Analysis of Financial Intermediation in Romania

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Abstract

The aim of this paper is to analyze the degree of financial intermediation in Romania. At the same time it comprises an analysis of the three indicators which show the degree of financial intermediation in Romania: credits/GDP; deposits/GDP; bank assets/GDP for the period 2004-2015. We want to study the relation between the three indicators that define financial intermediation with the help of the correlation coefficient.

Key words: financial intermediation, bank assets, credits, deposits, banking system
J.E.L. classification: G00, G210, P52.

1. Introduction

Financial intermediation holds the key role in the saving-investing process. Financial intermediation is defined as the process through which funds raised from those who want to save are made available to persons who need them for different types of investments. Therefore, financial intermediation consists of channeling available funds towards productive uses thus insuring the necessary funds for deficient units.

Financial intermediaries mobilize funds (financial assets) from economic agents with surplus funds (savers), by creating debts (assets) to them and they issue their own assets to those who use the funds. Deterioration in the balance of financial institutions led to deleveraging, characterized by a decline in crediting, as well as consumer spending and business investments and, as a result, the economic activity deteriorated. A weak economy and the decline in housing demand led to an increased decline rate in real estate prices, which caused yet another deterioration in the balance of financial institutions and a decrease in credit. (Frederic S. Mishkin, 2009).

Financial intermediation and financial markets influence directly the economic growth and the global economic welfare. Financial intermediation is a subcomponent of financial development.

We cannot address the issue of financial intermediation without talking about financial development first. Financial development is defined as the factors, policies, and institutions that lead to effective financial intermediation and markets, as well as deep and broad access to capital and financial services. This definition thus spans the foundational supports of a financial system, including the institutional and business environments; the financial intermediaries and markets through which efficient risk diversification and capital allocation occur; and the results of this financial intermediation process, which include the availability of, and access to capital (The Financial Development Report 2012).

First of all, an extensive financial development leads to a greater mobilization of savings and to their distribution in investment projects with the greatest level of reimbursement. This capital accumulation stimulates the economic growth.

Secondly, by allocating capital for viable investment projects and by promoting corporate governance, financial development leads to an increase in the technological innovation rate, in productivity, in economic consolidation, as well as welfare.

Recent literature suggests that the financial development is measured by these factors: the dimension, depth and access of a certain financial system, as well as the efficiency and stability of that system which includes its markets, intermediaries, range of assets and its institutions and

regulations. Xiao and Zhao in their 2011 paper (Xiao, S. and S. Zhao. 2011) advocate that: "banking sector development has significant and positive effects on firm innovation in countries with lower government ownership of banks, but insignificant and sometimes even significantly negative effects in countries with higher government ownership of banks".

Other research (Rajan and Zingales 2001) suggests that compared to other forms of financial intermediation, established banks form close ties with the private sector, establishing a relation which would allow them to obtain more efficient information on firms and to convince them to pay off their debts in time.

Arcand, Berkes and Panizza (2012) use a different dataset and examine empirically whether there is a threshold above which financial development no longer has a positive effect on economic growth. They use total credit to the private sector as a proxy to measure financial depth. Their dataset covers the period 1960-2010. The results from the panel regressions suggest that the marginal effect of financial development on economic growth becomes negative when credit to the private sector reaches 80-100% of GDP.

2. Research methodology

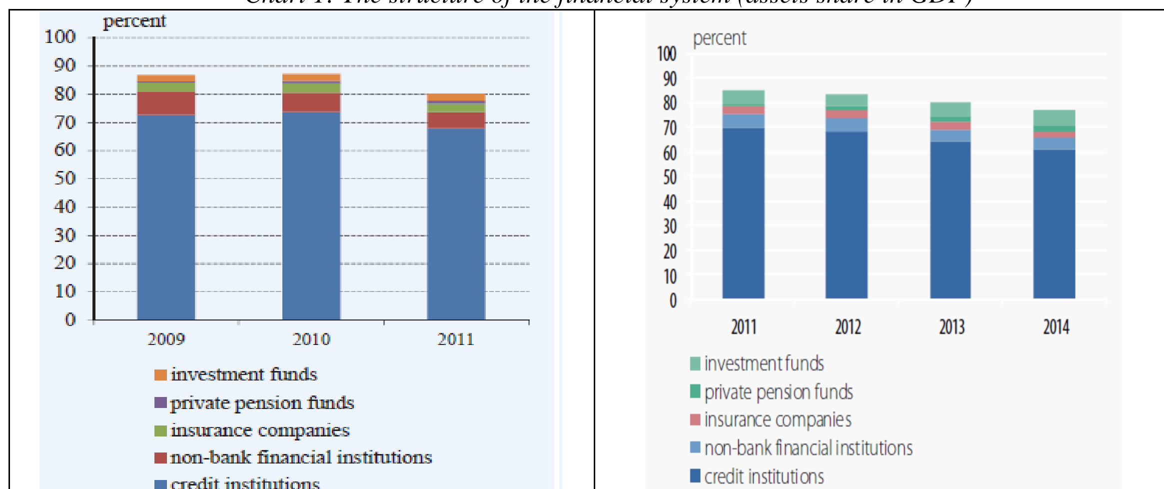
Research methodology: Every scientific approach ought to be implemented through adequate scientific research. Methodology is a complex word made up of two parts *methodos* and *logos* which mean "method" and "science" in Greek and in free translation "the science of the method" meaning the science of conceiving, of choosing and using the method in the process of investigating the economic phenomenon. The research methodology we employed for this article consisted of analyzing and systemizing the specialized literature in this field, the data regarding the real GDP, loans, deposits, assets are obtained from the IMF's International Financial Statistics Database (IFS), Eurostat, The National Institute of Statistics and the National Bank of Romania. The paper concludes with analysis of the correlation between Credits, Deposits and Bank assets as dependent variables and GDP as independent variable. We want to study the relation between the three indicators that define financial intermediation with the help of the correlation coefficient. We will calculate the correlation between Credits and GDP; Deposits and GDP; Bank assets and GDP for all analyzed year (2004-2015) and we will also analyze the intensity of the relation between these indicators.

3. Analysis of the degree of financial intermediation in the Romanian banking system in the period 2004 – 2015

The Romanian financial system consists of:

1. Banking sector
2. Non-bank financial sector (The insurance sector; Private pension funds; Non-bank financial institutions)
3. Financial markets (Monetary market; Government securities market; Currency market; Capital market).

Chart 1: The structure of the financial system (assets share in GDP)



Source: NBR – Report on financial stability, 2012-2015

For this analysis we collected official data from: The International Financial Statistics Database (IFS), Eurostat, The National Institute of Statistics and The National Bank of Romania (NBR). The dominant share within the financial system is held by the banking sector and the exposure of credit institutions towards the financial institutions in Romania, as well as the resources they attract have continued to diminish, indicating the limitation of vulnerabilities of direct contagion within the financial system.

As we can observe in Chart 1, the structure of the financial system (as share of assets in GDP) has not modified significantly. The dominant position of credit institutions within the financial system slightly accented, while the share of non-bank institutions continued in 2014 its tendency to decline, as the previous years. There were reports of increased shares in investment funds and private pension funds.

The degree of financial intermediation is analyzed with the help of the following indicators:

1. private sector credit to GDP ratio;
2. deposits from companies and the general population to GDP ratio;
3. bank assets to GDP ratio.

The degree of financial intermediation *in nominal terms*, calculated as the ratio of bank assets to GDP (gross value), reported an increase until 2010 and afterwards we notice a slight tendency of decrease (until 66.65 % in December 2012), while the nominal growth rate of gross assets was reported ahead of the nominal GDP (see Charts 3 and 4).

The same trend was noticed when calculating in nominal terms the degree of financial intermediation based on the ratio of private sector loans to GDP (37.2% in December 2012), respectively of the deposits from companies and the general population to GDP (32.48% in December 2012).

In real terms, the degree of financial intermediation calculated as the ratio of deposits from companies and the general population to GDP exhibits a slight tendency of increase as compared to December 2011 (by approximately 0.11 percent), while the other two indicators previously mentioned reflect a tendency of decrease (-1.36 percent in the case of credits, and -1.89 percent in the case of assets).

The Gross Domestic Product represents the synthetic expression of the results of the economic activity produced inside the economic environment in a certain time span, irrespective of the contribution of domestic or foreign participants.

Our country's GDP has had an increasing trend over the years (Chart 3), with the exception of 2009 when it reported a decrease from the previous year. Thus, one can observe that, amid the economic and financial crisis which affected the entire world starting with the second half of 2008, the value of the GDP of Romania for 2009 reports a decrease by approximately 3% as compared to the previous time span.

DELEVERAGING: The European Central Bank identified a series of factors which can be held accountable for the magnitude of the vulnerabilities to the deleveraging phenomenon in host countries, as follows:

(i) the prevalence of foreign banks within the national banking sector;

(ii) the dependence of foreign banks on the finance coming from outside the host-country territory;

(iii) the maturity of the financing, of the credit (short term versus long term);

(iv) the ability of local banks or of third party foreign banks to substitute the activity of foreign banks.

In Romania, deleveraging manifested moderately, as a consequence of the following factors:

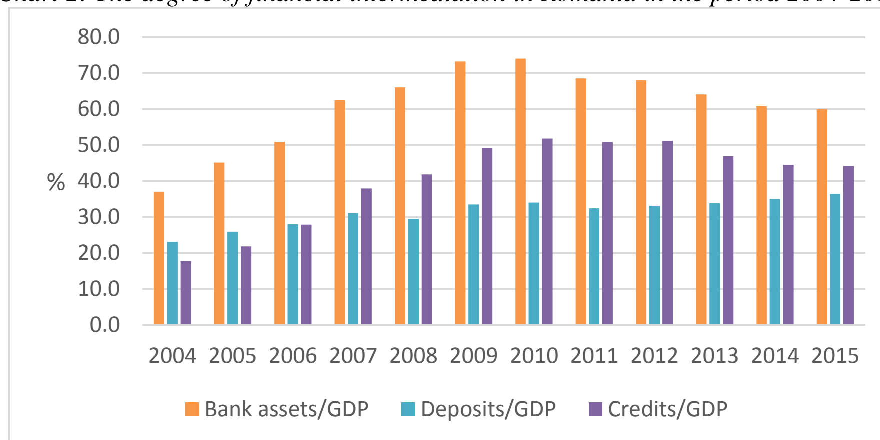
(i) slight increase in total bank assets (see Chart 4);

(ii) increase in capital due to new capital contributions, but also as an effect of introducing IFRS;

(iii) moderate decrease financing sources from parent banks.

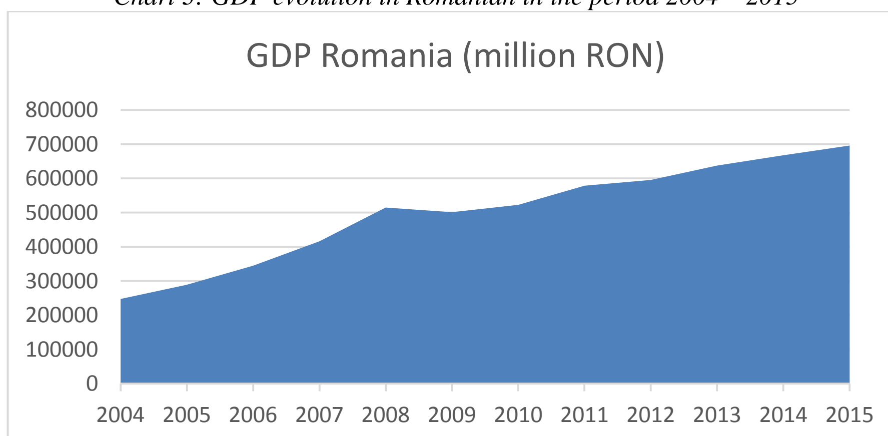
The way European banks implement deleveraging measures adopted worldwide in the context of the international financial crisis can influence negatively the financing and activity of subsidiaries in Romania.

Chart 2: The degree of financial intermediation in Romania in the period 2004-2015.



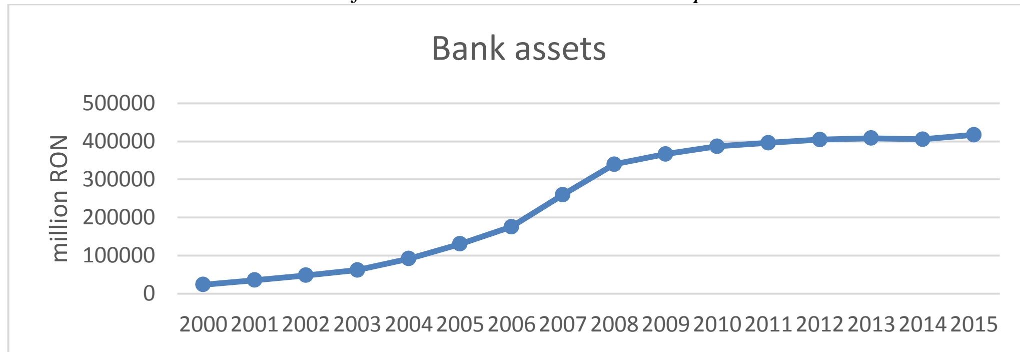
Source: personal processing of data collected from the monthly Newsletters from 2004 to 2015 - National Bank of Romania and from the National Institute of Statistics database

Chart 3: GDP evolution in Romanian in the period 2004 – 2015



Source: Personal processing of data collected from the National Institute of Statistics

Chart 4: Evolution of bank assets in Romania in the period 2000 – 2015



Source: Personal processing of data collected from the monthly Newsletters of the NBR 2004 - 2012.

On the background of a low economic growth, the efforts towards restructuring the operational activity can have a negative impact on the degree of financial intermediation, by resizing the territorial network and by stopping the crediting towards risky segments. The continuous decline of securities on the market is considered to be another risk factor as it leads to a significant increase in the provisions volume for credit risk after the reevaluation of securities.

The factors which influence financial intermediation in Romania are:

- euro area sovereign debt crisis which became more intense, and the risk of expansion, through contagion, of the effects of this crisis has grown;
- the risk of diminishing the crediting offer towards the real sector is amplified at a European level, while the financial deleveraging process continues. The way banking groups implement, at a European level, the deleveraging measures (adopted globally) in the context of the international financial crisis may have a negative effect on the financing and the activity of subsidiaries in Romania;
- the economic growth in countries which are partners of Romania has slowed down.

4. Analysis of the correlation between GDP, Credits, Deposits and Bank assets

In this paper, the authors study the relation between the indicators that define financial intermediation with the help of the correlation coefficient. We will calculate the correlation between GDP, Bank assets, Deposits and Credits during 2004-2015 and we will also analyze the intensity of the relation between these indicators. The study is based on data from the period 2004 – 2015 in Romania. We used Pearson's correlation coefficient. Pearson's correlation coefficient gives indication about the magnitude of a correlation through a value that lies between -1.00 and 1.00. In the case of Romania, during 2004-2015, we would obtain the following Person's correlation coefficient:

$$r = \frac{\sum_{i=1}^{n}(X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum_{i=1}^{n}(X_i - \bar{X})^2}\sqrt{\sum_{i=1}^{n}(Y_i - \bar{Y})^2}}. \qquad (1)$$

If Person's coefficient is negative, then there is an inverse correlation where X increases and Y decreases. If the result is positive, then there is a direct correlation where X increases and Y decreases. If the coefficient is O, then there is no correlation. The indicator presents itself in the form of an index in order to give more sense to the comparison of tendencies in the various analyzed countries. In the Table no.1 we calculated Person's correlation coefficient between GDP and Bank assets; between GDP and Deposits; between GDP and Credits with the help of the data collected from The World Bank, Global Financial Development Database.

Table no. 1: Correlations during 2004-2015

Correlation between GDP and Bank assets	0,960
Correlation between GDP and Deposits	0,993
Correlation between GDP and Credits	0,968

Source: personal calculations

5. Conclusions:

The Romanian financial system functioned adequately on the background of a still modest economic dynamic also reflected in the continuous growth of nonperforming loans, as well as despite a difficult external environment, affected by the sovereign debts crisis and the interests in the quality of balances and the financing of certain banking institutions and systems, especially in the euro area.

The changes in financial intermediation structures have extended considerably the access to financing and contributed to social welfare. The changes led to new forms of bank intermediation, including the rise of the shadow banking system and innovative products. Yet, some of the changes - associated with the attributes of concentration, interconnectedness, complexity, and opacity - have come with risks.

The degree of financial intermediation in Romania calculated as the ratio between Credits/GDP, Deposits/GDP and Assets/GDP in the period 2004-2015 reported the largest percent in 2009 and 2010, being followed then by a slight decrease.

We conclude that there is a direct correlation: between GDP and Bank assets (0,96); between GDP and Deposits (0,99); between GDP and Credits (0,96) because the correlation coefficient approaches the value 1. In all the years analyzed, the coefficient is above 0.9. The intensity of correlation is very high. If GDP increases, then Credits, Deposits and Bank assets grows.

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