MODELS OF INSOLVENCY RISK ANALYSIS IN FINANCIAL AND BANKING INSTITUTIONS

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Abstract

The risk of insolvency is one that can cause great problems for the bank's activity and, in particular, can affect the profitability objective set by the bank's management. Insolvency is an issue that concerns both the bank, the bank's clients and the banking market.

In this article, the solvency risk is treated in this perspective, focusing on the insolvency analysis, the indicators used and the way of interpretation. When granting loans, the risk of insolvency is equally opposed to the bank or the client. Each of the two parties analyzes the risk of their insolvency but also of their business partner.

The main elements of the concept of insolvency risk are presented, an assessment is made of the conditions in which the banking risk arises and then, after identifying it, there are foreseen the elements of study regarding the possible occurrence of the banking risk, but also on the banking strategy elements, for prevent and eliminate the effects of insolvency. Of course, the effects of insolvency are treated more from the point of view of the partner in the business, as this may lead to additional causes for the bank's evolution strategy.

Keywords: *insolvency, degree of risk, Basel Accord, bank capital, solvency ratios.*

JEL Classification: *G24, G32*

Introduction

In this article, regarding the risk of insolvency, the conditions under which the risk arises, after it is defined in concrete terms, the identification measures, the quantification on the basis of which, in the analyzes, also the elimination measures are to be established.

The risk of insolvency is presented as a potential risk that can generate degenerative effects in perspective. We understand that in analyzing the prospects for the possible occurrence of the risk of insolvency (or solvability, it is the same thing but the treatment point is slightly different), we must start from the fact that at the moment T_0 these risk elements do not exist but they evolve gradually in the next period in which the bank's agreement (agreements) with its clients is carried out.

Insolvency is a risk of the greatest importance because, if a large part of the clients are covered by this risk, we limit ourselves to credits only, they become inadequate. And, in connection with them, there are problems, how serious and precise are the bank's bank guarantees covering the loans.

It presents the mechanism for analyzing the causes that can lead to the risk of insolvency and it is concluded that they have to be identified, well known and, consequently, to take optimal management measures to identify and liquidate the bank risks.

Literature review

Anghel (2015) analyzes the main bank risks and methods of managing them. Gouriéroux, Héam and Monfor (2012) demonstrate the existence and uniqueness of the liquidation equilibrium, study the consequences of exogenous shocks on the banking system and measure the phenomena of contagion. Jiménez, Lopez and Saurina (2013) study the role of franchise value in limiting banking risk. Elsinger, Lehar and Summer (2006) assess the systemic financial stability of a banking system using standard tools of modern risk management combined with a pattern of interbank lending network. Sokolov (2012) considers that the dynamic modeling of risks is much more proactive, not ignoring causality in favor of correlation. Anghel et al. (2016) investigated the steps taken by the bank in taking the risk and conducted a study on the evolution of non-performing loans in Romania. Anghelache and Anghel (2014) analyzed the risk categories faced by both the credit institution and the debtor - a natural or legal person, as well as the main models of their coverage. Anghelache (2006) studies the methods applied in the economic and financial decision making process. Anghelache, Bodo and Marinescu (2017) consider that information asymmetry is the source of economic inefficiency, in which context they have built simple models illustrating the essence and implication of information asymmetry over decision-making. Sfetcu (2011) studied the main indicators used in the assessment of clients' financial statements and resource management. Eeckhoudt, Coollier and Schlesinger (2005) conducted a paper on economic and financial risk decisions. Hoenn (2008) addresses aspects of the bank's market strategy in the new context of MIFID.

Research methodology, data, results and discussions

• General aspects

Risk management is an essential component of the activity of financial and banking institutions and the NBR, in its role as a banking and financial market supervision authority in Romania, attaches significant importance to banks to implement adequate internal mechanisms for measuring and managing the risks associated with the activity carried out .

Banking risk can be defined as a complex of factors that can cause negative effects in the process of running a bank's operations and which, through their complexity and interdependence, can cause results to be expected to be counterproductive to expectations or plans or, in the extreme case, may trigger some chain events with disastrous effects for that institution.

Here are two of the risks that need to be addressed by financial institutions and which, if not properly managed, can lead to bankruptcy of the respective banking institution.

The risk of insolvency or credit risk refers to the risk associated with lending activity (one of the core functions of a bank) and is based on the default risk of loans to customers, which is the one with the greatest direct implications in the evolution of the Bank's assets.

At the same time, the operational risk, according to some authors under this collective name, encompasses all the risks that are associated with the operations and processes specific to the activity of financial-banking services and include all the factors that contribute to their operation, technical, human, procedural etc.

Since the risk of insolvency is one of the most important factors that the bank should consider and the bank can react quickly to major events involving the client portfolio, this risk involves the greatest effort to analyze and track the the development of loans. Hence, there is a very close relationship between the two risks studied. For modeling and closely tracking the lending process, banks are increasingly using more and diversified resources in their desire to include more and more key factors and elements that can provide a early warning system. Technological developments allow the use of sophisticated data collection and processing IT & C resources, more and more people involved in credit granting and tracking, processes are becoming more and more sophisticated and comprehensive, so the impact of operational risk factors on the risk of insolvency is increasing.

The insolvency risk can be extrapolated through the recovery risk that occurs after the customer has become unable to repay. Although the bank took precautionary measures to recover the loan in the event of repayment problems by requesting collateral from customers, there is a risk that these guarantees

can not be capitalized to the expected values of the bank, ie there is a risk that their market value in the time of sale does not cover the borrower's debt. The price difference may have behind the determinant factors that influenced or evaluated the collateral at the initial, the date and the moment of capitalization, all of which may be associated with operational risk elements - hence the close link between the two risk factors studied .

The importance of insolvency risk in bank processes was first considered expeditiously by BASEL II provisions, which included risk as a major pillar alongside the risks associated with core banking financial institutions' functions. Subsequently, the BASEL III approach has sophisticated the way in which the two risk factors studied in the article expanded this interdependent relationship.

In the following, we will review the main elements of the insolvency risk.

• Elements of insolvency risk

Insolvency can be defined as the long-term incapacity of the financial-banking institution to meet its customer commitments, which may be mistaken for a maladministration in a liquidity crisis.

The risk of insolvency is manifested in the context in which some clients fail to comply with their obligations under the credit agreements they have pledged to repay debts at maturity (here it is not considered whether they have financial problems, or acts fraudulently). Frequently this leads either to a definitive loss of capital or a partial and delayed recovery, following the legal action of the debtors. As such, customer insolvency will directly affect the bank's patrimonial situation and disrupt its liquidity.

We may consider the risk of insolvency as the situation in which the bank does not have sufficient own funds to absorb possible losses. This risk results, on the one hand, from the total amount of available own funds and, on the other hand, from the risks that occur (credit, market, exchange rate, etc.). Prudential regulation sets minimum thresholds for own funds according to the risks to which banking institutions are exposed.

The definition of insolvency risk is closely related to the level of equity. In other words, we may consider that the risk of insolvency is the risk of losing the bank's own funds. The prudential regulation of the bank's solvency refers to the suitability of own funds for assumed risks, where own funds are considered the ultimate guarantor of solvency against all risks. Under Banking Law in force, banks are required to calculate and report to the NBR the level of solvency ratios determined by two distinct issues:

- the solvency ratio, as determined by the first method, is calculated as a percentage ratio between own funds and net exposure (total assets and off-balance sheet items, weighted according to their risk). This indicator has the minimum accepted level of 12%;
- the solvency ratio, determined by the second method, which is calculated as a percentage ratio between equity and net exposure, and for this indicator the rules impose a minimum of 8%.

In national banking legislation, but also in international practice, it was considered in the structure of a bank's capital as being composed in two parts: equity (basic) composed of: paid-up share capital, paid-up capital, retained earnings, general credit risk; additional capital comprising: other reserves, revaluation reserves, subordinated debt, investment grants.

The NBR rules provide for the weighting of a bank's assets according to the risk associated with each asset class as follows:

- risk class 0% - for gold and gold, metals and precious stones; state-guaranteed claims; receivables secured by central banks in the „A" and „B" categories; secured receivables with collateral deposits, deposit certificates, etc .;
- 20% risk - for claims secured by the EIB; claims secured by local governments in Romania, receivables secured by banks in Romania, receivables;
- guaranteed by banks and local governments in „A" and „B" category countries and claims guaranteed by banks in „B" countries;
- 50% risk - for loans granted to individuals and guaranteed by mortgages and for receipts to be received (financial leasing);
- 100% risk - for claims on central governments and banks in „B" countries except those denominated and funded in the national currency of the debtor, claims on regional or local governments in „B" countries, maturity claims over one year on banks in „B" countries, claims on the non-bank sector in the category „A" or „B" category or in Romania, tangible assets and other assets.

The Basel III agreement introduces the need for a review of counterparty credit risk (clients and other financial institutions) and an indicator that regulates the indebtedness of banks in member countries of the Basel Committee. In the Romanian banking system, the insolvency rate remained at a high level of 19.1% in June 2016, and the trend to gradually abandon prudential filters during the implementation of the additional capital requirements of Basel III will increase by 20% annually . This shows a capital adequacy ratio to credit risk superior to many countries in the region.

We note that Basel III, which regulates access to financial-banking, supervision and prudential rules applicable to credit institutions, is being implemented gradually from 1 January 2014 until the end of the year 2018.

Conclusion

The authors' study reveals a series of theoretical conclusions with the effect and possibility of practical application.

First of all, it is necessary to consider the possibility of insolvency risks in banking activity. The bank should keep in mind, at any time, the client's cash, the way the customer generates profit and the possible identification of the elements that may cause the client to enter into insolvency.

The second conclusion is that insolvency is potential, and it can occur along different paths and from different interpretations. In this way, the client's study and the client at the same time should see through the study on the bank if there are potential risks of this kind. The Bank covers its insolvency risks by providing strong guarantees by clients, covering not only the principal but also the costs that credit is generating. In turn, the client must, by selecting the bank, use his own degree of risk. In passing, if we think about the 1990s and the first 5 years after 2000, a number of banks have entered insolvency and then bankruptcy, causing great harm to their clients.

Another theoretical conclusion is that knowing the possibility of banking risks should be the result of a profound analysis carried out by specialists in the field. At the level of banks, there is such a compartment that analyzes each client requesting credit or other bank operations.

The final conclusion is that insolvency, albeit potentially as a risk, is likely to occur and therefore it is necessary to monitor the ongoing conduct of credit agreements so that, when elements leading to insolvency prospects arise, steps are taken accordingly.

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