Research Paper

Impact of banking on the real economy in Cameroon: an Empirical Analysis

[1]Ibrahim Ngouhouo[(PhD)] , [2]Kamdem Kountchou Francis
[1]Faculty of Economics and Management at the University of Dschang in Cameroon,
[2]PhD student at the Faculty of Economics and management, University of Dschang.

ABSTRACT: - This article examines the impact of banking on economic growth in Cameroon during the period from 1979 to 2009. The main objective is to see whether the determinants of financing and bank intermediation have an impact on economic growth. In order to test our hypotheses based on our objective, a regression model is used. The results indicate that the variables used for banking are all significant with the exception of dummy variables. However, contrary to our expectations, credit to the private sector negatively affects economic growth, while the banking rate positively influences the growth of the country; similarly, the level of financial development, the credit to Government, the intermediation margin and investment rates are positively related to economic growth as expected.

KEYWORDS: - impact, intermediation, determinants, financing, growth JEL classification: C2, C5, E5, E6

I. INTRODUCTION

The race to sustained economic growth is one of the major policy objectives of many developing countries and Cameroon is not outdone in terms of major projects initiated in its economy since the late 80. Thus, the Cameroon government has chosen to reform and develop the assets in which the system has to create economic growth needed for sustainable development. Taking into account changes due to economic and financial crises, the role of the banking system in the march towards sustainable growth process have been questioned, which led to the reform of the Cameroonian banking system and the liberalization of its financial sector observed since the 90s.

Thus, the importance of the banking sector in the development of an economy has been recognized in the theoretical literature for several decades (see Adam Smith (1776) and Schumpeter (1939)), which were the precursors. Similarly, the work of Goldsmith (1969), McKinnon (1973) and Shaw (1973) on the impact of the financial system on economic growth led to the conclusion that the financial sector accelerates economic growth and improves the performance of an economy by facilitating the movement of capital to the most productive sectors. At the empirical level, the controversies that the results of some authors raise underscore the specific character of each economy; thus, Levine (2003) notes that the obstacle could be the financing of economic growth. This opinion is approved by the work of Soumare (2009) on the Malian economy. By cons, the work of Romer (1986) and Pagano (1993), develop a model of endogenous growth to explain the mechanisms by which financial development accelerates economic growth through transmission channels. Given these differences in empirical studies it is necessary to investigate the case of Cameroon under the strict prudential framework established with the banking reforms of the 90s. Thus, the excess liquidity of banks since 2000 and a financial system that is struggling to take off towards the expansion worth paying attention.

The result of this work is organized around four sections including: a synthetic review of the literature (section 2), the analysis of banking in the evolution of the real sector in Cameroon (section 3), the study of the empirical effect of the banking sector on economic growth in Cameroon (section4), results and discussions (section 5), and finally a conclusion followed by recommendations.

II.   LITERATURE REVIEW

1.   The theoretical foundations

Adam Smith (1767) develops in his book "The Wealth of Nations", the role of banks in financing the economy. In his analysis of the role of credit and banks in financing the production and accumulation of capital in the long term, It focuses on long-term investment and gives banks the function of short-term financing by the discounting of trade and bills of exchange and not the long-term financing. Schumpeter (1912) in "the theories of economic development" gave a new direction to banking theories through a study of the conditions of financing economic development. It will break with the "base" of the classical analysis of investment financing introduced by A. Smith and said that savings can only make investment financing. For Schumpeter, banks will therefore finance the creation of fixed and circulating capital. They will do so by creating new means of payment and not from a pre- filed home savings, thus Schumpeter provides a clear vision of the kind of banking system he considers best able to finance innovation and promote economic development. According to him, banks must develop new means of payment and must not be mere financial intermediaries. Loans granted by banks create deposits (Schumpeter, 1939, 1964, p 93; Infra, p 57). Schumpeter thus opposes the traditional banking theory, which establishes the category of commercial bank, which limits the activity of banks than bank deposit, granting loans from the deposits received from savings agents. In general, the work of authors such as McKinnon and Shaw (1973) presuppose the existence of a positive link between the financial sector and economic growth. Thus McKinnon (1973) develops a model where investment is indivisible and requires the accumulation of prior savings. This savings is based on the real interest rate: the higher it is, the higher the amounts available for investment are important. According to the implications of the model of McKinnon, the financial repression prevents the economy from reaching its optimal growth rate. Artificially low rates lead to lower economic growth due to the low volume of investments related to low savings amounts collected. The conclusions of Shaw (1973) are similar to those of McKinnon. However, while McKinnon limits its analysis to the collection and redistribution of resources, Shaw takes into account the capacity credit of banks. The influence of the structure of the financial system on economic growth gives rise to a debate among economists of developed countries. Actually the contribution results in the conclusion that the banking financial system that promotes long-term projects, enables innovation in the economy.

2.   Empirical aspects of literature

In the early 80s, economists such as Jovanic Greenwood (1990), Bencivenga and Smith (1991), Robini and Sala -i- Martin (1992), King and Levine (1993a) and Saint Paul (1992) develop models of endogenous growth to analyze the interaction between the financial sector and economic growth . Meangon (2005) and Soumare (2009) studied the impact of bank finance on economic growth in Senegal and Mali respectively. It is clear from their analysis that the growth is mainly due to the level of credit to the economy and total deposits. Dembele E. (2010) analyzes the contribution of bank financing on the Ivorian economic growth from a simultaneous equation model (SEM). Using the triple least squares method (TLS), he also showed that the credit to the economy positively and significantly affect economic growth.

The positive effect of the financial sector on economic growth is not fully recognized by a number of authors. Thus Robinson (1952) showed that financial development is rather a consequence of the growth and the accumulation of capital. In the same line, Lucas (1988) showed that finance has no effect on economic growth, while Levine (2003) for his part said that the finance would be a drag on economic growth. Ngono (2004) showed from a multiple regression model in the case of the effect of credit to the economy on the evolution of global production in Cameroon that, the private credit sector does not affect real GDP.

The nature of the relationship between bank financing and economic growth was also the subject of several concerns: Sendeniz and Yuncu (2006) did an analysis of Granger causality in 11 OECD countries, the role of bank credit in the real sector; they noted that the banking sector plays a role of choice in the evolution of the real sector. Following the experiences of financial liberalization undertaken in Africa, Raffinot and Venet (1998) sought to establish a relationship between financial deepening and growth on a sample consisting of the countries of the West African Economic and Monetary Union (UEMOA), the relationship between financial development and economic growth has been studied from the method of panel data. The results led to reject the influence of financial deepening on the growth rate of GDP. Kpodar (2005) studied the link between financial development and growth in 64 developing countries (DCs), including 25 Sub -Saharan Africa, and taking into account their specificity. The results obtained using the Generalized Method of Moments dynamic panel show that compared to other developing countries financial development has a lower marginal impact on growth in sub- Saharan Africa.

Hay (2000) for his part in a sample of 12 countries, including six developed and six other developing countries concluded that bank lending negatively affects the growth of developing countries, but positively and significantly that of developed countries.

III.   ANALYSIS OF THE BANKING SECTOR IN THE EVOLUTION OF THE CAMEROONIAN ECONOMY

Cameroon has experienced more than two decades of growth after its independence in 1960. Its economy has achieved positive results through the continued development of industrial production and agricultural exports, which was added from the second half of the 70s, by the exploitation of oil resources. Cameroon has indeed recorded average growth rate of 4% between 1965 and 1977, the period was also marked by an embryonic banking sector. With the discovery and exploitation of oil, economic growth jumped to 13 % on average between 1977 and 1981; and during this period the banking landscape grew with banking reform of 1973, oil revenues will corollary swelling of bank resources. A graceful and uncontrolled distribution of public loans to enterprises and the state at the expense of the private sector is in place **and this through focusing on commodity and trade finance distribution**. Economic growth will finally keep a steady pace (around 8%) until 1985 (Tuna (2007)). During this period, the banking sector will know an accumulation of bad loans as loans granted were not always reimbursed. More banks accumulate a lot of losses because of mismanagement and fraud that were neglected by the monetary authorities. (Tchakounté and Bita (2009)). At the end of 1986, Cameroon experienced a period of crisis (economic and banking) generated by internal and external factors. As internal factors, we can note the high voltages in the treasury coffers and businesses due to mismanagement; repressive state policies, incompetence of credit managers, poor quality in the supervision of the banking system and in the process of issuing credit has resulted in defaults of payment, bad debts and severe liquidity problems of several banks (Tamba and Tchamanbé (1995)) . Regarding external factors, we can retain consistency of the decline in oil revenues, falling prices for agricultural commodities and the weaker U.S. dollar, which resulted in a significant deterioration in the terms of trade between 1986 and 1988. Thus between 1985 and 1995, gross domestic product fell by - 6.3% per year according to Tuna (2007).

The late '80s was marked by the bankruptcy and closure of several banks. Reforms prescribed to companies in the financial sector by the Bretton Woods institutions, provided first disengage the state of the productive sector and then to liberalize the financial sector. Thus, many banks will be liquidated and other restructured and recapitalized. An audit institution, the Central African Banking Commission (COBAC) will be standing by the BEAC (1992). Financial liberalization and other economic policy measures have enabled nonetheless sector to redress the situation. The growth rate became positive with an average of 5% per year. During this period, there is an improvement in the banking sector in bank liquidity effect are increased , going from 53 % between 1997 and 2000 to 100 % in 2006. However, banks have become very cautious and less engaging in financing the economy. We are witnessing the creation of a coordinated monetary market by the Douala Stock Exchange (DSX) in 2001 which marks the end of a repressive financial system. Reaching the completion point in 2006 despite weak growth in 2005 and 2006 with 2.8 % and 4.3% respectively will demonstrate the ability of Cameroon to continue servicing debt while ensuring economic and social development. Unfortunately, the financial crisis of 2008 came and weaken more and more the growth that was already not stable; however, it did not affect the financial sector remains immune to external shocks as opposed to foreign trade.

IV.   METHODOLOGY

In this section, we present our data in terms of their nature and source, then our econometric as well as various statistical tests that were conducted, and finally the variables and outcomes model.

1 . Nature and sources of data

The data collected for this study are time series of second hand. They were extracted from the database of the World Bank (World Development Indicators 2010) , the International Monetary Fund (IMF) and the report of the BEAC (2009). Our study covers the period 1979-2009 with an annual periodicity.

2 . econometric model

To show the influence of banking on economic growth in the case of Cameroon , we used a regression model developed from the growth function Romer , Mankiw and Weil (1992) and Hay (2000) to highlight the burden of financing variables and intermediation rate of GDP growth in real terms . The model is as follows:

$$PIBrt = a_0 + a_1 CRBN_t + a_2 CGOUV_t + a_3 MINT_t + a_4 M2/PIB_t + a_5 INVPIV_t + a_6 DUM1_t + a_7 DUM2_t + 1_t \varepsilon \qquad (8)$$

RGDP : Real Gross Domestic Product (rowth rate)
CBRN : Bank credit to the private sector
CGOUV : Credit to the Government or the net position of the Government
MINT : The intermediation margin
M2/GDP : The M2 money supply to GDP
INVPRIV : The private investment rate
Dummy1 : Banking reform
Dummy2 : Foreign bank financing (Dummy2)

Where a0 is the constant;
I (i = 1 , ... , 7) coefficients of exogenous variables ;
 1t : random perturbations.ε
In the econometric test , the variables are

3 . The statistical methods used
For a better quality of our regression results , we decided to perform several tests including:
• The test of the unit root Dickey - Fuller increases (ADF) , used to test the stationarity of the variables. Dickey Fuller tests can not only detect the existence of a trend, but also whether a series is stationary or not.
Autocorrelation test errors Breush - Godfrey, used to test the auto- correlation between the residuals of the model, this is because the Durbin Watson usual gives us biased results. To do this we consider the hypothesis of no autocorrelation of errors
• Testing for heteroscedasticity ARCH used to detect heteroscedasticity errors in our regression model.
4 . Selected variables and outcomes
a) Real gross domestic product (real GDP)
Taken as an indicator of economic growth, real GDP growth is the most widely used indicator to assess the state or the evolution of an economy. In our study, it seems to be appropriate given the availability of these data.
b) Bank credit to the private sector (CBRN)
They represent loans granted to the private sector and lending banking institutions and is measured relative to GDP (% of GDP) . This indicator tries to capture the weight of the banking business in terms of the distribution of credits. We therefore expect a positive sign in that regard .
c) Credit to the government or the government's net position (CGOUV)
This indicator quantifies the claims held by the banking system to the Government of Cameroon. View the prominent place which is attributed to the government in terms of national , investments needed for growth , one would expect a positive sign for his contribution.

d) The intermediation margin (MINT)

It represents the difference between the interest rate loan and deposit interest rates. It quantifies the contribution of banking intermediaries in the financial development and growth of domestic production , hence we expect a positive or negative sign depending on the influence of bank lending rates on private investment
e) The M2 money supply to GDP (M2/GDP)
It represents the quantity of money and quasi money in circulation. It is expressed in % of GDP where M2/GDP ratio which is often considered the banking rate , measuring the level of financial development or the degree of financial deepening . Its sign should be negative given the low level of involvement of household financial system and the expansion of the informal financial system in Cameroon.
f) The private investment rate (INVPRIV)
 The private investment rate is defined by the volume of investment in relation to GDP produced by the private sector. According to economic theory , the investment is considered to be the engine of economic growth in a country where its effect on growth should be positive.
g) The banking reform (dummy1)
It corresponds to the set of measures (restructuring , banking supervision , liberalization) snuff by the government and the monetary authorities in the early 90s to deal with banking crises difficulties that prevailed in the 80s . To highlight the effects of all financial reforms on growth, was taken to the definition of a dummy variable that takes the value 1 for the years of reform and 0 for years without reforms. Its impact on growth should be positive.
h) Foreign bank financing (Dummy2)
Funding is the main contribution of banks to economic growth. In Cameroon this contribution from outside has been dramatically reduced by the economic and financial crises of the 80s, the austerity measures of structural adjustment programs and later is seen to enhance the financial liberalization. Its impact on economic growth is represented here by a dummy variable that takes the value 1 for years when there was funding from outside and 0 for years without such funding. A positive sign of this variable is expected

V.   RESULTS AND DISCUSSION
1- **Unit root test and econometric interpretation**
These results indicate that most of the series are non-stationary with the exception of the investment rate (INVPRIV) which is stationary. Explained the real GDP is non-stationary variable, we can not apply the principle of the stationary group . We perform a unit root test on the residues of the first model. If the test is

stationary, we proceed to estimate if there is a test of co-integration or long-term relationship between the dependent variable and the explanatory variables. In this case, the unit root test on the residue is stationary (Table 1) . From this table, all variables are significant at 1% level of significance; except for the dummy1 variable that is significant at 5% and Dummy2 variable which is not significant. The adjusted coefficient of determination is 96% and shows that the model is well specified, and the Fisher test (F test) is well above 10 (122.37). There is also an absence of autocorrelation and this is proved not only by the Durbin Watson, but also by the Breusch-Godfrey presented in Table 3 below. Indeed, the null hypothesis of no autocorrelation could not be rejected with a probability of 0.3612. In addition, the ARCH test described below allows us to conclude the absence of heteroscedasticity in the model. Indeed, the null hypothesis of no heteroscedasticity could not be rejected with a high probability of 0.7.

2. Analysis and discussion of results

The analysis of the model indicates that the exogenous variables are significant with the exception of dummy variables (dummy1, Dummy2).

Bank credit to the private sector: its coefficient is negative (- 0.579381) and significantly higher. This sign is absurd because this result is not consistent with economic theory; we expected to have a direct positive impact on economic growth. Indeed, empirical studies show that credit growth is positively related to economic growth in accordance with the work of several authors such as Bencivenga and Smith (1991), Goldsmith (1969). However, our finding is consistent with that of Lucas (1988), Levine (2003), of Soumare (2009) on the Mali economy. Also, Hay (2000) on a sample of 61 developed and underdeveloped countries and Nelly Ngono(2004) for the study of intermediation Banking and economic growth in Cameroon. This can be partly explained by the statistical problems of developing countries such as Cameroon.

Bank credit to the government: Its coefficient is positively and significantly related to real growth. This implies that a 1% increase in credit to the government will result in a positive increase in the real level of growth which joined the theoretical and empirical results of most of the authors of our theoretical and empirical literature.

The intermediation margin: Our results demonstrate the positive and significant contribution of added value that emerges from the banking business to real GDP growth. In fact a 1 % increase of banking intermediation margin would result in an increase in the level of real GDP. This result is confirmed by the work of Nelly Ngono (2004) on the effect of bank intermediation on economic growth in Cameroon and those of Isaiah Dembele (2010) on the economy of Côte d'Ivoire.

The rate of banking or financial deepening: the coefficient is positive and highly significant. A variation of the banking rate will result in a change in the same direction of the real growth of the economy. This result is contrary to our expectations given the low involvement of economic agents (mainly households) in the formation of fixed capital through the mobilization of savings. This was disapproved by the empirical work of Toukam (2010), on the countries of the CEMAC zone, the work of Mbitty Fall (2004) on Mauritania. However, this result confirms the theoretical work of Ohlin (1939), McKinnon and Shaw (1969) and Berthélemy Varoudakis (1998).

The investment rate in the private sector: private investment despite its low influence actually contributes to the Cameroonian economy. Indeed, the positive and significant coefficient indicates that an increase in the investment rate in the private sector will lead to a rise in the real rate of growth of the Cameroonian economy. This is even more true that the theory of endogenous growth of Romer (1986) and Pagano (1993) shows the importance of the formation of capital stock on productivity and therefore on economic growth in the long term. Similarly Toufano (1995) shows that the mobilization of capital determines the economies of scale for growth which fully explains the role given to the investment rate as an indicator for measuring the transmission of financial flows in the real sector. However, while the banking reform negatively but not significantly affected the real growth of the economy, the external bank financing during the same periods has not significantly contributed positively to growth. The non-significance of financial reform measures regarding the liberalization is confirmed by Lucas (1988) and empirical work of M'bitty Fall on financial intermediation in Mauritania. Tchakounté and Bita (2009) explain the financial mismanagement of state resources during those periods of financial repression and especially Funding "white elephants".

Tableau 1: Results of unit root test on the residue

Null Hypothesis: RESID02 has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on SIC, maxlag=5)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-4.215230	0.0035
Test critical values:	1% level		-3.752946	
	5% level		-2.998064	
	10% level		-2.638752	
*MacKinnon (1996) one-sided p-values.				

Source : EVIEWS 5.2

## a)	Results

Table 2: **Results of Ordinary Least Squares**

Dependent Variable : LPIBC
Method: Least Squares
Sample: 1979 2009
Included observations : 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.673209	1.239846	2.156082	0.0418
LCB	-0.579381	0.073040	-7.932413	0.0000
LCGOUV	0.740050	0.095914	7.715762	0.0000
LMINT	0.579435	0.159195	3.639779	0.0014
LM2/PIB	1.240162	0.172641	7.183484	0.0000
LINVPRIV	0.381832	0.112422	3.396433	0.0025
DUM1	-0.087294	0.044168	-1.976394	0.0602
DUM2	0.053947	0.037697	1.431088	0.1659
R-squared	0.973853	Meandependent var		12.65560
Adjusted R-squared	0.965896	S.D. dependent var		0.248825
S.E. of regression	0.045951	Akaike info criterion		-3.104833
Sumsquaredresid	0.048565	Schwarz criterion		-2.734772
Log likelihood	56.12492	Hannan-Quinn criter.		-2.984203
F-statistic	122.3798	Durbin-Watson stat		1.498847
Prob(F-statistic)	0.000000			

Source : Eviews5.2

a) The consequences of the lack of private sector credit

In Cameroon, banks focused their interventions towards short-term financing at the expense of long-term financing. At this level, it is easier for us to understand why in our empirical analysis the credit to the economy negatively influences the actual long-term growth. Indeed, loans granted without prior prudential measures were used to finance activities very risky performance and very low downtime (short-term funding). Thus the profitability of investment remained positive until 1985 (approaching 60%) became negative until 1990 (Tchakounté and Bita, 2009) reflecting the light in monitoring projects funded. Funds sunk into these types of financing could only be shortfalls in other sectors of the economy, which has led to imbalances that are (economic crisis). Indeed, this phenomenon can be explained through the law of diminishing returns or proportional of Ricardo and Mill.

b) The role of bank financing in economic development

In developing countries as in Cameroon, we encounter a "debt economy" essentially. Debt is a factor of development only if the resources that come from actually funded projects for sustainable growth. This implies that many infrastructure and social investments must first precede industrialization and large-scale commercialization. Thus for sustained growth, the state must develop economic infrastructure such as roads, railways, ports and airports, especially energy. On the social level, the emphasis should be placed on the housing, health, education and especially vocational training. Hence the need for the state to design

development plans and to borrowing in the medium and long term. There should therefore be a positive influence of loans to the state by the bank on economic development.

c) The margin of intermediation in economic growth

Since 1990, rates have been liberalized in banks; only remain fixed the maximum lending rate and the minimum lending rate. Between 1989 and 1997, the difference between the maximum lending rates for medium-term operations of the regular customers and the minimum deposit rate on deposits of 12 to 24 months increased from 8.9% to 17% and turned around 11% from 2006 which shows that the profit margin that emerges from the intermediation function can not be negligible for financial development and thus for economic growth in Cameroon. Given that mediation can substantially influence the financial development without going through the credits, this means it is more oriented towards the collection of deposits, that's why banks multiply the counters and staff to increase their market share. In addition, they must also minimize leakage of deposits to other collection systems (treasury, savings ...), multiply the investment instruments available: books, savings, housing, etc...

d) Financial deepening and economic growth

Studies by the World Bank (2009) led to the conclusion that a 10% increase in financial depth (liquidity ratio) is accompanied by an acceleration of growth in GDP per capita of 2 8%, which is considerable. This against all expectations confirms the results of our study regarding the positive impact of financial deepening on growth of real GDP. Despite the fact that in the countries of sub-Saharan Africa, namely Cameroon, domestic savings knows disparities because of hoarding and the expansion of the informal financial sector (use tontine as a means of financing) which is an obstacle to the development of the banking sector, real channel for increasing the gross domestic investment (APBT, 2011).

VI.   CONCLUSION AND RECOMMENDATIONS

This study allowed us to identify the influence of the banking sector on economic growth in Cameroon. Through an empirical approach, we have shown that the determinants of the banking business had a significant influence on economic growth. Indeed, the credit to the government, the intermediation margin and the rate of private investment significantly and positively influence real GDP which has been recognized by several authors in the literature. However, credit to the private sector negatively influences the real GDP, which could explain the lack of lending to the key Cameroonian economic sector, in addition, the rate of bank against all odds significantly and positively influences real GDP proof that the conquest of the informal sector should be at the center of development strategies in the financial sector for a more efficient system in the overall GDP growth.

As recommendations relating to the lack of bank financing to the private sector, and given the obstacles in mobilizing savings, we suggest as possible solutions: