

Does Saving Mobilization Enhance Credit Granting? An Evidence from Cameroon Rural Areas

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Abstract: *Join effects of economic isolation and difficulties of managing credit risk slow down the expansion of banks in rural areas. Financial structures that are deployed there are rural microfinance institutions that collect local savings and finance economic activity. The goal of this paper is to highlight the impact of savings mobilization on credit granting in rural areas. Based on data collected by the World Council of Credit Unions (WOCCU) from 2007 to 2018, and covering ten microfinance institutions involved in rural financing, the specifications of the Generalized Moment Methods (GMM) applied to unbalanced panel data show that increase in savings has a very weak impact on credit granting in rural areas. It calls National Monetary Authorities and the Central Bank to support the credit granting mechanisms in order to interest commercial banks.*

Keywords: Bank credit; Microfinance; Unbalanced Panel; Rural areas; Savings Mobilization

1. Introduction

The inclusive and sustainable development of rural areas in Cameroon is linked to improving the living conditions of the people living there (Islam et al., 2014 ; Akwaa-Sekyi, 2013 ; Shah et al., 2007). The Ministry of Economy, Planning and Regional Development (MINEPAT), places the rural sector as central to the creation of employment and income-generating activities as well as food security (MINEPAT, 2015). According to the National Institute of Statistics (NIS), 59.7% of the population lives in rural areas (NIS, 2015). The latter express needs in terms of infrastructure, education, health, and training among others. The incidence of poverty is estimated at 56.8% in 2014, and up 1.8 points from 2007 (NIS, 2015). However, the lack of appropriate financing structures is a characteristic of these areas. Yet, rural finance is recognized as a critical element in poverty reduction (Zeller, 2003).

Factors such as high level of risk, the absence or weakness of collateral, low and unstable incomes, uncertainty, and high informational and operational costs (Onumah, 2003 ; Ladipo, 2008 ; Ibrahim, 2008 ; Abassi et al., 2009), explain the poor development of microfinance in rural areas. Microfinance in these areas operates on the basis of short term savings, an intrinsic characteristic of rural cooperatives, and allows for control by its members (Armendariz and Morduch, 2003 ; Barnerjee et al., 1994). This collection of savings appears to be the mode of financing loans by ensuring an objective of financial autonomy (Sangaré, 2014). However, these organizations only imperfectly meet the demand for financing from the rural world (Morvant-Roux, 2009). The rural world expresses medium-term financing needs for agropastoral campaigns and longer-term needs for capital goods (Christen and Pearce, 2005 ; Wampfler, 2002a and 2002b). This raises the problem of granting medium- and long-term credit at a level capable of stimulating and transforming the economic physiognomy of the rural world.

This study has a double practical interest. On the one hand, the issue of developing bank credit in rural areas by mobilizing local savings has interested the authors for years, and even more so since the Millennium Development Goals (MDGs) in 2000, which have been merged and reformulated into Sustainable Development Goals (SDGs) since 2015, and the objective of reducing poverty by enabling rural populations to access credit and local financial products. In addition to the poverty reduction and development issues, the question takes on additional importance in the banking sector. Theoretical work attempts to show the importance of diversifying bank portfolios through the development of rural finance. On the other hand, mastering the relationship between savings mobilization and credit supply provides monetary authorities and commercial banks with avenues for developing regulatory mechanisms to ensure viability and inclusion for the former and a field of expansion for the latter, by identifying the levers on which to act.

This article aims to examine the existing relationship between the collection of local savings and the granting of credit in rural areas in Cameroon. It seeks to verify empirically whether, given the current operating model of rural microfinance, an increase in resources would substantially increase the granting of credit for the financing of rural activities. To do this, the study is based on data from 10 microfinance institutions that focus on rural financing between 2007 and 2018. The approach consists firstly of an analysis of the joint dynamics of the volumes of credit granted and savings mobilized annually by the microfinance members of the World Council of Credit Union (WOCCU) network in Cameroon between 2007 and 2018, and secondly of the modeling of the relationship between the granting of credit and savings in rural areas by specifications and estimation of Generalized Moment Methods (GMM) models on unbalanced panel data.

This paper is organized into five sections include this introduction part. The second section deals with the literature review and the third section presents the data and the method. The fourth section presents and discusses the

results. Section 5 is devoted to the conclusion and policy recommendations.

2. Litterature Review

2.1 Brief overview onrural area in Cameroon

2.1.1 Population and living standard

Rural areas in Cameroon are predominantly made up of aging people. Living conditions are difficult, due to limited access to health care, education and basic infrastructure in general. The level of income is low and uncertain due to the informality of activities and the vagaries of the climate. More over, agriculture is the predominant activity. The incidence of poverty is estimated at 56.8% in 2014 (NIS, 2015) and up 1.8 percentage points from 2007. In addition, rural areas in the northern parts of the country are particularly affected by poverty, food insecurity and climate disruption.

2.1.2 Productive and financial sector

The productive sector is not developed and, animal, plant, and fish production does not cover the food needs of the population. The low development of the productive sector is due not only to poor access to energy and communication infrastructure, but also to a lack of production factors (inputs, equipment, skilled labor, etc.). Concerning the financing sector, there are no bank branches located in rural areas. Although these structures are not found everywhere, cooperative, associative and mutual organizations are responsible for mobilizing savings and granting micro-credits. In some areas there are microfinance organizations with extensive networks in several localities.

2.1.3 Financing agriculture in rural area

*Platform for Agricultural Risk Management*¹(PARM) recognizes that one of the major risks facing agriculture in Cameroon is the very limited access to financing for this sector. Indeed, "the banking sector is characterized by a very low penetration rate and the low amount of credit allocated to the rural sector. Only 2% of the active population in rural areas have ever obtained credit from a formal institution (PARM, 2017). While 57.9% of the rural population report saving, only 7.8% do so in a formal organization (PARM, 2017). The financing of these organizations on the basis of savings is due to the weak development of local financial markets. Furthermore, the low associated cost (Bald, 2008) would justify this dominant type of funding by these organizations. However, according to the Ministry of Finance (MINFI), savings in rural areas are very often on demand and do not allow for their transformation into medium and long-term credit (MINFI, 2011). Microfinance in rural areas benefits very little from public subsidies. In this context, the savings-based financing model is essential (Creusot and Poursat, 2009).

¹ PARM strive to make risk management an integral part of agricultural policy and investment planning

2.2 Access to bank credit in rural areas

2.2.1 Credit in the financing of the economy

Through the mobilization of savings and facilitating payments, the financial sector plays a crucial role in expanding access to finance, stemming the tide of poverty (Zhang et al., 2009), and leading to increased financial inclusion. Areas with low access to credit experience slow development. Bhattacharya and Wolde (2010) found that inadequate access to credit has stunted growth in Middle East and North Africa (MENA) countries relative to the rest of the world. There are a number of reasons for the areas' unequal access to financial services.

2.2.2 Determinants of financial inclusion

Studies such as Naceur et al. (2017) have identified some determinants of financial inclusion. First, structural factors that determine the cost of providing financial services to the population. Second, policy-related factors that can create enabling environments for financial inclusion, such as an environment with multiple financial institutions (Love and Martinez, 2015). Third, some non-political characteristics of the country. For example, Aga and Martinez (2014) show that international remittances to Sub-Saharan Africa also play a role, as remittance recipients are more than likely to have a bank account.

2.3 Saving mobilization and bank loan offer

2.3.1 Saving Mobilization

Various authors have emphasized the importance of deposit mobilization in achieving financial sustainability of rural microfinance institutions. Ongoing deposit mobilization improves the sustainability of the microfinance institution in providing credit and contributes significantly to its self-sufficiency (Ledgerwood, 1998; Ledgerwood et al., 2013; Branch and Klaehn, 2002). According to Van der Steeren (2004), deposits are the most valued form of funding as well as a stable and inexpensive source of funds for small financial institutions. Collecting deposits allows the microfinance institution in rural areas to provide a much-needed service to more poor clients and reduce capital costs (Hartarska et al., 2011).

Bogan (2012) studied the impact of capital structure on the sustainability of microfinance institutions using Panel data on microfinance institutions in Africa, East Asia, Eastern Europe, Latin America, the Middle East, and South Asia for the period from 2003 to 2006. His empirical finding showed that the size of the microfinance institution's assets and capital structure were associated with the performance in financing the economies. According to Kinde (2012), microfinance institutions improve their sustainability and funding of the economy through savings mobilization. His finding also indicated that savings could expand loan portfolios, reduce loading rates, and shift to meeting demand.

2.3.2 Bank loan offer

The interest rates charged are a significant barrier to accessing credit in rural areas (Aliero and Ibrahim, 2013). Keynes (1936) highlighted that investment is a decreasing function of the interest rate. This means that the demand for

credit is a decreasing function of the interest rate. Interest rates are very high in developing countries, particularly on microcredit, because of the higher administrative costs relative to the scale of operations (Sacerdoti, 2005). In Cameroon, the real annual interest rate charged in rural areas varies from 18% to 60% (MINFI, 2013). This greatly hinders the development of bank credit in these areas. Financial institutions charge interest to borrowers of which a certain percentage will be paid to savers as a savings rate. At a higher savings rate, savings will be attractive and likewise, banks will make more loans, but investors will reject more loans as the interest increases (Alierio and Ibrahim, 2013).

2.3.3 Link between saving mobilization and credit granting

Using unbalanced panel data collected from 23 microfinance institutions in East Africa over the period from 2004 to 2009, Tehulu (2013) found a significant influence of deposits on financial sustainability and credit extension in East Africa. Yaron (1994) further indicated that the success of a rural financial institution in mobilizing savings was crucial to its self-sufficiency and thus its ability to finance rural activities.

Several studies have examined the effectiveness of microfinance in rural areas in Cameroon (Ngoa Tabi and Ondoua, 2015; Tchouassi et al., 2015) based on the Malmquist and Data Envelopment Analysis (DEA) approaches. The relationship between saving mobilization and loan offer was studied by Alierio and Ibrahim (2012) in rural Nigeria. Based on savings and credit volumes over a 27-year period, and using Engel and Granger (1987), Augmented Dickey Fuller, and Johansen (1998) modeling, they showed that there is a positive relationship between savings mobilization and credit extension. However, they found that less than half of the savings mobilized in rural areas were disbursed as loans in these same areas.

3. Method

3.1 Data source and variables

3.1.1 Data source

This study is based on data from 2007 to 2018 from the Mix Market² and WOCCU statistical reports. They cover a sample of 10 microfinance institutions oriented towards financing activities in rural areas in Cameroon. The choice of this period is due to the availability and completeness of data from Cameroon microfinance institutions members of the WOCCU network.

3.1.2 Variables

Based on theoretical and empirical review of the literature, variables selected for this paper are the following: the annual volume of credit granted, the annual volume of savings collected, the annual volume of interest generated by the loan portfolio, the annual volume of fees on loans granted, the annual number of depositors, and the annual number of borrowers. For the purposes of macroeconomic analysis, we

choose to use the annual volume of interest generated by the loans granted instead of the interest rate, which can vary depending on the loans granted by rural microfinance institutions. We also choose to take into consideration variable capturing fees on loans granted in order to refine estimations and analyses.

3.2 Empirical method

3.2.1 Analytical approach

Dynamics analysis of volume of credit granted and savings mobilized in rural areas is based on a graph representing the joint evolution of the two series, and descriptive statistical tools. The relationship between credit granting and savings mobilization in rural areas is captured through the specification of models on unbalanced panel data from a sample of microfinance institutions involved in rural financing over the period 2007 to 2018. The econometric model is defined by equation (1).

$$C_{it} = \beta_1 S_{it} + \beta_2 I_{it} + \beta_3 F_{it} + \beta_4 D_{it} + \beta_5 E_{it} + \theta_i + \mu_t + \varepsilon_{it} \quad (1)$$

Where, C_{it} denotes the volume of credit extended by rural microfinance i in year t ; S_{it} the volume of savings collected by rural microfinance i in year t ; I_{it} the volume of interest generated by the loan portfolio by microfinance i in date t ; F_{it} the volume of fees on credit extended by microfinance i in date t ; E_{it} the number of borrowers at microfinance i in date t ; D_{it} the number of depositors of microfinance i at date t ; $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are parameters to be estimated; θ_i an individual effect that captures the effect of unobserved determinants specific to each rural microfinance and invariant over time; μ_t is the time-specific effect; and ε_{it} an error term assumed to be uncorrelated with the explanatory variables.

3.2.2 Analytical approach justification

The proposed panel data approach has two advantages for this study. From an econometric view, it provides a large number of observations to estimate relationship between credit granting and savings mobilization in rural areas, and also allows for testing the existence of heterogeneity between microfinance institutions. From an economic perspective, it allows for a direct comparison of the relationship dynamic between credit granting and savings mobilization in several rural microfinance institutions.

According to Baltagi (2008), many economic relationships are dynamic in nature and one advantages of panel data is that it allows researcher to better understand the dynamics of adjustment. The use of panel data model allows for the introduction of dynamic effects (Baltagi, 1995), capture the dynamic effects of current or past shocks (Hsiao, 2014), control for unobserved and missing variables or relationships, and allow for the identification of effects specific to microfinance institutions (Arellano-Bond, 1991; Pesaran et al., 1996).

If y_{it} is the dependent variable in microfinance institution i , and x_{it} is the vector of microfinance institution-specific regressors (Hsiao, 2007), then a panel data model can be set up as follows:

²Data are available on www.themix.org/mix-market

$$y_{it} = \partial y_{i,t-1} + \beta x_{it} + u_{it} \quad [i = 1, 2, \dots, N; t = 1, 2, \dots, T] \quad (2)$$

∂ is a scalar, μ_i is the individual fixed effect specific to the microfinance institution i . u_{it} is the error component of the model such that :

$$u_{it} = \mu_i + \vartheta_{it} \quad [\mu_i \sim IID(0, \sigma^2_\mu); \vartheta_{it} \sim IID(0, \sigma^2_\vartheta)] \quad (3)$$

μ_i and ϑ_{it} are independent (Baltagi, 2005). μ_i is the vector of unobserved factors.

To account for slope dynamics and heterogeneity in modeling the relationship between loan offer and saving mobilization as well as control variables in a panel data setting, the specifications can be improved as follows :

$$y_{it} = \varphi_0 + \varphi_y y_{i,t-1} + \sum_{j=1}^p \varphi_x x_{it} + u_{it} \quad (4)$$

However, due to the inclusion of the lagged dependent variable $y_{i,t-1}$ in the model, panel data regression is characterized by two sources of persistence over time : autocorrelation due to the presence of a lagged dependent variable among the regressors and individual effects characterizing heterogeneity among individuals (Baltagi, 2005). Although it has been established in the literature that these problems could hamper the robustness of the estimated model, a number of estimation techniques (Arellano and Bond, 1991 ; Arellano and Bover, 1995; and Blundell and Bond, 1998) using the generalized method of moments (GMM) have been developed to solve the problem of the lagged dependent variable in the specification of a panel data model (Deaton, 1997).

Unlike dynamic panel GMMs, standard econometric techniques such as ordinary least squares (OLS) do not provide unbiased estimates of such a model, because of the presence of the lagged dependent variable on the right-hand side of the equation. This results in biased estimates. The GMM method relies on the orthogonality conditions between the lagged variables and the error term, both in first differences and in levels. When the dynamic model is expressed in first differences, the instruments are in levels, and vice versa.

The validity of the selected instruments can be confirmed or refuted, using the Hansen and Sargan tests. There are two variants of GMM estimators in the dynamic panel :

- Arellano and Bond's (1991) first difference GMM estimator : this consists of taking the first difference of the equation to be estimated for each period in order to eliminate the individual specific effects. The lagged endogenous variable is then instrumented by its past values of two or more periods. However, this method does not identify the effect of time-invariant factors ;
- The GMM estimator in Blundel and Bond's (1998) system : it combines the first difference equations with the level equations. The instruments in the first difference equation are expressed in level, and vice versa.

Blundel and Bond (1998) have shown with Monte Carlo simulations that the system GMM estimator performs better than the first difference GMM estimator, which gives biased results in finite samples when the instruments are small.

The estimation of a GMM in a system characterized by equation (1) results in equation (5).

$$\Delta C_{it} = \beta_1 \Delta C_{i,t-1} + \beta_2 \Delta S_{it} + \beta_3 \Delta I_{it} + \beta_4 \Delta F_{it} + \beta_5 \Delta D_{it} + \beta_6 \Delta E_{it} + \Delta \mu_t + \Delta \varepsilon_{it} \quad (5)$$

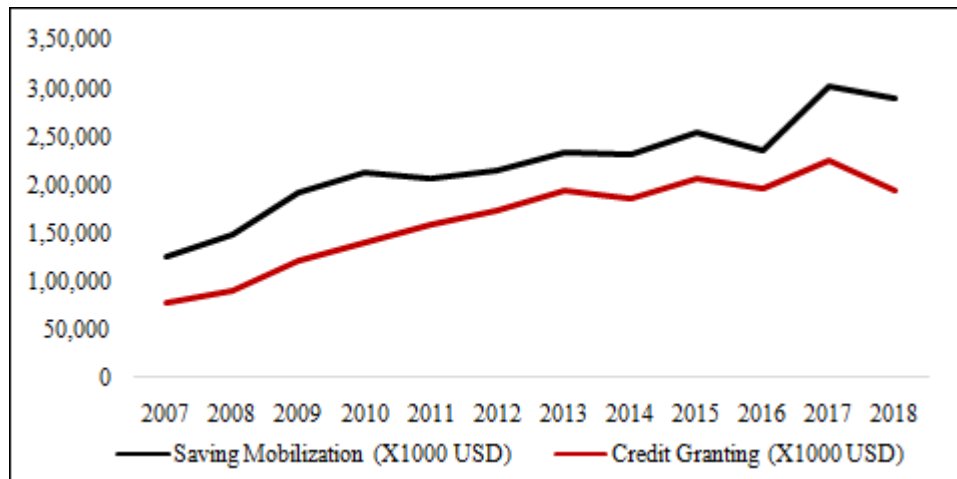
The effectiveness of the GMM estimator relies on the validity of the following assumptions : (i) the instruments are well valid and (ii) the error terms are not autocorrelated. To test the validity of lagged variables as instruments, Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998) suggest the Hansen/Sargan overidentification tests. In this work, we use the Hansen test because it is effective in the presence of autocorrelation and heteroscedasticity problems (Roodman, 2007; Neanidis and Varvarigos, 2009). To test the hypothesis of non-correlation of the error terms, we perform a second-order autocorrelation test because by construction, the first-difference error term is correlated to first order (Levine et al., 2000).

4. Results and discussions

4.1 Dynamic of saving mobilisation and credit granting

Since 2007 and the entry into force of the 21 regulations 01/02/CEMAC/UMAC/COBAC, the dynamics of savings mobilization and credit granting by financial institutions in rural areas have been growing. Microfinance institutions in rural areas are granting more and more credit. Graph 1 illustrates the growing dynamics of savings mobilization and credit granting by WOCCU microfinance members in Cameroon. Excluding major underperformance in 2018, with a sharp decline of more than 18% observed compared to the previous year, the annual credit volume granted by cameronian microfinance institutions member of the WOCCU network has increased overall by more than 149% over the period from 2007 to 2018, with an average annual growth of more than 9%.

The upward trend in the volume of credit granted in rural areas can be explained not only by the increase in financial inclusion and therefore in credit requests, but also by the increase in the technical and managerial skills of credit managers. They have benefited from several projects and programs that have enabled them to strengthen their capacities. Also, in terms of credit granting, microfinance institutions in rural areas grant individual or group credits. The promotion of the grouping of economic actors in rural areas into Cooperatives or Common Initiative Groups (COOP/CIG) in recent years can also explain the evolution of the volumes of credit granted. This is because the groups are very often able to present collateral and are more easily able to pass a technical and financial evaluation. In addition, credits are granted according to a credit methodology that is documented in procedure manuals. This ensures viability and therefore recovery.



Graph 1: Evolution of savings and loan offer in rural areas of Cameroon in the WOCUC network

Source: World Council of Credit Union (WOCUC) and authors, 2022

The trend in saving mobilization is also upward. Saving mobilization is just as important as credit in meeting the needs of rural population (Boomgard and Angell, 1994). The growth in the annual volume of savings mobilized by WOCCU microfinance members in Cameroon has increased by more than 130%, with an average annual growth rate of more than 8 percent (Graph 1). The modernization of microfinance management in rural areas has increased rural populations' confidence in finance and promoted financial inclusion. The need for access to credit by rural populations and the financing opportunities offered by membership in a rural savings and loan or other form of microfinance in rural areas explain this growing dynamic over the years. These rural financial institutions offer savings mobilization products such as short and medium savings plans to rural populations.

Over the period 2007 to 2018, the volumes of loans granted and savings mobilized by microfinance institutions in rural areas have shown almost similar upward dynamics (Graph 1). This strong positive correlation between savings mobilization and credit granting could reveal the capacity of local savings collection to finance loans. However, these are almost exclusively short-term loans to finance the specific needs of rural populations. For production units in rural areas, the credit granted are mainly to acquire small equipment, agricultural inputs, or to expand commercial activities. These loans are mainly of short maturity and small amount. Since the savings mobilized are mainly on demand. Indeed, in savings cooperatives, members generally mobilize their savings over a maturity of not more than one year. These resources are certainly suited to this type of credit, but they leave many other needs necessary for the development of rural populations unmet.

4.2 Impact of saving mobilization on credit granting

Table 1 summarizes the estimations of equations specified to capture impact of saving mobilization on credit granting in rural areas. Equations (a1) and (b1) are estimated by the GMM difference estimator method proposed by Arellano and Bond (1991). Equations (a2) and (b2) are estimated by the GMM system estimator technique proposed by Arellano and Bover (1995) and Blundell and Bond (1998). The

Sargan over-identification tests carried out and reported in Table 1 validate the lagged variables as instruments. This test therefore rejects the hypothesis of over-identification of the specified models. The p-values are all higher than 5%. It also shows the validity of the hypothesis of non-correlation of the error terms for estimations (a1), (b1), and (b2). Indeed, the second order autocorrelation tests performed on these equations all have p-values higher than 5%. The estimates made in this article are therefore globally valid and we can proceed to their interpretation.

The relationship between credit granting and savings mobilization is highlighted by the estimated models summarized in Table 1, which show the impact of savings and interest on credit granting in rural areas. Estimations reveal a positive and significant impact of savings (Estimations (a2)) and the number of depositors (Estimations (b1) and (b2)) on credit extension. However, the growth in savings only has a very small impact on the supply of credit. In fact, for a one percent increase in the volume of savings, credit granted would grow by only 0.11 percent (Estimations (a2)). This can be explained by an economic environment in rural areas that is characterized by difficulties to deal with credit risks. In estimations, this can be seen by the negative and significant impact of the number of borrowers on the volume of credit granted (Estimations (b1)).

Indeed, the default of the first borrowers leads to credit rationing. This results in a decline in the volume of credit granted with the number of borrowers. Economic activities are carried out in an uncertain environment, marked by fluctuations of income depending on rainfall and other agropastoral risks, and market instability. The informal nature of activities and the lack of supervision of farmers are also a credit risk factor. As Sambe and Agboli (1997) note, because of their concern for financial viability, credit institutions avoid taking risks by financing the rural poor. More over collateral is sometimes difficult to mobilize. In fact, it is difficult for the population to produce the required guarantees because of poor access to property titles. In addition, the phenomenon of moral hazard is widespread and difficult to control. All these circumstances lead credit managers to ration credit granting.

Table 1 also highlights the significant negative impact of interest on credit granting in rural areas (Estimations (a1), (b1), and (a2)). Indeed, real interest rates in rural areas are very high. These real interest rates on credit granting in rural areas can sometimes reach 60% (MINFI, 2013). In a context of a real difficulties to deal with credit risks, microfinance institutions in rural areas use the interest rate as a risk selection tool. Estimations (a1), (b1), and (a2) presented in table 1 reveal that an increase of one percentage point in

interest rates would result in a reduction of between 0.148 and 0.497 percentage points in the volume of credit granted. In addition to high interest rates, the transaction costs of extending credit are quite high in rural areas. Estimations (a1), (b1), (a2), and (b2) show a positive and significant sign for coefficientson borrowing fees. Moreover, these coefficients are high and may reflect a strong increase in loan fees on the volume of credit granting in rural areas.

Table 1: Impact estimation of saving mobilization on credit granting

VARIABLES	Arrelano-Bond		Arrelano-Bover/Bundell-Bond	
	(a1)	(b1)	(a2)	(b2)
	<i>CreditGranting</i>	<i>CreditGranting</i>	<i>CreditGranting</i>	<i>CreditGranting</i>
<i>L.CreditGranting</i>	0.296*** (0.0204)	0.316*** (0.0121)	0.166** (0.0691)	0.371*** (0.00896)
<i>Saving mobilization</i>	0.0228 (0.0167)		0.110*** (0.00937)	
<i>Borrowing fees</i>	8.994*** (0.419)	8.803*** (0.106)	11.55*** (1.451)	7.655*** (0.138)
<i>Interest on Borrowing</i>	-0.319*** (0.0491)	-0.148*** (0.0495)	-0.497* (0.264)	0.0237 (0.0682)
<i>Number of borrowers</i>	-13.61 (25.72)	-18.10** (8.384)	-127.3 (81.29)	1.655 (39.14)
<i>Number of savers</i>		1.838** (0.729)		5.968*** (0.198)
<i>Constance</i>	1.016e+06*** (182.516)	1.090e+06*** (302.294)	1.747e+06*** (621.358)	-282.115 (508.071)
<i>Observation</i>	58	58	70	70
<i>Microfinance</i>	10	10	10	10
<i>Instruments</i>	45	45	13	13
<i>AR(2) [p-value]</i>	0.15	0.13	0.03	0.15
<i>Sargan [p-value]</i>	0.99	0.99	0.929	0.051

Standard deviation in parenthesis

*** p<0.01; ** p<0.05; * p<0.1

Source : Mixmarket and authors, 2022

These phenomena are due to the difficulty of understanding the economic environment in rural areas by microfinance institutions. This is also materialized by high transaction costs. These high costs due to the risk aversion of microfinance in rural areas hinder the sustainable financing of the activities of rural populations and suggest the need for the State to intervene to support the rural world. Moreover, the World Bank (2008) has already recognized the difficulty of the private sector to effectively finance rural populations. Would it not be necessary to establish national development banks to provide long-term financing and technical assistance to areas and sectors that are not adequately served by the private sector ? as suggested by the United Nation in 2005. Successful examples have been observed in India (Fouillet, 2009 ; Lapenu, 2000). And another example is being implemented in Guinea Conakry with the National Bank of Investment of Guinea where the board is shared between the State and the private investor.

5. Conclusion and recommendations

The expansion of bank credit in rural areas is a key issue for the socio-economic development of these areas. This is all the more the case as rural development strategies are based on the existence of sustainable and inclusive financing

mechanisms. Moreover, the development of bank credit in rural areas is an opportunity for commercial banks to diversify their portfolios. It appears, however, that these rural areas are poorly served by basic financial products. This is due to the absence of commercial banks in these areas. The rural microfinance institutions that are deployed in these areas are in some cases microfinance institutions organized as companies, but more generally they are structures as an associative, mutual or cooperative nature.

These microfinance institutions partially cover the specific needs of rural populations based on local savings they collect locally. Unfortunately, resources are often very short-term and small amounts, which leaves many financing needs of rural populations unmet. However, there has been an increase in savings mobilization and credit granting in rural areas over the past decade. This situation has been driven by an increase in the penetration rate of microfinance in rural areas with the development of savings mobilization products and capacity building of managers and credit officers, which has contributed to strengthening the confidence of rural people in rural microfinance. However, there are still difficulties in understanding and deal with risk in rural areas due to the intrinsic nature of these areas, which are

characterized by volatility of activities and income, and difficulties in mobilizing collateral.

Faced with these situations, microfinance institutions in rural areas ration credit granting in various ways, the most striking of which is through the lending rate. Interest rates in rural areas are particularly high and can sometimes be similar to usury rates. The combined effect of the short-term nature of the resources mobilized and the difficulty to deal with risks in rural areas results in a mismatch between the mobilization of local savings and the granting of credit, especially in medium and long-term activities that can transform economic landscape of these rural areas. As highlighted by the specification of GMM models under unbalanced panel data, the increase in microfinance resources in rural areas has very little impact on the dynamics of credit granting. This situation highlights the inefficiency of the microfinance credit granting mode in rural areas and calls into question its sustainability and the need for some interventions for its reform. In light of these findings, the following recommendations are made :

(1) The weak impact of the increase of saving mobilization in granting of credit reflects a difficulty to deal with risks and it implied rationing of credit when the number of borrowers increases. However, microfinance institutions can be a decisive players in the process of development of bank credit in rural areas, if obstacles they are facing are overcome by government support. This support can be on technical and financial level.

On technical level, it would be a matter of setting up continuous training to strengthen the capacities of credit managers and officers. The latter will be better equipped to deal with credit risks. This would reduce the rationing of bank credit by interest rates. On the financial level, it can be financing in direct form or refinancing. In the direct form, the State can take a share in the capital of financial institutions in rural areas, but entrusting management to the private sector in order to avoid the abuses that have been observed in public management. Refinancing mechanisms can be set up for financial institutions in rural areas, similar to those that exist for commercial banks. This action could be overseen by the Bank of Central African States (BEAC). Bailing out rural microfinance institutions would enable them to set up lines of credit to overcome the difficulties of financing medium and long-term loans.

(2) Commercial banks should be encouraged to invest in rural finance by networking with cooperative and associative organizations in rural areas. Indeed, we have highlighted the fact that the increase in microfinance resources in rural areas in recent years has had little impact on the increase in credit granting. This could be due to the difficulties faced by these microfinance institutions in terms of the availability of long-term resources and risk management. However, commercial banks are better equipped in terms of human and material resources to deal with risks and also have long-term resources that make them more capable of granting longer-term loans.

The State is once again called upon to play an incentive role by offering collateral or a guarantee fund to commercial

banks that engage in this activity. The State can also direct the supply of credit from commercial banks to rural microfinance through these same incentives. Moreover, as empirical studies have shown, the associative, cooperative and mutualist sectors have a strong capacity to control the agricultural and rural environment. In particular, the cooperative movement is recognized as having the capacity to build national networks for the transfer of funds and the diversification of risk (Thorsten, 1999). As a result, the implementation of rural financing mechanisms by commercial banks could be inspired by these models to develop bank credit in rural areas. Indeed, Westley (2007) emphasizes the enormous capacity of banks to offer bank credit services in rural areas if they so wish. All that is needed is for them to be better informed about the portfolio diversification opportunities offered by rural finance and for incentives to be offered.

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