BASEL I, II, III: CHALLENGES TO THE BANK'S CAPITAL ADEQUACY

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Abstract: *The present article has as a research field the theoretical, methodological aspects of the bank's capital adequacy mechanism, according to Basel Agreement. The purpose of this paper is to underline the main challenges of the bank's capital adequacy. The study reflects that the current global financial turmoil continues to pose a threat to the effectiveness of the Basel rules which are aimed at achieving global financial stability. Also, the present paper aims to reflects that in light of the Basel Accord, new and potent ally better financial ratios are being developed to prevent future banking crises from happening.The objectives of the research theme, presented in this paper, are oriented mainly towards: understand the role and importance of capital in a bank's balance sheet and identify the composition and relative importance of the different measures of capital from a regulatory perspective (Core Capital, Tier 1 Capital and Tier 2 Capital); know the structure of the Basel Accord (minimum capital requirement, supervisory review process and market discipline) and the key principles of each; be aware of the enhancements to the Basel Accord from Basel III and interim amendments. The Basel III introduces paradigm shift in capital and liquidity standards. Firms should ensure they are engaging with Basel III as soon as possible to position themselves competitively in a new post-crisis financial risk and regulatory landscape. The National Bank of Romania offers to its users, information's' regarding the* challenges to the bank's capital adequacy *through the Reports of Financial Stability and the Annual Reports. The present research is based on a deductive approach - strictly qualitative. For analyzing all the data I used the following research methods: comparative method, document analysis, external observation. I choose this subject for scientific reasons and realistic reasons. A result of this research tries to highlight the extent to which the final structure of capital bank, the requirements of capital banks. If we compare the analyses challenges of the three Accord Basel, we can see that the relationship: Capital requirement under Basel I < capital requirement under Basel II < capital requirement under Basel III.*

Keywords: *Bank's Capital Adequacy; Basel Accord I; Basel Accord II; Basel Accord III; Tier 1; Tier 2.*

JEL Classifications: *G21*

1. Generally Introduction

The global economic crisis has provided an opportunity for a fundamental restructuring of the approach to risk and regulation in the financial sector. The Basel Committee on Banking Supervision (BCBS) has collectively reached an agreement on reforms to strengthen global capital and liquidity rules with the goal of promoting a more resilient banking sector, which is being referred to as Basel Accord. The present article has as a research field the theoretical, methodological aspects of challenges to the bank's capital adequacy. The motivation of choosing the research theme is formulated and further the used research methodology is being presented. In the scientific research methodology, there are presented the scientific research areas, the field and the objectives of the scientific research, and also its structure. The present research is based on a deductive approach - strictly qualitative. For analyzing all the data I used the following research methods: comparative method, document analysis, external observation. I choose this subject for scientific reasons and realistic reasons. Compared with the implementation of the previous agreement (Basel II), this enhanced level of dynamism, complexity, and interdependency within the global regulatory landscape will likely add significant challenge to the implementation of Basel III. The objectives of this study are characterization of the adequacy capital of the Romanian banking sector, evolution of this in the Romanian banking sector bet wand interpretation of this evolution in the banking system.

2. Literature review

Even though the stage of research in this field is advanced, in both romanian and foreign literature, which dedicate a lot of theoretical and empiric studies to bank and their implication in the bank capital adequacy mechanism, in this moment the international crises pointed out the purpose and implications of credit institutions in the financial field. We had and we have ways to approach these problems. We want, in the allocated space, based on those already presented, to refer to the proposed challenge according agreement Basel I, Basel II, Basel III. Referring to the literature in the field, a very useful starting for our research is the series of works developed under BIS (Bank for International Settlements). The BIS carries out research and analysis to contribute to the understanding of issues of core interest to the central bank community, to assist the organisation of meetings of Governors and other central bank officials and to provide analytical support to the activities of the various Basel-based committees. The BIS also comments on global economic and financial developments and identifies issues that are of common interest to central banks. The research agenda of the BIS is focused on key areas of interest to central banks, such as monetary and financial stability, monetary policy and exchange rates, financial institutions and infrastructure, financial markets, central bank governance, and legal issues. I have been used due to their importance, new character and desire to be largely and deeper known and especially used in the scientific research and in the practical activity. This paper contributes to the literature by providing a comparative assessment of key framework elements of the two regulatory schemes for banking and insurance: Basel II/III and Solvency II.

3. Research design and methodology

Considering the scientific research methodology, the following issues were set: introduction, motivation, importance and scientific research methodology, objectives, development of the article, estimated scientific results. In the introduction is being argued the research theme, the necessity and the importance of it. The motivation of choosing the research theme is formulated and further the used research methodology is being presented. In the scientific research methodology, there are presented the scientific research areas, the field and the objectives of the scientific research, and also its structure. The present research is based on a deductive approach - strictly qualitative. For analyzing all the data I used the following research methods: comparative method, document analysis, external observation. I choose this subject for scientific reasons and realistic reasons.

4. Results and discussions

4.1. Basel Accord I

Accord of Basel I in 1988 established the criteria to be considered for determining the optimal size of a bank's capital and established the minimum level of capital that you need to have a bank. Formula set by Basel I capital adequacy provide precise criteria. Under Basel I rules, banks must have capital rank relative to risk weighted assets of 4%, while the second rank of 8%. Currently, most banks in developed countries have capital adequacy index of at least 10%. After application of Basel I, revealed the need to improve its provisions, because of the complexity of risk in financial markets. Given the conclusion derived by the practical application of Basel I system, central bank governors and heads of bank supervisory authorities of the European Union, approved on 26 June 2004, the final version of Basel II. The new agreement maintains the definition of capital and minimum requirement of 8% of risk exposure, but improving risk assessment methods. Important contribution of the Basel I minimum capital is defined in terms of risk, in terms of solvability. Under this agreement, capital consists of:

a) The basic equity (Tier I) - comprising capital and reserves, net of Loss of current year, future refunds of taxes and intangible assets;

b) Supplementary capital (Tier II) - contains provisions and revaluation reserves and subordinated debt in Tier II lower.

4.2. Basel Accord II

Basel II is the second of the Basel Accords, (now extended and effectively superseded by Basel III), which are recommendations on banking laws and regulations issued by the Basel Committee on Banking Supervision. Basel II, initially published in June 2004, was intended to create an international standard for banking regulators to control how much capital banks need to put aside to guard against the types of financial and operational risks banks (and the whole economy) face. Since the end of 2006 began to be applied Basel II and comprises three main points:

a) minimum requirements to be met by banks in terms of balance - is thus deals with them better first Basel agreement, taking into account operational risk (fraud, systemic crisis) and market risk. Second, credit must be evaluated by the banks

using different calculation methods according to their requirements (internal rating systems);
b) strengthening controls that central banks may have on commercial banks, taking into account current and excessive risk-taking strategies which can take companies, central banks will have discretion in determining whether a bank has sufficient resources to banking intermediation and can establish requirements greater than the agreed minimum ratio larger or smaller reserves based on risk profile of banking institution);
c) Market discipline and transparency - transparency regulations will require the provision of information to the public regarding the level of reserves, risks and management.

However in our opinion may appear negative consequences for the domestic banking system, among them:
a) induction of discrimination between banks (especially between small banks and large), because small banks will not, human and financial reasons, to use the most advanced methods of risk assessment have the adequate internal control procedures, audit and risk management are thus required to increase solvency indicators, particularly by increasing capital, to fit an appropriate risk profile;
b) Emphasis on mergers and acquisitions transactions between banks in the system, the small banks are expected to leave the market;
c) Penalty SMEs through internal rating systems. It is known that SMEs are considered more risky and have lower quality for some specific classifications. This will lead to the collapse of credit for SMEs and simultaneously increase interest rates. It is expected that the Romanian Banking Association, National Bank and credit institutions to find the most appropriate ways to not disadvantage lending to SMEs
d) Changes in credit lending and credit products, depending on the quality of the borrower, for the most risky interest rates will be higher including a higher risk premium.
Proposals Basel 2 is based on three pillars:
- A capital adequacy requirement;
- Supervisory review process;
- A requirement for market discipline.
The Basel Accord I dealt with only parts of each of these pillars. For example: with respect to the first Basel II pillar, only one risk, credit risk, was dealt with in a simple manner while market risk was an afterthought; operational risk was not dealt with at all. The role of Basel II, both before and after the global financial crisis, has been discussed widely. While some argue that the crisis demonstrated weaknesses in the framework, others have criticized it for actually increasing the effect of the crisis. In response to the financial crisis, the Basel Committee on Banking Supervision published revised global standards, popularly known as Basel III.

4.3. Calculation of capital proposed by the Basel Accord II risk management
A key part of bank regulation is to make sure that firms operating in the industry are prudently managed. The aim is to protect the firms themselves, their customers and the economy, by establishing rules to make sure that these institutions hold enough capital to ensure continuation of a safe and efficient market and able to withstand any foreseeable problems. The main international effort to establish rules around

capital requirements has been the Basel Accords, published by the Basel Committee on Banking Supervision housed at the Bank for International Settlements. This sets a framework on how banks and depository institutions must calculate their capital. In 1988, the Committee decided to introduce a capital measurement system commonly referred to as Basel I. This framework has been replaced by a significantly more complex capital adequacy framework commonly known as Basel II. After 2012 it was replaced by Basel III. The capital ratio is the percentage of a bank's capital to its risk-weighted assets. Weights are defined by risk-sensitivity ratios whose calculation is dictated under the relevant Accord. Basel II requires that the total capital ratio must be no lower than 8%. The first pillar deals with maintenance of regulatory capital calculated for three major components of risk that a bank faces: credit risk, operational risk, and market risk. Other risks are not considered fully quantifiable at this stage. The credit risk component can be calculated in three different ways of varying degree of sophistication, namely standardized approach, Foundation IRB, Advanced IRB and General IB2 Restriction. IRB stands for "Internal Rating-Based Approach". For operational risk, there are three different approaches – basic indicator approach or BIA, standardized approach or STA, and the internal measurement approach (an advanced form of which is the advanced measurement approach or AMA).For market risk the preferred approach is VaR (value at risk).

a) The standard approach is similar to that proposed by Basel I, but uses more refined weights. Compared to Basel I, this approach allows the use of derivatives to mitigate credit risk and reduce capital requirements. In the standard model approach, weights are given depending on the type of state or institution credited according to their rating. The most important categories of borrowers are states, including central banks, local authorities, banks and multinational corporations.
b) The approach based on internal ratings based credit allows an institution to use their own rating system, including own calculations using the input probability of default (PD), but losses when the counterparty enters default (LGD) is provided by the institution supervision. On the other hand, the approach advanced internal ratings banks calculate their capital requirements based on their own models, validated by the institution of supervision, including calculations input probability of default (PD) and losses when counterparty enters default (LGD). Capital allocation methods are defined as ratings-based approach (IRD).
c) The approach based on internal ratings advanced. Credit institutions may have prompted the capital requirement for operational risk by applying this method only request bank approval.

Politically, it was difficult to implement Basel II in the regulatory environment prior to 2008, and progress was generally slow until that year's major banking crisis caused mostly by credit default swaps, mortgage-backed security markets and similar derivatives. As Basel III was negotiated, this was top of mind, and accordingly much more stringent standards were contemplated, and quickly adopted in some key countries including the USA.

4.4. Basel Accord III

Basel III (or the Third Basel Accord) is a global, voluntary regulatory standard on bank capital adequacy, stress testing and market liquidity risk. It was agreed upon by the members of the Basel Committee on Banking Supervision in 2010–11, and was scheduled to be introduced from 2013 until 2015; changes from January 7, 2013 extended implementation until 2019 however. The third installment of the Basel Accords was developed in response to the deficiencies in financial regulation revealed by the late-2000s financial crisis. Basel III was supposed to strengthen bank capital requirements by increasing bank liquidity and bank leverage.

Basel Accord III is under development IV CDR package for implementation of Basel III package that will materialize in a directive, whose provisions will be transposed into national law until 01.01.2013. Thus, CRD IV represents a set of measures transposing the European level Basel III which aims to strengthen the regulatory and supervisory framework of the banking sector.

Comparison of proposed changes for determining capital adequacy:

The set of measures aimed at correcting deficiencies manifested during the crisis we are going through, while the existing regulations were insufficient management issues:

- Erosion of the capital base and its ability to cover losses;
- An oversized volume unsustainable assumption of risk-based capital ratio (leverage exaggerated amplification);
- Managing insufficient market liquidity and interaction between credit risk and liquidity risk is reflecting inadequate capital requirement liquidity problems of credit institutions.
- To increase the quality and transparency of the capital base of credit institutions, in addition to increasing the regulated minimum capital CRD IV package own funds structured on two main levels:
- Level 1 (basic - and additional CET 1 - AT 1) and
- Level 2 (T 2), introducing stricter eligibility criteria specific to each level.

Baseline therapy introduced CRR is more restrictive than that required by the regulations in force, that the elements currently reduces Tier 1 and those that are deducted in equal proportion from both Tier and of the level 2 will mainly affect CET 1 equity component must ensure the greatest extent covering capital requirements. CRR introduces a number of new deductions also affects directly CET 1 deferred tax assets dependent on future profitability, assets related to defined benefit pension funds, mutual holdings of equity). However, CRR introduces a number of new deductions also affects directly CET 1 deferred tax assets dependent on future profitability, assets related to defined benefit pension funds, mutual holdings of equity). Alterative basic treatment, the transitional arrangements for the period 01.01.2013-31.12.2017 allows Member States to opt for a smooth transition to the new treatment application deductible under CRR elements. Thus, CRR provisions established for each year of the period mentioned above, a range of values (indicating the minimum and maximum) of the competent authorities may choose the percentage that each element deductible provided the CRR will affect equity categories according to treatment more restrictive base. The amount remaining after applying this percentage will also be deducted, but according to an alternative treatment slower than basic treatment is specified separately for each deductible item.

The Romanian banking sector is necessary to analyze the two options, namely the full implementation of basic treatment since 1/1/2013, which would correspond to the values shown for 2018 in the table below, or transient application using the following schedule, which were considered minimum values of the ranges provided for CRR for basic treatment and alterative which would apply while the transitional period:

Table no. 1: Period and transitional regime for implementation of the Basel Accord III

Period / Transitional regime	**2013**	**2014**	**2015**	**2016**	**2017**	**2018 -** the first year after the transitional period applies entirely new provisions
The extent deductible under CRR elements will affect basic own funds under treatment (more restrictive)	0%	20%	40%	60%	80%	100%
The extent deductible under CRR elements affect their funds under treatment alterative	100%	80%	60%	40%	20%	0%

(Source: author based on archive of The National Bank of Romania)

Basel Accord III has been developed against the background of the financial crisis and represents an extension of Basel Accord II, which remains in effect. The goals of Basel Accord III is to increase the stability of the international banking sector, mainly by improving the ability of banks to withstand financial and economic stress and by improving the transparency and market discipline by means of detailed disclosure of the capital base. Capital serves as a cushion against sudden financial shocks (such as an unusually high occurrence of loan defaults), which can otherwise lead to insolvency. The Basel III regulatory reform package revises the definition of regulatory capital and increases capital holding requirements for banking organizations. The quantitative requirements and phase-in schedules for Basel III were approved by the 27-member jurisdictions and 44 central banks and supervisory authorities on September 12, 2010, and endorsed by the G20 leaders on November

12, 2010. Basel III recommends that banks satisfy these enhanced requirements by 2019. The Basel agreements are not treaties; individual countries can make modifications to suit their specific needs and priorities when implementing national bank capital requirement. Implementing Basel III is a significant challenge for any bank. The key issues are deciding how best to implement a solution that allows them to comply, how to streamline their systems and processes for improved operational effectiveness and how to reduce their capital requirements.

5. In conclusion

In conclusion, the comparative assessment of challenge of bank's capital adequacy of Basel I/ II/III allowed the detection of similarities and differences as well as benefits and shortcomings of three regimes, which provides an opportunity to rectify their drawbacks. Lines of action taken aimed at avoiding deteriorating credit institutions in the general context of limiting investment options and restricted possibilities to attract resources. Accepting a higher risk level by credit institutions means strengthening the level of own funds, even over the level stipulated by the bank. Capital adequacy is prominent feature in the management of any risks encountered by the credit institution. The credit institutions should manage the inherent risks. The very efficient management of risk it is essential for the success on long term of any bank. Methods and techniques of risk management, capital calculation must be continually reviewed and adapted to changes occurring in financial markets, a review of Basel Accord is absolutely necessary in the current economic and financial context. As a final conclusion of this research we want to mention and express our opinion that the methods and techniques of managing risk, calculation of capital need permanent revision and adaptation to the changes that take place on the financial market the implementation of Basel Agreement 3, which are absolutely necessary in the actual economic and financial context.

Reference:

Bardoloi S.(2004), *Measuring Operational Risk: The Data Challenges,* Banking and Technology New Service Network, UK

Cem K.,Taylor M.W., (2000), *Toward a New Global Banking Standard. The Basel Committee's Proposals*, Finance&Development

Chicken&Posner, (1998), *The Philosophy of Risk*, Ed. Thomas Telford

Doughterty C.(2007), *Economic powers to study growing influence of hedge funds*, International Herald Tribute

Dowd K, (2002), *Measuring Market Risk*, publishing by John Wiley&Sons

Gallati Reto, (2003), *Risk Management and Capital Adequacy*, Publishing by McGraw- Hill

Holton Glyn A, (2003), *Value at Risk: Theory and Practice*, Academic Press

Jackel P., (2002), *Monte Carlo methods in finance*, John Wiley&Sons

Jarrow R. A., (2003), *Modern risk management. A history*, Risk Books

Jorion P., (2003), *Financial Risk Manager Handbook*, John Wiley&Sons

Likierman A. (2006), *Measuring corporate responsibility: Acting ethically- and being able to prove it*, Ethical Corporation

Matis E. A. (2009) *Performance and risk management in Romania's commercial banks,* Home Book Science Publisher, Cluj-Napoca.

Owen M. (2004), *Preparing for the pain of Basel II*, Banking and Technology New Service Network, UK
Palfi C. (2009) *Financial-accounting management of the risks in the banking activity*, Risoprint Publisher, Cluj-Napoca.
Basel Committee on Banking Supervision (2011), *Basel III: A global regulatory framework for more resilient banks and banking systems,* Bank for International Settlements, http://www.bis.org/publ/bcbs189.pdf
Philipp, H. et al. (2010),. *Basel III and European banking: Its impact, how banks might respond, and the challenges of implementation* , EMEA Banking
Walter, S., *Basel III and Financial Stability*, Speech at the 5 th Biennial Conference on Risk Management and Supervision, Financial Stability Institute, Bank for International Settlements, Basel, 2010, http:// ww.bis.org/speeches/sp101109a.htm
Walter, S., *Basel III: Stronger Banks and a More Resilient Financial System,* Conference on Basel III, Financial Stability Institute, *Basel*, 2011
Philip Lawton, *Middle Office: Managing Financial Institutions in Turbulent Times, 2012*
Annual report of Romania's National Bank (2007).
Annual report of Romania's National Bank (2008).
Annual report of Romania's National Bank (2009).
Annual report of Romania's National Bank (2010).
Annual report of Romania's National Bank (2011).