



Banking consolidation and credit availability for small medium enterprises : evidence from CAMEU countries

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Abstract

This article deals with the question whether the process of banking consolidation worsens small medium enterprises (SME) access to credit in Central African Monetary and Economic Union (CAMEU). We utilized cross-sectional data originated from post consolidation banks in CAMEU over the period 1990 to 2010. From a pooled regression in panel data analysis, we find—contrary to public fear—that banking consolidation in CAMEU does not have a significant negative impact on the financing of small medium enterprises. In particular, our results confirm that consolidation process induced changes in banks structure in terms of size and capitalization which positively influence availability of credit for small medium enterprises in the Union. For policy, the need to strengthen the CAMEU banking system becomes fundamentals if the potentials of the bank consolidation exercise will be fully realized.

Keywords: Banking consolidation, bank merger, SMEs financing, bank credit, CAMEU.

1 Introduction

Deregulation of the banking industry occurred in the 80s resulted in increased competition between banks and their repositioning that resulted in many mergers and acquisitions of small banks by large financial groups [15]. This phenomenon known as banking consolidation has fueled a vast literature. As it usually addresses through the link with bank failures, literature on the impact of bank consolidation on credit availability for small businesses has not been studied enough. However, it is considerable debate as to this process induces effects on banking structure [1]; [13]; [8]. On the theoretical side, according to [15] the nature of banking consolidation affects access of certain enterprises to external resources. In particular, beyond a certain size mergers between financial intermediaries leads to a marked reduction of credit access for small medium enterprises. However, according to [16] when mergers involve institutions of less important size, they can facilitate access to credit of these enterprises. Ultimately, the banking structure impact on how financial intermediaries provide credit, and on enterprises access to credit. Two main arguments are often used to justify this result.

First, for [17] the bank size explains its ability to offer loans to businesses, since it influences the overall cost of supervision of investment projects to be financed. Thus, acquisition of two banks increased size in terms of assets and therefore increases the overall cost of the expertise [11]. On the other hand, we know from the work of [12] that the supply of credit may depend on the banks ability to diversify their portfolios. To this end, the more bank size is, the more it is able to limit agency problems vis-à-vis depositors potentially exposed to default risk problems.

On the empirical side, the work of [20] leads to the conclusion that bank consolidation reduces access to credit for small medium enterprises. The reason is that the expected return on these credits is reduced, because of the high risk they pose to big banks. [10] observes that the previous effect may be temporary. Conversely, [18] and [13] found that bank consolidation leads to an increase in funding for small businesses. In the case of highly concentrated banking systems, [1] and [4] note that it negatively affects the growth rate of credit to small medium enterprises, in rural and urban markets.

Ultimately, it is clear from the theoretical and empirical literature that the impact of bank consolidation on small medium business access to credit depends on characteristics of the studied banking system.

In the case of the Central African Monetary and Economic Union (CAMEU) countries, the banking system has undergone restructuring in the late 90s, which are manifested by many mergers and acquisitions and bank recapitalization [2]. In addition, banks are characterized by excess liquidity while paradoxically enterprises derive most of their external resources from financial intermediation. The weakness of the Union banking system is due to smallness

of size, credit rationing and illiquidity that lead to high banking overhead costs. Consequently, the banking system could not effectively support the real sector of the economy with domestic economy at about 9% of GDP, compared to developed countries of 272%.

In view of the above, the need to engender a banking system that can support the growth and development of real sector stands out prominent as justification of the banking consolidation process in CAMEU. In addition, while there exists an important literature that attempt to evaluate effects of consolidation program on banks lending performance, this topic has never been treated in the CAMEU banking system case. The present paper stands to fill this gap.

In the light of the forgoing, the general objective of this research effort is to assess the response of flows of credit from banking system to consolidation process in CAMEU countries. Specifically, we evaluate the impact of banking consolidation on availability of credit for small medium enterprises. This is intended to provide directions to guide and shape subsequent policy actions towards making the banking sector adequately responsive to the development financing needs of the CAMEU economies.

The rest of the paper is organized as follows. Section 2 presents characteristics of the CAMEU post-restructuring banking system. Section 3 evaluates effects of banking consolidation on CAMEU's small medium enterprises access to credit are evaluated. Finally, section 4 concludes.

2 An overview of the post-restructuring CAMEU banking system

Bank restructuring occurred in the late 80's changed the financial sphere of CAMEU economies. Indeed, in 2012 the CAMEU banking system had 43 banks in operation, which must be added to insurance and microfinance companies. The balance sheet restructuring is marked by excess liquidity, credit rationing and high banking concentration.

For the first two characteristics, the CAMEU banks are in a situation of excess liquidity. They have a permanent imbalance between assets and liabilities, and reflect problem of resources allocation. Paradoxically, economic agents face credit rationing to finance their projects. This phenomenon has resulted in a continued decline in credit to the economy in ten years (from 1993 to 2003, they decreased from 78% of total assets of all banks to 60%). Over the same period, balance sheets of banks knew a sharp increase from 6.2% to 21.8% and the balance of customer transactions from -8.7% to 22.1%. This excess liquidity is also confirmed by the sharp decline in refinancing resources, which in 2003 accounted for 0.44% of their total budgets, against 60.6% in 1993 [14]. Since 1991, credit to GDP ratio decreases continuously to an average of 12.7% in 2000. Finally, we note that the main source of bank profitability consists of investments with the central bank [2]. Overall, the credit crunch is due to uncertainty that affects eligible projects for bank financing, information asymmetry that characterizes the bank-customer relationship and the inability of commercial banks to transform resources in the short-term jobs.

Regarding the banking concentration, CAMEU has been marked by a significant reduction in the number of banks as a result of mergers and acquisitions, direct or indirect, closing, etc. CAMEU banking concentration can be determined from the ratio deposits on loans and market share. For example, in Cameroon (51% of total assets of banks in the CAMEU), it is effective with 54% of deposits and 49% of the credits of the entire area. Thus, three banks make the bulk of deposits with 63% of the funds collected.

Bank concentration can also be understood in terms of market share, that means the place occupied by banks in the total assets and then in terms of geographical distribution agencies. Thus, in Cameroon during the year 2003, three banks (Crédit Lyonnais, Société Générale and BICEC) represented slightly more than 50% of total assets amounting to 1278 billion. Finally, bank concentration may also be assessed in terms of agencies implantation in CAMEU countries. To this end, approximately 95% of branches are located in the political and economic capital of Gabon, Cameroon and Congo.

Moreover, the CAMEU banking sector is characterized by a lack of financial innovation and internationalization. This is manifested in part by a virtual absence of financial services and a lack of diversification in the euro area banks [6]. In addition, the banking system remains fragmented and elitist, with the exclusion of bank financing of a large segment of the population. Many of the banks in the Union are small in size and unable to compete with the bigger ones. Some of the small banks, apart from being closely held, are plagued by incidence of non-performing loans, capital deficiencies, weak management and poor corporate governance.

3 Banking consolidation effects on credit for SMEs

The study aims at determining the direction and magnitudes of effects of consolidation induced changes in the banking industry, on credit availability for small medium enterprises in the CAMEU zone.

3.1 Modeling

Like [9] and [13] we evaluate the impact of bank consolidation on the availability of credit for small medium enterprises in CAMEU, over the period 1990-2010. In particular, we assume that consolidation encourages banks to select their asset portfolio in order to increase the level of seizures. For this purpose, a bank's loan reaction function is assumed to depend on variables size, capitalization, liquidity, return on equity and market share. Then, availability of credit for small medium enterprises can be written:

$$CE_{it} = \alpha_0 + \beta_1 ROE_{it} + \beta_2 CAP_{it} + \beta_3 LQ_{it} + \beta_4 PM_{it} + \beta_5 LT_{it} + \varepsilon_{it} \quad (1)$$

In equation (1), explanatory variables are available as follows:

- Loans to small medium enterprises (CE) represent volume of credit granted exclusively to small medium enterprises by banks;
- Capital (CAP) consists of shareholders' contributions. These are all available bank capital.
- The liquidity (LQ) is the ability of banks to meet their payment obligations in a timely manner. It is determined from the loans to assets ratio. The higher it is, the less the bank has liquidity;
- Market share (PM) refers to the ratio of the share of bank assets in the total assets of the banking system;
- The size (LT) can have an effect on the volume of credit because of the possibility of diversification, the nature of all investment opportunities, the characteristics of the property or access to equity;
- The return on equity (ROE) is a performance indicator as it helps assess the banking situation. It represents the ability of banks to generate profit, depending on the contributions of its shareholders.

3.2 Econometric approach

We use a pooled regression in panel data analysis to estimate equation (1). Our data sample covers the period 1990-2010 and 13 banks involved in the consolidation process in Gabon, Cameroon and Congo (these countries represent 90% of banking assets in CAMEU). Data are from the Central Bank and from Bank of France.

Econometric approach first performs a test for individual or non-specific effects. If the test is successful, then we will check the nature of the specific effect. Thus, if there is a fixed specific effect, then we are in the presence of a fixed effect model. In any case, if there is a specific random effect, we proceed to estimate a random effects model. The Hausman test allows choosing the appropriate model. In the case where the Hausman test is not conclusive, we proceed to a comparison of the inter-individual and intra-individual variables variation.

To determine the best model, we use respectively specification tests, errors autocorrelation test, heteroscedasticity test and possibly endogeneity test. The poolability test amounts to testing equality of coefficients of the studied model in the individual dimension. This test involves determining whether it is reasonable to assume that the theoretical model is the same for all banks, or on the contrary if there are specific to each bank.

The Hsiao homogeneity test returns to confronts the null hypothesis $H_0: \mu_i = \mu$, for $i=1, \dots, 13$ (presence of common effects) against the alternative hypothesis $H_1: \mu_i \neq \mu_j$ (presence of individual effects). Fischer statistics concludes the rejection of H_0 or not. The rejection of H_0 means that there are specific bank individual effects. In this case, a specific constant μ_i for each bank is introduced in the model (1).

The specification test shows whether the banks specific effects are significantly different. It is therefore to test the heterogeneity hypothesis of banks. We successively use these tests to select a fixed or a random effect model. In addition, we seek the presence or absence of random individual effects, this amounts to achieve compliance testing of variance: $H_0: \sigma_a=0$ (no random effects) against $H_1: \sigma_a \neq 0$ (random effects).

Finally, the Hausman test determines whether coefficients obtained from the two estimates (fixed effects or random effects) are statistically different. The Wooldridge autocorrelation errors test admits as H_0 the intra-individual first order autocorrelation, that means $E(\varepsilon_t, \varepsilon_s) \neq 0$ for $t \neq s$. If H_0 is rejected, then errors are autocorrelated. Finally, for the heteroscedasticity test, we use the Breusch-Pagan test and the Wald test, according to the chosen specification. The Breusch-Pagan procedure purposes a regression in the structural fixed effects model and the recovering of residual. Then residual is squared and regressed on explanatory variables of the structural model. Under the null hypothesis (homoscedasticity), the statistic test follows a chi-2 (k-1), where k represents the number of variables, including constant. Finally, when the model is specified, we proceed to estimation and interpretation of results.

3.3 Estimation results and analysis

The previous approach is applied to estimate model (1). All variables have previously been transformed into logarithms. The following results were obtained:

The homogeneity test results in table 1 shows a Fisher statistic $F(13,42)=309.42$ and $\text{Prob}>F=0.000$. Thus, the null hypothesis of no specific effect in model (1) is rejected at the 5% level. We therefore accept the presence of specific effects in model (1).

The heterogeneity test in table 2 determines whether banks specific effects are significantly different. The result of the Fisher heterogeneity test is as follows: $F(12,37)=3.14$ and $\text{Prob}>F=0.0125$. Therefore, we reject H_0 and conclude that there are bank specific effects. To this end, the Breusch-Pagan test in table 3 provides the following result: $\text{Chi}2(12) = 5.40$ and $\text{Prob}>\text{chi}2 = 0.0202$. As $\text{Prob}>\text{chi}2$ at 5%, we reject the hypothesis of non specific random effects in the model.

Finally, the Hausman test allows us choosing between a fixed effect model and a random effect model. The following results are obtained: $\text{chi}2(17) = 1.53$, $\text{Prob}>\text{chi}2 = 0.9340$. Therefore, the Hausman test does not discriminate between a fixed effect model and a random effects model. Table 4 leads us to compare differences of each variable changes. To this end, Table 4 results lead to retain a fixed effects model.

The Wooldridge test found no residuals autocorrelation, since the Fisher statistic $F(12, 48) = 1.55$ and $\text{Prob}>F = 0.191$. The residual test of normality due to Shapiro-Wilk in table 5 shows that residuals follow a normal distribution. Indeed, we have: $W.\text{Stat}=0.98444$ and $\text{Prob}>W = 0.64107$. The Breusch-Pagan residuals homoscedasticity test (table 6) leads to $\text{Chi}2(1)=0.01$ and $\text{Prob}>\text{chi}2=0.9138$. Then we proceed to analysis of the model (1) estimation. After retaining a fixed effect model, estimation of equation (1) leads to results in table 7.

We note that the econometric estimation has good statistical properties. The coefficient of determination has a strong explanatory power ($R^2 = 0.91$). Furthermore, the results show that in CAMEU zone, most of the explanatory variables have expected signs. Indeed, the level of capital and the size have a positive a significantly impact on the supply of credit for small medium enterprises. This means that an increase of one unit in the level of capital and the size of banks led to an increase in the supply of credit for small medium enterprises respectively for 27.15% and 185.01%. This result refers to the intuition that an increase in the capital following the process of mergers and acquisitions of banks led to an increase in the supply of credit for small medium enterprises.

Regarding the variable size, it appears that the more it is, the more availability of credit increases. According to [7] this variable determines ability to monitor and analyze projects financed by banks. Therefore, banks will apply less credit rationing.

Concerning the liquidity variable, the econometric estimation shows that it has a negative and significant impact on availability of credit for small medium businesses in the CAMEU countries. Specifically, an increase in liquidity from 1% leads to a decrease of 34,82% in credit supply. Moreover, the negative sign of the coefficient of liquidity seems to reflect some banks caution probably due to the high potential default risk in the CAMEU countries. This result suggests that the CAMEU banks fail to turn surplus cash into profitable assets. It suggests that the more banks take risk in granting more loans, the more profitability increases. Therefore, the CAMEU banking system should grant more loans to small medium enterprises to solve the excess liquidity problem.

4 Conclusion

In this study we sought to assess the impact of bank consolidation on credit availability for small medium enterprises in the CAMEU zone. Our approach is based on a panel data analysis covering the period 1990-2010. It shows that banking capital, banking liquidity and banking size influence the level of small medium businesses credit availability. Like [21], our results do not confirm the literature common assumption according to which banking consolidation reduces access to credit for small medium enterprises. In this regard, for policy, we suggest continuing process of banking consolidation in the CAMEU zone in order to minimize credit rationing for small medium enterprises. Finally, in a future research, the recovery of this analysis in a dynamic framework should help to refine the understanding of bank consolidation effects on access to credit for SME.

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Appendices

Table 1: Homogeneity test

Test	F(12,54)	Prob> F
F test that all $u_i=0$:	4.11	0.0031

Table 2: Breusch-Pagan test (random effects)

Test	chi2(1)	Prob> chi2
T est $\text{Var}(u) = 0$	8.76	0.0031

Table 3: Hausman test

Test	chi2(13)	Prob> chi2
Ho: difference in coefficients not systematic	0,21	0,9998

Table 4: autocorrelation test

Test	F(12,48)	Prob> F
F test that all $u_i=0$:	1,55	0,1921

Table 5: Normality test of residual (Shapiro-Wilk)

Test	W	Prob> W
Shapiro-Wilk	0,9844	0,64107
W test for normal data		

Table 6: Homoscedasticity test for residuals

Test name	chi2(1)	Prob> chi2
Ho: Constant variance	0,01	0.9138
Variables: fitted values of lnce		

Table 7: Fixed effects model estimates

lnce	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
lnroe	-.0408037	.0362106	-1.13	0.265	-.1134017 .0317942
lnlq	-.3482884	.1392772	-2.50	0.015	-.627522 -.0690544
lnpm	-.1591069	.1542835	-1.03	0.307	-.4684266 .1502129
lnicap	.2715331	.1126753	2.41	0.019	.0456328 .4974334
cons	.8461731	.8586018	0.99	0.329	-.8752198 2.567566