

## THE NECESSITY OF AN UNIFORM REGULATION FOR THE MANAGEMENT OF BANKING RISK AT THE EUROPEAN LEVEL

Ioan Trenca<sup>1</sup>, Daniela Bozga<sup>2</sup>, Daniela Zapodeanu<sup>3</sup> Mihail-Ioan Cociuba<sup>4</sup>

<sup>1</sup>Faculty of Economics and Business Administration, Department of Finance, Babes-Bolyai University, Cluj-Napoca, Romania

<sup>2</sup>Faculty of Economics and Business Administration, Department of Finance, Babes-Bolyai University, Cluj-Napoca, Romania

<sup>3</sup>Faculty of Economic Sciences, Department of Finance, University of Oradea, Oradea, Romania

<sup>4</sup>Faculty of Economic Sciences, Department of Finance, University of Oradea, Oradea, Romania

[itrenca2011@yahoo.com](mailto:itrenca2011@yahoo.com)

[danielabozga@yahoo.com](mailto:danielabozga@yahoo.com)

[danizapodeanu@yahoo.com](mailto:danizapodeanu@yahoo.com)

[cociuba@gmail.com](mailto:cociuba@gmail.com)

**Abstract:** *In spite of the fact that both national and international bodies of authorities, such as national Central Banks, International Monetary Fund, the World Bank, or The Basel Committee have approached risk management, at present there is clear indication that the implementation of Basel III will improve the financial sector stability. The significance of the need to have a unified approach in analyzing risks, especially the credit risk which is the most overwhelming of them all, lay in the fact that risks have the ability to directly affect the financial stability and ultimately lead to systemic risks. In this context, what the economic crisis has done was to highlight the importance of approaching risks with the utmost care. The direct connection between economic growth and banking system (Kyriaki Kosmidou, Pasiouras, & Floropoulos, 2004; Liu, Molyneux, & Wilson, 2013; Perera, Skully, & Chaudrey, 2013) but also the influence that the banking system has on the economic growth (Borio, 2014) makes it imperative for supervisory authorities to implement measures in order to maintain the stability of banking system. The European Central Bank has implemented the Single Supervisory Mechanism and the Single Resolution Mechanism in order to have a banking system much better prepared to face any financial or economic shocks.*

**Keywords:** risk, systemic risks, financial stability, global economy.

**JEL classification:** G21, G01

### 1. Introduction

Risk management in Romanian banking system is in a continuous development which leads to the willingness to apply in our country modern methods of risk management. The overall objective being the creation of a stable economic environment, based on the maintenance of a reasonable risk level. This can be achieved through the application of prudential policy which are needed to generate a healthy development of Romanian economic system, an economic system that can be integrated with the European financial system. The specific objectives are

the identification of early signals regarding the threats to the financial stability, in order to ensure the fulfilling of this objective an active role must be played by the national and international supervisory institutions. Creating a standardized set of rules is an urgent necessity in order to create a stable and predictable economy, which can withstand any kind of economic or financial shock.

An effective risk management is supported by rigorously drawn policies and lending rules, which respect the principle of bank prudence. These policies and lending rule must measure correctly the different types of risk a bank may face. The current set of regulations in Romania lacks a coherent theoretical basis regarding risk classification, and also lacks a practical motivation on the objectives, scope of use, purpose, general characteristics, structure and content of the risk categorization. A uniform international regulation would certainly help regulators at national level of each country in supervision and control, increasing confidence in the financial and banking sector.

The idea of risk appears at first sight to have a negative connotation, but it is particularly important to know the risks in order to be able to prevent and take necessary protective measures. To the concept of risk is also assigned the concept uncertainty, respectively something unknown that may affect the expected results. The first one to make the distinction between the notions of risk and uncertainty was Knight (Knight, 1921) showing that the risk is measurable whereas uncertainty cannot be quantified. Risk is defined (Knight, 1921) as the probability of an unexpected event which may generate losses, this definition doesn't take into account the difference between negative risk, respectively downside risk, and positive risk, upside risk. So a more adequate definition should take into account these difference, (Jorion, 2000, p. 3) definition of risk as a sudden variation of the results, focuses on the unexpected characteristic of these fluctuations.

Uncertainty can be of two types: general uncertainty and specific uncertainty. General uncertainty can be regarded as fully ignorance regarding the results, while in the case of specific uncertainty the outcome results may be quantified by having probabilities of possible outcomes.

The notion of risk is inherent to the financial markets, the financial risk (Zenios & Ziemba, 2006) represents the likelihood of a future event to generate unexpected financial losses, financial risk represent any event or action that may adversely affect a financial organization (Holton, 2006; McNeil, Frey, & Embrechts, 2005) considers that risk has two components: uncertainty and the ability to quantify future effects of actions, while (Horcher, 2011) makes a distinction between risk and exposure to risk.

There are different possibilities to classify risk (Berbe,Damel,Debay, 2005) classify risk depending on their quantification possibility:

- Measurable ex ante risks, which includes: market risk (interest rate risk, foreign exchange risk, liquidity risk); credit risk.
- Not measurable ex ante risks, which includes: legal risk, operational risk.

Also, the classification of financial risks can be made depending on whether they are endogenous or exogenous to the financial institution (Jorion, 2000, p. 22).

The main banking risk are (Bessis, 2011, p. 12):

- Credit risk is understood (Jorion, 2000, p. 25) as the risk of loss due to the inability/unwillingness of borrowers to honor their contractual obligations. The effects of the credit risk on banks depend on the risk factors: the level

of exposure, maturity, probability of default, any correlations between borrowers and recovery rate.

- Risk of insolvency (capital risk). This risk is understood as the bank's inability to extinguish its obligations.
- Interest rate risk. Interest rate risk is understood as an cash flow sensitivity to changes in interest rates (Trenca & Benyovszki, 2011)□. Due to different maturities of resources (K Kosmidou, 2004, p. 28)□ banks may be exposed to interest rate risk.
- Market risk. It's defined as the risk of loss due to changes in market prices, this categories may include interest rate risk, currency risk and commodity price risk of the portfolio (Chernobai, Rachev, & Fabozzi, 2007)□.
- Liquidity risk. Liquidity risk is the risk that the borrower may not fulfill their obligations on time, the risk is generated by default at maturity of loans, unpaid interest and inability to refinance (Trenca, 2002)□.
- Operational risk. It can be understood as the inability of banks to provide profitable customer service (Trenca & Hadrian, 2011, p. 33)□ it is caused by deficiencies in information systems or internal controls.
- Currency risk. Exchange rate fluctuations may be a risk factor for commercial banks if the resources or loans are denominated in a currency other than the reference. Operational risk is viewed as an intrinsic risk, domestic financial institutions, risk can be controlled and reduced by implementing a system of risk management, unlike the risks of exogenous operational risk derives entirely from the structure financial institutions.
- Country risk. Especially in the economic crisis of 2007-2008 the country risk has become a major issue though country risk implications on the entire economy, not just the banking system, were known. Changes directly affect the ratings of countries financial systems in emerging countries, the intensity of these effects is higher in times of crisis (Kaminsky & Schmukler, 2001, p. 11)□.
- Legal risk. There are two main components of the legal risk: legal risk, which refers to the conditions of legality by banks, and the regulatory risk which is manifested by changes in regulations.

Different classifications of risks and the emphasis of many authors (Arunkumar & Kotreshwar, 2005; Basel Committee, 2010; Bessis, 2011; Santomero & Santomero, 1997; Trenca, 2002; van Greuning & Brajovic Bratanovic, 2009)□ on bank risk shows the importance role that risk management has in the banking system.

The process of risk management is an extremely difficult process (Horcher, 2011, p. 5) which are necessary to implement □:

- Identification and quantification of internal and external risk factors, specifying the influence of risk factors on banks;
- Prioritize risks of probabilities and their associated losses;
- Defining a threshold of risk tolerance;
- Development of management strategies for minimizing risk.

The level of risk in the banking system has risen after the crisis in 2007, the bankruptcy of Lehman Brothers in September 2008 has increased risks associated with the banking system followed by a normalization of perceived risks, but the sovereign debt crisis in Europe has once again brought the risks associated in the

system banking to levels similar to those in September 2008 (De Vincentiis, 2012)□. The measures implemented in the European banking system finally managed to decrease the perception of high risk of the European banking system. The European Central Bank has implemented the Single Supervisory Mechanism and the Single Resolution Mechanism, which aims to ensure the safety and soundness of the European banking system and enhance integration and financial stability in Europe. Within the Single Supervisory Mechanism and the Single Resolution Mechanism are participating both Eurozone countries and non-euro may join.

<b>Basel III Phase-in arrangements</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Minimum Common Equity Capital Ratio	4.5%	4.5%	4.5%	4.5%
Capital Conservation Buffer	0.625%	1.25%	1.875%	2.5%
Minimum common equity plus capital conservation buffer	5.125%	5.75%	6.375%	7%
Phase-in of deductions from CET1	60%	80%	100%	100%
Minimum Tier 1 Capital	6%	6%	6%	6%
Minimum Total Capital	8%	8%	8%	8%
Minimum Total Capital plus conservation buffer	8.625%	9.25%	9.875%	10.5%
Capital instruments that no longer qualify as non-core Tier 1 capital or Tier 2 capital	Phased out over 10 year horizon beginning 2013			
Liquidity coverage ratio – minimum requirement	70%	80%	90%	100%
Net stable funding ratio				Introduce minimum standard

Table. 1. Basel III Phase-in arrangements

Data source: [www.bis.org](http://www.bis.org)

The implementation of Basel III is underway, which aims to strengthen micro-prudential regulations and supervision, and furthermore to develop the macro-prudential supervision. The most important modification Basel III brings are for (Basel Committee, 2010, p. 2)□ Pillar 1 the quality and level of capital must be raised, the minimum level of common equity capital ratio will be increased to 4.5% of risk-weighted assets, after deductions. New indicators are also imposed: leverage ratio, a capital conservation buffer, respectively a countercyclical buffer. In the case of Pillar 2 and Pillar 3 supplemental requirements are made regarding the risk management and disclosure of information.

## 2. Data and methodology

The dataset consists of annually financial information for 228 banks, the analysed period is from 2005 until 2013, the dataset is from the Bankscope database. The analysis is performed on the following indicators: Regulatory Tier 1 Capital, Total Regulatory Capital, Tier 1 Regulatory Capital Ratio, Total Regulatory Capital Ratio and Risk Weighted Assets.

### 3.Results

In the case of Regulatory Tier 1 Capital we observe that over the analysed period has increase with over 248%, which shows an improvement of banks financial strength. Analysing the evolution of Total Regulatory Capital it can be observed that over the analysed period has a similar evolution to Regulatory Tier 1 Capital.

Indicators	Regulatory Tier 1 Capital	Total Regulatory Capital	Tier 1 Regulatory Capital Ratio	Total Regulatory Capital Ratio	Risk Weighted Assets
2005	1988,4	2265,8	6,7780	10,082	24930
2006	4283,7	3289,5	6,8375	9,6154	48966
2007	3307,8	4166,1	7,3968	10,216	36491
2008	3515,4	4805,3	7,6159	10,161	34783
2009	4236,7	5572,4	8,8009	11,662	34525
2010	5151,4	6418,5	9,8287	12,775	40332
2011	4744,3	5848,9	10,721	13,828	37977
2012	5058,3	6021,4	11,137	14,639	37863
2013	4948,6	6070,3	11,486	15,319	34222

Table 2. Bank indicators evolution (average of the period)  
Data source: Dataset Bankscope, own calculations

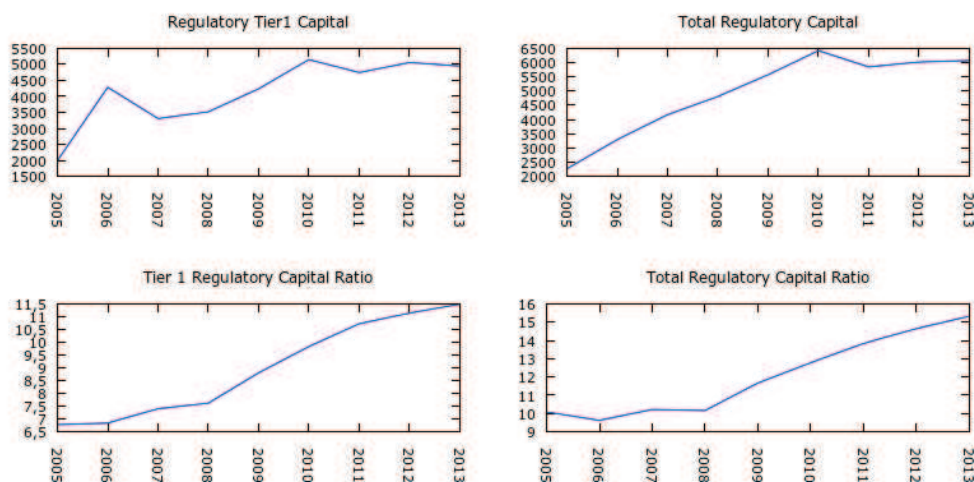


Figure 1. Bank indicators evolution

Data source: Dataset Bankscope, own calculations

Tier 1 Ratio evolution also improved over the analysed from an average of 6.7% (10.08 for Total Capital Ratio) in 2005 to an average of 11.48% (15.31 for Total Capital Ratio) in 2013. Although the evolution of capital indicators and ratios are positive for the analysed period the banking sector evolution, if we also analysed its profitability and liquidity, is negative. This is due to the fact that the increase of capital is done in period of recessions and not in period of economic growth (Fig. 2).

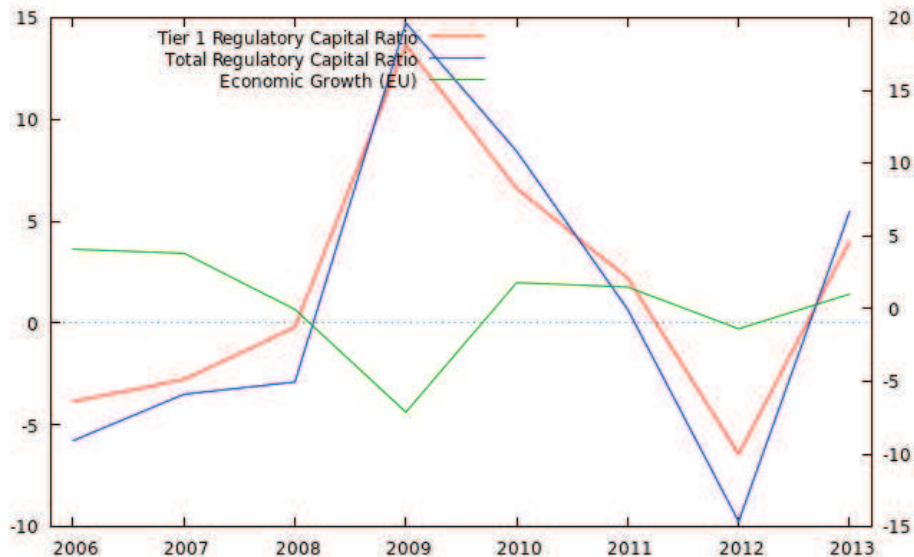


Figure 2. Bank indicators evolution and GDP  
Data source: Dataset Bankscope, own calculations

Basel III main idea is to create an additional safety net of capital during the boom period but as seen in Figure 2 the effectiveness of these methods over the 2005-2013 period is limited, also studies regarding the impact of countercyclical capital buffer would tend to reduce capital requirements during high growth GDP period and increase them during the periods of low growth (Repullo & Saurina, 2012)□, also the impact of these indicators depends on the type of shock that economies are facing (Agenor, Alper, & da Silva, 2013, p. 231)□.

#### 4. Conclusion

Economic growth and banking system are closely interdependent (Borio, 2014), meaning that economic stability has an influence on the stability of the banking system and vice-versa. Macroeconomic turbulence or risks related to the economic environment or possible imbalances of economic policies; incidental risks such as natural disasters, political events or mass bankruptcies (Houben, Kakes, & Schinasi, 2004, p. 19)□ influence the stability of banking system. The connection between banks performance and macroeconomic conditions is well documented (Kyriaki Kosmidou, Pasiouras, & Floropoulos, 2004; Liu, Molyneux, & Wilson, 2013; Perera, Skully, & Chaudrey, 2013); macroeconomic indicators (long-term interest rate, the level of inflation, money supply growth rate, GDP growth rate) all have a direct connection to the performance of the banking system. In the Case of European Union countries and especially in the case of the Eurozone the measures implemented decreased the level of risk. With the implementation of the Single Supervisory Mechanism and the Single Resolution Mechanism the European Union banking system is much more prepared to face any financial or economic shocks. Banks are much more prepared to withstand any turbulence due to the level of capital being much higher after the implementation of Basel III



recommendation and the Single Supervisory Mechanism\Single Resolution Mechanism.

**Annexes**

**Dataset Summary**

Data source: Dataset Bankscope, own calculations

Period	Number of banks	Gross Loans mil. euro	Customer Deposits mil. euro	Deposits from Banks mil. euro	Operating Profit mil. euro	Total Assets mil. euro
2005	228	38577	31605	16577	646,16	90629
2006	228	44111	34532	18234	799,76	100820
2007	228	50263	38319	17807	728,68	111664
2008	228	52548	37566	17658	7,54	122021
2009	228	52275	38712	15583	169,05	111781
2010	228	56118	42005	12055	434,32	118048
2011	228	55423	42012	11788	55,95	121777
2012	228	54178	42921	10708	207,06	118257
2013	228	52032	44263	9465	155,34	108778

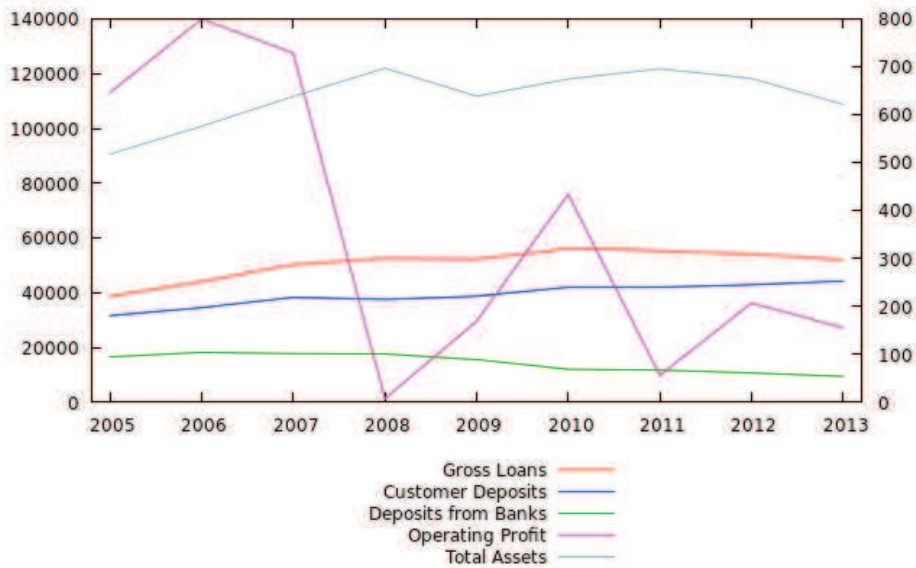


Figure 3. Dataset summary  
Data source: Dataset Bankscope, own calculations

## References

- Agenor, P. R., Alper, K., & da Silva, L. P. (2013). Capital regulation, monetary policy, and financial stability. *International Journal of Central Banking*, 9(3), 193–238.
- Arunkumar, R., & Kotreshwar, G. (2005). Risk Management in Commercial Banks (A Case Study of Public and Private Sector Banks). *Indian Institute of Capital Markets*, 1–22. doi:10.2139/ssrn.877812
- Basel Committee, S. O. B. (2010). Basel III: A global regulatory framework for more resilient banks and banking systems. *Basel Committee on Banking Supervision, Basel, 2010*(June), 1–77.
- Berbe, Damel, Debay, C. (2005). *Asset and Risk Management Risk Oriented Finance*. John Wiley & Sons.
- Bessis, J. (2011). *Risk management in banking*. John Wiley & Sons.
- Borio, C. (2014). The financial cycle and macroeconomics: What have we learnt? *Journal of Banking and Finance*, 45(1), 182–198.
- Chernobai, A. S., Rachev, S. T., & Fabozzi, F. J. (2007). *Operational risk : a guide to Basel II capital requirements, models, and analysis*. Wiley Finance (Vol. 180). John Wiley & Sons.
- De Vincentiis, P. (2012). Banking risk perception: What is going on after 2007 in Europe? *Procedia Economics and Finance*, 2, 299–306. doi:10.1016/S2212-5671(12)00091-3
- Holton, G. A. (2006). Defining risk. *Financial Analysts Journal*, 60(6), 14.
- Horcher, K. A. (2011). *Essentials of Financial Risk Management, John Wiley & Sons, 2011*
- Houben, A., Kakes, J., & Schinasi, G. (2004). Toward a Framework for Safeguarding Financial Stability. *IMF Working Paper*.
- Jorion, P. (2000). *Value at Risk: The New Benchmark for Managing Financial Risk*. McGraw-Hill New York.
- Kaminsky, G., & Schmukler, S. (2001). Emerging Markets Instability: Do Sovereign Ratings Affect Country Risk and Stock Returns? *Policy Research Working Paper Series, WPS2678*(202), The World Bank. doi:10.1093/wber/16.2.171
- Knight, F. H. (1921). Risk, Uncertainty and Profit, 1921. *Boston and New York*, 23(3), 135–157.
- Kosmidou, K. (2004). Goal Programming Techniques for Bank Asset Liability Management. *Applied Optimization*, 90. doi:10.1007/b106009
- Kosmidou, K., Pasiouras, F., & Floropoulos, J. (2004). Linking profits to asset-liability management of domestic and foreign banks in the UK. *Applied Financial Economics*, 14(18), 1319–1324.
- Liu, H., Molyneux, P., & Wilson, J. O. S. (2013). Competition and stability in european banking: A regional analysis. *Manchester School*, 81(2), 176–201. doi:10.1111/j.1467-9957.2011.02285.x
- McNeil, a J., Frey, R., & Embrechts, P. (2005). Quantitative risk management: Concepts, techniques and tools. *Risk Management*, 101(476), 30. doi:10.1198/jasa.2006.s156
- Perera, S., Skully, M., & Chaudrey, Z. (2013). Determinants of commercial bank profitability: South Asian evidence. *Asian Journal of Finance & Accounting*, 5(1), 365–380. doi:10.5296/ajfa.v5i1.3012



- Repullo, R., & Saurina, J. (2012). The countercyclical capital buffer of Basel III: A critical assessment. *The Crisis Aftermath: New Regulatory Paradigms (CEPR, London)*, (1102), 45–67.
- Santomero, A. M., & Santomero, A. M. (1997). Commercial Bank Risk Management: an Analysis of the Process. *Journal of Financial Services Research*, 12(2), 83–115.
- Trenca, I. (2002). Metode și tehnici bancare--principii, reglementări, experiențe. *Editura Casa Cartii de Știință, Cluj-Napoca*.
- Trenca, I., & Benyovszki, A. (2011). RISCUL PORTOFOLIULUI DE CREDITE BANCARE, *Editura Casa Cartii de Știință, Cluj-Napoca*
- Trenca, I., & Hadrian, S. (2011). Metode performante privind managementul riscului operațional în bănci.
- van Greuning, H., & Brajovic Bratanovic, S. (2009). *Analyzing banking risk. Analyzing Banking Risk A framework for assessing corporate governance and financial risk management* (Vol. 3). doi:10.1596/0-8213-4417-X
- Zenios, S. A., & Ziemba, W. (2006). Handbook of asset and liability management. Theory and methodology. *Handbook in Finance*. North Holland