findings of the result proved that the flow of credit to small and medium scale enterprise is mixed. The contribution of the first section are negative, subsequent by positive contribution of the next three constituents, after exhibited positive and negative fluctuation in the residual components. An econometric analysis of the outcome in relation to the ratio of SMEs to GDP is that the contributions of credit performance to the major components have been relatively unsteady.

Again, Adolphus (2011) studied “modeling Bank Management, Rural Lending and Small Business Finance in Nigeria” from 1992-2007. While using regression analysis, he concluded that the surplus funds in the banking sector have not improved the funding of SMEs in Nigeria; adding that the regulatory position, which moderates the cash reserve ratio and the loan to deposit ratio has not really supported SMEs. In fact according to him, bank

management has preferential to bigger firms for the reason of their sizes and relative low risk class. He recommends that economic policy should therefore aim critically on bank management variables to ensure compliance with prudent values and a balanced collective portfolios connecting big and macro-scale businesses. The re-establishment of the mandatory credit allotment system could assist in enhancing small and medium enterprises credit. Still, professional lending relationship should be guarantee to moderate moral hazard problem, while Park (2008) in a related study established that bank competition or concentration reduces the line of loan limits of firms drastically. More so, Kehinde (2012) studied the “effect of pre-post bank consolidation on the accessibility of finance to SMEs in Nigeria” from 1992-2008. This study applied Ordinary Least Square in its methodology. He established that confidence to virile and a strong SMEs sector was aborted by reform.

In addition, Dogo (2008) examined the effect of bank loan on the growth of SMEs in Nigeria for post financial reforms era. The study utilized OLS method of analysis and two stage least square regression model. It finds a significant relationship between bank loan and the growth of SMEs. Along the same line of argument, Imoughale and Ismaila (2012) who examined the “impact of commercial bank credit on the growth of SMSEs in Nigeria” revealed that 1) the SME’s output positively influenced by exchange rate in the economy, 2) bank density has direct but insignificant effect on SME’s output while rate of interest has insignificant impact on SME’s output in Nigeria. They recommend that government should encourage the establishment of bank branches in the rural area to enhance the accessibility of credit to SME by bringing banks closer to the rural populace. While investigating the impact of commercial bank credit accessibility and sectoral performances in Nigeria, Ismaila (2013) argued that commercial bank credit flow has long-run relationship with the sectoral performance output in Nigeria. Hence, he recommends that banks should be encouraged to lend to SME. In the same way, Udell (2005) studied “bank market power and SMEs financing constraints in Nigeria”. He also finds mixed results that firms assessment to credit depend on bank market structure. And Henry (2011), who studied the “influence of banking development indicators, agriculture sector and manufacturing industry sector on economic growth in Indonesia” discovered that financial development, agriculture sector and manufacturing industry controls the economic growth even though the proportion of their contributions are relatively small.

Essentially, Oke and Aluko (2012) investigated the “impact of commercial banks in financing SMEs in Nigeria” from 2002 - 2012. A sample of ten (10) commercial banks drawn from the study of individual bank data and macroeconomic time series annual data were collected. Using panel regression analysis; the results revealed that commercial bank has significant impact on SMEs’ financing as deduced from the results of constant effect. Fixed effect and random effect models also show that financial institutions ratio of funds to SMEs and total funds in the country and equity of commercial banks, explain a substantial proportion of changes that arise in SMEs’ financing in Nigeria. The paper suggests that commercial banks are capable of making SMEs grow; and Dada (2014) who engage in the same related study, also discovered that commercial bank credit to SME exert positive influence on SME development while exchange rate and interest rate exhibit adverse effect on the development of SME. He therefore recommends that government should encourage bank lending to SME by subsidizing interest rate. Davies (2008) and Asikhia (2009) in their separate studies have common opinion that relationship between financial institutions credit and the performance of SMEs exist in Nigeria.

2.4 Theoretical Review

The pecking order theory propounded by Myers in 1984 is adopted as the theoretical foundation of this present study. The theory stated that firms fund their need in a prioritize order using insiders’ generated funds first, seconded by way of debt and finally equity. That is, firms arranged their sources of funding from internal to external finance in relation to accessibility and opportunity cost for the business enterprise. According to Silva and Lawal (2007), the financing problem of SMEs is because the small firms often live under tight liquidity constraints; and fund whether internal or external, is needed to increase maximize returns. Basically, owners’ funding is always inadequate to undertake the necessary level of transactions for a gainful project. Thus the need for debt financing to seal the finance gap in spite of the agency problem envisaged in the imperfect market as signified by asymmetry information, which hinders financial institutions from getting a useful information on their customers financial positions and that restrict bank to allocate credit to SMEs. Thus it was found that when agency problems as information asymmetry and moral hazard disclosed in the market, it affects the availability of credit to SMEs, but eventually when SMEs had access to external funds and investment improved successfully, further assets are usually created, which can again be used as collateral for additional borrowing.

Accordingly, access to external credit is supposed to significantly impact on the accessibility of factors of production such as labour, land, capital equipments and machinery, which are subject to restraint of information asymmetric and higher cost of fund on credit to SMEs in the country (Levine,1997). However, rate of interest being the cost of obtaining loan is conversely related to the efficiency of the business in view of the fact that rising price will induce the manufacturers to incur higher cost of production. All things being the same,

increased cost and amount of factors of production and accessibility to a business could make greater production successful and efficient promotion approach to advance firm's growth and development (Obamuyi, 2007). Accessibility of credit improves purchase volume of manufactured goods no doubt. Hence, reduction in unit cost of goods is expected to cause an increase in sales because of economies scale. In view of the mentioned theoretical framework, the researchers have the view that accessibility of bank credit would result in an improved SMEs performance in job creation and wealth maximization. The core assumption of pecking order theory is that asymmetric information is the determinant of capital structure decision of SMEs.

3.0 Methodology

3.1 Research Design

This study adopts quantitative research design because of huge involvement of secondary data (time series). These data are actually out of the control or manipulation by the researchers. This research design approach is considered useful by the researchers since we relied completely on the time series data that spans from 1986 to 2012 for the quantitative econometric analysis. All the data used in the study were variously sourced from the World Bank and the Central Bank of Nigeria (CBN) bulletin of various years.

3.2 Description of Research Variables

The dependent variable of this study is the SMEs growth in Nigeria in relation to credit flow. Although the SMEs have been theoretical defined exclusively in the literature, the operational measure of the SMEs growth is concisely considered in this section. As such, SMEs growth as the dependent variable is measured in this study along the line of amount of loan that the sector is able to attract from the banking sector- hence the credit flow. Being that as it may, SMEs growth is defined operationally as the ratio of deposit money banks total loan to small and medium enterprise in Nigeria. Empirically, other scholars such as Adolphus (2011) and Oke and Aluko (2012) have used this measure in their previous studies. The measurement is also conventionally in line with banking services availability and accessibility by small scale business in relation to the principle of financial inclusion policy in the country. It indicates the ratio of loan allocated to small and medium enterprises. On the other hand, the exogenous variables also constitute the independent variables of study: They include:

-The banking sector development (BKDEV): The banking sector development is defined in this study as the ratio broad money supply M^2 and the gross domestic product of the country (i.e. M^2/GDP). This conventional measurement indicates the level banking development and its influence on general activities of the economy including the activities of SMEs in Nigeria. The broad money supply also contains some element of amount of credit supplied from the banking sector to SMEs as the banks' main functional role; because according to Eigchengreen and Luengnamomitchai (2006), banks domestically have the primary function of mobilizing funds and providing patience finance to business arising from their long standing relationship as borrowers and lenders.

-Banking density (BKDEN): Banking density points to quantity and quality of banking operating in a country. In this current study, banking density is operationally defined as the ratio of total population of the country to the total number of banks operating within the country. It ascertains the level of banking outreach in relation to the population of the people that requires and receives the services of the bank. It also justifies the banking core role of efficient service delivery to the people within the economy.

-Prime Lending Rate (PLR): This is among the variables chosen as controlled variables in the study. They are chosen because they constitute key macroeconomic factors that play perhaps essential role in SMEs growth in the volatile business environment like the Nigerian case. In this study, the prime lending rate is the proxy for interest rate. It is however, expected that interest rate perhaps drives the supply and demand for loanable funds in general and SMEs in particular.

-Exchange rate (EXCR): This is the second controlled for because of the fact that Nigeria depends on imported goods and services to a large extent. As such, presumably, most SMEs use imported materials in their business operations and activities. It is expected that they will have significant sign in the outcome. Apparently, the researchers expect by apriori that it will have negative sign with the growth SMEs in Nigeria.

-Inflation rate(INFR): For the purpose of obtaining valid estimated results, inflation rate was also controlled for; because it ranks high as macroeconomic factor that exert joint influence on banking functions and SMEs activities. Therefore, the exogenous variables that are applied in the model are altogether five including the controlled variables. However, because of the problem of degree of freedom, we did not border to add other variables in the study.

3.3 Research Model Specification

Aware of the fact that the purpose of this study is to determine the contributory role of banks in the growth of SMEs in Nigeria, a regressable model is estimated to achieve the objectives of the study. The study adopted a model earlier used by Ismaila (2013) and Udell (2005) with foremost modifications.

The model of the prior studies adopted specified the following variables: Total loan to deposit ratio(TLDR), rural loan to total deposit ratio (RLTDR), liquidity ratio (LR), cash reserve ratio of loans to small and medium enterprise (RLSMEs) in their research effort. They specified theirs thus: $RLSMEs = \beta_0 + \beta_1 IR + \beta_2 CRR + \beta_3 LTDR + Ut \dots(1)$

Where the variables are as explained above.

Meanwhile, along this line, our own model is specified thus:

$$RDMBL = \beta_0 + \beta_1 PLR + \beta_2 INFR + \beta_3 BKDEV + \beta_4 EXCR + \beta_5 BKDEN + Ut \dots (2)$$

Where:

RDMBL is Ratio of Deposit Money Banks’ Loan to SMEs, PLR is Prime Lending Rate, INFR is inflation, BKDEV is Banking Sector Development, EXCR is exchange rate, BKDEN is bank density, β_0 is constant, $\beta_1 - \beta_5$ the coefficient of the parameter to be estimated. *Ut* is the stochastic disturbance term.

However, for the avoidance of additive regression model that is akin to spurious results, the baseline model is further transformed. The model transformation is done by the application of natural logarithm into the model as thus:

$$\text{LogRDMBL} = \beta_0 + \beta_1 \text{logPLR} + \beta_2 \text{logINFR} + \beta_3 \text{logBKDEV} + \beta_4 \text{logEXCR} + \beta_5 \text{logBKDEN} + Ut \dots (3)$$

The OLS assumptions are strictly observed in the model for the purpose of validity and reliability of the outcome.

4.0 Empirical Results

Prior to the regression equation estimation, the required diagnostic test was carried out for the purpose of accomplishing some basic OLS assumptions. Among the diagnostic test done is the unit root test. It was conducted using the ADF techniques. The summary of the unit root test shows that all the variables were not stationary at 5% level. Meanwhile, recall that a variable is said to be stationary when it has no unit root, which is denoted in the text as I (0). A variable of non-stationary can have one or more unit roots and it is denoted by I (d). *d* is the figure of unit roots that the variable has and, by implication, the figure of unit roots that the variable must be differenced in order to make it stationary. Likewise, if a time series data has to be differenced second time (that is, taking the first difference of the first differences) to make it stationary, we describe it as a time series integrated of order 2; that is, 1(2). However, from the result of the unit root test conducted. No variable was integrated at level that is 1(0), but the first differencing of the variables revealed that the variables as RDMBL, prime lending rate (PLR), inflation rates (INFR) and banking density (BKDEN) were all unitary at first difference, as order one 1(1). Subsequently, the banking development (BKDEV) and exchange rate (EXCR) showed that they were unitary at next difference, as integrated order two 1(2). Table 1 below describes the result of the stationary unit root analysis achieved by using ADF approach.

Table 1: Summary of ADF Stationarity Root Test

Variables	1% Critical Value	5% Critical Value	10% Critical Value	ADF T-Statistic	Order
D(RDMBL)	-3.7497	-2.9969	-2.6381	-4.793854	1(1)
D(PLR)	-3.7497	-2.9969	-2.6381	-4.946989	1(1)
D(INFR)	-3.7497	-2.9969	-2.6381	-4.828089	1(1)
D(BKDEV)	-3.7497	-2.9969	-2.6381	-4.934723	1(2)
D(EXCR)	-3.7497	-2.9969	-2.6381	-5.131270	1(2)
D(BKDEN)	-3.7497	-2.9969	-2.6381	-4.329754	1(1)

Source: E-view Stat.

From the table 1 above, it is clear that all variables of interest were stationary or integrated of order 1(1) and order two 1(2), since economic theory suggests that all variables within a model take the highest order of integration. Having confirmed the stationarity status of these variables, we proceed to conduct a test to

determine the long run relationship amongst the variable. This gives credence to the conduct of co-integration test as reported in table 2.

Table 2: Johansen's co- integration Result for Model

Lags interval: 1 to 1				
	Likelihood	5 Percent	1 Percent	Hypothesized
Eigen value	Ratio	Critical Value	Critical Value	No. of CE(s)
0.890247	134.8617	94.15	103.18	None **
0.716340	81.83314	68.52	76.07	At most 1 **
0.655384	51.59369	47.21	54.46	At most 2 *
0.510026	26.02592	29.68	35.65	At most 3
0.308141	8.904231	15.41	20.04	At most 4
0.002634	0.063290	3.76	6.65	At most

Source; E-view Stat.

The unit root test earlier reported has confirmed that all variables are stationary after differencing them twice {i.e 1(2)}. The linear grouping of one or greater number of these variables might prove evidence of a long run relationship. To see the extent of long and short run relationship among the variables, the multivariate co-integration methodology was adopted as suggested by Johansen (1990), Johansen, and Juselius (1991). The highest eigen value and the trace test from this technique use to set up the number of co-integration vectors and the outcome shown in table 2. Both the results of the trace and maximum eigen value tests point out that, there is one co-integrating vectors at 5% level of significance. The finding reveals that there exist long run relationships among the variables in the model. See also appendix for more co-integration results.

5.0 Estimated equation result

The estimated equation results from the model specified in the study are presented in table 3.

Table 3: Regression Result

Dependent Variable: Log (RDMBL)				
Method: Least Squares				
Sample(adjusted): 1987 2012				
Included observations: 26 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.00006	11.95907	1.254283	0.2242
Log(PLR)	1.016462	0.267832	3.795150	0.0011
Log(INFR)	0.091783	0.072076	1.273421	0.2175
Log(BKDEV)	-0.123215	0.165066	-0.746459	0.4641
Log(EXCR)	-0.145267	0.023434	-6.198987	0.0000
Log(BKDEN)	-0.215135	0.147835	-1.455240	0.1611

Where : $R^2 = 0.858028$, $F(6, 26) = 24.17448$, $Adj.R^2 = 0.822534$, $DW = 1.543502$

From the estimated model, there is long run relationship among the variables examined. A bird eye view of the OLS result in Table 3, reveals that the $R^2 = 86$ percent, and is exceedingly considered very high. This entails that the R-square explained around 86% of the changes in the contribution of business enterprises growth in Nigeria. It is only 14% difference is taken care by new issues omitted in the model or U_{t1} term. However, it was found that all the variables included in the model; prime lending rate was the most statistical significant with t-statistic value of 3.795150. However, the banking development, exchange rate and banking density negatively influence the flow of loans to the economy as their t-statistics were, -0.746459, -6.198987, and- 1.455240 respectively. See the empirical result as contained in table 3. The above table is the description of the static regression analysis where endogenous variable (RDMBL) was regressed on the exogenous variables. The joint outcome of the independent variables was statistically significant at 5% level. D-W analysis of autocorrelation is 1.543502, which is approximately two (2), indicating that there is little or no positive autocorrelation among the variables.

Specifically, at 5% level of significance, prime lending rate has significant positive impact on fund flow to the SMEs sector. Meaning that banks' prime lending rate has contributed immensely to the flow of credits to SMEs in Nigeria. It however, justifies the intermediating roles and functions of Nigerian banks that engage in loan packaging and arrangement. This current finding is in line with the study of Oluseye (2013) and Kehinde (2012). Conversely, inflation rate, banking development, exchange rate and banking density exert negatively to

the flow of credits to SMEs in Nigeria. Though exchange rate is negative, it is rather statistically significant. Therefore, a unit rise in exchange rate reduces the flow of credits by a corresponding unit of 14%. This suggests that exchange rate volatility within the years under review has discouraged the flow of credits from banks to SMEs in Nigeria. In reality, it means that SMEs are not encouraged to borrow when the exchange rate is high. The findings are in line with the study of Godstime (2013).

Similarly, banking development is has negative sign. This suggests that the ratio between the M^2 and GDP has been broaden and consequently shown banks partial contribution towards the flow of credits from Nigerian banks to SMEs. Therefore, banking development (BKDEV) from our findings show that banking development has negatively affected the accessibility of funds in the country such a one percent increase in banking development reduces the credit flow to SMEs by 12%. This could be attributed to the failure of the financial reforms in the country to set up a strong modern banking system competent to act as a catalyst in the country and to allocate surplus savings to a good number of industrial sectors in the country. Consequently, this shows that Nigeria banking system is still developing as depict by various financial reforms in the financial sector.

The empirical facts derived from the work disclosed that prime lending rate has the highest contributions of banks to the flow of credits and to the growth of SMEs in the country. Notably the supposed transformation agenda of Nigeria through the monetary instrument on lending rate guidelines for those periods under review was not realized. It can however be noted that our empirical evidence above suggests that the outcome is in line with an earlier expectation. A sharp contrast to the view is the inputs of banking density which is found be negative; suggesting that the banking density has no positive impact to the flow of credits to SMEs in Nigeria within the year under review. In concrete term, it means that one percent decrease in the ratio of banking density reduces funding of small and medium enterprises in Nigeria by 21 per cent. In reality, it is a true fact because when the banks grow bigger, they tend to look down on small business; and rather go for bigger company or industry. This current finding is in an agreement with work of Park (2008) who studied on “how bank-market concentration affects small business lending. He engaged the survey of business finance and the result substantiate that banking market competition adversely influence the total credit supplied in Nigeria. Moreover, it reduces the line of credit limit of small firm drastically.

6.0 Conclusion

Overall, the results of the long-run relationship between the proxies of banks' flow of credits and SMEs in Nigeria are rather similar to the result of the short run. The over paramatized error correction model (ECM) shows an improvement in all the variables of our interest. The inverse relationship between banking development and banking density is rather surprising since economic theory suggest otherwise. Conclusively, and as suggested by theory, the variables of interest especially those included in this model and SMEs possess a direct and positive relationship with one another; and that Nigerian banks really play an intermediating role in credit flow SMEs in Nigeria. This function in turn tends to contribute to the growth of young enterprise in Nigeria-after all the young shall definitely. This assertion clearly supports the earlier empirical findings that adequate lending rates policy is expected to increase banks' credits flow to small enterprises in the country. However, the remaining 14% unexplained variables not included in this study could be deposit savings (DSs), foreign direct investments (FDIs) and broad money supply (BMS) = (M^2) which can be added in the further research to find its impact on the similar study in Nigeria. The results of this research disclose a statistically significant outcome of the contribution of banks to the funding of SMEs sector in the country.

We therefore recommend that Nigerian government should adopt policy measure that will make cost of capital affordable and attractive to investors. The establishment of more bank branches in the rural areas for easy access to credit is also the suggestion of this study; the Central Bank of Nigeria should engage on sound and implementable momentary policy to address the issue inflation and exchange rate in the country and finally, endeavour to enhance the financial sector growth through financial reform with best banking model.

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Appendix A: Data for Regression

YEARS	DMBL	TDMBC	FOC(RDMBL)= DMBL/TDMBC	PLR	INFR	M2	GDP	BKDEV= (M2/GDP)	EXCR	TPOC	BBUAs(1)	BBRAs(2)	TNBBs (1+2)	BKDEN = TPOC/TNBBs
1986	1454.3	16705.1	0.09	10.50	5.40	24819	69147	0.36	2.02	80688	879	529	1408	57.31
1987	3587.3	17541.8	0.20	17.50	10.20	29995	5223	0.29	4.02	83043	947	602	1549	53.61
1988	5090.6	24604.1	0.20	16.50	38.30	39843	5139048	0.29	4.54	85488	1057	756	1813	47.15
1989	5789.5	28104.3	0.21	26.50	40.90	46223	216798	0.21	7.39	87998	1093	765	1858	47.36
1990	5900	28640.7	0.21	25.50	7.70	64903	267550	0.24	8.04	90557	1169	774	1943	46.61
1991	7572.3	37842.6	0.21	20.01	13.00	86153	312140	0.28	9.91	93161	1253	775	2028	45.94
1992	29400	75456.3	0.27	29.80	44.50	129156	532614	0.24	17.30	95725	1493	763	2258	42.39
1993	15462.9	88821	0.17	18.32	57.30	198519.1	683870	0.29	22.05	98360	1577	701	4536	21.68
1994	20552.5	143516.8	0.14	20.08	57.00	266944.9	899853	0.30	21.89	101068	1534	675	2209	45.75
1995	32374.5	204090.6	0.16	20.18	72.80	318763.5	1933212	0.16	21.89	103850	1661	714	2336	44.46
1996	42302.1	254853.1	0.17	19.74	29.30	370333.5	2702719	0.14	21.89	106709	1727	714	2441	43.72
1997	40844.3	311358.1	0.13	13.74	8.50	429731.4	2801973	0.15	21.89	109647	1727	722	2441	44.92
1998	42260.7	366544.1	0.12	18.29	10.00	525637.6	2708431	0.19	21.89	112665	1466	722	2188	51.49
1999	46824	449054.3	0.10	21.32	6.60	699733.7	3194024	0.22	92.70	155766	1466	722	2188	71.19
2000	4454.3	587999.9	0.08	17.98	6.90	1036080	4537640	0.23	102.11	118953	1466	722	2188	54.37
2001	52428.4	844486.4	0.06	18.29	18.90	1315869	4685912	0.28	111.90	122228	1466	722	2188	55.86
2002	82368.4	948464.1	0.09	24.84	12.90	1599495	5403007	0.30	120.97	125893	2283	722	3005	41.89
2003	90176.5	1203199	0.07	20.71	14.00	1985192	6947820	0.29	129.36	129053	2520	722	3242	38.81
2004	54981.2	1519243	0.04	19.18	15.00	2263588	7078062	0.32	133.50	132062	2765	722	3487	38.03
2005	50672.6	1991146	0.03	17.95	17.90	2626455	14553097	0.18	132.15	136253	3487	722	4209	32.37
2006	2573.7	2609289	0.01	16.89	8.20	3415968	15426283	0.22	128.65	140004	3233	722	3955	35.40
2007	40100.4	4820696	0.01	16.94	7.20	4811962	16382712	0.29	125.88	143854	4200	722	4922	29.23
2008	13512.2	7799400	0.01	15.21	15.10	9166.8	2429630	0.38	118.57	147810	4952	722	5674	26.05
2009	16366.5	9667877	0.01	19.55	11.50	10767.4	247170	0.44	148.88	151874	5636	722	6158	24.66
2010	12550.3	9198173	0.01	15.74	13.80	11488.7	2910800	0.39	150.30	156051	5087	722	5809	26.86
2011	15611.7	9614446	0.01	16.69	10.30	13300.3	3653190	0.36	158.64	160342	5566	722	6288	25.50
2012	13863.5	10440956	0.01	16.51	12.00	15128.7	195420	7.74	159.58	164751	5454	722	6176	26.68

Source; Authors computation

NOTE; DMBL [Deposit money bank loan], TDMBC [Total deposit money credit], FOC [Flow of Credit] as RDMBL [Ratio of Deposit Money Bank Loan] = DMBL/TDMBC,

BKDEV [Banking Development] = [M²/GDP], TPOC [Total Population of the country], BBUAs [Banks Branches in Urban Areas (1)]

BBRAs [Banks Branches in Rural Areas (2)] TNBBs [Total Number of Banks Branches (1+ 2)], BKDEN [Banking Density] =TPOC/TNBBs