Capital adequacy and risk management - premises for strengthening financial system stability

Bunea-Bontaş, Cristina Aurora and Lăzărică, Marinela and Petre, Mihaela Cosmina

Alexandru Ioan Cuza University of Iasi, Romania

30 June 2009

CAPITAL ADEQUACY AND RISK MANAGEMENT – PREMISES FOR STRENGTHENING FINANCIAL SYSTEM STABILITY

Cristina Bunea-Bontas
"Constantin Brancoveanu" University, Pitesti,
Faculty of Management-Marketing in Economic Business
Braila, Romania
bontasc@yahoo.com
Marinela Lazarica
"Constantin Brancoveanu" University, Pitesti,
Faculty of Management-Marketing in Economic Business
Braila, Romania
mlazarica@yahoo.com
Mihaela Cosmina Petre
"Constantin Brancoveanu" University, Pitesti,
Faculty of Management-Marketing in Economic Business
Braila, Romania
nita_mihaela_c@yahoo.com

Abstract

In the last decades, we have witnessed the progressive integration of European financial system, as a result of the cumulative effect of markets' liberalization, innovation and globalisation, and of harmonization of the regulations and implementation of financial reforms by the EU Member States. In this context, increased risk of financial instability necessarily requires the development of standards and codes of best practices in order to improve financial system integrity and stability, and to insure the health of the global banking and financial markets. From this perspective, the Basel II Accord represents a true revolution, aiming the improvement of the consistency of capital regulations internationally and better operational risk management practices. As a member of the EU, Romania is currently through the stages of implementation of Basel II, starting 1st of January 2008. As a central bank, NBR main objectives are: to adapt national legislation; to coordinate the efforts of credit institutions to develop new strategies regarding solvency, capital adequacy and measurement system for each risk category; to impose the disclosure requirements for financial reports and to adapt the IT system.

Keywords
Basel II Accord, capital adequacy, financial system stability, minimum capital requirements, risk management, risk-weighted assets

1. INTRODUCTION

Capital helps protect individual banks from insolvency, thereby promoting safety and soundness in the overall banking system is a necessity. Banks must have a process for assessing their capital adequacy relative to their risk profile, by setting internal capital targets that are consistent with their risk profile, operating environment, and strategic or business plans. The **"Internal capital adequacy assessment process"** (ICAAP) represents an integral part of banks' risk management processes, thus the board and senior management are enabled to assess, on an ongoing basis, the inherent risks in their activities and material to the bank. The individual financial institutions have been substantially improved their risk

management during the last twenty years. These improvements have been spurred by the pressure to cope with a more volatile and dynamic financial environment. As a priority, regulators have undertaken great efforts to impose new risk management standards on banks, in order to attenuate dangers of systemic risk and to strengthen the stability of the financial system. The role of **financial institutions** in straightening the financial system stability was expressed by Jaime Caruana [1], actual General Manager of the Bank for International Settlements, since 1st April, 2009, who declared that these institutions can contribute by "increasing the soundness of their risk management systems to match the growing complexity of domestic and international financial markets, to help ensure that their actions do not have a negative impact on other participants in global financial markets."

2. THE PILLARS OF BASEL II ACCORD

Increasing financial system stability is an important step in the process of integration of the European banking sector, that's why a special concern of supervising institutions is to introduce a discipline which ensures a proper risk management, as a premise of the consolidation of banking supervision. In opinion of Barbu and Vintila [2], banking system components are less integrated on European level, comparing to the capital markets which have an increased degree of integration and registered favourable evolutions in the field of harmonization legislation, and not only. Factors that slow down the banking systems financial integration process are: the diversity of national banking systems, due to the particularities at a national level, such as consumer culture, the preferences of domestic customers, the costs of banking services and products, the national regulations, the institution typology; and the lack of a consolidated supervision and regulation.
Having regard to those mentioned above, the **New Basel Capital Accord "International Convergence of Capital Measurements and Capital Standards: A Revised Framework"** (*Basel II Accord*), has a significant impact on the alignment of banking practices in the field of risk management in the European banking system, considering the challenges it has brought in banking activity. This approach constitutes the aim of the document published by Basel Committee on Banking Supervision in June 2004. The changes related to Basel I appeared to be necessary because of several problems that became increasingly obvious over time, emphasised by Firtescu [3]: lack of sufficient risk differentiation for individual loans; no recognition of diversification benefits; unacceptable treatment of sovereign risk; some incentives for better overall risk measurement and management; few distortions related to cross-border lending.
The fundamental objective of the Basel II Accord is to develop a revised framework that would further strengthen the soundness and stability of the international banking system and to promote the adoption of stronger risk management practices by the banking industry, and views this as one of its major benefits. The Basel II accord is based on three pillars:
Pillar I: ***Minimum capital requirements*** - Establishes the measurement methods for the most important categories of risks which a bank has to be faced to: credit, market and operational risk. The changes brought by Basel II affect mostly the risk evaluation methods. Thus, the methods used for measuring credit risk are the most advanced, those for market risk are unchanged, and those for operational risk are introduced for the first time (more discussions about types of risks and their estimating methodologies are presented in Section 3 of this article).
Pillar II: ***Supervisory review process*** - Consists in the extended role assumed by the supervisors, which includes assurance that banks operate with adequate capital, and that they have in place an internal processes required to evaluate risks and take the necessary

measures when required. According to this pillar, the national banking regulator requires that each financial institution creates and validates an internal process used to calculate the minimum capital requirements in accordance with its own risk profile.
The supervisory review is intended to help ensure overall capital adequacy by [4]:
• confirming a bank's compliance with regulatory capital requirements;
• addressing the limitations of minimum risk-based capital requirements as a measure of a bank's full risk profile, including risks not covered or not adequately quantified in Pillar 1;
• ensuring that each bank is able to assess its own capital adequacy (beyond minimum risk-based capital requirements) based on its risk profile and business model; and
• encouraging banks to develop and use better techniques to identify and measure risk.
Pillar III: ***Market discipline*** - Improves market discipline through effective public disclosure to complement requirements for Pillar 1 and Pillar 2. Pillar 3 has introduced substantial new public disclosure requirements, which represent a significant increase in the amount of information made publicly available by banks around capital structure, capital adequacy, risk management and risk measurement. The disclosures relating to the capital structure and capital adequacy have to be made at the level of the top consolidated entity, but also individually for each significant subsidiary. This can create a sizeable additional burden for internationally active institutions with significant operations in a number of countries [5].

3. TYPES OF RISKS. RISKS ASSESSMENTS

For a few decades, rapid innovations and financial flows internationalisation, due to the technological progress and deregulation, are imposing themselves as major characteristics of financial markets, resulting in substantial changes in banking activities and increasing competitive pressures among banks and non-banks alike. According to Van Greuning and Brajovic Bratanovic [6], banks response to the new challenges of ongoing changing of global financial environment was vigorous and imaginative by entering new business areas, focusing on superior information and knowledge management capabilities and developing new instruments, products and services. On “the other side of the coin”, internationalisation and deregulation have increased market volatility, risks and uncertainties, possibilities for contagion. We name only two probative examples: the financial crises in 1997 spreading from Thailand to the rest of Southeast Asia, East Asia, Eastern Europe and South America, having effects on banking systems all around the world, and the most recent one originated in United States and spread to the European Union and then to the rest of the world, whose economical and financial deep effects are experienced nowadays. That is why recent developments have increased the need for more adequate and effective methods for risk measurement, risk management techniques, and integrated approaches to internal controls.
Risk is usually defined by the adverse impact on profitability of several distinct sources of uncertainty. While the types and degree of risks an organization may be exposed to depend upon a number of factors such as its size, complexity business activities, volume etc., it is believed that generally the banks face credit, market, operational, liquidity, interest rate risk in the banking book, compliance/legal/regulatory and reputation risks. However, many authors approach the complex issue concerning the typology of risks which a bank is exposed to, through the standard classification which the Basel II Accord is based on. This includes credit risk, market risk and operational risk. In this article, identifying and classifying all possible banking risks are not our objective, therefore we adopt the lastly mentioned, which gives us the opportunity to emphasize the methods of calculation the minimum capital requirements.

A. CREDIT RISK arises from the potential that one party to a financial instrument is causing a financial loss for the other party by failing to discharge an obligation [7]. Alternatively losses may result from reduction in portfolio value due to actual or perceived deterioration in credit quality. Credit risk emanates from a bank's dealing with individuals, corporate, financial institutions or a sovereign. Loans are the largest and most obvious source of credit risk; once this is determined the bank could develop a plan to optimize return while keeping it within predetermined limits [8]. The choices for measuring credit risks are:

1) The Standardized Approach. Under this approach banks are required to use ratings from External Credit Rating Agencies recognised as eligible by national supervisors to quantify required capital for credit risk (like as Standard & Poor's, Fitch Ratings, Moody's). In many countries this is the only approach the regulators have approved in the initial phase of Basel II implementation. The Revised Framework offers guidance for weighting the assets risk.

2) Internal-Rating Based (IRB) Approach. Credit risk rating is summary indicator of a bank's individual credit exposure. An internal rating system categorizes all credits into various classes on the basis of underlying credit quality. The importance of internal credit rating framework becomes more eminent due to the fact that historically major losses to banks stemmed from default in loan portfolios. It would facilitate banks in a number of ways such as credit selection, amount of exposure, tenure and price of facility, frequency or intensity of monitoring, analysis of migration of deteriorating credits and more accurate computation of future loan loss provision, and deciding the level of approving authority of loan [9].

Subject to certain minimum conditions and disclosure requirements, banks that have received supervisory approval to use the IRB approach may rely on their own internal estimates of risk components in determining the capital requirement for a given exposure. The risk components include measures of the probability of default (PD), loss given default (LGD), the exposure at default (EAD), and effective maturity (M). The goal is to define risk weights by determining the cut-off points between and within areas of the expected loss (EL) and the unexpected loss (UL), where the regulatory capital should be held, in the probability of default. Then, the risk weights for individual exposures are calculated based on the function provided by Basel II. The internal-ratings system is based on Foundation IRB and Advanced IRB, accompanied by a set of formulae provided by the Basel II Accord.

- **The Foundation IRB (F-IRB)**. Under this approach banks are allowed to develop their own empirical model to estimate the PD for individual clients or groups of clients and they are using regulator's prescribed LGD and other parameters required for calculating the RWA (Risk-weighted asset).
- **The Advanced IRB (A-IRB)**. Under this approach banks are allowed to develop their own empirical model to estimate PD, EAD, LGD and other parameters required for calculating the RWA. No matter the approach, the total required capital is calculated as a fixed percentage of the estimated RWA.

In the process of credit risk valuation, banks and supervisors are guided by the principles stated by the Basel Committee in the Consultative Document "**Sound Credit Risk Assessment and Valuation for Loans"** issued in November 2005. The measurement and management of credit risk may be viewed as a continuum. As the complexity and sophistication of the transactions increase, the bank should move its level of credit risk measurement and management along the continuum to a greater degree of complexity and sophistication. Each step to greater sophistication should be effectively integrated into the bank monitoring and management processes. The benefit is enhanced when these management techniques are viewed as integral components of the organizational infrastructure rather than as steps that must be taken to achieve regulatory compliance [10].

B. MARKET RISK is the risk of losses in on and off-balance-sheet positions arising from movements in market prices. Different risks subject to market prices fluctuations are: the risks pertaining to interest rate related instruments and equities in the trading book [11]; and the foreign exchange risk and commodities risk throughout the bank. Market risk capital is held against: **general market risk -** the potential for trading book losses due to general market movements; **specific market risk -** the potential for losses sustained over the short term due to issuer specific factors; **incremental risk -** the potential for losses over the longer term due to credit default or credit migration (e.g. loss on equity position due to default by that company on its debt obligations) [12]. In measuring banking market risks, a choice between two broad methodologies is permitted by the national authorities:

1) The Standardized Approach. Uses a "building-block" approach in which specific risk and the general market risk arising from debt and equity positions are calculated separately.

2) The Internal Models Approach. Is subject to the fulfilment of certain conditions and its use is therefore conditional upon the explicit approval of the bank's supervisory authority. This method allows banks to use risk measures derived from their own internal risk management models. The calculation of capital charge of market risk through the internal models is based on **Value-at-risk (VaR) models**. VaR provides a single number to summarize the downside risk in a portfolio of financial assets, estimating the maximum expected loss over a given investment period at a predetermined level of statistical confidence. Its purpose is to quantify the likelihood of experiencing the worst possible loss, or lower-tail outcome, while preserving the bank portfolio's upside potential [13]. Banks have flexibility in devising the nature of their quantitative models. These models could, for example, be based on historical simulations, Monte Carlo simulations, no particular model being prescribed by The Revised Framework.

In response to the global financial crisis, the Basel Committee has released a suite of consultative documents aimed at strengthening the Basel II Framework. One of the revisions concerns the data sets used: banks must (the previous used term was "should") update their data sets *monthly* (instead of every three months) and to reassess them whenever market prices are subject to material changes. Banks also must have processes in place to update their data sets more frequently, according to the consultative document **"Proposed revisions to the Basel II market risk framework"**, issued in July 2008. Another proposed change to traded market risk capital adequacy standards includes a significant increase in general market risk capital through the introduction of a **scaled stressed-VaR (sVaR)** according to the consultative document **"Revisions to the Basel II market risk framework"** (January 2009).

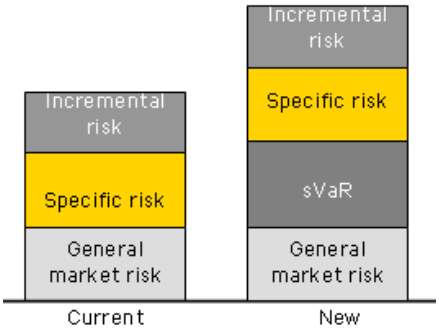

Fig. 1. Changes in components of market risk capital to include sVaR [14]

General market risk: market-wide losses at a 99% confidence over the next 10 days;
sVaR: market-wide losses using data from historical periods of high market volatility;
Specific risk: issuer-specific losses at a 99% confidence level over the next 10 days;
Incremental risk: issuer-specific losses at a 99.9% confidence level over the next year.

C. OPERATIONAL RISK generally appears as a result of poor management, being referred as the risk of corporate governance exposure. According to Tinca [15], management risk is the no. 1 operational risk. It represents one out of six or seven operational risk cases. Next in importance is event risk, including internal and external fraud. Operational risk measurement is quite distinct, from several reasons: it deals mainly with tail events rather than central projections or tendencies, reflecting aberrant rather than normal behaviour and situations; the bank exposure to this type of risk is less predictable and even harder to model; for a wide range of operational risk there is and never can be data to support anything but an exercise requiring subjective judgment and estimation; the diverse nature, from internal or external disruptions to business activities and the unpredictability of financial impact [16].
However, the Basel II Accord proposes three methodologies for calculating operational risk.
1) The Basic Indicator Approach (BIA). It requires banks to provision a fixed percentage (15%) of their average gross income over the previous three years for operational risk losses. There are no qualifying criteria associated with this approach, and it involves little change to current practices. Generally, only small banks are expected to use BIA and they are encouraged to comply with the Committee's guidance on **"Sound Practices for the Management and Supervision of Operational Risk"**, issued in February 2003.
2) The Standardised Approach. Banks' activities are divided into eight business lines: corporate finance, trading & sales, retail banking, commercial banking, payment & settlement, agency services, asset management, and retail brokerage. Within each business line, gross income is a broad indicator that serves as a proxy for the scale of business operations and thus the likely scale of operational risk exposure within each of these business lines. The capital allocation is calculated for each business line, but not for the whole institution, by multiplying gross income by a factor (varying from 12% to 18%) assigned to that business line.
3) Advanced Measurement Approaches (**AMA**). They offer flexibility and self-discipline, as banks may use their own method for assessing their exposure to operational risk, so long as it is sufficiently comprehensive and systematic. This involves the collection of historical data on losses, their analysis, and the use of models to derive a probability of loss. It should be stressed that the most difficult part is the collection of the data, rather than the implementation of the models, because data might not be available for every type of risk. Use of the AMA is subject to supervisory approval, and banks need to demonstrate the accomplishment of some qualifying general criteria and quantitative and qualitative standards.

4. CAPITAL STRUCTURE AND CAPITAL ADEQUACY

When assessing the strength of banks, one of a number of factors to be taken into account is **capital adequacy**. In the simplest formulation, a bank's capital is the "cushion" for potential losses arising from both on and off-balance sheet exposures, which protect the bank's depositors or other lenders. Banking regulators in most countries define and monitor capital adequacy to protect depositors, thereby maintaining confidence in the banking system. International Monetary Found [17] emphasizes few more arguments for capital adequacy measurement, like as: it demonstrate that bank owners are willing to put their own found at risk, provide quickly available resources free of transaction and liquidation costs, provide for normal expansion and business finance, level the playing field by requiring universal application of the standard, and encourage less risky lending. Banks capital is divided into three tiers:
A. ***TIER 1 CAPITAL*** consists in *equity capital*, defined as permanent shareholders' equity, equalled with issued and fully paid ordinary shares/common stock and non-cumulative perpetual preferred stock (but excluding cumulative preferred stock), and *published reserves*

from post-tax retained earnings, created or increased by appropriations of retained earnings or other surplus, e.g. share premiums, retained profit, general reserves and legal reserves. Tier 1 capital is a metric of a bank's ability to sustain future losses, being the core measure of a bank's financial strength from a regulator's point of view [18]. Basel Committee argues the importance given to this element [19]: capital is the only element common to all countries' banking systems; it is wholly visible in the published accounts and is the basis on which most market judgements of capital adequacy are made; and it has a crucial bearing on profit margins and a bank's ability to compete.

B. TIER 2 CAPITAL is considered as *supplementary capital*, and it consists of undisclosed reserves, asset revaluation reserves, general provisions/general loan-loss reserves, hybrid (debt/equity) capital instruments, subordinated debt. **Limits and restrictions**:

(i) the total of tier 2 capital is limited to a maximum of 100% of the total of tier 1 capital;

(ii) subordinated term debt are limited to a maximum of 50% of tier 1 capital;

(iii) where general provisions/general loan-loss reserves include amounts reflecting lower valuations of asset or latent but unidentified losses present in the balance sheet, the amount of such provisions or reserves are limited to a maximum of 1.25 percentage points of weighted risk assets to the extent a bank uses the Standardised Approach for credit risk; or to 0.6 percentage points of credit risk-weighted assets to the extent a bank uses the IRB Approach for credit risk;

(iv) long-term subordinated debt may not exceed 50% of tier 1 capital;

(v) asset revaluation reserves which take the form of latent gains on unrealised securities are subject to a discount of 55%.

C. TIER 3 CAPITAL was created with the implementation of the 1996 Market Risk Amendment to Basel I, consisting of short-term subordinated debt. It can be used to partially offset the capital charge for market risks, including foreign exchange risk and commodity risk [20]. To qualify as tier 3 capital, securities must be subordinated, unsecured, and subject to a minimum maturity of two years. **Limits and restrictions** that take into account tier 3 capital:

(i) the amount of tier 3 capital that can be used for market risks is limited to 250% of the amount of tier 1 capital;

(ii) tier 2 capital may be substituted for tier 3 up to a limit of 250%;

(iii) tier 1 capital should represent at least half of total eligible capital, i.e. that the sum total of tier 2 plus tier 3 capital should not exceed total tier 1 capital.

Capital adequacy is measured through the **capital adequacy ratio (CAR)**, calculated as:

$$\mathrm{CAR} = \frac{\mathrm{Capital}}{\mathrm{Risk}} \tag{1}$$

Capital can be defined taking into account its components: *Tier 1*, expressing the ability to absorb losses without compelling the bank to stop transactions, *Tier 2*, which can take up losses even in the event of closing down the bank, and *Tier 3*, used in case of necessity against risk exposures due to fluctuations in the market value of assets held:

Capital = (Tier 1 capital – goodwill) + (Tier 2 capital) + (Tier 3 capital) - adjustments (2)

Goodwill is entirely subtracted from tier 1, because its value may fall during crises; various adjustments are made to prevent possible double counting of value and they are deducted for 50% from tier 1 and for 50% from tier 2.

Risk is expressed by **risk-weighted assets** (RWA). Total risk-weighted assets is determined by multiplying the capital requirements for market risk and operational risk by 12.5% (i.e. the reciprocal of the minimum capital ratio of 8%) and adding the resulting figure to the sum of risk-weighted assets for credit risk. The Basel Committee applies a scaling factor in order to broadly maintain the aggregate level of minimum capital requirements, while also providing incentives to adopt the more advanced risk-sensitive approaches. The scaling

factor is applied to the risk-weighted asset amounts for credit risk assessed under the IRB approach, and at issuing date it was estimated at 1.06, based on quantitative impact study data. Considering the three types of risks, banks need to calculate minimum capital requirements for credit, market and operational risk, as a major objective of Pillar 1. The regulatory capital is computed as the sum of the credit, market and operational risk capital charge (CC). The Total Cost of Risk (TCR) is obtained by summing Credit Risk Cost (CRC), Market Risk Cost (MRC), and Operational Risk Cost (ORC), respectively, so that:

$$\text{Capital} > \text{TCR} = \text{CRC} + \text{MRC} + \text{ORC} \quad (3)$$

The minimum capital requirements will be gauged by the total capital coefficients:

$$\frac{\text{Capital}}{\sum \text{Credit RWA} + 12.5 \times (\sum \text{Market risk CC} + \text{Operational risk CC})} \geq 8\% \quad (4)$$

The higher the capital adequacy ratios a bank has, the greater the level of unexpected losses it can absorb before becoming insolvent. The riskier its loan portfolio, the more stockholders' funds are required. Suppose Bank A only purchases government securities or makes short-term loans on a secured or guaranteed basis, so it won't require as much capital as bank B, similar-sized, that makes unsecured loans to small enterprises and commercial property developers. Bank B has more risk, thus it should have more capital to protect its other creditors against losses. On the other hand, the reward for the stockholders of Bank B is that higher risk generates higher profits, if managed properly.

The real fact that “higher risk generates higher profits” results in a major dilemma that banks have to deal with, like any other entity. This dilemma is summarized by Grier [21]: too much capital reduces leverage or the banker's ability to maximize return on equity for shareholders, but too little capital exposes the bank to a disproportionate level of risk of failure if misfortune strikes. The problem is solved differently: banks generally prefer a lower level of capital to maximize return on equity, regulatory authorities prefer a higher level to safeguard the banking system and reinforce the market stability, whilst the rating agencies do not think it is all that important considering that capital is one factor among many, being critically important only in cases of financial difficulty and approaching the floor of solvency. In order to attune both the interests of shareholders and creditors, the Basel II Capital Accord recommends **minimum capital adequacy ratios** that banks should meet:

- **tier 1 capital to total risk-weighted credit exposures to be not less than 4%**;
- **total capital (i.e. tier 1 plus tier 2 less deductions) to total risk-weighted credit exposures to be not less than 8%**.

Even though a bank may have capital adequacy ratios above the minimum levels recommended by the Basel II Accord, this is no guarantee that the bank is “safe”. Capital adequacy ratios are concerned primarily with credit risks but there are also other types of risks which are not recognised by capital adequacy ratios, e.g. liquidity risk, a wide range of risks due to activities on international markets. Also, capital adequacy ratios are only as good as the information on which they are based, e.g. if inadequate provisions have been made against problem loans, then the capital adequacy ratios will overstate the amount of losses that the bank is able to absorb. Thus, capital adequacy ratios should not be interpreted as the only indicators necessary to judge a bank's financial soundness. The same opinion is expressed in the IMF's global financial stability report, published in October 2008. Accordingly, the solvency risk cannot be adequately analysed using only a single-dimensioned statistic. Despite the risk-based capital ratio is a superior measure of capital adequacy, its accuracy relies heavily on a proper risk valuation of assets. In our opinion, this induces a certain degree of uncertainty about the process of assets exposure valuation.

In opinion of Wellons [22] a very low number of formal actions were made in United States in order to enforce the compliance with the rules concerning capital adequacy, targeting

mostly the small banks, not the big ones. He argues that formal actions are particularly rare against the largest banks, which might pose the greatest threat to the financial system.
Another edifying conclusion was drew by Alexander, Dhumale and Eatwell [23], after studying the responses of banks from Thailand, South Korea and Indonesia to the Basel II capital adequacy requirements, especially after the 1997 financial crisis in Southeast Asia. Following a classification made in a previous cited study, they analysed the responses divided them into "cosmetic" and effective. Some banks managed to increase their capital ratio with little or no effect on the probability of failure, implementing so called "cosmetic" changes: exploiting the difference between capital as measured for regulatory purposes and the banks' true economic capital, because the regulatory accounting generally records assets at historical costs, rather at their current market value; avoiding recognizing losses on depreciated assets and accelerating recognition of gains on any assets that may have appreciated in value, by selling appreciated assets while simultaneously delaying their recognition of losses; increasing the risk exposure based on private information inaccessible to regulators.
In the report on global financial stability (October 2008), IMF points out another dilemma: "capital will need to rise in relation to credit and balance-sheet size, but to what standard?", perfectly entitled question because regulators, rating agencies and investors use different metrics for assessing bank capital adequacy, and these measures have influenced the amount and form of capital raised by banks. As we could see above, Basel II puts primary emphasis on the ratio of tier 1 capital to risk-weighted assets. Rating agencies continue to prefer the same ratio, but they favour different measures of capital. Investors have placed increasing emphasis on simple measures, after losing confidence in the valuation and risk assessment of structured finance products and other illiquid assets [24].

5. THE IMPLEMENTATION OF BASEL II ACCORD IN ROMANIA

In Romania, the implementation of the Basel II Capital Accord implies a series of challenges both on the credit institutions and on the National Bank of Romania (NBR). The major objectives of the NBR regarding Basel II, consist in [25]:
- the transpose of the new requirements into the national legislation,
- the development of means of prudential supervision, adequate to the new context, and
- the development of risk management systems at the credit institution's level.

According to Georgescu, the strategy for implementing the New Capital Accord consists in:
Phase I – Initiating the dialogue and exchanging information with the banking sector:
(i) achieving a general valuation regarding the risk management techniques and knowledge on the credit institutions position regarding the national options concerning methodologies for risks assessment (standardized approach or internal-based models approach);
(ii) establishing the dialogue and exchanging information with national authorities (Ministry of Public Finances, National Securities Commission) and international regulators (supervising authorities from other countries);
(iii) evaluation of requirements for training in the banking sector and the national authority.
Phase II – Developing the instruments for achieving the banking supervision in conformity with the New Capital Accord standards:
(i) transposing the European Directives in the national legal framework;
(ii) performing supervision activities from the central authority headquarters and missions to the credit institutions to verify the preparation stage for implementing Basel II;
(iii) ensuring the premises for financial stability when the New Accord will be applied.

Phase III – Process of validation by the National Bank of internal-rating models used by the credit institutions for credits and loans valuation and for assessing risk exposure of existent credits portfolio.
Phase IV – Verifying how the New Capital Accord is applied in the banking sector [26].
For further implementation of the Capital Accord, the following measures must be taken:
- *regarding the legal framework*: European Directives on capital adequacy must be transposed in the Romanian legislation;
- *regarding the institutional framework*: the national bank has to train the personnel, develop the credits databases, self-evaluate the supervising capacity according to Pillar 2 requirements, evaluate the impact of macroeconomic evolutions on the financial stability. In the same time, the credit institutions have to include the Basel II requirements in the internal strategies and politics, develop the best practices of corporative governance, and reconfigure the objectives of relationship with customers, the banking products and services.
- *regarding the cooperation*: collaboration between the National Bank, the Ministry of Public Finances, the Romanian Banking Association, the National Securities Commission; cooperation with the supervising authorities from the origin states of the credit institutions having subsidiaries in Romania, enforcing collaboration at regional level regarding the experience in Basel II implementation, developing of the national rating agencies [27].
The main objective fulfilled in Romania by the end of 2006 regarding the legal framework concerning the implementation of the Basel II Accord refers to *Government Emergency Ordinance **(EGO)** no. 99/2006 on Credit institution and capital adequacy* that transpose the content of Directive 2006/49/EC, approved with adjustments through Law no. 227/2007. These regulations concern: risk levels related to minimum capital requirements; approaches that can be used by credit institutions in assessment process of capital adequacy; techniques for reducing the errors in determination the minimum capital requirements; ways for clarifying market risk, counterparty risk, exchange rate risk and others; requirements for market transparency; supervising activities, including consolidated supervision [28].
The New Capital Accord became effective beginning with 1st January 2008. In the report on financial stability 2008, published by NBR in July 2009, the methodologies used for assessing the minimum capital requirements are presented as follows:
(i) for banks holding a market share greater than 5% from aggregate assets, 91% from capital requirements were adequate for exposure to credit risk, counterparty credit risk, unfinished transactions, calculated using the standardized approach;
(ii) for banks holding a market share greater than 5% from aggregate assets, 8% from capital requirements were adequate for exposure to operational risks, using basic indicator approach; other two banks have based their assessment process on standardized approach, respectively on advanced measurement approach;
(iii) for market risks, banks have constituted 1% from minimum capital requirements based on standardized approach.
All banks had a solvency ratio (Romanian equivalent to capital adequacy ratio) which was superior to the regulatory limitation, proving that they have an excessive own funds, respectively 36% from minimum capital requirements.
The new policy issues and banking supervision approaches have changed substantially the supervisory methodology, from a compliance-based approach to a risk-based assessment. NBR conducts supervision on credit institutions, concludes cooperation agreements with other authorities in Member States and other countries, in order to ensure financial stability, flexibility in adapting the ever changing cooperation framework, and uniform implementation of principles of Basel II Accord (especially in terms of risk management centralization at consolidated level).

One key challenge for national supervisor is enhancing the quality of supervision through a greater involvement of credit institutions' risks assessment and management, focusing on their own risk profile and consolidated supervision based on close cross-border cooperation, both between consolidating credit institutions and their corresponding supervisory authorities. The NBR sets and discloses the general criteria and methodologies for risk strategies and profiles, risk management framework and internal control mechanisms, which should be enforced by credit institutions for prudential reasons, as well as for risk assessment process. New instruments have been set out for banking supervision under Basel II Accord, like Common Reporting (COREP), Financial Reporting (FINREP), prudential filters, benchmarks set by the supervisory authority needed for assessing banks' risk parameters in internal rating based models.

6. CONCLUSIONS

Risk management is a discipline at the core of every financial institution and encompasses all the activities that affect its risk profile. It involves identification, measurement, monitoring and controlling risks to ensure that: the individuals who take or manage risks clearly understand it, the bank's risk exposure is within the established limits, the expected payoffs compensate for the risks taken, sufficient capital as a buffer is available to take risk.
Accepting and managing risks are inherent to the business of banking and banks' role as financial intermediaries. Risk management as commonly perceived does not mean minimizing risk; rather the goal of risk management is to optimize risk-reward trade-off.
Assessing overall capital adequacy requires identification of all material risks, measurement of those that can be reliably quantified and systematic assessment for the limitations of minimum risk-based capital requirements. The fundamental objectives of a sound assessing process of internal capital adequacy are: identifying and measuring material risks; setting and assessing internal capital adequacy goals that relate directly to risk; and ensuring the integrity of internal capital adequacy assessments. Fulfilment of the above objectives should contribute broadly to the development of better risk management at both the individual entity and consolidated levels. The key point is for a bank to be able to identify all material risks and measure those that can be reliably quantified in order to determine how those risks affect, particularly, the bank's overall capital adequacy, and, generally, the strengthen of financial system stability.

References

[1] IMF, Shifting roles in financial globalization, IMF Survey, June 18, 2007, vol. 36, no. 10, p. 160, http://www.imf.org/external/pubs/ft/survey/2007/061807.pdf
[2] Barbu, T., Vintilă, G., The Consolidation of Banking Supervision in the Context of a Pan European Banking System, Theoretical and Applied Economics Review, 2006, p. 53-54, www.ectap.ro/articole/7.pdf
[3] Firtescu, B., Actual stage of development for Basel II and effects on Romanian financial system soundness, Scientific Annals of ,,Al. I. Cuza" University, Iasi, vol. LIV Economic Science, 2007, p. 84, http://anale.feaa.uaic.ro/anale/resurse/12_Firtescu_B_-_Actual_stage.pdf
[4] Department of Treasury, FED, FDIC, Supervisory Guidance: Supervisory Review Process of Capital Adequacy (Pillar 2) Related to the Implementation of the Basel II Advanced Capital Framework, 2008, par. 4, p. 7-8, www.occ.treas.gov/ftp/release/2008-81a.pdf

[5] Cadiou, C., Mars, M., Basel II Pillar 3: Challenges for banks, PricewaterhouseCoopers: The Journal, Global perspectives on challenges and opportunities, 2009, p. 31, http://www.pwc.com/gx/en/banking-capital-markets/pdf/Basel.pdf
[6] Van Greuning. H., Brajovic Bratanovic, S., Analyzing Banking Risk: A Framework for Assessing Corporate Governance and Risk Management, 3rd Edition, The World Bank, Washington, 2009, p. 1, http://books.google.ro/books?id=73CX8O8akZ4C&printsec=frontcover
[7] Bunea-Bontaş, C., Basic Principles of Hedge Accounting, Economy. Transdisciplinarity. Cognition Review, no. 1/2009, p. 173, http://www.ugb.ro/etc/etc_1_2009.pdf
[8] State Bank of Pakistan, Risk Management: Guidelines for Commercial Banks & DFIs, 2003, p. 6, Par. 2.2.3., www.sbp.org.pk/about/riskmgm.pdf
[9] State Bank of Pakistan, 2003, p. 10, par. 2.6.2.
[10] Czuszak, J., An integrative approach to credit risk measurement and management, RMA Journal, June, 2002, p. 2, http://findarticles.com/p/articles/mi_m0ITW/is_9_84/ai_n14897131/pg_2
[11] "A trading book consists of positions in financial instruments and commodities held either with trading intent or in order to hedge other elements of the trading book", according to International Convergence of Capital Measurement and Capital Standards: A Revised Framework, Comprehensive Version, June 2006, p. 158, par. 685, www.bis.org/publ/bcbs128.htm
[12] Ernst & Young, Market risk capital set to Increase, Prudential standards Update, February 2009, p.1, http://www.ey.com/Publication/vwLUAssets/PS_Update_-_MktRisk_Capital_Increase
[13] Neaime, S., Shahin, W., Basel II and Market Risk of Selected European Commercial Banks: A VAR Analysis, 2008, p. 3-4, http://www.efmaefm.org/0EFMAMEETINGS
[14] Ernst & Young, 2009, p. 3
[15] Tinca, A., The operational risk in the outlook of the Basel II Accord Implementation, Theoretical and Applied Economics, 2007, p. 32, www.ectap.ro/articole/217.pdf, was citing Chorafas, D. (2004), Operational Risk Control with Basel II, Elsevier Butterworth-Heinemann
[16] Jobst, A. A., Consistent Quantitative Operational Risk Measurement and Regulation: Challenges of Model Specification, Data Collection, and Loss Reporting, IMF Working Paper, WP/07/254, 2007, p. 3, 5, http://www.continuitycentral.com/news03623.htm
[17] IMF, Financial soundness indicators: compilation guide, IMF, 2006, p. 30, http://books.google.com/books?id=I2om4HIVdJcC&pg=PT40&dq
[18] http://en.wikipedia.org/wiki/Tier_1_capital
[19] International Convergence of Capital Measurement and Capital Standards, July 1988, updated to April 1998, p. 3, www.bis.org/publ/bcbsc111.pdf
[20] Van Greuning. H., Brajovic Bratanovic, S., 2009, p. 156
[21] Waymond A. Grier, A. W., Credit analysis of financial institutions, 2nd Edition, Euromoney Books, 2007, p. 17, http://books.google.com/books?id=Xw54k-ZEOTAC&pg
[22] Wellons, A. P., Chapter 8 - Enforcement of Risk-Based Capital Rules, p. 284 in Scott, S. H., (editor) Capital adequacy beyond Basel: banking, Securities, and Insurance, Oxford University Press, 2006, http://books.google.com/books?id=_ArcmJEhwrAC&pg
[23] Alexander, K., Dhumale, R., Eatwell J., [Global Governance of Financial Systems: The International Regulation of Systemic Risk, Oxford University Press, 2006, p. 223-224, http://books.google.com/books?id=Ms-ROC8zTAwC&printsec=frontcover&hl=ro
[24] IMF, Global Financial Stability Report, October 2008, IMF, p. 20, http://books.google.com/books?id=YvnmYFG0TyIC&pg=PA57&dq
[25] Miru, O. M., Hetes-Gavra , R., Nicolescu, A. C., Applying Basel II Requirements in Romania, 2008, p. 6, http://mpra.ub.uni-muenchen.de/12613/1/MPRA_paper_12613.pdf
[26]-[27] Georgescu, F., Basel II – O nouă etapă pentru modernizarea sistemului bancar românesc, Sinaia, 2005, p. 14-16, 17-18, http://www.bnro.ro/PublicationDocuments.aspx?icid
[28] Firtescu, B., 2007, p. 86