SMEs FINANCING AND ITS EFFECT ON MANUFACTURING SECTOR GROWTH IN NIGERIA: AN EMPIRICAL ASSESSMENT

Ezeaku, Hillary Chijindu[1i]**,**
Anidiobu, Gabriel A.[2]**,**
Okolie, Paschal I. P.[2]

[1]Department of Banking and Finance,
Caritas University, Enugu, Nigeria
[2]Department of Banking & Finance,
Enugu State University of Science & Technology,
Enugu, Nigeria

Abstract:

This paper assessed the effect of SMEs financing on manufacturing sector growth in Nigeria using annualised data from 1981 to 2014. A cointegrating relationship was determined using the Engel and Granger residual based approach which showed evidence of a long-run relationship between SMEs credit and manufacturing output growth in Nigeria. The results of the error correction model showed that SMEs financing had exerted positive influence on the manufacturing sector growth. The finding indicated that when credits to the SMEs increased by 1%, manufacturing output rose by 14.5%. The results also revealed that interest rate and inflation rate had negative effect on manufacturing sector growth. A unit change in interest rate led to 15.7% fall in output growth of the manufacturing sector. We conclude that while SMEs is an important sector that can drive the Nigerian economy, rising interest rate stifles their growth and overall economic impact. This sector needs nurturing hence the government and monetary authorities should make policies and create enabling environment for SMEs to thrive. Access to fund should also be made easy and at low interest rate.

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[i] Correspondence: email gijindu@gmail.com

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1. Introduction

The secret behind the prosperity of developed economies of the world has been traced to rapid growth rate of small and medium-sized enterprises. Also, among the shining lights of emerging economies remain the fact that conducive environment is created for SME to thrive. SMEs constitute over 70% of the industrial sector among the world's most prosperous economies, and remain the highest employer of labour, compared to large corporate entities. A survey by Organization for Economic Cooperation and Development (OECD) countries indicate that SMEs constitute between 96 and 99% of the total enterprises in the member countries, and remain the employer of labour more than the large firms. Developing countries like Nigeria have come to realize that SME is critical to sustainable growth and development hence urgent steps are continuously being taken to foster the growth and survival of small and medium-scale industries. Such measures are often in the ways of policy directives and establishment of organizations and institutions that will ensure that SMEs are funded and supported.

Advocates of SMEs opine that SMEs boost competition and entrepreneurship, cross-border economic benefits, innovations, and increase in productivity. It is also argued that productivity of SMEs is much higher than that of big firms even though the financial market and other institutional failures hinder their development (Alese and Alimi, 2014). Nigeria's peculiar business environment is characterized by many pitfalls like poverty, unemployment, insecurity and high cost of doing business. Therefore, nipping these challenges in the bud is necessary in order to ensure a healthy and prosperous economy. Motilewa, Ogbari and Aka (2015) highlight the role of SMEs to include mobilization of domestic savings for investment, enhancing real sector growth, creation of employment, poverty reduction, increase in income per capita, hence high living standard, economic diversification, promoting technological advancement and innovative industrial sector, curbing rural-urban migration and contribution to overall growth and development of the country. Granting credit to entrepreneurs at affordable cost is key to realizing the above mentioned goals.

SMEs are essential catalysts for economic development of any country. In a well-functioning financial system, efficient intermediary functions of financial institutions promote economic growth by bridging the gap between the net savers and the investors. This entails that the success of SMEs also depends on efficiency of the financial system in channeling credit to where it is most needed, and where productivity is generally higher. Unfortunately, the banking system shows apathy lending to SMEs. They often see lending to entrepreneurs as risky, the conditions for borrowing is unusually stringent. Majority of entrepreneurs are not literate and may not

be able to follow through all the rigorous paper works. Secondly, virtually, borrowers have no asset or collateral to secure credit needed to start their business.

Obviously, SMEs do not have access to public capital markets. As a result, they basically depend on banks for funding. Relying on banks makes them even more helpless because shocks in the banking system can significantly affect credit supply to SMEs (Ogujiuba, Ohuche and Adenuga, 2004). For this reason, SMEs look for internal source of finances, which could help but might be insufficient to keep them at optimal efficiency.

Realizing the importance of SMEs to the growth of Nigeria's economy, there is the need to find out how credit channeled to SMEs has impacted on the growth of the manufacturing sector. Fewness of studies on the response of the manufacturing sector to SMEs financing has created a gap in knowledge, and most studies examine its effect vis-à-vis the overall economy. Thus, we attempt in this impact study to ascertain the effects of SMEs credit on economic development of Nigeria. This methodological assessment will determine both direction and magnitude between the relevant components, and covers the period, 1981 – 2014.

2. Review of Related Literature

Anyanwu (2003) asserts that SMEs have been generally acknowledged as the bedrock of the industrial development of any country. Likewise, Ganiyu (2010) explains that as indicated above, SMEs are primarily expected to serve as bedrock of supply of promising entrepreneurs who would be ready to take chance on the exploration of new ideas or favourable market development. Apart from enhancing growth through increase in the production of goods, SMEs provide veritable means of employment generation, as they are largely labour-intensive. These contributions underlie the concerted efforts by governments and International Agencies towards the realization of sustainable industrial growth and creation of employment through the rapid growth and development of the small and medium-sized enterprises.

From the time when Nigeria gained independence, every regime understands the importance of SMES as key driver of economic growth. Such recognition gave rise to the establishment of quite a few micro-credit institutions with the aim of enhancing the development of SMEs in Nigeria. Such micro-lending institutions include the National Economic Reconstruction Fund (NERFUND), Nigerian Bank for Commerce and Industry (NBCI), the People's Bank of Nigeria (PBN), the Community Banks (CB), and the Nigerian Export and Import Bank (NEXIM) However, facts show that the

performance of SMEs in Nigeria has not justified the establishment of these various micro-credit institutions. (Ogujiuba, Ohuche and Adenuga, 2004).

When lack of funding impedes the development of SMEs, there is the tendency that economic growth will begin to decline. The unwillingness of the deposit money banks to extend credit to the micro, small and medium enterprises have created a scenario where local resources are underutilized because the SMEs have not been able to operate at full capacity in order to exploit every available opportunity and enjoy economies of scale. Supporting this argument, Bamidele (2012) explains that industrial process propels economic growth and structural transformation, and enhances use of both human and material resources without depending on external sector for growth and sustenance (Bamidele, 2005). Azende (2011) argues that lack of funding for enterprises is capable of impeding economic growth and development.

Ayozie (2011) opines that SMEs promote the development of indigenous manpower as well as increasing local participation in the manufacturing sector. SMEs have been widely recognized by governments and finance experts as the key engine of economic growth and a main factor in promoting private sector development, as well as partnership. Therefore, the development of SME is a critical factor in the growth strategy of most economies and with special reference to Nigeria. SMEs contribute significantly in improving living standards, and also foster considerable local capital formation and rapid growth in productivity. Notably, SMEs remain the principal means through which equitable and sustainable industrial sector diversification can be achieved (Udechukwu, 2003).

The role of capital in the growth of enterprises cannot be overemphasized. In this regard, Tawose (2012) points out that productivity is a direct function of capital. The establishment of new businesses, modernization and the expansion of existing ones require capital. Evidence, however, indicates that the growth and development of SMEs in Nigeria is hampered by some daunting challenges like inadequate (or lack) of capital, poor technical knowhow and managerial skill, difficulties in sourcing raw materials locally, and poor infrastructural development etc. in order to address these challenges, policies and various economic initiatives have been put in place (Anyanwu, 2003). Though SMEs have limited access to institutionalized credit facilities, the Central Bank of Nigeria (CBN) has through policies and directives urged the deposit money banks to ensure that entrepreneurs are not financially excluded. In addition to credit from banks, there have long been micro lending institutions with special role of funding and supporting industrial growth and development. The need to evaluate the impact of such credit on the growth of the economy has continued to attract attention among researchers and development experts.

2.1 Empirical Review

In order to gain some insight into the link between SMEs credit and economic development, we reviewed some empirical works related to this subject. Muritala, *et al.* (2012) investigated small and medium enterprises as a veritable tool in economic growth and development, using primary data. A survey method was employed to gather data from 200 respondents. Data was collected with a structured questionnaire, which were analyzed with descriptive statistics to determine the perception of the roles of SMEs in Nigeria. The results of the study therefore, showed that the most common constraints of small and medium scale business growth in Nigeria were lack of capital, poor management, poor infrastructure, among other hindrances.

Safiriyu and Njogo (2012) examined the impact of small and medium scale enterprises in the generation of employment in Lagos state. Statistical methods of simple percentage and chi-square were employed to analyze data for the study. The results showed that there was relation between small and medium scale enterprises and sustainable development of Nigeria; and SMEs and improvement in employment generation.

Opafunso and Adepoju (2014) explored the impact of SMEs on economic development of Ekiti State, Nigeria between 2006 and 2013. The study adopted a survey research design and obtained data from 150 respondents. Data for this study was analyzed using Statistical Package for Social Sciences (SPSS) and Chi-square was used to test the hypotheses. The findings showed that there was a positive and significant relationship between SMEs and poverty reduction, employment generation and improvement in standard of living of people in Ekiti State.

Motilewa, Ogbari and Aka (2015) reviewed the impacts of SMEs as social agents of economic liberations in developing economies. The study, however, focused on the SMEs operating within Nigeria. It employed secondary data. The findings revealed that despite the benefits of this vibrant sector to the Nigerian economy, the government policies, infrastructures, finances amongst others were not favourable for its growth and sustainability. With regard to relevance of capital base as determinant of bank lending, Ogujiuba, Ohuche and Adenuga (2004) evaluated the importance of new capital base for banks in enhancing credit availability to small and medium scale enterprises in Nigeria. The paper showed that capital base was important in determining the response of bank lending to the SMEs, and highlighted how stable and efficient financial sector promoted SMEs' growth.

Alese and Alimi (2014) investigated the role of small and medium scale enterprises (SMEs) financing as a catalyst for economic growth in Nigeria within the period 1980 – 2012. The study employed the Error Correction Model (ECM) and Engel

Granger causality tests. The results revealed that commercial bank credit significantly improved the economic size of the Nigerian economy in the long-run, but not significant in the short-run. The Engel Granger causality test indicated a bi-directional causal relationship between SMEs financing and economic growth in Nigeria. Akingunola (2011) assessed specific financing options available to SMEs in Nigeria and contribution with economic growth via investment level. The Spearman's Rho correlation test was employed to determine the relationship between SMEs financing and investment level. This indicated that there was significant positive relationship between SMEs financing and economic growth in Nigeria via investment level.

Eze and Okpala (2015) examined the quantitative impact of small and medium scale enterprises (SMEs) on Nigeria's economic growth performance within the period 1993 and 2011. The study adopted multiple regression method based on Ordinary Least Squares econometric technique, and the Johansen Co-integration test. Results of Johansen test revealed evidence of long run equilibrium relationship between SMEs and economic growth. However, output of SMEs did not make any significant contribution to Nigeria's economic growth over the period.

Azende (2011) empirically evaluated the performance of the small and medium scale enterprises equity investment scheme in Nigeria (SMEEIS). The result showed that there was no significant difference between the credits extended by banks to SMEs before and after the introduction of SMEEIS and the conditions for accessing SMEEIS funds was too stringent for the predominant SMEs in Nigeria. This shows that SMEEIS, as a formal financing option, has not made any significant positive impact towards SMEs growth in Nigeria.

Dad (2014) investigated the effect of commercial banks' credit on SMEs development in Nigeria between 1992 and 2011. The study employed the Ordinary Least Square (OLS) technique of analysis to estimate the multiple regression models. The results revealed that commercial banks credit to SMEs exerted a positive influence on SMEs development while exchange rate and interest rate have negative effect on SMEs development. In a related study, Safiyya and Garba (2013) examined the contribution of commercial banks to the growth of small and medium scale enterprises in Nigeria between the period of 1980 and 2009. The paper employed descriptive method of analysis and discovered that commercial banks contributed to financing small and medium scale enterprises, but their contribution had declined as the government through CBN directives abolished the mandatory bank credit allocations.

3. Data and Methodology

Data for this study is purely from secondary sources. Obtaining published data that is authentic and verifiable is a necessary condition to arriving at dependable findings. We collated data from the Central Bank of Nigeria Statistical Bulletins, and World Bank National Accounts data files and the OECD National Accounts data files. Our dependent variable is the annual growth of manufacturing value added, whereas deposit money bank credit to the SMEs sector is our independent variable. Moreover, interest rate, inflation rate and exchange rate are our control variables. Data set covers the period 1981 to 2014. Our model was estimated using the Error Correction Model (ECM) while the Engel and Granger Residual-based approach to cointegration was employed to test for long-run relationship. Because we are dealing with time-series data and that the study spanned a long period, we ensured that our data set had no unit root by testing for the stationarity of the series using the Augmented Dickey-Fuller unit root test. Key diagnostic tests of serial autocorrelation, heteroscedasticity, Ramsey tests and CUSUM test were conducted.

3.1 Model Specification

Linear regression model for this study incorporates all our variables and the stochastic term. The regression model is represented as;

$$MVA_t = \alpha_0 + \alpha_1 LogSMCR_t + \alpha_2 INTR_t + \alpha_3 INFR_t + \alpha_4 EXR_t + \mu_t ------(1)$$

Where MVA is annual growth of manufacturing value added, α_0 = constant, α_1, α_2 and α_3 are coefficients. SMCR is the deposit money bank credit to SMEs, INTR is interest rate, INFR is inflation rate, EXR is official exchange rate, and μ is white noise.

Recent literatures suggest that if a long-run relationship is established, then a model that adjusts and accounts for short run dynamic adjustment process has to be integrated. The adjustment process implies the speed of adjustment from short-run disequilibrium to long-run equilibrium. To this effect, we modify equation (1) to derive Error Correction Model (ECM) presented as follows;

$$\Delta MVA_{t,j} = \beta_0 + \sum_{i=1}^{n1} \beta_{1i,j} \Delta MVA_{t-1,j} + \sum_{i=0}^{n2} \beta_{2i,j} \Delta LogSMCR_{t-1,j} + \sum_{i=0}^{n3} \beta_{3i,j} \Delta INTR_{t-1,j} + \sum_{i=0}^{n4} \beta_{4i,j} \Delta INFR_{t-1,j}$$
$$+ \sum_{i=0}^{n5} \beta_{5i,j} \Delta EXR_{t-1,j} + \delta_{t-1,j} + \mu_t, ------------ (2)$$

Where: Δ is change, i and j are lag lengths, n is number of lags, and δ_{t-1} is error correction term (and speed of adjustment), which is integrated at order zero, I(0). β_0 is constant term, $\beta_1 - \beta_6$ are coefficients and μ_t is error term.

4. Results and Analyses

4.1 Unit root test

Table 1: Augmented Dickey-Fuller (ADF) Unit Root Test Result

Variable	ADF Test Stat.	5% Critical value	Order of Int.	Inference
MVA	-9.141847	-2.963972	I(1)	stationary
SMCRD	-5.738119	-2.960411	I(1)	stationary
INTR	-6.407172	-2.960411	I(1)	stationary
INFR	-5.392317	-2.957110	I(1)	stationary
EXR	-5.392317	-2.957110	I(1)	stationary

Source: Authors' 2017.

Table 1 presents the unit root test results, and shows that all our series are stationary, hence has no unit root. Model estimation based on time series data that are not stationary is bound to produce spurious results. It is noteworthy that all the variables attained stationarity after first differencing (or integrated at order one).

4.2 Engel and Granger Residual Based Co-integration Test

Table 2: Residual Based Unit Root Test ($\Delta\mu_t = \alpha\mu_{t-1} + \epsilon_t$)

Variable	ADF Test Stat.	Critical Value @1%	Critical Value @5%	Critical Value @10%	Prob. Value
Residual (μ_t)	-3.960268	-3.689194	-2.971853	-2.625121	0.0052

Source: Authors' 2017.

Co-integration test result in Table 2 is based on Engel and Granger residual based approach. Under this technique, the residual has to be stationary at level for the null hypothesis of no co-integration to be rejected. The results indicate that the residual (μ_t) is stationary at 1%, 5% and 10%, and at level. This outcome reveals a long-run relationship between credit to the SMEs and annual growth of manufacturing value added in Nigeria.

4.3 Regression Result: Error Correction Model (ECM)

Table 3: Estimation Based on Error Correction Model - Dependent Variable: D(MVA)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.663363	1.100524	0.602771	0.5528
(LOG(SMCR))	0.144700	0.873235	0.165705	0.8699
D(INTR)	-0.156731	0.293743	-0.533567	0.5990
D(INFL)	-0.011808	0.059074	-0.199887	0.8434
D(LOG(EXR))	0.750240	3.555613	0.211002	0.8348
ECT(-1)	-0.821471	0.217436	-3.777988	0.0010
R²	0.750535	Prob(F-statistic)		0.015577
Adjusted R²	0.715656	DW stat	2.054229	

The regression estimate in Table 3 reveals that manufacturing output response to SMEs credit is positive. The result indicates that the established influence is however not significant. It can be observed that when SMEs credits increase by 1%, annual growth of manufacturing value added increases by 14.5%. Interest rate and inflation rate have negative effects on MVA, while a positive influence was evidenced for exchange rate. The error correction term (ECT) has the right sign and is significant at 5%. The error correction term indicated the speed of adjustment from short-run disequilibrium towards long-run equilibrium. The result therefore shows that the error correction term adjusts with the previous periods disequilibrium at the rate (or speed) of 82.1% on annual basis.

4.4 Validity and Stability Tests

Table 4: Test for Serial Autocorrelation, Heteroskedasticity, and the Ramsey Tests.

Test	Obs*R-squared	Prob. Chi-Square	F-statistic	t-statistic	P value
Breusch-Godfrey Serial Correlation LM Test	3.179554	0.2040	1.354550	-	0.2788
Heteroskedasticity Test: Breusch-Pagan-Godfrey	4.787380	0.3098	1.186335	-	0.3420
Ramsey Reset Test	-	-	2.154494	1.467819	0.1557

Source: Authors' 2017.

In the results reported in table 4, Breusch-Godfrey Serial Correlation LM Test indicates that our model has no serial correlation. This confirms the result of Durbin-Watson (DW)statististic result in table 3. The second test for Heteroskedasticity reveals that our model is homoskedastic. These results are desirable and confirms that our overall results are non-spurious hence reliable. The Ramsey test results evidence the stability of

the model. Moreover, the Recursive CUSUM result in Figure 1 below confirms the stability of our model as indicated by the Ramsey test.
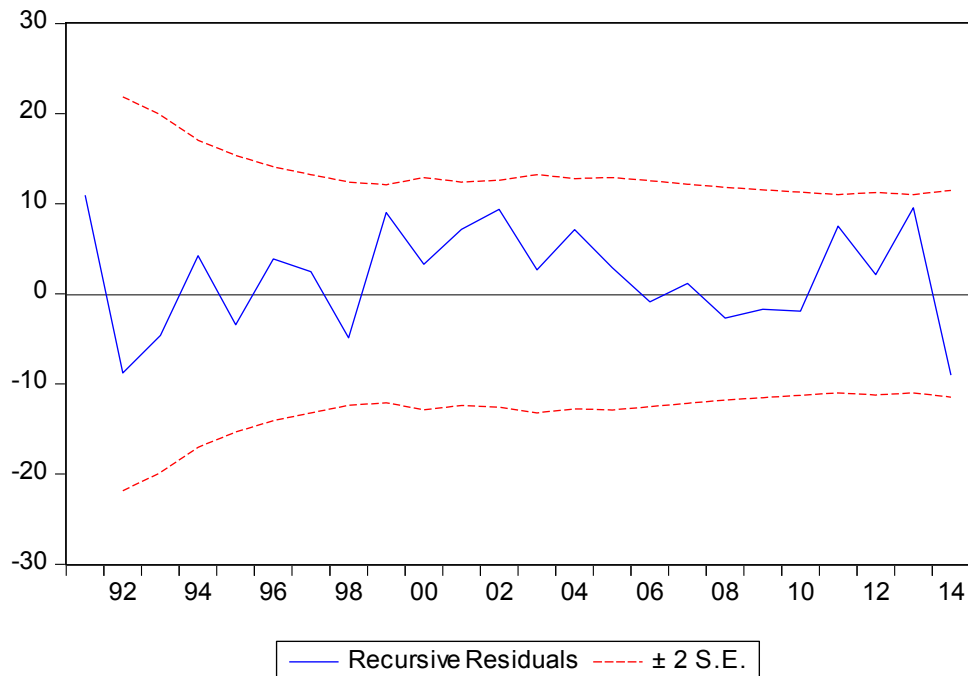

Figure 1: Recursive Estimate's CUSUM Test Result

5. Conclusion

SMEs have been widely acknowledged as the key driving force for industrial growth in a country. The importance of SMEs is recognized by governments and monetary authorities hence need adequate attention while funds should be made accessible to the sector at low rate in order to stimulate and sustain their economic activities. It is against this backdrop that we examine in this paper relation between credit to SMEs and the growth of the manufacturing output in Nigeria. Co-integrating relationship was determined using the Engel and Granger residual based approach which showed evidence of a long-run relationship between SMEs credit and manufacturing output growth in Nigeria. The results of the error correction model show that SMEs financing has exerted positive influence to the manufacturing sector growth. The finding indicates that when credits to the SMEs increase by 1%, manufacturing output rises by 14.5%. The results also reveal that interest rate and inflation rate have negative effect on manufacturing sector growth. A unit change in interest rate leads to 15.7% fall in output growth of the manufacturing sector. We conclude that while SMEs is an important

sector that can drive the Nigerian economy, rising interest rate stifles their growth and overall economic impact. This sector needs nurturing hence the government and monetary authorities should make policies and create enabling environment for SMEs to thrive. Access to fund should also be made easy and at low interest rate.

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