SCIENTIFIC REVIEW

THE ROLE OF THE BANKS' RATING SYSTEM IN THE ALLOCATION OF LOANS

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ABSTRACT

The subject of this paper is the analysis of the application of banking internal credit risk measurement models for the purpose of calculating the minimum regulatory capital. The Basel Committee established proposals for an internal rating-based approach (IRB approach-internal rating-based) to capital requirements for credit risk.

Such an approach, which relies on the bank's internal assessment of counterparties and exposures, can ensure two key objectives: the first is additional risk sensitivity, in which capital requirements based on internal ratings can be much more sensitive on the drivers of credit risk of economic losses in the banking portfolio; the second is incentive compatibility, where the appropriate structure of the RBI approach can provide a framework that encourages banks to continue to improve their internal risk management practices. The internal ranking approach aims to improve the safety and soundness of the financial system.

The paper defines the terminology and classification of the rating system. The probability of default (PD-probability at default) and the other two risk components LGD (loss given default) and EAD (exposure at default) are key input parameters for the calculation of regulatory capital.

The rating system is, therefore, a significant driver of risk management and financial performance measurement. To be in a position to demonstrate to supervisors that an internal rating system should be used for the purposes of determining minimum regulatory capital requirements, banks must first demonstrate that the rating system is an integral part of their ongoing operations and risk management culture.

***Keywords**: rating system, risk, loss, risk exposure, risk assessment, risk factors*

JEL:G21

DOI: 10.5937/intrev2302149S

UDC: 336.717.5

COBISS.SR-ID 121815817

INTRODUCTION

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Such an approach, which relies on the bank's internal assessment of counterparties and exposures, can ensure two key objectives: the first is additional risk sensitivity, in which capital requirements based on internal ratings can be much more sensitive on the drivers of credit risk of economic losses in the banking portfolio; the second is incentive compatibility, where the appropriate structure of the RBI approach can provide a framework that encourages banks to continue to improve their internal risk management practices. The internal ranking approach aims to improve the safety and soundness of the financial system.

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Therefore, the validation of these components and the rating system is a key component of the supervisor review process. The paper shows that rating systems are a "block" for calculating banking regulatory capital. Banks are obliged to demonstrate to supervisors that they can evaluate the performance of their internal ratings and risk assessment systems efficiently and consistently. The design of the validation methodology depends on the type of rating system. [4]

Rating systems may differ, depending on the type of borrower, exposure, rating methodology (point-in-time vs. through-the-cycle) and default data capability. This chapter explores different rating concepts that affect the dynamic properties of PD (probability of default) estimates and a framework for comparing alternative approaches to quantifying PD parameters. The dynamic characteristics of PD are described depending on how default events are predicted, as well as individual banking philosophies of risk rating.

In accordance with the subject of the research, certain goals were set. The general objective of the research, where the IRB approach relies on the bank's internal assessment of counterparties and exposures, can ensure two key objectives: the first is additional risk sensitivity, in which capital requirements based on internal ratings can be much more sensitive to credit risk drivers of economic losses in the banking portfolio; the second is incentive compatibility, where the appropriate structure of the RBI approach can provide a framework that encourages banks to continue to improve their internal risk management practices.

TERM AND CHARACTERISTICS OF THE RATING SYSTEM

Internal ratings are a key grim indicator of the risk inherent in an individual loan analyzed by a bank. Ratings typically contain an assessment of the risk of losses due to the default of the counterparty, which are based on considerations of appropriate quantitative and qualitative information. In the considered banks, the exposures of each internal level of risk are typically treated according to their specific and measurable characteristics that lead to loss. easy approaches can vary. in principle, there are the following characteristics of it:

- Probability of debtor default (PDJ);
- Loss caused by non-fulfillment of obligations;
- The level of the bank's exposure to risk at the time of default by the debtor;
- Expected losses per loan (EL-expected loss), which is a function of these three variables; and
- Unexpected loss (UL-unexpected loss).

The rating system contains all the elements that play a role in this process including the conceptual measurement of losses that are based on the system, the methodology for evaluating risk and exposure, the responsibilities of key personnel, and the internal use of rating information. There are a number of reasons why different banks adopt different approaches to rating systems including [3]:

- Different views on the appropriate degrees of use of quantitative versus qualitative risk factors;
- The importance of each individual credit culture present in banking institutions and historical experience in light of the close links between the rating system and credit risk management;

- Differentiating assessments in relation to the complexity and transparency of the risks associated with each type of transaction;
- Distinguishing responses to inherent difficulties associated with quantifying loss characteristics;
- Distinguishing between risk management and other measures and procedures that use rating and risk size information as inputs.

In the last ten years, banks have made significant progress in correcting the architecture of these systems and measuring the characteristics of loan components and their degree of loss.

This information is used in key risk management processes such as pricing, limit setting and reserving decisions. The expansion of the system's architecture is motivated by attempts to correct the characteristics of economic capital allocation management, based on risk.

Accordingly, there are several specific areas in which rating systems differ from one another, which are an important part of the development of the IRB approach. First, banks must rely on a one-dimensional rating system or a multidimensional system in which the various elements of transaction risk are graded separately.

In a two-dimensional rating system, for example, a counterparty may receive an overall obligor grade that reflects its risk of default on any of its obligations, while each loan to that counterparty will receive a service grade based on a combination of obligor and transaction characteristics.

Second, the internal process in which the rating is assigned may be oriented towards subjective and broad criteria assessed by experienced credit officers or alternatively may explicitly and objectively contain criteria such as target levels for specific financial ratios or aggregates. "Even when specific and objective criteria are used, they can be applied through traditional forms of financial analysis or instead through some types of formal statistical models"[6].

"One IRB (internal rating based-internal ranking) capital should be characterized based on the concept and statistics of the basic internal rating system in a way that it is sensitive to risk variations and fully consistent with the usual practice of credit risk management. However, it is useful to reduce the IRB's approach (internal ranking-based approach) to regulatory capital by the following"[1]:

In order to qualify for an internal rating approach, a bank must first demonstrate that its internal rating system and processes are compliant with the minimum standards and best practice guidelines set by the Basel Committee. These guidelines should ensure the quality, usability and integrity of the key statistical parameters that should form the basis of the bank's capital requirements.

- If the bank's internal processes and systems meet these requirements, the bank must further provide supervisors with exposure amounts and estimates of some or all key loss statistical analyzes associated with these exposures (such as PD-probability non-payments) through internal ratings. Such exposures should include unpaid balances and some percentages of executed but unused funds. Banks should provide information based on their own rating systems in accordance with minimum standards and good practice guidelines to be issued by the Basel Committee.
- Based on the bank's assessment of the probability of default as well as on the estimates of default losses and other potential asset characteristics (which can be assessed either by the supervisor or by the banks) the bank's exposure should be allocated to the capital portfolio [12]. Each bouquet should have an associated degree of risk that includes unexpected loss together with estimates of probability of default and losses given default and if possible other risk characteristics. Risk levels should be developed by the supervisor in order to maintain the own risk of a given asset or exposure while minimizing the incentive for banks to bialy assign internal ratings or engage in capital arbitrage.
- Most banks use a statistical model as part of the rating system or as a tool for monitoring changes in the debtor's condition and the accuracy of the rating. The relative importance of the output obtained from such tools versus the importance of expert judgment varies widely among banks. These models rely on similar inputs: balance sheet ratios, trend analyses, etc. Many banks used internally developed models, modeling techniques described as dominant, techniques based on logistic regression analysis, or based on classical credit scoring techniques. They are constructed from internal data although, in a small number of cases, they are constructed to simulate the decision-making processes of rating agencies such as Standard & Poor’s or Moody’s.

- With the business partner model (vendor provided), they often mentioned KMV Credit Monitor TM, which was primarily used with large corporate or international debtors. Some banks use other public databases, for example, Teikoku Data Bank in Japan.

With all banks, the external rating is considered in assigning internal degrees to the extent that such a rating is available for each debtor. Many banks with risk-based systems have used these ratings extensively in setting internal ratings. The external rating can dominate the internal rating or simply serve as a starting point. Only in one case was the scorecard-based rating (or KMV score) inconsistent with the scorecard results.

In that case, the external rating prevails as the leading criterion. Such bank ratings were rarely available for other borrowers that were not large corporations or financial institutions. While some banks noted that the ratings were not widely available outside of North America or England.

With a small number of banks, external ratings become less important in rating processes in general, indicating the advantage of KMV Credit Monitor TM and other tools that are very important in application. Most banks describe the time horizon in which the rating is expected to be valid (horizon of rating prediction) as a one-year period, an almost equal minority characterized this period by extending it to a duration of three years to seven years or according to the maturity of the transactions that were the subject of consideration. For those banks that use a one-year period, the choice is based on annual financial cycles in reporting (bank and debtor), the frequency of internal rating reviews, and in some cases the uncertainty of projected properties beyond one year.

Some banks in longer periods link the relationship with users and the need to analyze the complete period of the transaction, and other banks mark the horizon as ambiguous and alternatively allow appraisers to determine the duration of the horizon moving from case to case. Banks define point-in-time and through-the-cycle differently.

In the point-in-time process, the internal rating reflects an assessment of the debtor's current conditions or most likely future conditions over a selected time horizon. The internal rating therefore changes in line with changes in the borrower's conditions within the credit or business cycle.

In contrast to this first orientation, the through-the-cycle process requires an assessment of the debtor's riskiness, which is based on the worst-case scenario at the bottom of the cycle, i.e. His conditions under stress. In this case, the borrower's rating would remain the same within the credit cycle or the business cycle.

Rating agencies try to use this process, although it is not the easiest to say to what level they use it in practice. In relation to practice, bank rating systems generally evolve the risk of a borrower or service on a point-in-time basis. However, in certain cases, the interaction between the time horizon in which the risk is assessed and quantified, as well as the techniques used, is not feasible.

This result highlights the fact that banks generally assign ratings based on all relevant facts and information. They take into account long-term negative consequences and do not rely much on long-term projections of improvement in the borrower's ability to repay the loan, which makes it their preferred way of assigning ratings.

Such perspectives are fully in line with the best practice of credit risk management.

STRUCTURE OF THE RATING SYSTEM

"The structure of an internal rating system is influenced by a wide spectrum of factors, which include the way information is distributed and the bank's asset impairment treatment policy." [6]

Banks are required to differentiate risk exposures with good quality from impaired exposures, which are defined as assets with potential weaknesses that require close management attention.

Most banks believe that their rating systems are capable of adequately differentiating risks. Typically, banks with the highest degree of differentiation are those that use ratings in their pricing decision-making process. However, the appropriate distribution of banks' risk exposure depends on many factors, including the structure of the loan portfolio and the nature of the exposure in that portfolio, as well as the way ratings are used within the process of business management and risk management in the banking sector. A key element of the bank's rating systems structure is the level to which the rating extends to include borrower characteristics and specific transaction details, or alternatively, as an aggregate indication of the risk inherent in borrower and transaction characteristics.

In this regard, banks make decisions that reflect this type of rating. In some cases, banks may choose to adopt multiple rating systems so that the same exposure or loan may receive a rating for each of the dimensions. These dimension decisions lead institutions to choose specific rating criteria when assigning risk grades. The overwhelming majority of banks have adopted explicit debt dimensions, which means that they have assigned a rating that primarily reflects the risk that the debtor will default on any of its obligations.

Some banks explicitly consider the risk of transactions (which can be implemented through a single dimension of services that reflect the characteristics of borrowers and transactions) while others use two-dimensional rating systems that include both dimensions. Within this architecture, the service levels for different loans, and for one and the same debtor, may differ in terms of taken collateral or other structural attributes of these loans.

In some cases, it can be seen that individual banks correct the degree of execution of the debtor depending on the transaction between the bank and the client.

Banks with two-dimensional rating systems assign one rating to the debtor and another rating to losses in the event of default that expressly evaluates the recovery rates of each transaction in the event of default. Banks with two-dimensional systems, as well as all banks that use a single level of service, have assigned service levels based on total risks or losses based on the characteristics of both borrowers and transactions. The number of rating dimensions formally used by banks does not always reflect current practice.

For example, some banks that assign service ratings may actually rely on borrower processes. and then to evaluate the risk of the transaction in a mechanical way.

On the other hand, some banks quote the other party implicitly taking into consideration the riskiness of services for the purpose of price determination, profitability analysis, and when allocating economic capital. In such cases, service-type-specific loss-in-default values are mechanically derived from the type of loan, the presence and type of collateral, and possibly other influencing factors outside of the rating system.

Therefore, in the light of this practice, it seems that a small minority of banks do not take into account the characteristics of services and their processes of determining the degree of risk.

VALIDATION OF THE RATING PROCESS

Model Task Forco (Working Group) has identified three categories of rating process:

- -statistically based processes.
- processes based on expert opinions and
- -processes based on limited expert opinions.

These categories can be viewed through different points determined by the degree of reliability of quantitative techniques (such as the scoring model) and on the other hand the reliability of personal experience and expertise of loan officers. Different risk factors can be considered as different elements of control and support as well as processes that are necessary to maintain the integrity of the rating. [8] The distinction between these three categories can be less precise in practice for three key reasons:

- Even in systems where models drive the assignment of ratings, personal experience plays a role that, for example, in credit assessment or loan analysis, gives officers the ability to override assigned ratings. Moreover, personal expertise is an effective factor in the development and implementation of these models and the construction of their inputs;
- Banks often use different mixes of these techniques in different market segments (for example, corporate vs. retail);
- Those banks that give relative importance to qualitative versus quantitative factors belong to a wide range of banks of 60% and more. The "true" range is much narrower, suggesting different perceptions or understandings of what constitutes qualitative and what quantitative factors; for example, in those cases where the survey response elaborated on this diversity, the factors banks identified as "qualitative" were often measurable quantitative factors, for example, payment history, management age, management experience, banking sector or geographic location.

Furthermore, it is these factors to which the degree is distributed (for example, management ability). These grades are used as an input to statistical models, such as the scorecard.

DEFINITION OF LOSSES AND DEFAULTS

"Differences in banks' approaches that exist in relation to the conceptual definitions of loss and default in the process of assigning ratings arise from different legal, accounting and regulatory definitions as well as from specific banking considerations." [7]

The Task Force Model (Generation Groups) analyzes the extent to which the use of such different definitions of default and loss in banks and the data sources used to quantify the loss characteristics of each internal level affects the comparability of estimates of the probability of default among banks, but also among countries and leading banks.

In the last five years, a significant number of banks have started to monitor the migration of loans between rating levels. The use of such information is quite limited, although several banks rely on such data to verify and calibrate default probabilities and default losses and to validate the internal consistency of the rating process.

With some banks, the use of migration schemes derived from agency data in determining one-year default probability forecasts for use in their loan pricing models is significantly present.

Looking to the future, a significant number of banks are planning to use such data much more extensively. Some banks estimated the mean value of the probability of default for each internal level and based on the corresponding mean value of the assessment of the individual probability of default for each debtor in a given level, or using statistical models of default prediction.

Such models are built on the basis of loss experience databases (ex. National Credit Register and Balance Register) which are typical sources that include financial data on the debtor and identify those debtors who have defaulted.

Such subsequent presentations suggest that the use of behavioral models in addition to the use of balance models may also increase (increase their use). These default probability models can typically suggest a fixed relationship between a relatively small number of independent variables and the corresponding defaults.

Almost all observed banks use such divisions when assigning and revising the assignment of internal ratings. Models play a more or less central role in the decision-making process on rating issues for a number of banks, but not for all. Some banks apply specific loss-in-default estimates to their exposures for use in interim capital allocations and/or profitability analysis systems.

The following factors are important in assessing losses in case of default:

- Attributes of the debtor (such as debt level, domicile country, size, industrial sector and other factors that can affect the unsecured values remaining with the debtor, regardless of whether he continues to operate after entering into default or is in liquidation);
- Characteristics of the services (which include the existence of credit risk mitigation such as seniority structure, the sale value of any collateral taken and the value of any other form of credit risk mitigation such as third-party guarantees);
- Bank-specific characteristics (such as internal policy in relation to recovery);
- Exogenous factors (such as economic cycles).

In relation to the services provided, banks use different techniques and data sources to arrive at estimates of the value of financial and physical forms of collateral. Some banks distinguish between "normal" and "forced" valuations, and some banks consider "average" and "worst case" values. Some banks require additional collateral and/or other forms of risk mitigation under the terms of the contract to maintain the expected scope of recovery [9].

"Most banks reflect the reduction of risk with the help of third-party guarantees by replacing the degree of the debtor with the degree of guarantor or guarantor. Other banks reflect the mitigation of the risk effect by adjusting the simulated values of losses in case of non-payment characteristic of the given service". [10]

In terms of the data used in the quantification of default losses, almost all banks considered default losses partly entirely based on data from their own historical records.

The time period covered by such data varies widely from bank to bank. Some banks supplemented this internal data with data pulled from external sources such as studies published by rating agencies.

Among external sources, the largest number of sources related to experience based on losses in the USA and North American debtors.

As with the use of different definitions of default in quantifying the probability of default, those banks that sought to estimate losses in the event of default also adhered to different definitions of loss and default and relied on different assumptions regarding direct and indirect costs, and time.

These differences stem from different legal and regulatory definitions as well as from different lending practices but also from different banking policies in relation to recovery. Most banks put their focus primarily on the economic rather than the accounting term of the meaning of loss.

Many of the interpretations related to questions about the value of losses in the event of default have also arisen in relation to default exposure. Explicit exposure-at-default (EAD) assessments of contingent drawdown services, such as stand-by credit lines or financial commitments, were typically performed only in those banks that used some form of economic capital allocation model.

Key variables indicated by banks to have an impact on the assessment of default exposure include current defaults (i.e., how much money is drawn from the bank), required tends (i.e., how much can be withdrawn from the bank), service structure, debt rating (which triggers further withdrawals from the bank).

When setting these conversion factors for instruments such as financial liabilities, some banks make a distinction between maturity dates.

Banks rely on internal data and studies of their own experience in estimating default exposure values to a much greater extent than they did in estimating default losses, and very little external data sources appear to be available.

Most banks use rating information for purposes of analyzing the pricing of their services. Application types range from cost and fund accounting to assigning specific premiums with risk levels.

In some sophisticated institutions, the cost of capital is explicitly considered at the stage of pricing decisions. In all cases, these banks calculate costs and funds and assign specific premiums according to the degree of risk.

Additional risk characteristics beyond those explicitly stated in internal ratings are included in economic capital allocation processes. In banks with a system of economic capital, exposure in risky degrees will be coupled with a higher cost of capital.

The loan officer is primarily responsible for approving loans and assigning ratings, while the primary responsibility for the initial assignment of ratings varies widely and varies among banks depending on the counterparty.

RISK FACTORS IN DETERMINING CLIENT RATINGS

The risk quantification of rating categories using default probability magnitudes has the potential to contribute to different rating methodologies that are less relevant in theory, and settlement will be possible using these default probability values as a kind of "common currency". [2]

Ratings are also used as a basis for economic capital allocation decisions and as inputs into sophisticated measurement, portfolio management and pricing applications. Almost all banks rely on the rating when preparing summary reports for senior management in order to monitor the composition of risks in the assessed portfolios. [5]

Such reports contain aggregated exposures for all rating classes and assigned limits. Furthermore, some banks use certain specific information related to debtors such as leading movements in rating classes for a single customer. They can also serve as a basis for capital allocation decisions.

"Most banks use rating information for the purpose of analyzing the pricing of their services.

The types of allocations range from the calculation of costs and funds to the allocation of specific premiums with degrees of risk." [13]

About one third of banks rely directly on the level of reserves in rating classes. A significant number of other banks implicitly consider rating information when determining reserves.

Banks oriented to expert assessments tried to introduce some form of standardization, which included explicit guidelines in their formation of rating criteria. All banks with extensive rating systems use historical and trend data to some extent in their analyses.

Several banks explicitly stated that they use three or more years of data. Formal banking and peer analysis play a significant role in assigning ratings. The banking analysis is supported through internal economic analyses, so that different appraisers within one and the same institution adopt a common view of the banking viewpoints regarding all debtors. Competence and experience of management were identified as significant factors in the evaluation-oriented bank reports.

These banks take into account data on the structure of ownership, reputation, and the quality of the transferred financial information. the purpose of the loan that is the subject of the contract and in some cases about the existence of charges based on the environment and other obligations of the debtor.

Finally, the country risk is universally considered to be the "sovereign ceiling" (where the rating of the other party to the contract cannot exceed the rating of the sovereign (risk of the grain) in which it is incorporated or has its business seat).

In very few cases country risk (transfer risk) was not considered at all in the rating process. All banks consider service characteristics when making lending decisions and during the process of managing their credit risks.

Almost all banks explicitly consider service characteristics (at least to some level) when assigning an exposure level and/or analyzing internal profitability or capital allocation). Specific features of the services include third-party guarantees, collateral and seniority and subordination of obligations.

When considering the characteristics of services, most banks allow guarantees to affect ratings by effectively transferring the risk to the guarantor or alternatively using the rating of the debtor or the guarantor (which implicitly implies a correlation between the two parties to the contract).

Collateral is also considered as an input in loss mitigation and service rating improvement, although in some cases this has led to a reduction in exposure rather than a rating change.

"Due to the limited available detailed data and information on potential clients, banks partially or completely rely on data provided by leading rating agencies by mapping the ratings of potential clients, public databases, such as the National Credit Register, or data from consulting companies." [11]

As a first step in the assessment of loss characteristics and the use of rating agency data, banks must assume a correspondence between the rating level and external credit assessments made by level mapping institutions. In fact, several banks have relied on internal rating scales that mirror rating agencies and attempts to develop criteria consistent with such scales in order to have internal rating processes as replicas of agency assessments.

In these cases, internal scales can more closely track historical default experience in publicly rated bonds by providing external default information that can be used in conjunction with a portfolio of external and internal counterparties.

The process of mapping external rating agencies can be accomplished in several ways, including comparing internal rating levels assigned to obligors with their external ratings. Approximating the results of the debtor's rating on the basis of internal and external data increases the probability of the accuracy of the assessments of his rating.

CONCLUSION

In recent years, many banks have made significant progress in improving the traditional, qualitatively-oriented internal assessment of credit risk by expanding their own capabilities to quantify the credit risk associated with banking exposures. Banking operations are aimed at improving the significance and quantification of the assessment of one of the most fundamental drivers of credit risk - the risk of debtor default. Furthermore, for banks, for some classes of exposure, the Basel Committee proposes a basic methodology by which banks take as an input size their own assessment of the risk of non-payment of the debtor, but the assessments of the additional risk factor are derived through the application of the supervisor's standardized rules.

The core methodology will be available for those banks that can satisfy supervisors that they are able to meet the specific minimum requirements of banks' internal rating systems, risk management processes and the ability to assess the necessary risk components.

The aspect of access based on internal ranking can be seen in a number of ways. First, over the period and at the industry level, the Basel Committee expects more and more banks to move away from the standardized approach to the RBI approach and expects that they will do so once they have the necessary systems in place. Second, within the RBI approach banks will be expected to move from using basic to more advanced methodologies in line with improvements in their risk management practices.

The paper indicated that some banks are capable (or will become so) of conducting a suitable and consistent assessment of additional risk components. These additional components are the losses that will occur in case of non-payment by the debtor, the level of the debtor's exposure at the time of non-payment, the effect of guarantees and the risk of exposure to credit derivatives.

At the same time as the basic methodology, advanced methodologies have been established that allow the use of one's own internal assessments of risk components. The widespread use of such assessments is an important part of a dynamic and risk-sensitive RBI approach in such a way that those banks that are able to conduct a sufficiently valid and quantified risk assessment can be recognized and distinguished.

It is concluded that the validation by banking institutions includes two key components - the validation of the rating system and the assessment of the risk components and the validation of the rating processes aimed at the implementation of the rating system. The validation of the rating system can further be broken down into two components: the evaluation of the development of the rating system or the development of the model and the assessment of the risk components.

The rating system is a significant driver of risk management and financial performance measurement. To be in a position to demonstrate to supervisors that an internal rating system should be used for the purposes of determining minimum regulatory capital requirements, banks must first demonstrate that the rating system is an integral part of their ongoing operations and risk management culture.

A common risk rating system is required to be used for RBI purposes as well as for the following complementary functions:

- Approval of loans and limits by competent authorities;
- Evaluation of the loan price;
- Reporting on the risk portfolio profile to the bank management and the board;
- Analysis of the adequacy of banking capital, provisions and profitability,
- Performance stress tests as a capital adequacy approach.

Banks will be required to have a robust system for assessing the accuracy and consistency of the rating system, process, and internal assessment of risk factors. Historical time frames for data used in assessing the degree of data correlation should be as long as possible, ideally covering a complete business cycle. Also, banks must have at their disposal clear stress testing processes that they use in assessing capital adequacy.

The testing must contain the identification of future changes in economic conditions and possible events that could adversely affect bank assessments of default (debtor's default) and therefore the overall level of capital adequacy. Stress testing must be conducted at least once every six months. The results of the testing should be submitted periodically through a report to the bank's senior management. The research confirmed that the definition of default according to Basel II is based on two sets of conditions, i.e., that banks take into account that the debtor is unwilling to pay and others that the debtor is more than 90 days in arrears on any credit obligations.

To assess the probability of default, external rating data and internal estimates of the probability of default, the definition of the default event and the resulting definition of the default rate (estimate of default) must be similar. If there were certain differences in the calculation of the default degree, the main differences would be in the definitions of the default event, e.g., differences in types of default, differences in qualitative criteria of default, number of days of non-payment that will lead to default.

Supervisors and bank risk managers will need to adopt techniques for validating bank credit rating and quantification systems. Supervisors will be required to understand how banks assign risk ratings and calculate default probabilities.

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Article history:

Received 27 April 2023

Accepted 5 July 2023