## THE EFFECT OF COMMERCIAL BANK CREDIT ON THE OUTPUT OF SMALL AND MEDIUM ENTERPRISES IN CAMEROON: EMPIRICAL EVIDENCE FROM 1980-2014

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## ABSTRACT

The objective of this paper is to empirically examine the impact of commercial bank credit on the performance of Small and Medium Size Enterprises (SMEs) in Cameroon between 1980 and 2014. The SMEs output is approximated by wholesale and retail trade output as a component of the GDP. The study employed Ordinary Least Square (OLS) method to estimate the multiple regression model. The results revealed that stock of capital and labor force have a positive impact on Cameroonian SMEs performance. The results also revealed that commercial bank credit and real interest rate have a negative and significant impact on the performance of SMEs in Cameroon. Therefore, the study suggests that the Cameroonian government should improve the business environment by provision of necessary infrastructure which will lower the cost of borrowing, and then induce the growth of SMEs in order to achieve the vision 2035.

Keywords: Small and Medium Enterprises, Commercial Banks, Bank Credit, Ordinary Least Square, Cameroon.

Jel classification code: C10, C22, E44, G21.

## I. INTRODUCTION

The role small and medium enterprises (SMEs) play in the economic development of every country is vital. In fact, SMEs have the capacity to realize rapid economic growth while generating a considerable extent of employment opportunities (Reddy, 1991). In developing economies like Cameroon, the financial market is under-developed. So, debt financing remains the major source of funds for SMEs and it is limited to commercial bank credits. According to Ayyagari and al. (2007) SMEs contribute on an average 60 percent of total formal employment in the manufacturing sector both in advanced economies and in developing economies. In Africa, that contribution is about 75% of total employment in the manufacturing sector. Given that the financial sectorin Africa is mostly dominated by commercial banks, a crucial challenge in the development of the SME segment is access to finance in general, and bank financing in particular.

Some authors like Rungani (2009) think that commercial banks are a principal source of debt financing for new SMEs. In fact, they offer to newly created SMEs a wide range of services in their own right or through wholly or partially owned subsidiaries. These services cover every aspect of the financial market like overdraft facilities, term loans, trade bill financing, factoring, leasing, export and import finance and even government loan guarantee schemes.

Other authors such as Diamond and Dybvig (1983) argue that commercial banks are in a better position to gather information on SMEs through the establishment of relationships between their staff and SMEs owners. Indeed, commercial banks have extensive branch networks that can be

accessed by new SMEs even in remote locations. Since the financial conditions of small firms are usually opaque to investors in developing economies, the costs of issuing securities directly to the public are prohibitive for most SMEs.

Thus, without financial intermediaries like banks it would simply be too costly for most investors to learn the information needed to provide the credit, and too costly for the small firm to issue the credit itself. Banks performing the classic functions of financial intermediaries solve the problems of asymmetric information and adverse selection by: (i) producing information about borrowers and monitoring them over time; (ii) setting loan contract terms to improve borrower incentives; (iii) renegotiating the terms in the case the borrower has financial difficulties.

Many entrepreneurs in Cameroon cite access to adequate loan for working capital and long-term investment as one of the major constraints that they face in their operations. This is not really new because The World Bank report (2010) suggests that one of the major causes of SME failure in developing economies is limited access to external finance. The report further observes that SME loans as a percentage of total bank loans are generally smaller compared to large firms. Approximately ten percent (10%) of all formal SMEs report to have access to a bank credit line.

Considering the fact that finance is the life-blood of any business enterprise and that Cameroon has placed the dynamism of SMEs as a condition for its emergence by 2035, it is interesting to analyze the effect of banking credit on the performance of SMEs. Therefore, it becomes imperative to ask the following question: *To what extend do banks loans contribute to the performance of small and medium sizes enterprises in Cameroon*?

The main purpose of this paper is to empirically explore the impact of bank loans on the performance of small and medium sizes enterprises in Cameroon. To achieve this main objective, we adopt specific objectives. They include evaluating the relationship between bank credit and the SMEs output in Cameroon; and assessing the impact of government policy on the performance of SMEs in Cameroon.

In order to reach the objectives of this study, we test a null and an alternative hypothesis. The null and alternative hypotheses are defined as follows:

- H<sub>o:</sub> Bank loan has no significant impact on the performance of SMEs in Cameroon.
- H<sub>1:</sub> Bank loan has a significant impact on the performance of SMEs in Cameroon.

Therefore, this study is significant for various reasons. Firstly, while many studies have attempted to assess the impact of commercial bank credit on the performance of SMEs in some countries in Africa, Cameroon has received very little or no attention across works. That is why this paper wants to fill the void concerning the relationship between banks loans and SMEs performance for the case of Cameroon at the macroeconomic level. Secondly, this study will help the government and the monetary authorities to know how bank loans help in the growth of small and medium sizes enterprises in Cameroon in order to see the effectiveness of the monetary policy and achieve the vision 2035.

In terms of methodology, this paper follows the modelling of Ehikioya and Mohammed (2014) who worked on the same topic but for Nigeria. Those authors inspired themselves from the works of Afolabi (2013) and Dada (2014) and measured SMEs performance by the wholesale and retail trade output as a component of GDP. But, we made some modifications on that model by not taking into consideration some variables like: the exchange rate since Cameroon is part of a currency board (Zone Franc); the saving and time deposit with commercial banks; the bank density and the total

government expenditure. We replaced those variables by the real interest rate, the stock of capital and the labor force. We used the ordinary least square (OLS) to estimate the coefficients of the multiple regression models. The period of study, which is between 1980 and 2014, helps to see the consequences of structural adjustments plans and financial sector reforms that Cameroon has experienced during that period.

The rest of the article is organized as follow. The second section presents a literature review. It covers both theoretical and empirical contributions of authors. The third section discusses the methodology and presents the materials and the method. In the section four, the findings are presented. We discuss those findings in section five while the section sixth concludes and give some recommendations.

## II. LITERATURE REVIEW

It is not easy to have a general definition of the notion of Small and Medium Enterprises. In fact, the criteria for classification of an enterprise as small, medium or large vary from one country to another. They also depend on whether the country is developed or is a developing one.

For example, in the European Union, the Law N°2003/361/CE of the 20<sup>th</sup> May 2003 defines an SME as "an entity that carries on a business independently by employing less than 250 employees and having an annual turnover lower than  $\in$  50 million or an annual balance sheet total under  $\in$  43 million." In Nigeria, SMEs are enterprises with a total capital employed not less than 1,500,000 Naira but not exceeding 200 million Naira, including working capital, but excluding cost of land and/or with a staff strength of not less than 10 and not more than 300 (Ehikioya and Mohammed, 2014). In Cameroon, the Law N°2010/001 of the 13th April 2010 defines SMEs as "companies with a permanent staff less than or equal to 100 individuals, whose turnover does not exceed one billion FCFA".

Apart of the above conceptions in terms of legislation, there are other conceptions of SMEs made by authors in the economic literature. According to Bamidele (2012) SMEs are usually small own or family managed business with its goods and services being basic. This definition also emphasizes the fact that SMEs tend to lack the organization and management structure. Another definition of SMEs in the literature is that of Aluko (2002) who defines SMEs as those enterprises employing up to fifty (50) workers or less than excluding household enterprise. For this author, small business is a business that is privately owned and operated with a small number of employees and relatively low volume of sales.

Theoretically, the role of financial institutions in promoting growth within the economy has been broadly debated in the economic literature. In fact, while some argue that finance is a catalyst for economic growth through financing of entrepreneurship and enterprises (Schumpeter, 1912; McKinnon, 1973; Shaw, 1973; King and Levine, 1993), others defend the fact that finance cannot affect the real sector. Amongst them, we have authors such as Cameron (1972), Lewis (1995) and Levine and Zervos (1998).

However, the monetarist school of thought claims that change in the money supply leads directly to a change in the real magnitude of money. In fact, an expansive open market operation by the Central Bank increases stock of money. This activity leads to an increase in commercial bank reserves and their ability to create credit. At the end, we have an increase in money supply through the multiplier effect and the possibility to stimulate activities of SMEs. According to Bencivenga and Smith (1991) financial institutions have five main functions as an engine of SMEs development and performance. The first function is to reduce risk through coverage, commerce and diversification. This function is essential for technological innovation which is often considered as a long and slow process. The second function is to gather information and allocate resources by reducing information asymmetries between lenders and borrowers. It helps to: (i) channel resources to the most productive sectors; (ii) encourage economic efficiency and social welfare. The third function is to reduce the costs of compiling the information needed in order to enforce contracts and oversee the behavior of borrower firms. The fifth function is to facilitate specialization by reducing transaction costs.

Empirically, several studies have attempted to verify the impact of bank credit on the performance of SMEs. Our target is not to perform an exhaustive review of those works. But, since we are working in a developing economy, it is useful to look at the relevant and recent empirical works dedicated to developing economies in general; and Africa in particular.

Afolabi (2013) evaluated the effect of SMEs financing on economic growth in Nigeria between 1980 and 2010. His study made use of Ordinary Least Square (OLS) method to estimate the multiple regression models. The results revealed that SMEs output proxy by wholesale and retail trade output as a component of gross domestic product and commercial banks' credit to SMEs have positive and significant impact on economic development while lending rate is found to exert negative effects on economic growth.

Namusonge, Mairura and Karanja (2013) surveyed on the role of financial intermediation in the growth of SMEs in Nairobi (Kenya). The study adopted a survey research design and a mix method approach. According to the authors, the mixed method approach is a procedure for collecting, analyzing and mixing both quantitative and qualitative data in a single study or a series of studies. The researchers employed stratified random sampling in selecting respondents. The populations were segregated into sub-populations or strata, herein referred to as business categories. Using ANOVA and OLS techniques, the results showed that financial intermediaries play a significant role by offering banking services and extending credit facilities to SME businesses. They also found that evaluation procedures made it difficult for businesses to access support from financial institutions because the procedures wasted a lot of business time and made financial intermediaries' services inaccessible to most SMEs.

Access to credit positively affects financial performance of SMEs in Kenya in the study of Osoro and Muturi (2013). They used a sample of 100 entrepreneurs randomly selected. The collected data was analyzed using descriptive statistics such as frequencies and percentages. In terms of findings the authors noticed that the easier the access to credit, the higher the financial performance of the SMEs in their sample. However, they also outlined the different requirements one has to meet before the credit is approved to entrepreneurs. They concluded by saying that as credit becomes more available, the financial performance of small and medium size enterprises becomes better and hence a chance for SMEs growth in Kenya.

Dada (2014) noted that the consistently repeated complaint of SMEs about their problem regarding access to finance is highly relevant constraint that endangers the development of the sector in Nigeria. The author used Ordinary Least Square (OLS) technique to estimate the multiple regression models in order to investigate the effect of commercial banks' credit on SMEs development in Nigeria for the period 1992-2011. The findings revealed that commercial banks credit to SMEs and the saving and time deposit of commercial banks exert a positive and significant influence on SMEs development proxy by wholesale and retail trade output as a component of

GDP, while exchange rate and interest rate exhibit adversative effect on SMEs development. The study concluded that adequate savings should be mobilized from the public by emphasizing more on saving and that government should encourage banks to lend to SMEs by providing guarantee, interest rate subsidies and other incentives.

To ascertain the relationship between SMEs output and a set of explanatory variables in Nigeria between 1986 and 2012, Ehikioya and Mohammed (2014) estimated parameters of the model via the Ordinary Least Square (OLS) technique. The variables were tested for stationary and cointegration analysis was also carried out. The study revealed that savings time deposit and exchange rate has a significant impact on SMEs output in Nigeria. Moreover, commercial bank credit to SMEs, total government expenditure and bank density has direct but insignificant impact on the country SMEs output performance. To explain this result, the authors thought about the restrictive policy in accessing credit facility and the crowd effect of government expenditure in the economy. The study also showed that interest rate has adverse effect on SMEs performance.

From the above literature review, one can easily see that there are no studies on the relationship between bank credit and SMEs performance for Cameroon. Also, it is important to assess to what extend the bank credit will contribute to the dynamism of Cameroonian SMEs in order to achieve the objectives of the vision 2035. All these reasons motivated our choice of Cameroon.

## **III. METHODOLOGY**

The study used secondary data derived from the publications of the World Bank specifically the World Development Indicators (2015), and some other sources like; online journals, academic papers and appropriate textbooks.

The data cover 1980 and 2014 which is about 34 years. Several statistical techniques are used to test both the properties of the variables and the stability of the model. Unit root test is used to investigate the stationary properties of the variables, while the statistical tool used to analyze the influence of banks credit on SMEs output in Cameroon is multiple regression technique which is processed electronically via Stata 12. Descriptive statistics of the data are given in the appendix 2.

The estimation is carried out by using the ordinary least squares (OLS) technique, which is regarded as the best linear unbiased estimator (BLUE) that can be used in evaluating models of this nature (Gujarati, 2003). With this technique, we follow the works of Ehikioya and Mohammed (2014), and Afolabi (2013).

## a. Model Specification

To empirically assess the impact of bank credit on the SMEs performance in Cameroon for the period 1980-2014, we follow the modelling of Ehikioya and Mohammed (2014) who worked on the same topic but for Nigeria. Those authors inspired themselves from the works of Afolabi (2013) and Dada (2014). Therefore, in our study, SMEs performance is measured by the wholesale and retail trade output as a component of gross domestic product (SMEQ). But, we made some modifications on the initial model by not taking into consideration: the exchange rate since Cameroon is part of a currency board (Zone Franc); the saving and time deposit with commercial banks; the bank density and the total government expenditure due to the lack of data.

However, we include, in our final model, the real interest rate (RIR) which is equals to the difference between nominal interest rate and inflation rate. It helps to assess the purchasing power

of Cameroonian SMEs. We also consider the stock of capital (GFCF) which is approximated by the gross fixed capital formation as percentage of the GDP. Finally, we include the labor force (LAB) which is a proxy of the human capital approximated by the total working population. For a detailed analysis of our data see appendix 1.

Then, the model we estimate for the case of Cameroon is as follow:

 $LogSMEQ = \beta_0 + \beta_1 LogCBSME + \beta_2 LogGFCF + \beta_3 LogLAB + \beta_4 RIR + U_t$ 

Where:

SMEQ = SMEs Performance (Wholesale and Retail Trade Output); CBSME = Commercial Banks' Credit to SMEs; GFCF = Gross Fixed Capital Formation; LAB = Labor Force; RIR = Real Interest Rate;  $U_t$  = Error term;  $\beta_1, \beta_2, \beta_3, \beta_4$  = Slopes or Coefficients of the explanatory variables;  $\beta_0$  = Intercept of the model; Log = Natural Logarithm.

## b. Pre-Estimation Diagnostic Test

In general, time series is stationary when the mean E(xt) of time series (xt) does not depend on t, and the variance,  $E[x_t-E(x_t)]^2$  does not vary systematically with time. The property of a stationary process is that the mean, variance and autocorrelation do not change over time. The common approach to explore the stationary of time series data is to perform the unit root test. The mostly used is the Augmented Dickey Fuller (ADF) test offered by Dickey and Fuller (1981). To carry out this test, we test the null hypothesis of a difference stationary against the alternative hypothesis of a trend stationary.

H0: Xk ~1(1) H1: Xk~1(0)

We conclude that a time series is stationary when the P-value associated to the ADF statistic is lower than 5%. Otherwise, the time series is non-stationary and we need to differentiate it in order to make it stationary.

## IV. RESULTS

We analyze the unit root results in (a) and present the regression results in (b).

## a. Unit Root Test Results

The results of the Augmented Dickey-Fuller test revealed that all the variables are integrated of order one. In order words, the variables are stationary at first difference. In fact, the statistic associated to test possessed a 1% significance level as it is given in the table below.

## Table 1. Unit Root Test Results

Variables	Prob	t-Statistic	Oder of Integration
LogSMEQ	0.0004	-5.5605***	I(1)
LogCBSME	0.0042	-4.6208***	I(1)
LogGFCF	0.0000	-6.1604***	I(1)
LogLAB	0.0000	-10.717***	I(1)
RIR	0.0000	-6.5191***	I(1)

Source: Authors computation via Eviews 8.

Note: \* denotes 1% significance level

#### **b.** Presentation of the Regression Results

From the estimation results (in table 2 below) we can say that the model is statistically significant in explaining the relationship between SMEs performance, the commercial bank credit and the other set of explanatory variables. In fact, the calculated F-Statistic associated with the regression is higher than the tabulated F-statistic (2.17 > 0.0968).

Also, we observe that there is no correlation of the errors term. In fact, the Breusch – Pagan Statistic (0.76) is greater than the tabulated value (0.3823). Therefore, we accept the null hypothesis of constant variance of the error term and reject the alternative hypothesis.

#### Table 2. Estimations Results

Source	SS	Df	MS	Number of obs	35
Model	0.070795	4	0.017698	F (4, 30)	2.17
Residual	0.244944	30	0.00816	Prob> F	0.0968
Total	0.3157407	34	0.009286	R-squared	0.2242
				Adj R-squared	0.1208
				Root MSE	0.09036

LogSMEQ	Coef.	Std. Err.	Т	P>t	[95% Conf. Inter]	
LogCBSME	-0.1887*	0.1129137	-1.67	0.105	-0.4193	0.0418
LogGFCF	0.6868**	0.2784263	2.47	0.020	0.1182	1.2555
LogLAB	0.8817	0.8155829	1.08	0.288	-0.7838	2.5474
RIR	-0.006**	0.0030285	-2.02	0.053	-0.0122	0.0000
_cons	-0.4738	1.493503	-0.32	0.753	-3.5240	2.5762

Source: Authors Computation via Sata12.

NB: \*\* denotes significance at 5% Level; \* denotes significance at 10% Level.

## Breusch-Pagan/Cook-Weisberg Test for Heteroskedasticity

Ho: Constant variance Variables: fitted values of LogSMEQ chi2(1) = 0.76Prob > chi2 = 0.3823<u>Source</u>: Authors Computation via Stata 12.

Since the model is statically significant, and also since there is no correlation of the error terms, we can easily analyze the results.

## V. **DISCUSSION**

The regression results tell us much information. In fact one can see that the following variables have a positive impact on the SMEs performance in Cameroon: stock of capital and labor force. We can also see that the commercial bank credit to the SMEs and the real interest rate have a negative impact on SMEs performance in Cameroon.

In terms of significance, we observe that among the four explanatory variables, only three variables possess a significant impact in the explanation of Cameroonian SMEs performance. They include the commercial bank credit to the SMEs, the real interest rate and the stock of capital.

In fact, an increase of 10% of the commercial bank credit to the SMEs will lead to a reduction of 18.87% of their performance. With these results, one can see the collateral constraint that is faced by Cameroonian SMEs in their credit application. One can also consider that commercial banks which have excess of liquidity in Cameroon direct their financing to others entities like the government and households instead of lending to the private sector. So, our result differs from that of Ehikioha and Mohammed (2014) who found that commercial bank credit has a positive direct impact on the growth of SMEs in Nigeria.

Also, an increase of the real interest rate for about 10% will lead to a reduction of 0.06% of Cameroonian SMEs output. This result indicates the adverse effects of high interest rates charged by commercial banks to entrepreneurs when they want to start their businesses. This result also reinforces the idea that the dominants sources of financing in Cameroonian SMEs are informal. In fact, most people rely on Microfinance, Tontines, Doorstep lenders, Family and Friends, to finance their activities. Therefore, this finding is in line with those Afolabi (2013) and Olukayode and Somoye (2013) who stated that interest rate have indirect relationship with the growth of SMEs.

Looking at the stock of the capital, we can see that an increase of that indicator for about 10% will lead to an increase of the SMEs output for about 68.68%. With this result, one can see that SMEs in Cameroon are afraid to use the indebtedness tool. In fact, is it proved that indebtedness help enterprises to create added value and therefore the payment of interests. This will help to avoid the failure of the enterprises according to Jensen (1986). This result differs from that of Nwosa and Oseni (2013) who found an insignificant impact of that variable in the case of Nigeria during the period 1992-2010.

## VI. CONCLUSIONS

This study has investigated the impact of commercial bank credit on the growth of SMEs for the period which spanned between 1980 and 2014. Econometric model was specified and estimated via the Ordinary Least Square (OLS) techniques to ascertain the relationship between dependent SMEs output and a set of explanatory variables.

The study found that stock of capital and labor force have a positive impact on the Cameroonian SMEs performance. The study also reveals that commercial bank credit to the SMEs and the real interest rate have a negative impact on SMEs performance in Cameroon.

The study also found that among the four explanatory variables, only three variables possessed a significant impact in the explanation of Cameroonian SMEs performance. They include the commercial bank credit to the SMEs, the real interest rate and the stock of capital. Conclusively, commercial bank credit to SMEs, Real Interest Rate and Labor force are not the main determinants of Cameroon SMEs performance. Instead, the stock of capital is a positive and a significant determinant of Cameroon SMEs performance.

Based on the findings in this study and to improve SMEs dynamism in Cameroon, the following recommendations are suggested:

- 1. The government should progress the business environment by provision of necessary infrastructure which will lower the cost of doing business for many SMEs.
- 2. The reduction of interest rate on credit by monetary authorities will permit commercial banks to strongly affect the SMEs growth in Cameroon.
- 3. In order to achieve the vision 2035, the Cameroonian government should reinforce the role of *Banque Camerounaise des PMEs (BCPME)*. This can be done by the establishment of its branches in remote areas in order to channel credit to SMEs and promote entrepreneurship which is a source of growth and economic development.
- 4. Finally, it is also urgent to promote and develop investment banking and private equity companies in the country in order to diversify the sources of financing for Cameroonian entrepreneurs.

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## APPENDICES

## **Appendix 1: Descriptive Statistics**

	LOGSMEQ	LOGCBSME	LOGGFCF	LOGLAB	RIR
Mean	3.878752	2.639429	2.861845	4.169825	12.41017
Median	3.929012	2.504522	2.852714	4.169761	14.64998
Maximum	4.174765	3.441774	3.210671	4.239887	19.66818
Minimum	3.457735	1.877638	2.520381	3.929863	-1.09053
Std. Dev.	0.221892	0.511875	0.181855	0.049091	6.545414
Skewness	-0.300431	0.347136	0.104786	-3.3244	-0.91988
Kurtosis	1.770974	1.577556	2.230436	17.53863	2.294537
Jarque-Bera	2.729326	3.653654	0.927717	372.7186	5.661919
Probability	0.255467	0.160923	0.628853	0.000000	0.058956
Sum	135.7563	92.38002	100.1646	145.9439	434.3558
Sum Sq. Dev.	1.674025	8.908536	1.124416	0.081937	1456.643
Observations	35	35	35	35	35

Source: Authors Computation via Eviews 8

# Appendix 2: Variables and their meaning

Variables	Meaning	Proxy	Source
SMEQ	Small and Medium Size Performance	Wholesale Trade and Retail Output as a component of GDP	World Development Indicators, 2015
CBSME	Commercial Bank Credit to the Small and Medium Enterprises	Commercial Bank Credit to the Private Sector as a percentage of GDP	World Development Indicators, 2015
LAB	Labor Force	Percentage of Total Working Population in theCountry	World Development Indicators, 2015
GFCF	Stock of Capital or Level of Investment	Gross Fixed Capital Formation as a component of the GDP	World Development Indicators, 2015
RIR	Real Interest Rate	Difference between Nominal Interest rate and Inflation rate	Central Bank for African States (www.beact.int) World Development Indicators, 2015