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The implications of credit activity on economic growth in Romania

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Abstract

The economic crisis has questioned the efficiency of the existing economic model and created many doubts regarding the role that banks play in supporting the economic growth. Currently, the lack of confidence in the banking sector, due to the macroeconomic imbalances manifested, led to a contraction in credit activity which slowed down the economic recovery. The paper aims to analyze the relationship between credits and economic growth in Romania at a regional level. The analysis takes into account data for the period of 2005-2014. The results of this study indicate that credits have a significant influence on the evolution of gross domestic product in Romania.

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1. Introduction

The stability of the financial sector plays an important role in economic development of any country. The literature provides evidences that there is a correlation between economic growth and credit market. An increase in the allocation of capital accelerates growth leading to long-run economic growth. Therefore, it can be said that the financial sector and economic development are strongly related.

After the economic crisis the banking sector was submitted to a reforming process, aiming to make the sector safer and to help it regain its main function that of financing the real economy.

In the past years the Romanian economy has become highly dependent on the financing coming from the banking sector. The increasingly integrated financial markets have facilitated the foreign capital inflows and the expansion of the Romanian banking system but it also facilitated the transfer of the crisis effects within the Romanian banking sector. Nowadays, the main focus of the authorities it is to restart the lending activity of the banks which, is believed, that it will support economic growth.

The paper analyzes the relationship between credits and economic growth in Romania at a regional level. The aim of this paper is to see if the credits granted by the banks affect in any way the Romanian economic development.

The article revises, at first, the theoretical and empirical literature emphasizing few of the main statements about the relationship between credits and economic growth. Further, the article presents an econometric analysis that shows the credit impact on economic growth in Romania, using panel data.

2. Literature review

The correlation between financial sector and economic growth has been a theme in numerous studies, both theoretical and empirical. There are papers showing the pro and con arguments about the impact of financial system on a country's economic growth. Conclusions that can be drawn are that financial development leads to economic growth, forecasting the future rates of economic growth or technological change. Moreover, the quality of financial system is influenced by economic activity.

Some economists, such as Walter Bagehot (1873) and John Hicks (1969) argue that the financial system played an important role in the ease of capital mobility in England. In 1912, Joseph Schumpeter argued that identifying and funding the entrepreneurs with the best chances of implementation of innovative products would encourage banks to technologically innovate. At the other pole, Joan Robinson claims that the financial system automatically responds to requests from various financial arrangements created by economic development. In addition, Robert Lucas (1988) and Nicholas Stern (1989) do not support that the financial system-economic growth relationship is significant.

Levine (1997) sustains that, among the functions that financial systems have, it can be listed: mobilize savings, allocate resources, ease the exchange of goods and services, monitor managers and facilitate risk management. There are two ways in which financial systems affect economic growth: technological innovation and capital accumulation. In the class of growth models (Romer-1986, Lucas-1988, Rebelo-1991), which it is based on capital accumulation, the steady-state growth is affected by the rate of capital formation and the role of financial system is to modify the savings rate or to reallocate savings to some technologies that produce capital. Another class of growth models (Romer-1990, Grossman and Helpman-1991, Aghion and Howitt-1992) concentrates on technological innovation. The steady-state growth is influenced by the financial system through the rate of technological innovation. It is difficult to conclude that the financial system responds automatically to economic activity.

Recent models of growth indicate that there are many ways besides technological growth (Pagano, 1993), although it can sustain itself without technological progress (Lucas, 1988). Pagano (1993) presents three channels by which economic growth might be affected by financial sector, these are: increasing productivity of investments, reducing transaction costs and promoting or declining savings.

The main role that meets the financial system in a modern economy is resource allocation, allowing risk sharing between firms and households by pointing the savings from the latter to the corporate sector. The two functions that financial systems may have are allocation of savings to investment and risk-sharing between economic operators.

Allen and Oura (2004) argue that the financial system plays an important role in understanding variations in growth. Risk taking by entrepreneurs to obtain high yields can lead to growth and crisis. For sustainable growth should be avoided bubbles, contagion and financial fragility. They claim that the growth is discontinuous; booms are followed by periods of crisis. The financial system can contribute to improving crisis through internal regulations on the control activities of financial institutions and restrictions on international capital flows.

King and Levine (1993) analyze the way economic growth is affected by financial systems. In the proposed model, financial systems affect entrepreneurial activities leading to improved productivity in four ways. The first way is where potential entrepreneurs are assessed by the financial systems and the best projects are selected. The second way shows how resources are mobilized to finance projects. Third, allowed investors to diversify risks associated with innovative activities. Fourth, potential compensation for engaging in innovation are revealed by financial systems. The main idea of the study is that better financial systems boost productivity. Also, government policies on financial systems have an impact on long-term growth.

Leitão (2012) analyzes the relation between economic growth and bank credit. Introducing variables as domestic credit, savings, bilateral trade and inflation, it is shown that endogenous models have a greater potential to explain

economic growth. It is confirmed that savings encourage growth and the inflation and domestic credit are negatively correlated with economic growth.

Mishkin (2004) affirms that an undeveloped financial system is one of the reasons why developing or transition countries have low rates of growth. This is due to the hardships faced by the financial system. To solve the problem of adverse selection and moral hazard, shall be used two instruments: collateral and restrictive covenants. In most developing states, lenders must sue debtors for payment, which can take several years. When obtaining the collateral, its value may be lower. The result would be a slower growth because lenders will give money to borrowers with less productive investment opportunities.

Another role in channeling funds to less productive investments is played by government because it is not guided by the profit motive, as private institutions do. In addition, in developing countries and those in transition, banks were nationalized. Among the reasons why some countries have lower growth rates than others are weak legal system, inappropriate government regulations, nationalization of banks and government intervention through credit programs.

The empirical literature shows that countries which benefit from a better financial system were part of a faster economic growth process, and it can be referred to the characteristics of the financial system. Pistoresi and Venturelli (2012) examine how venture capital and investment lending affects regional economic growth. Based on data from 53 regions in countries like Germany, Italy and Spain, from 1995 to 2008, it is estimated a dynamic panel using generalized method of moments. The results indicate that several types of financial intermediaries contribute to regional economic growth, but that greater influences have mutual banks, especially in economically deprived areas. It distinguishes between commercial banks and mutual, the latter being those using soft information and implement lending policies. The link between regional economic growth and venture capital is statistically proven. Although local venture capital contribution to growth was relatively low, this could easily spread to all regions. Estimates indicate that venture capital generates a greater effect in the region where the company is based.

Koivu (2002) specifies that increase in credit has not always been sustainable and it may have led to a decline in growth rates. It is demonstrated that, in transition economies, the presence of an efficient banking sector accelerated economic growth. Evolving from the Soviet model, banking sector in transition economies has known a rapid expansion in the second half of the 1990s. Analyzing the link between economic growth and the amount of credit to the private sector in 25 countries in transition (including Romania), over a period of almost 7 years, from 1993 until 2000, Koivu (2002) notes some characteristics of transition economies: decreases of gross domestic product have been caused by large amount of credit, there are still budgetary constraints which may have promoted counterproductive investments.

Cristea (2010) affirms that, on the base of the analysis of Koivu from 2002, their conclusions are the same for the period 2001-2009, in Romania, and it states that the economic growth is not promoted by the growth of private credit. As it is concluded, the growth of private credit, inflation rate and average rate exchange rate lead to a relative decline in economic growth rates.

FitzGerald (2006) argues that the contribution that financial development brings to economic growth is important, but it depends on institutional structures. It is necessary to assess the role of commercial banks in developing countries, which are traditionally intermediaries between households saving and investment firms. Monetary policy should support stability of firms using a low and stable real interest rate and a competitive exchange rate, accompanied by appropriate tax incentives.

3. Methodology

The paper examines the relationship between credit and gross domestic product (GDP) in Romania in the eight development regions, namely North East, South East, South, South West, West, North West, Centre and Bucharest Ilfov.

In order to estimate the linear regression model we defined the credits in each development region as the independent variable, while the GDP was defined as the dependent variable. For the purpose of this analysis we used a series of macroeconomic data for each of the two indicators.

The data on credits were taken from the website of the National Bank of Romania for the period 2005-2014, and refer to the value of credits registered at the end of each year included in the analysis. The data for GDP were collected from the Eurostat website and relate to real GDP, annual values.

Preliminary analysis shows that there is a direct relationship between GDP and credit (see Figure 1).
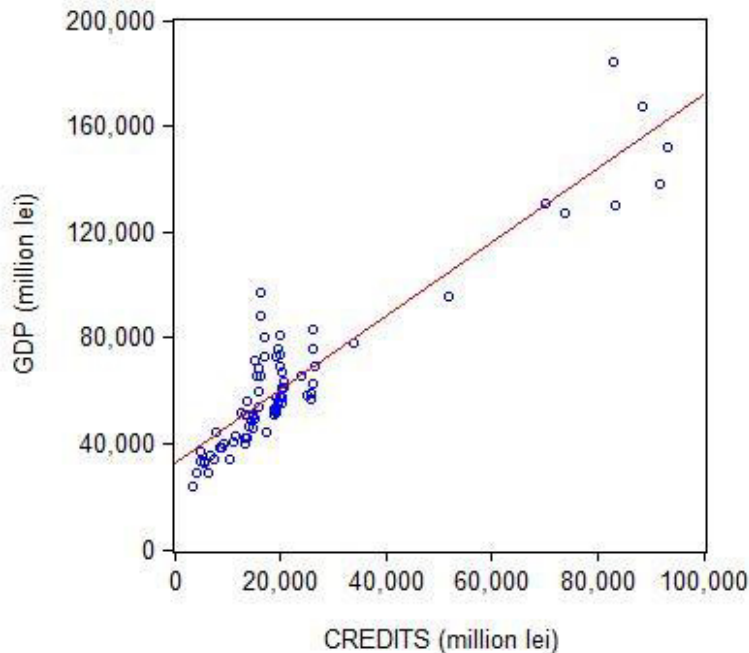

Fig. 1. The evolution of GDP and of credits

Source: National Bank of Romania, Eurostat, own calculations

The econometric model used for assessing the analysis of the data in Figure 1 is a simple regression that uses panel data. In order to examine the relationship between the two variables the model is hereby specified in line with the hypothesis that:

H0: credits have no significant impact on the growth of the GDP in the eight development regions in Romania;
H1: credits have a significant impact on the growth of the GDP in the eight development regions in Romania.
The functional relationship is specified as follows:

$$Y = f(X) \tag{1}$$

The methodology used is based on econometric modeling using Eviews 8.0. The relationship between the two variables led us to express the equation in the upcoming form:

$$GDP_{i,t} = \alpha + \beta \times X_{i,t} + \gamma_{i,t} + \delta_{i,t} + \varepsilon_{i,t} \tag{2}$$

Where:
$GDP_{i,t}$ - is the dependent variable and indicates the level of GDP in the i region at the time t;

α - constant
β - is the slope of the regression line;
Xi, t - is the vector of independent variable (in our case credits);
εi, t - error;
γi, t and δi,t - cross-section values or fixed or random effects;
i - is the region;
t - is the year.

Given the existing studies in the literature that analyzes this type of relationship, between credit and GDP we estimate that the value for parameter β will be positive. This would mean that the higher the level of credits, the higher the level of GDP will be.

To test the appropriate method, the random effects method or the fixed effects method we tested each of the two methods and then we applied the Hausman test to compare the results. According to this test the effective method is the random effects method both across countries and period.

Dependent Variable: GDP
Method: Panel EGLS (Cross-section random effects)
Date: 03/08/15   Time: 16:47
Sample: 2005 2014
Periods included: 10
Cross-sections included: 8
Total panel (balanced) observations: 80
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	30396.58	3339.610	9.101835	0.0000
CREDITS	1.478146	0.093626	15.78780	0.0000

Effects Specification		S.D.	Rho
Cross-section random		6543.993	0.2847
Idiosyncratic random		10372.66	0.7153

Weighted Statistics			
R-squared	0.760512	Mean dependent var	28553.08
Adjusted R-squared	0.757442	S.D. dependent var	21127.36
S.E. of regression	10405.27	Sum squared resid	8.45E+09
F-statistic	247.6949	Durbin-Watson stat	0.877168
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.847905	Mean dependent var	63720.12
Sum squared resid	1.14E+10	Durbin-Watson stat	0.722428

Fig. 2. Estimated regression model in EViews

Source: National Bank of Romania, Eurostat, own calculations in Eviews

The results of the regression model shown in Figure 2 reflect the correlation between GDP and the values of credits and are as follows:
GDP = 30396.58 + 1.478146 * CREDITS.

The data analysis shows that R^2 coefficient, showing the validity of the chosen model has a value of 0.7605. This value is close to 1, which indicates that the model chosen is valid. Therefore, the credit which is the independent variable, X in our equation, explains the variation in GDP, the variable Y in our equation, in proportion of 76.05%.

The positive value of the coefficient of the independent variable indicates a positive relationship between credit and GDP, which respects our initial presumption. At the same time, the positive value obtained for the constant term indicates that the variables that were not included in the model also have a positive impact on GDP. Also, it stands out the relatively high value of the constant term C, which leads us to conclude that the factors that were not taken into account in the construction of the regression model have a significant influence on the evolution of GDP.

Therefore we accept the alternative hypothesis stating that credits have a significant impact on the growth of the GDP in the eight development regions in Romania, between 2005 and 2014.

4. Conclusions

This study analyzes the role of credit in economic growth in Romania. In the analysis conducted we tried to include data pre and post crisis, however the period is relatively short due to the lack of data.

The study results indicate that credit has a significant influence on the evolution of GDP in the eight development regions of Romania. An increase with one monetary unit of credit will determine an increase of 1.47 monetary units in GDP. Based on the results of this study we can say that banks should continue to finance the economy through credit as it is contributing significantly to the GDP growth in Romania.

In order to maintain a sound credit activity it is important to have also, a strong legal framework that would move the funds toward innovative products and profitable investments on the one hand and on the other hand, it is important that the population have a strong knowledge about the credit activity, not only the benefits of it but also the risks.

Acknowledgement

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