Contribution of Cooperative Banks to the Regional Economic Growth: Empirical Evidence from France

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ABSTRACT

In this paper, we propose to study the contribution of the French cooperative banks in regional economic growth. This study is based on dynamic panel data estimation regarding that the data used are generated from 88 regional cooperative banks in France practicing in 26 different regions for the period 2006-2012. The empirical results by the system generalized method of moments method allow us to confirm that cooperative banks is positively associated with economic growth after controlling for various determinants. In fact, the development of cooperative banks by improving their financial situation can promote regional economic development.

Keywords: Cooperative Banks, Regional Economic Growth, Dynamic Panel Model, System Generalized Method of Moments
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1. INTRODUCTION

Several studies attempt to examine the importance of the financial sector in economic growth. The main role of the financial system is to generate liquidity and to establish a favorable and efficient payment system. Indeed, a developed financial sector is today the most important driver contributing to economic growth.

Different theoretical and empirical studies have confirmed that financial development can have a positive impact on economic growth (Guiso et al., 2004).

In the early 90s, endogenous growth models have integrated financial intermediation. Indeed, the most important of endogenous growth model aspect is that it integrates in macroeconomic framework microeconomic aspects of financial intermediation (Igue, 2013). Some empirical studies suggest that financial development is positively associated with the emergence of new firms, increased competition and economic growth.

Based on this model, the theory that examine the contribution of financial institutions to economic growth continues to develop in

order to analyze the characteristics that must have the banks in order to ensure a good role in the financial system. Indeed, the services provided by the banks will create a wider opening of the economy by reducing the investment risks and transaction and increasing operational efficiency by providing good information to stakeholders. Therefore, the role of the bank must be well defined in order to become one of the engines of economic growth (Yudistira and Ike, 2014).

Several theorists have focused on the study of the banking sector's contribution to economic growth. Schmpeter (1912) was among the pioneers to highlight this relationship. He demonstrated that the banking system is a catalyst for economic growth that the proper functioning of banks can stimulate innovation, identify and finance projects and companies that are producers of goods and services and thus stimulate development economic (Ouni, 2011) but there is no clear empirical evidence of the different effects of regional cooperative banks on local economic growth.

According to the International Cooperative Alliance (ICA), a cooperative is an autonomous association of persons united voluntary to meet their common economic, social and cultural

needs and aspirations through a jointly owned and democratically controlled enterprise. Unlike the stock banks (commercial banks), a cooperative bank is a financial institution which belongs to its members, who are at the same time the owners and the customers of their bank. Cooperative bank is often created by persons belonging to the same local or professional community or sharing a common interest. Cooperative bank generally provide their members with a wide range of banking and financial services (loans, deposits, banking accounts...).

Since a long time, cooperative banks have been an integral and well established financial system in many European systems. They are part of an important pillar of the European banking sector and they have their own ownership and governance structure and a specific business model. According to Ayadi et al. (2010), cooperative banks play a special role in local and regional economic development by mobilizing savings (deposits of members) and at the same time paying the funds they have mobilized in the region where they belong. Thus, they help to prevent capital flight that can occur on savings mobilized in a region where the economy is less developed and then transferred and loaned in the most active regions and this can cause migration and lead to lower activities of the less developed regions. In addition, a sufficient supply of banking services helps to make regions or cities more attractive for people who want to get away.

By using French data, this paper tries to bring some relies to the current debate on the contribution of regional cooperative banks to the regional economic growth.

Our paper is structured as follows: Section 2 offers a review of literature covering the contribution of cooperative banks to the local economy. Section 3 offers a description of the methodology used in the econometric study and finally, the main empirical results and analysis are reported in Section 4.

2. LITERATURE REVIEW

The study of the relationship between financial sector and economic growth continues to develop together with the efficiency analysis of financial institution in order to have a good intermediary role (King and Levine, 1993). The different services provided by financial institution will create a wider coverage of economic activity, decreasing transaction cost and investment risk, increasing operational efficiency and provide well information for stakeholders. Consequently, this advantage is expected to be responded positively by supply and demand on the financial sector. Furthermore, intermediary role of financial institution can be well developed and become one of economic growth policy.

Some empirical studies tried to find out the relationship between cooperative banks and regional economic growth. Using regional data from 1970 to 1993, Usai and Vannini (2004) confirm that the size of the total financial sector has a positive impact on economic growth. Also, they find that mutual banks contribute more to financial development and to regional growth. In turn, the study of these authors confirm that the smaller and less complex cooperative banks are more adapted for providing funds to small and medium

enterprise (SME business), rather than the large privately owned banks. Similarly, Hakenes et al. (2009) find that the presence of cooperative banks has a positive impact on regional economic growth, using regional economic data for Germany. More recently, Ayadi et al. (2010) examine the consequences of the presence of local cooperative banks on regional economic growth, using regional data for seven European countries from 2000 to 2008. They argue that the cooperative bank presence has a significant positive impact on growth rates in most countries through SME lending and that this effect is significantly stronger in poorer regions. In addition, these authors display that in addition to coexisting with other banks under similar conditions, cooperative banks have responded to shifts in market developments while fulfilling an integral role of contributing to stability and regional growth in their economies.

3. METHODOLOGY AND DATABASE

3.1. Theoretical Model and Econometric Specification

The following empirical study seeks to specify the determinants of regional economic growth in France paying close attention to the role of regional cooperative banks. The aim of this investigation is to test the proposition derived from theoretical model. Namely, does more efficient regional cooperative banks promote regional economic growth? Therefore, we construct a growth model based on Ayadi et al., (2010) to analyze the link between regional cooperative bank development and regional economic growth. The growth regression is following:

$$y_{it} - y_{i,t-1} = (\alpha-1) \, y_{i,\,t-1} + \beta \, X_{it} + \eta_i + \varepsilon_{it} \qquad (1)$$

Where y is the real per capita gross domestic product (GDP), X represents the set of explanatory variables, other than lagged per capita GDP and including our indicators of cooperative bank development, η is an unobserved region- specific effect, ε is the error term, and the subscripts i and t represent region and time period, respectively.

Equation 1 can be rewritten as:

$$y_{it} = \alpha \, y_{i,t-1} + B_1 \, X_{it} + B_2 \, Z_{it} + \eta_i + \varepsilon_{it} \qquad (2)$$

Where y_{it} is the regional economic growth, in-line with the classic literature on finance and growth (King and Levine, 1993), regional economic growth y_{it} is measured by the growth rate of regional GDP per capita (GDP-Capita-Growth). X_{it}, covering indicators of regional cooperative banks financial development, Z_{it} is a vector of macroeconomic indicators normally used as determinants of economic growth, η_i *is* the unobserved regional specific effect, ε_{it} is the disturbance and the subscripts i and t represent region and time period, respectively.

In the empirical finance and economic growth literature, a major technical challenge is how to choose the appropriate method to estimate the growth regression. Estimating the Equation 2 is plagued by some difficulties. Some important variables, e.g., country-specific effects, are not observable and omitted in the estimation. Estimating this dynamic panel data model by ordinary least squares will potentially lead to biased results.

The generalized method of moments (GMM) estimators for dynamic panel data (Arellano and Bond, 1991; Arellano and Bover, 1995; Blundell and Bond, 1998) have been applied extensively in recent years, especially in deriving the impact of financial development on economic growth. There are several advantages of using GMM panel estimators. First, we are able to control for time fixed effects and region-specific effects. Second, we can use appropriate lags of the independent variables as instrumental variables to deal with possible endogeneity in the regressors. In our case of growth regressions, a simultaneity bias caused by the joint determination of cooperative banks development and regional economic growth may produce inconsistent estimators. Also, the variables in conditioning information sets may suffer from an endogeneity problem. The GMM panel estimators can solve these econometric problems using lagged observations of the explanatory variables as instruments. As such, we can reliably examine the impact of regional cooperative banks development on regional economic growth in France.

To solve the endogeneity issue, not only for the banking indicators, but also for some other explanatory variables, we use the system GMM estimator (dynamic panel GMM) developed by Blundell and Bond (1998). They show that the system GMM estimator, which simultaneously uses both the difference in the panel data and the data from the original levels specification, produces dramatic increases in both consistency and efficiency relative to the first differenced GMM developed by Arellano and Bond (1991).

According to Goaied and Sassi (2012), the system GMM estimates can be based on either a one-step or a two-step estimator. In the one step estimator, the error term ε_{it} is assumed to be independent and homoskedastic across countries and time; in the two-step estimator, the residuals of the first step are used to consistently estimate the variance-covariance matrix of the residuals, relaxing the assumption of homoskedasticity. Although the two-step estimator is asymptotically more efficient in the presence of heteroskedasticity of the error term ε_{it}.

The consistency of the GMM estimator depends on the validity of the assumption that the error terms do not exhibit serial correlation and on the validity of the instruments. To address these issues we use two specification tests suggested by Arellano and Bond (1991), Arellano and Bover (1995), and Blundell and Bond (1998). The first is a Sargan test of over-identifying restrictions, which tests the overall validity of the instruments by analyzing the sample analog of the moment conditions used in the estimation process. The second test examines the hypothesis that the error term ε_{it} is not serially correlated. We test whether the differenced error term is second-order serially correlated (by construction, the differenced error term is probably first-order serially correlated even if the original error term is not). Failure to reject the null hypotheses of both tests gives support to our model.

To test the proposition presented above by estimating the direct link between regional cooperative bank development and regional economic growth, we estimate the model in Equation (2) using the two-step system GMM estimator.

3.2. Data and Variables
3.2.1. Data
We focus on the French cooperative banking system in order to test the impact of regional cooperative banks on economic regional growth. The French banking system is a system in which coexist cooperative or mutual banks and stock banks. A cooperative bank is the property of its customers. The ownership rights, obtained through the opening of an account, imply a share in the distribution of the surplus and a voting right when electing the board of directors: These rights are non-negotiable and not liquid. The ownership rights disappear as soon as the customers close their accounts. The owners of the cooperative bank have an ownership right that is not proportional to the size of their deposits since the co-operation articulates around the principle "a member = a voting right." Moreover, with the opening of their account, these owners have the possibility to give proxies of their voting rights to the administrators. The managers are then free to manage the company, sometimes at the expense of the legal owners and without fear of any takeover.

In contrast to the stock banks, the customers and the owners are completely different groups of people. The owners or shareholders hold shares whose value depends on the profits of the company, and enjoy limited liabilities with respect to the activities of the company. The financial interest of the shareholders on the effectiveness of the managers is proportional to the shares they own; it is direct since the value of the shares depends on the profits perceived by the bank.

Nowadays, the cooperative banks are an important element of the French banking system. The French cooperative system is composed of three different groups: Crédit agricole (CA) which join 39 regional banks, Crédit Mutuel (CM) which join 18 regional banks and Banques populaires caisses d'épargne (BPCE)[1] which join 18 banques populaires and 17 caisses d'épargne.

These groups have existed since the turn of 19th century and contrary to stock banks, they mainly served less developed and thinly populated parts of the country.

Our data set combines information from two main resources. Financial informations on regional cooperative banks are obtained from bankscope database[2] and regional macroeconomic indicators are provided by "INSEE[3]" and the European Commission's Eurostat Database.

This study employs panel data estimation regarding that the data used are generated from 88 regional cooperative banks in France operating in 26 different regions from the period of 2006-2012.

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1   The banque populaire purchased the crédit coopératif in 2003.
2   Bankscope database is provided by Bureau Van Dijk ant il is the most comprehensive, global database of banks' financial statements, ratings and intelligence. This database gathers some 600 French banks.
3   France's National Institute for Statistics and Economic Studies (Institut National de la Statistique et des Études Économiques: INSEE) is a Directorate General of the Ministry of the Economy, Industry and the Digital Sector and of the Ministry of Finance and Public Accounts..

3.2.2. Variables

Table 1 reports the variable definition and presents the descriptive statistics of the different variables used in the model (Equation 2).

Regional economic growth (y_{it}) is measured by the growth rate of regional GDP per capita (GDPG). In this empirical analysis, we use three cooperative bank performance indicators to proxy for efficiency. First, we use two indirect indicators ROA and ROE, which indicate that efficient cooperative banks should be more profitable. Then, from Koetter and Wedow (2010) who confirm that bank quality and bank cost efficiency (CE) explains economic growth, we introduce in our model a direct CE measure derived from stochastic cost frontier estimation. According to Ayadi et al., (2009) CE measure show how close bank i is to the estimated industry-wide best - practice cost frontier in year t. as show in Table 1, the average cost frontier for French regional cooperative banks is 90,82% over the sample period. Then we introduce bank z-score (Z) as further bank efficiency so as to take bank risk. Indeed, bank with higher risk taking are less efficient in capital allocation and project financing. The Z-score ratio is a measure of bank insolvency risk. It is estimated as the ratio between the sum of a bank's average return on assets (ROA) and capitalization (equity/total assets) and the standard deviation of the ROA. The Z-score indicates the number of standard deviations that a bank's ROA has to drop below its expected value before equity is depleted and the bank becomes insolvent. So, banks with a low Z-score indicate that the institution is exposed to higher risk (Ory and Lemziri, 2012).

Furthermore, we introduce the equity ratio (EQ) and net interest margin (NIM) as bank specific controls. Banks with a lower equity ratio (EQ) might enjoy a relatively higher return on equity (ROE), and this could generate biased results. Besides, this ratio reflects management's attitude to risk, and a control for this variable may also adjust for this possible bias (Ayadi et al., 2009). According to

Yudistira and Ike (2014), some banks might focus on potentially higher marginal interest business, which could have a positive influence on bank profitability and efficiency measures. Therefore, we include NIM. Finally, we include in our model institutional diversity (ID) measured by the cooperative bank's regional presence to test the impact of ID of cooperative banks on economic growth. The regional presence is measured by the total assets of cooperative banks in a region divided by regional GDP. Ayadi et al. (2010) assume that this measure adequately incorporates the relative importance of the cooperative model in a given region and they confirm that there is a positive relationship between lagged cooperative bank presence and current GDP growth.

Basically, the authors of various study (Beck and Levine, [2004]; Ayadi et al. 2010; Ebrahimi and Vaillancourt 2012; Hakenes et al. 2014); believe that different macroeconomic factors are important variables determining the economic growth. Accordingly, GDP growth can be influenced by macroeconomic factors other than financial cooperative bank development. So, a variety of macroeconomic indicators are included in our model, inflation (INF), the local labor (LL), the GDP per capita in a region (LGDP), Government consumption (GC) and Government investment (GI).

We take account of inflation (INF) since a high inflation can lead to a loss of investor confidence and subsequently suspend economic growth. We apply the variation of the annual consumer price index in France to control for this macroeconomic shock. Then, we introduce in our model LL supply measured by the active population in a region. Indeed, in the classical production function, output depends on two inputs, namely, capital and labor. Consequently, one concern of our analysis is that the results may be driven by features of the LL supply not captured by a region's financial development. We also include initial regional real GDP per capita (initial GDP-capita) to control for the effect of a

Table 1: Variable definitions and summary statistics

Variables	Definition	Obs	Mean	SD	Minimum	Maximum
Endogenous variable						
GDP-Capita-Growth	Annual growth rate of regional GDP per capita	82	0.01401	0.0443	−0.4193	0.1208
Cooperative banks specific indicators						
ROA	Return on total assets of cooperative banks	73	0.0072	0.0024	0.0013	0.0166
ROE	Return on total equity of cooperative banks	73	0.0670	0.0324	0.0207	0.2400
CE	Cost efficiencies of cooperative banks estimated using stochastic frontier analysis	61	0.9082	0.0404	0.0119	1
Z-score	Z-score is estimated as ROA+ (equity/assets)/standard (ROA)	74	78.2232	30.0268	9.7668	145.468
Equity ratio (EQ)	Equity to total assets ratios for cooperative banks	75	0.1100	0.0237	0.0318	0.1782
NIM	(Interest returns-interest expenses)/cooperative bank assets	75	0.0190	0.0055	0.0093	0.0406
ID	The total assets of cooperative banks in a region divided by regional GDP	82	0.8542	0.1790	0.0411	1.0089
Macroeconomic indicators						
Initial GDP-Capita (million Euro)	Regional GDP per capita in million Euros	82	25 050	5780.205	12500	51250
Inflation (INF)	Variation of annual French CPI	82	−2.7969	1.8779	−5.9077	1.0148
LL	Active population in a region	82	937589.9	1090403	44080	5710301
GC	Regional consumption expenditure/regional GDP	74	0.0122	0.0095	0.0028	0.0540
GI	Regional investment expenditure/regional GDP	74	0.0084	0.0075	0.0030	0.0388

CE: Cost efficiency, NIM: Net interest margin, ID: Institutional diversity, LL: Local labor, GC: Government consumption, GI: Government investment, CPI: Consumer Price Index, ROE: Return on equity, ROA: Return on assets, GDP: Gross domestic product, SD: Standard deviation

region's initial endowments because different regions might have different growth patterns. Initial GDP per capita, measured by the beginning of each period, controls for the growth convergence effect (Barro, 1991). The standard prediction of neoclassical growth models is that a country will grow faster; the further away it is from its steady state. Thus, we expect this variable to have a negative effect.

Extensive studies (Kelly, 1997; Alexiou (2009) have been undertaken in an attempt to evaluate the extent to which government spending affects economic growth. Economic theory would suggest that lower levels of government spending would enhance economic growth while on other occasions higher levels of government spending would be more desirable. Therefore, we include government spending as a determinant of economic growth. In this study, the treatment of government expenditure in the distinction made between GC expenditure and GI expenditure.

4. EMPIRICAL RESULTS AND ANALYSIS

Table 2 provides two-steps system GMM regression results of empirical estimation on the link between cooperative bank financial development and regional economic growth using STATA version 11 software. The correlation matrix is reported in Table 3.

As can be observed in Table 3, the correlations are markedly higher in some variables. First, ROA is positively and highly correlated with ROE, with a correlation coefficient of 0.59. Second, GC is positively and strongly correlated with GI, with a correlation coefficient of 0.82. It appears that these variables are highly correlated over sample period. For this reason, including these variables (ROA, ROE, GI and GC) in one model will create serious multicollinearity. We therefore, estimate four equations to overcome the multicollinearity problem.

The tests used for over identification are Sargan test and test of second serial correlation (AR2) of Arellano and Bond. As shown in Table 2, the results of these tests support the validity of the instruments and the absence of second order serial correlation in all regressions. So, these tests suggest the reliability of our estimates.

In all regression models, the lagged dependent variable (GDP-capita growth$_{(t-1)}$) is introduced as endogenous GMM style variable. The results indicate a significantly positive coefficient for the bank efficiency variables except cost efficiency (CE) variable. This confirms that cooperative bank efficiency and performance improvements are effective in promoting regional economic growth. Cooperative bank efficiency is proxied by ROE, ROA, cost efficiency (CE) and z-score.

The regression (1) and (2) that introduce indirect cooperative efficiency indicators (ROE and ROA) indicate that efficiency is statistically and positively associated with regional economic growth. That's means that a high level of bank performance promotes local economic development, consistent with the findings of Ayadi et al. (2010) and Yudistira and Ike (2014). In all regressions, the direct CE indicator derived from stochastic frontier estimation has a positive effect on regional economic growth but it is not statistically significant, namely bank cost efficiency is not associated with an increase in local economic growth. This result may be due to missing observations compared to other variables (Table 1). This finding contrasts with Koetter and Wedow (2010) and Hakenes et al. (2014) who find a positive impact of bank cost efficiency on economic growth.

The effect of z-score indicator is positive and statistically significant in all regressions, indicating that there is a significantly negative relationship between risk and regional economic growth. These results illustrate that regional cooperative banks with a lower degree of risk taking are associated with higher real GDP-capita growth.

Table 2: Cooperative banks and economic growth: Dynamic panel system GMM estimations

Independent variables	Dependent variable: GDP-Capita-Growth							
	Regression 1		Regression 2		Regression 3		Regression 4	
	Coefficient	P value	Coefficient	P value	Coefficient	P value	Coefficient	P value
GDP-Capita-Growth$_{(t-1)}$	−0.0002	0.73	−0.00015	0.90	0.00074	0.23	0.00024	0.86
Cooperative bank specific variables								
ROA	0.0529	0.05*	-	-	-	-	-	-
ROE	-	-	0.0045	0.00***	-	-	-	-
CE	0.0032	0.46	0.0043	0.43	0.00072	0.85	0.0049	0.39
z-score	0.000014	0.00***	0.000015	0.00***	0.000015	0.00***	0.000018	0.00***
Equity ratio	−0.0049	0.11	−0.0066	0.16	−0.0041	0.36	−0.0095	0.01**
NIM	−0.0883	0.00***	−0.0449	0.50	−0.0461	0.00***	−0.0455	0.12
ID	0.0069	0.02**	0.0034	0.575	0.0083	0.01**	0.0067	0.08*
Macroeconomic variables								
Initial GDP–Capita	−1.0168	0.00***	−1.0167	0.00***	−1.0200	0.00***	−1.0169	0.00***
Inflation	−0.00081	0.00***	−0.000069	0.03**	−0.00014	0.00***	−0.00006	0.07*
LL	0.00021	0.00***	0.00013	0.23	0.00017	0.00***	0.00016	0.01**
GC	-	-	-	-	−0.0816	0.00***	-	-
GI	-	-	-	-	-	-	−0.0074	0.68
Sargan test (P value)	0.998		0.997		0.999		0.999	
AR (2) test (P value)	0.364		0.290		0.461		0.310	

CE: Cost efficiency, NIM: Net interest margin, ID: Institutional diversity, LL: Local labor, GC: Government consumption, GI: Government investment, CPI: Consumer price index, ROE: Return on equity, ROA: Return on assets, GMM: Generalized method of moments, , ***, **, and *represent significance levels of 1%, 5% and 10% respectively.

Table 3: Correlation matrix

Variables	ROA	ROE	CE	Z-score	EQ	NIM	ID	INF	LL	GC	GI	Initial GDP-capita
ROA	1											
ROE	0.59*	1										
CE	0.49*	0.46*	1									
Z-score	0.07	0.44*	−0.11	1								
EQ	0.02	0.04	0.07	0.07	1							
NIM	0.02	0.03	0.07	0.05	0.02	1						
ID	0.03	0.01	0.14	0.10	0.38*	0.08	1					
INF	0.11	0.08	0.02	0.01	0.04	0.06	0.01	1				
LL	0.20*	0.24*	0.31*	0.10	0.05	0.22	0.01	0.01	1			
GC	0.15*	0.57	0.34	−0.36	0.14	0.08	0.02	0.15*	0.33*	1		
GI	0.21*	0.52	0.36	0.33	0.04	0.10	0.08	0.16*	0.36*	0.82*	1	
Initial GDP-capita	0.13	0.23	0.008	0.21	0.24*	0.08	0.01	0.01	0.04	0.21*	0.19*	1

Cost efficiency, NIM: Net interest margin, ID: Institutional diversity, LL: Local labor, GC: Government consumption, GI: Government investment, GPI: Consumer price index, ROE: Return on equity, ROA: Return on assets, Note: This table reports the correlation matrix of the main regression variables. Definitions of the variables are in Table 1. Stars denote significance at 5% level. *denote significance at 5% level

The key finding in Table 2 relates to the institutional diversity indicator (ID) which is the ratio of cooperative bank assets to regional GDP. ID is used as endogenous and explanatory variable (lagged value) to test the link between lagged cooperative bank presence and the current regional economic growth. We find a statistically significant positive impact of cooperative bank ID on regional economic growth in most regressions. These results show that markets with greater presence of cooperative banks also experience significantly greater growth rate. Several interpretations of this result are possible. First, cooperative banks have a significant market share in small- and medium-sized enterprises lending, which are often acknowledged as the drivers in most European countries, notably in France. Another interpretation is that increased availability of cooperative banks may mitigate some of the access problems, thereby giving the larger population the means to prosper and contribute to economic growth.

EQ and NIM are not significantly associated with regional economic growth in most model specifications.

Taken as a whole, these estimations suggest that the regional cooperative bank development had important effects on regional economic growth.

The standard macroeconomic factors in growth models are found to be significant and have the expected signs except the GI spending which could be an indicator of development, has no influence on economic growth.

Inflation, initial GDP-capita, GC and LL remain important determinants of economic growth. Inflation is negatively and significantly related to economic growth in all four regressions. This result confirms that higher levels of inflation have harmful effects on economic growth, in agreement with the panel evidence in the growth literature. Initial GDP-capita is shown to have a significant negative impact on regional growth. Indeed, the hypothesis of economic convergence is supported by the negative and significant sign of the variable initial GDP per capita. Our results also find a significant negative effect for GC (regression 3), that's means region with sound macroeconomic

policies, characterized by low GC spending, tend to grow faster. LL supply has a positive impact on GDP growth in most regressions.

5. CONCLUSIONS

The potential role of cooperative banks on economic growth is not obvious. Several empirical studies suggest that local financial development is important and there is a causal link between local financial development and regional economic growth.

This paper analyzes the impact of regional cooperative banks on real economic growth. It reviews an empirical investigation on the relationship between cooperative bank financial development indicators with regional GDP growth.

According to the system GMM (system GMM) developed for dynamic panel methods by Blundell and Bond (1998), the results demonstrate a strong positive association between cooperative bank development and regional economic growth and in sum, using four alternative panel specifications, the results confirm that the regional cooperative banks efficiency is positively correlated to local economic development and most of results are consistent with previous findings in finance literature.

Overall, our investigation suggests that cooperative banks may be effective in promoting local economic growth. Indeed, these institutions appear to play a stabilizing role, maintaining their presence in regions experiencing low growth and thereby contributing to future growth.

Although our study does not suggest that cooperative banks provide more advantages compared to conventional banks, it does, however establishes the positive impact on economic growth. This means that many countries that currently suffer for low growth may want to further develop this segment of finance. For this reason, it is essential to develop proper legislation and regulation as well as the supporting infrastructure, including the necessary skill set.

Future areas of research include measuring better cooperative bank development and studding the impact of cooperative banks on inequality and social development. Regional cooperative banks

may prevent a capital drain and thus foster development, especially in less developed regions.

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