International Journal of Economic Research

ISSN : 0972-9380

available at http: www.serialsjournal.com

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Volume 14 • Number 7 • 2017

Credit Risk Assessment Approach Evolution with Consideration for the Requirements of International Regulators and National Banking System Features

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ABSTRACT

Since the second half of the twentieth century, the international financial stability system has acquired the significance of the national interest; the foundations of the international regulation system of banking activities have been laid.

The principle of compulsory risk regulation was found fundamental in order to ensure the stability of the financial system. Credit risk is generally present in any activity of a commercial bank while running active operations and it is also the probability of the income loss by a credit organization or even registered capital decrease due to a borrower's loan payment failure or the used registered capital interest payment failure. Moreover, there has recently been a prevailing interpretation of risk as an abeyance, which might lead to a deviation from the expected result of an activity both ways. Thus, credit risk means the possibility of financial losses by a credit organization due to the failure to meet obligations by one of counterparts. It should be noted that currently, considerable losses in the Russian banking system are related to some credit risks, since the banks' loan portfolio is from 50% to 70% of assets; more than 70% is designated to the credit risk, around 15% to the market risk and just 5% to the operational risk. The applicable approach to the Russian credit risk management is significantly different from the European approach, which is described in the provisions of international regulations. The significant differences are: the choice of methods, the computational procedures and the basic ratings used.

The Basel Committee on Banking Supervision, which was established in 1974, with the Bank of International Settlements in Basel (Switzerland), as a consultative and advisory body, is a key international institution, which determines the banking rules, for the leading industrialized nations. Nowadays, the number of member countries of the Basel (Basel III; Basel II/III). Committee has significantly increased; it includes 27 countries,

including Russia. The main objective of the Basel Committee since its foundation till present is to draw up the joint principles of development and convergence of the national approaches in the field of banking regulation. As part of the Basel agreement, there is a generalization and standardization of the best modern banking practices. The guidance documents, which are adopted by the Committee, have officially become obligatory to all the member states, as the base conditions for the proper functioning of the international banking system.

Seeing the above, it is necessary to give a closer look to the contents and development trends of the Basel approaches to the credit risk assessment with regard to Russian and global practices of its implementation.

Keywords: Risk, bank, risk-management, standard rates of risk, risk losses, risk cost, Basel II, Basel III, credit risk, capital adequacy level.

1. INTRODUCTION

The problem of credit risk management is a top priority for banks now. Issues of formation of an effective evaluation system of credit risks in commercial banks were highlighted in the works by foreign scholars, due to a much earlier transition to unified Western standards of banking business. Here are some names and a number of related works, which are worth noticing: Arvanitis A., Arman M., Borodovsky L., Brayovich-Bratanovich S., Brunetti A., Bakeman L., Wesseling S., Henn von Trenning, Gregory D., Damodaran A., Kizunko G., Condor I., Crochett E., Critzman M., Coopernce T., Markovitz G., Mauro P., Merton R., Mishkin F., Night F., Nelken I., Pirotte H., Prast N., Rudolf M., Rubenstein M., Sinky G. Junior, Tavakoli D., Fergusson R., Hallton G., Chent G., Shimko D., Shinazy G., Schols M., Schonbucher R. and others.

The names of Russian researchers and their works should also be specifically mentioned as soon as they are dedicated to problems of the credit risk assessment: Valentseva N., Lavrushina O., Lobnova A., Sokolova O., Sevruk V., Tagirbekova K., Chugunova A., Sholomitsky A., Yashina N. and others.

However, the existing studies are mostly focused on separate elements of the credit risk assessment with regard to the requirements of the national regulators (Krichevsky 2013; Chetyrkin 2008). Moreover, the problem of building up the unified system of banking risk management, which is unique to every national banking system, is still left beyond the scientists' research.

2. METHODS

The Basel-based approach requires the capital adequacy for banks and is aimed at achieving the sustainability of financial system and risk management.

In 1988, the Basel Committee prepared the first Agreement on capital adequacy - International convergence of capital measurement and capital standards (1999; 2008). In world practice, this agreement is called – the Basel Capital, 1988 Accord or Basel I. In Russia, this Agreement is known as Basel I. Its main purpose is to limit any potential losses in banking business by building the control system for monitoring bank's capital adequacy.

The previous leverage ratio (which is the capital and assets ratio of the bank) was replaced by a more complex figure, which takes into account the degree of assets riskiness and implies the capital's possible separation into two levels according to the degree of reliability. Credit risk is central to Basel I: bank's financial stability is determined by the adequacy of its capital to cover credit risks. The degree of adequacy is defined by so-called Cooke's ratio and is set at 8%. To estimate the amount of credit risk, it is suggested to calculate the total amount of assets and various liabilities to the bank, based on their credit

risk by multiplying the asset value by its corresponding risk factors from 0% to 100%. Capital adequacy is considered to be the main criterion for the banking activities stability, and the only limitation of the capital adequacy is the credit risk of the bank assets.

Determination of the weighting factors corresponding to the credit risk level is fixed as the exclusive competence of the national regulators of the banking markets. Basel I does not at all encourage commercial banks to participate independently in solving the problem of adequate received credit risk assessment.

In 1999, the Basel Committee approved the Principals for the Credit Risk Management, (International regulatory framework for banks, 2010) which announced the next stage in the development of approaches to credit risk assessment and management. This document declared the principle of internal credit ratings system use for the credit risk evaluation and bank's credit portfolio management (Internal rating based approach - IRB-approach or IRB).

The system of assessment itself, which is based on the internal credit rating, was presented later in the document known as "The New Basel Capital Accord", 2001 (International convergence of capital measurement and capital standards, 1988) and after some lengthy approvals the system was assigned to the "International Convergence of Capital Measurement and Capital Standards. A Revised Framework", 2004) (The New Basel Capital Accord, 2001). These standards have received a common abbreviation – Basel II. So, Basel II extends the ideas laid out in earlier agreements.

The new standard contains three bases and components (or pillars), which determine the stability of the banking system. The first component includes the bank's minimum capital requirements. The second component includes the supervisory body reviewing process in relation to the capital which is reserved against risk.

The third component includes the market discipline which obliges banks to comply with the market discipline in order to disclose information about their activities. The first component is given maximum attention, while the second and third ones are rather declarative.

In accordance with the provisions of the first component, the procedure for calculating the minimum capital adequacy has been defined more precisely and is also based on three types of risk: credit risk, operational and market risks.

In order to determine the value of the credit risk the bank may choose one of the following approaches:

1. Standardized approach (or SA).
2. Internal rating based approach (or IRB).
   - Foundation IRB (or FIRB).
   - Advanced IRB (or AIRB).

As well as the credit risk assessment approaches mentioned above, Basel II enables the regulators to allow banks, with certain restrictions, to use own assessment methodologies.

The standardized approach of Basel II is not fundamentally different from the approach recommended by Basel I: in respect of bank's capital to its assets, with regard to any risk, there must be carried out Cooke's 8-percentage ratio. The difference is in the use of external ratings in relation to bank credit risk assessment agencies. Credit liabilities to the bank and the bank's assets are divided into 13 groups according to the level of risk and a fixed risk factor is provided for each group or the scale which correlates these factors with the largest agencies rating like Standard&Poor's, Moody's, Fitch, Export Credit Agency.

Along with the downgrade, the risk factors are set to rise. The standardized approach does not require from banks to run an independent assets risk analysis. It is easily applicable when the liabilities and assets are rated by external rating agencies. IRB-approach allows banks to determine the amount of risk-weighted assets independently. With regard to the credit risk estimation, the approach has a number of changes in value assets , which are weighted by the risk level, the credit risk parameters are as follows:

1. Probability of default.
2. Given loss default (the asset value loss share upon default of the counterpart).
3. Exposure at default (credit requirements at the risk of default).
4. Maturity (effective (real) repayment term (maturity of the credit claim).

The received value of assets, which is weighed by the risk level, is included in the formula denominator for the capital adequacy calculation.

Depending on the approach used by the bank – whether it is the base one (or FIRB) or the advanced one (or AIRB) – the values of these parameters can be set by both the bank and the Basel Committee. The base approach (or FIRB) is based on the fact that the bank uses its internal models to determine the probability of the counterpart's default (or PD), as for other credit risk parameters (or PD, LGD, EAD, M) they are guided by the recommendations of the regulator. The Advanced Approach (or AIRB) involves an independent estimation by the banks of all four credit risk components, provided that all the necessary requirements and conditions, stipulated by Basel II, are complied with.

There are a number of restrictions imposed on the possibility of using IRB by banks: for example, for retailing it is allowed to use only the advanced approach (AIRB), to evaluate PD the statistical data are required over a period of at least five years, and for LGD – over at least seven years. In addition, the bank must regularly assess the model performance, including monitoring, reaching stability, tracking the models' interconnection, testing with respect to the actual data and a number of other restrictions, designed to improve the stability and reliability of the banking system. All in all, the Basel II proposed approaches have provided banks with sufficient freedom to choose between the two main methodologies for calculating the credit risk: using external rating assessments or their own internal rating systems.

3. RESULTS

Currently, the Basel Committee is working on a fundamental revision of the approach based on external ratings. The purpose of work is to minimize the negative aspect impact on the banking system, which might be associated with the practical application of the approach:

1. External rating agencies seem not to be well-developed in many countries.
2. Delayed external ratings on the current situation.
3. Different assessments of the same borrower by some rating agencies.
4. Payable rating procedures, which could potentially lead to the distortion in the assessment of the borrower's creditworthiness.
5. There is the so called cliff-effect, which takes place when you change the rating – it is considered to be a cyclical effect, when the negative expectations by the rating agencies are the basis for the borrower's credit rating reduction, which may well aggravate the course of crisis.

The established criteria by Basel II, such as objectivity and independence, are applied to the external rating process, and are often declarative. Under these circumstances, the Basel Committee is inclined to think that the leading approach should be based on internal rating systems.

The Russian practice of credit risk assessment and customer's financial stability estimation is carried out in accordance with the Bank of Russia Regulations #254-p "The reserves formation procedure for possible losses on loans and similar debts". At the same time the choice of assessing methodology in order to estimate the borrower's financial position, as well as a set of information data, methods and procedures are defined by banks independently. According to the Russian standards (the requirements of the supervisory body), there are three categories of borrower's financial situation: good, average and poor.

According to this criterion, the borrowers are classified, depending on the trends and state of their businesses, including production output, business efficiency, accounts payable and receivable, and financial situation.

According to Regulations, the main criterion for credit risk evaluation is the borrower's financial condition (Section 3.3 of Regulations), divided into three types: good, no showing improvement and poor. The second criterion is the way how the borrower pays out debts (the quality of debt service), which could be good, average or poor (Section 3.7 of Regulations). Loan quality assessment is based on a combination of two classifying criteria (borrower's financial position and the quality of debt service). In addition to the mentioned above, the Regulations #254-P specify how the loans could be attributed to the second and third quality categories and the security measures in order to regulate the any possible losses . The procedure of reserves formation is also established by the credit institutions for possible losses on loans and similar debts. The provision is formed by the credit institution in terms of impaired loans, *i.e.* the loss in the loan value resulted from a borrower's failure on loan commitment, in accordance with the contract terms, or because of a real threat of such failure (improper performance). The provision is formed either for a particular loan or for a portfolio of similar loans, that is, for a group of loans having similar credit risk characteristics. In order to determine the amount of the estimated reserve, because of the credit risk factor, loans are classified according to the professional judgment (except for loans, grouped together in a portfolio of similar loans) into one of the five quality categories, which were mentioned above. Loans related to II-V quality categories are considered impaired. Provision is usually formed within the amount of the principal debt (the balance loan value).

The size of the estimated provision is determined by the results of the loan classification:

1. I quality category (supreme) – standard loans – provision estimated size in percentage of the loan principal amount is 0%.
2. II quality category (non-standard loans) – from 1% to 20%.
3. III quality category (doubtful loans) - from 21% to 50%.
4. IV quality category (problem loans) - from 51% to 100%.
5. V quality category (lower) – bad debts – provision estimated size is 100%.

The reserve size and the provision estimated size are determined constantly along with the loan credit risk assessment, which is, in its turn, carried out by the credit institution.

However, despite the attention given by the Basel Committee to the risk management, the financial crisis of 2008-2009, clearly demonstrated the inability of the global banking system to ensure its stability.

The obvious need for the standards revision has led to a new agreement creation in 2010 — "International regulatory framework for banks, 2010", with subsequent amendments or so called Basel III.

Basel III is designed to strengthen the regulation, supervision and risk management in the banking sector and is mainly intended to ensure its ability to withstand some financial and economic shocks.

With respect to credit risk management policies, Basel III proposes to increase the capital adequacy ratio to cover counterparty credit risk, arising from derivative financial instruments, from transactions involving the securities and also from agreement transactions .

Generally, more stringent requirements have been set for the calculation of model parameters of the credit risk assets and model complexity.

Besides, Basel III provides the following changes:

1. Introducing a new concept such as an "Equity Tier 1" and putting constraints on "Tier 1".
2. Forming the buffer capital for possible crisis periods — "conserving buffer" and "countercyclical buffer".
3. Requirements toughening for the minimum aggregate bank capital, with regard to the capital buffer up to 10.5% of the risk-weighted assets; still, the minimum requirements for the aggregate capital remain the same – up to 8% of assets.
4. Introducing the minimum liquidity levels in order to ensure the adequate funding implementation in times of crisis.
5. Introducing a risk-free basis for the minimum capital calculation requirements – the leverage ratio as the capital ratio to loans.

It is important to note that the risk-free leverage ratio has been established, which had been used prior to Basel I, and it has been quite an addition to the approach, which included the capital adequacy risk calculation. As well as this, Basel III also pays much attention to the data management within the banking structure, especially with regard to large banks with extensive branch network. According to Basel III, banks will be required to accumulate the potential risk exposure information properly, as well as information on liabilities, counter-agents and market conditions and submit it to a centralized risk database; and also, they are to open access to all portfolio cash flows, run stress flow tests and liquidity analysis according to various scenarios.

The period of five years from 2013 to 2018 is the time of the global banking systems methodical transition to Basel III standards. The Basel Conventions adaptation is carried out by the national regulators with regard to the features of a country's banking system.

4. DISCUSSION

Currently in Russia, there are two credit risk assessment approaches, earlier stipulated by the Basel Conventions, which have been approved by the Central Bank of the Russian Federation:

1. Simple standardized approach, according to which the asset weighting factors are measured in terms of risk - 100%, 50%, 20%, 150% and other - instructively established by the regulator for all banks;
2. Comprehensive approach to derivatives and repo agreement operations, which also provides special collateral procedure, according to the discount system.

The standardized credit risk assessment approach, estimated by the external rating agencies, has not been applied in Russia. The main reason is that historically the rating agencies functioning system has been poorly developed; moreover, there are very few borrowers who have passed the procedure of obtaining an independent credit rating.

According to the Bank of Russia Instruction, dated December, 3rd 2012, № 139-I "Obligatory Bank Standards", which is an essential banking business standard in the Russian Federation/Russia, there is an established capital adequacy ratio –N1.

The N1 standard — is a bank's equity ratio and its risk-adjusted assets. In Russia the capital adequacy requirements are more stringent than anywhere else in the world: the N1 value is limited up to 10%, instead of 8% according to Basel's.

Asset weighting rates for the credit risk calculation are established in the guidance order by the Central Bank of Russia.

The IRB-approach is being introduced into the Russian banking system, alongside with the existing simplified standardized credit risk approach. So that the IRB-approach can be implemented, a number of amendments have been introduced into Section 72.1 of the Federal Act "On the Central Bank of Russia", as well as into the Bank of Russia's Letter dated December, 29th 2012 №192-T "Guidelines for the credit risk calculation approach implementation based on bank internal ratings". According to it, credit institutions are eligible to use the internal Quantitative Risk Assessment models, which are elaborated independently but agreed with the Bank of Russia.

The IRB-approach can be used by banks provided that the requirements of the bank assets size, the minimum qualitative and quantitative requirements for internal models of credit risk assessment are fulfilled as well as the bank risk management requirements. Currently the regulatory framework is being developed in this direction by the Bank of Russia. Moreover, the IRB-approach, which corresponds to the Basel standards, is planned to be fully implemented in Russia in order to harmonize the national standards with the international ones. (Ivliev 2013)

Around fifteen Russian largest banks have stated their wish to use the internal credit ratings for the credit risk assessment. Permission to use the IRB-approach will be issued by the Central Bank of Russia to the banks which have shown a desire to use the internal rating systems in their businesses, based on the regulator's assessment.

According to the Bank of Russia provisions, certain rates are calculated, such as: the amount of cash flow and the minimum reserve size, while the Basel Committee says that everything should be based on the IRB-approach, and the default probability figures are computed (PD) as well as the loss given default (LGD) and the value at-risk of default (the EAD), and the effective maturity (M).

The Basel Committee states that, the credit institution is able to be based not only on the external (mostly international) ratings, but also run its own internal rating system, according to the requirements of the IRB approach.

Thus, in contrast to the European financial institutions, which have been using the Basel standards for more than 10 years in their work; the Russian banking sector faces a hard task of Basel II and Basel III implementation.

Russian banks must intensify their actions in order to develop their own assessment methods and management systems concerning the credit risk. The national approaches to the credit risk assessment are in line with the global trends, though with a certain lag, and the Russian approach is about a more stringent control of rationing the banking activity indicators.

In view of the above, the credit risk assessment methodology has gone a long way and it has been reflected in the Basel Committee documents and in the Russian practice of its application. Numerous approaches to the credit risk assessment come from the history of development of approaches to the bank capital rationing, as the main way to ensure the stability of the banking system.

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