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CREDIT RISK MANAGEMENT IN A CHANGING WORLD

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Abstract:

The appearance of credit risk is one of the key dangers for the banking portfolio because if it becomes impossible to collect claims from several key clients, the bank could remain insolvent. Recent financial crises have highlighted the need for banks to identify, measure, assess, and control credit risk, as well as to ensure an adequate level of capital to cover potential losses in the event of loan defaults. Therefore, risk management relies heavily on the direct application of mathematical and statistical methods and models, as well as on the use of their results for business purposes. The aim of this paper is to gain knowledge about how banks manage credit risk in a changing world, bearing in mind that credit risk management is one of the indicators of the results of the banking operations of a particular bank.

Keywords:

credit risk, collateral, bank.

1. INTRODUCTION

The banking sector of an economy represents a very high-risk activity. Impending losses or lower profits arising from banking activities are indicators of risk. Banks' exposure to risks increases because there are numerous types of risks, their intensity is different, and they are conditioned by the environment. To effectively manage risk, banks need to recognize it, measure it, and align their processes and objectives (Bessis, 2015).

Basel standards include credit, market, and operational risk (National Bank of Serbia, 2022). Banking operations are also subject to (il)liquidity risk, investment risk, exchange rate risk, country risk, transfer risk, interest rate risk, legal risk, reputation risk, and other risks. Risk is a condition in which a negative deviation from the desired outcome we expect or hope for is possible. Therefore, we can say that for risk to exist in the financial business, it must: be possible, cause economic damage, be uncertain, and be random (Hull, 2018).

In the scientific world, as well as among organizations and practitioners, risk management has become a very useful and popular management tool. Risk management includes identifying risk, assessing it, developing a plan to manage it, and determining where to allocate resources. High volatility and market instability are characteristics of the banking sector. As a result, the banking sector is a high-risk activity. Market risks are conditioned by frequent and rapid changes. Exchange rates, interest rates, stock prices, the volume of monetary derivatives, and other monetary phenomena change at lightning speed in the financial market, all due to modern communication systems.

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In addition, economic, political, and geostrategic influences are increasingly pronounced. The effects that occur are often fateful. The international banking sector is further complicated by a large number of market participants, speculation, and asymmetric information. Bank losses or reduced profits are more likely to occur when there is a high degree of uncertainty. The global financial crisis led to the bankruptcy of many banks. Others fell into financial difficulties and were saved by the states (with budget funds), others were nationalized for political reasons, others were privatized in transition economies, while some recovered and strengthened. Today's business environment is characterized by much more dynamic and turbulent changes. So, the risk is increasing day by day. Banks are increasingly exposed to risk.

2. CREDIT RISK

Credit risk is the risk from a typical banking business and, as such, the biggest risk for the bank (Barjaktarović, 2015). As credit risk management is a multidimensional problem, different approaches are used, some quantitative and others qualitative. Regardless of the method used, the key element is understanding behavior and predicting the likelihood that certain entities will default.

Credit risk is the risk of adverse effects on the bank's financial result and capital due to the non-performance of the debtor's obligations to the bank (Law on banks, 2015). Credit risk can also be defined as “the potential that the contracting party will not fulfill its obligations by the agreed terms”. Credit risk is also variously called default risk, performance risk, or counterparty risk. All these refer to the same thing: the impact of credit effects on a firm's transactions.

Three characteristics define credit risk:

1) Exposure (to a party that could default or suffer a negative change in its ability to perform).
2) The probability that this party will not fulfill its obligations (probability of default).
3) Recovery rate (, how much can be recovered if there is a default).

Given the above, credit risk management is the process of controlling the potential consequences of credit risk. The process follows a standard risk management framework: identification, evaluation, and management. It is necessary to identify the cause of the risk, assess the degree of risk, and decide how this risk will be managed (Witzany, 2017). The bank's credit risk is determined by its capital adequacy, internal acts for credit risk management, and the classification of its assets and off-balance sheet items. In addition to creditworthiness and regularity, the bank's credit risk is also determined by the debtor's creditworthiness, regularity in fulfilling his obligations to the bank, and the quality of the bank's debt security instruments.

What factors determine the risk associated with interest rates? In addition to the number of approved loans, the bank's credit policy determines its credit risk. Credit policies include customer selection, lending terms, billing terms, monitoring and collection. The bank will not have financial problems if its credit policy is set correctly. When a large number of loans are approved, the bank becomes exposed to risk (the potential loan loss increases). Credit risk management means eliminating risk. Due to the mentioned factors, the risk is almost impossible to eliminate. Management should mitigate risks as much as possible rather than eliminate them. Management of client credit requests requires maximum attention because this is where the first sources of problems and potential credit risks arise. Therefore, it is important to analyze the client's credit potential based on internal criteria (internal rating) and collateral as a secondary means of collection. Potential borrowers (clients to whom the bank has approved a loan) must be evaluated individually, on an average level, or in banking terminology, on a portfolio basis.

Defining lending conditions is the next step for the bank. This implies defining a series of criteria. The most important criterion is the interest rate. It can vary significantly for clients with similar characteristics (professional education, salary level, position, etc.). In what way? For instance, by saving, transferring money to a foreign currency account, using credit cards, etc. Risky customers usually pay higher interest rates because of the so-called risk premium. This means that banks want to protect themselves against potential losses by insuring risky customers. When defining lending conditions, banks consider repayment dynamics in addition to interest rates. By determining stricter dynamics for credit risks with a higher rating, banks insure themselves by setting higher annuities.Contracts often contain additional protective provisions. These safeguards do not apply to so-called golden clients (clients with high incomes, deposits, or turnovers). Finally, the main means of bank security is collateral. For a client with a higher credit risk, collateral is unfavorable because the bank wants to protect itself from losses (Đukić, 2021).

After the loan is approved, the bank must monitor the repayment of the loan, the so-called monitoring. The bank's operations are standardized, so financial reports are used for monitoring. Reporting should include measurement of mandatory losses, value adjustments, and provisioning for expected losses to maturity. Taking care of the final collection of receivables from the client is the main purpose of credit risk monitoring. Here, the bank controls credit risk by monitoring clients' operations, regularly checking the debtor's creditworthiness, monitoring the servicing of annuities (interest and principal), checking the value of collateral, and observing protective provisions.

The final collection of receivables in case the client has problems with a regular collection of loans, i.e. repayment of annuity, should be done by the bank. As a result, the bank can extend the repayment term, restructure claims, for example, forgive part of the debt or convert it into equity, execute collateral, sell and/or assign claims, or initiate litigation.

To protect itself adequately, the bank has adapted its business policy as follows: the bank deals with credit control and debt management by establishing rigorous procedures to achieve minimum credit standards for the client and transaction completion time. In this regard, it is possible to monitor the exposure to those risks. At least once a year, the bank updates and adjusts its internal acts, policies, and procedures to ensure an adequate credit risk management system and reduce credit risks as much as possible. The bank assesses the risk of non-payment of obligations based on the probability that the client will enter the status of non-payment. As a measure of the risk that the other party will not fulfill its obligations, the bank determines the internal rating for each credit risk exposure and credit decision. The internal rating of each client is updated at least once a year. Provisions for credit risk are formed based on internal ratings at a quantitative level. In order to assess the risk of client default, all available information is considered (Đukić, 2021).

Groupings are made into four risk categories:

- Low risk - renowned and long-term clients, large internationally recognized clients, and clients using a wide range of services. Those clients who have not been in arrears recently or in the past year. This category of clients is also mainly used to conclude new business.
- Special supervision (management attention) - financially satisfactory and unsatisfactory clients. It is very uncertain whether the loan will be sustained in the medium term. Early payment reminders are sent to customers from the population segment with limited numbers or possible payment problems.
- Performance below average (sub-standard) - economically and financially sensitive clients.
- Problematic claim (non-performing) - meets at least one of the following criteria for non-payment of obligations, as defined by the bank's internal acts: uncertain collection, payment delay of 90 days, restructuring due to which the bank suffers a loss, realization of a loss, or bankruptcy proceedings. Restructured receivables that are not in arrears but are uncollectible are also problematic.

  The level of non-payment of obligations is determined at the level of the client, including natural persons; when one product is overdue; all products of that product are overdue.

2.1. MONITORING AND SUPERVISION OF CREDIT RISK

Through the process of regular re-approvals, the bank analyzes the overall status of the debtor in order to recognize any deterioration in the quality of the loan portfolio that may cause material losses for the bank.

2.1.1. DEFAULT STATUS

There are five categories of status events in the bank, based on regulatory requirements at the banking group level:

- E1 – The decline in the debtor's credit quality makes it unlikely that the obligations will be settled in full;
- E2 – Payment of materially significant debt is delayed for more than 90 days;
- E3 – Changes in repayment terms due to the deterioration of the client's economic situation;
- E4 – Insolvency;
- E5 – Bankruptcy.

If the guaranteed exposures are not met, there is an outstanding exposure based on the total nominal amount.

It is possible to trigger an event at the individual placement or client level. Still, in principle, the client is assigned default status for all individual exposures, with an internal rating of 'R', regardless of where the default event occurs. When one of the default events E1 - E5 occurs, all bank clients default and each client is assigned an internal rating (R1 - R5). There is a precise minimum duration for each default event, and the exit from the default status requires the successful completion of the monitoring period, which occurs automatically after the expiration/termination of the validity period of the default event E1 - E5 for customers with any type of credit obligation and lasts at least 3 of the months. It is impossible to successfully complete the monitoring period if any criterion triggers or has triggered one of the previously defined default events E1 - E5.

2.1.2. WRITING-OFF OF RECEIVABLES

The bank writes off uncollectible receivables following the Bank's Rulebook on the write-off and transfer of receivables from balance to off-balance accounts after implementing all collection options. Additionally, write-offs may be considered when there is no alternative to the collection due to higher costs or when no further action is effective. Receivables are written off only for impaired and uncollectible placements. After determining that the court process or bankruptcy will take too long and thus burden the bank's balance sheets, a decision is made to transfer the claim from the balance sheet to the off-balance sheet, but the debt is not forgiven.

2.2. COLLATERAL AND OTHER MEANS OF PROTECTION AGAINST CREDIT RISK

Once the placement is approved, the bank expects the debtor's future cash flows to ensure payment. In addition, within this type of collection, the bank takes various security instruments (collateral) as protection against potential loss due to the potential default status of the debtor. The bank prefers collateral that is quickly and easily realized. Business competition and the current market situation determine whether collateral can be taken. Credit risk mitigation techniques can be measured and controlled by monitoring how long it takes to realize the collateral and how far the realized value deviates from the expected value (Tursoy, 2018).

The Strategic Risk and Collateral Management Department are responsible for all aspects of collateral management, from preliminary analysis to implementation. The stages of the process are divided into three categories:

1) The collateral analysis phase is the first step during the collateral management process. The identification, analysis, and documentation of collateral, as well as the registration of collateral in the collateral registration system, begin with the identification and analysis of potential collateral.
2) In the collateral monitoring phase, the value and determination of the collateral are monitored. The main function of this system is to record, monitor, update, and control collateral data.
3) When the collateral is realized (by selling to close the placement), the collateral is closed in the collateral record system, and the process is completed. The data collection phase for calculating the average realization and collateral recovery rate (eng. Collateral Recovery Ratio) is also included.

2.3. ASSESSMENT OF IMPAIRMENT OF FINANCIAL ASSETS

The bank establishes a structure, tools, and processes that enable the timely determination of credit losses following IFRS 9[1]. To cover expected economic losses from financial assets, the bank regularly assesses the need and creates value corrections by regulatory and accounting standards (IFRS Foundation, 2022).

Expected credit loss/impairment represents all reductions in expected cash flows over the expected life of the financial asset. In contractual terms, the reduction represents the difference between the cash flows owed to the bank and the cash flows the bank expects to receive. Even though the bank expects to be paid in full, a credit loss may still occur after the expiration of the contractual term.

2.4. BASIC TYPES OF CREDIT PROTECTION PROVIDERS BASED ON GUARANTEES AND CREDIT DERIVATIVES

The state and commercial banks provide intangible credit protection with sufficient credit quality and international development banks - exposure secured by bank guarantees and international development banks.

2.4.1. EXPOSURES SECURED BY REAL ESTATE MORTGAGES

The decision on the adequacy of the bank's capital recognizes real estate as a protection instrument when all conditions are met. It is necessary to meet specific requirements to be placed in a particular class of exposure, exposure secured by real estate mortgages, which is assigned a more favorable credit risk weight than the recognition of the effects of the credit risk mitigation technique. The exposure or part of the exposure that is fully secured by a mortgage on residential real estate is assigned a risk weight of 35%; exposures that are fully secured by commercial real estate mortgages are assigned a risk weight of 50%.

Level 1 Impairment status

a. Assets recognized on initial recognition (excluding POCI assets[2]),
b. Assets that meet the criteria of low credit risk,
c. Assets without a significant increase in credit risk after initial recognition.

Level 2 Impairment status

- Financial assets with increased credit risk are included but not impaired by credit losses, including initially recognized assets.

1 International Financial Reporting Standards

2 Purchased or originated credit impaired asset, POCI assets represent exposures for which, at the time of recognition, it was determined. Purchased or originated credit-impaired assets, POCI assets represent exposures for which, at the time of recognition, it was determined that credit losses reduced its value due to significant credit risk.

Level 3 Impairment status

- Financial assets are impaired due to credit losses at the time of reporting.

2.5. REPROGRAMMED LOANS

The bank should reprogram, respectively, to restructure loans rather than to realize collaterals when the conditions for reprogramming loans are met. To provide the client with better terms for the loan, one can extend the repayment period, reduce the interest rate, reduce the annuity, and partially write off the receivables or some other way. Reprograms can be business reprograms or forbearance restructuring. When the business is reprogrammed, the client is granted more favorable credit conditions that are not conditioned by worsening the debtor's financial position or mitigating its consequences. Due to the changing conditions in the market, the existing dynamics and lending conditions need to be adjusted to the new conditions. Due to financial difficulties, the debtor cannot fulfill the contractual obligations, and the bank must make concessions for the client to succeed.

2.6. RISK OF PLACEMENT CONCENTRATION

A bank faces a concentration risk when it has high exposure to a particular group of debtors or individual debtors. In the event of changes in economic, political, or other circumstances that equally affect them, there may be a significant concentration of credit risk when a significant number of clients from the same industry, region, or economic background are exposed to the same factors that affect their income or expenses. In order to minimize concentration risk, maximum exposure levels and credit limits are determined, with regular monitoring of compliance with the established limits, in order to achieve and maintain a safer credit portfolio. As part of this process, the bank analyzes the concentration of credit (as well as other) risk according to various criteria (exposure classes, economic sectors, collaterals, products, etc.). Considering all conditions defined by the Bank's Risk Management Decision, the bank analyzes exposure to credit risk by looking at two indicators: Exposure of one person or a group of related persons may not exceed 25% of the bank's capital, and the sum of all significant exposures may not exceed 400% (Law on banks, 2015).

3. RISKS RELATED TO CREDIT RISK

In addition to residual risk and credit impairment risk, settlement/delivery risk and counterparty risk, market and foreign exchange risk are also included in credit risk. Using the same credit risk control processes and procedures, the bank also overcomes other risks to which it is exposed in its operations.

4. CONCLUSION

In its operations, the bank is most exposed to credit risk. This risk is as old as banking itself because lending money to another contracting party always carries the risk that the borrowed funds will not be returned. Various activities were undertaken to mitigate this risk and avoid banking operations' adverse consequences. Of course, the complexity of the mechanisms used to manage credit risk was much simpler than today. When the financial market develops rapidly and new instruments and banking products are created, the management system's complexity is necessary. In order to prevent unfavorable situations, risk exposure must be adequately controlled and monitored, and preventive measures must be taken. The main task of this paper was to answer the question: How does the bank manage credit risk? The bank prefers collateral that is quickly and easily realized. Credit protection is primarily provided by cash and cash equivalents deposited with the bank. The state and commercial banks protect intangible credit with sufficient credit quality and international development banks.

5. LITERATURE

Barjaktarović, L. (2015). Upravljanje rizikom, Univerzitet Singidunum, Beograd.

Bessis, J. (2015). Risk Management in banking, Wiley.

Đukić, Đ. (2021). Upravljanje rizicima i kapitalom u bankama, Beograd: Ekonomski fakultet.

Hull, C.J. (2018). Risk Management and Financial Institutions, 5th edition, John Wiley and Sons, Hoboken, New Jersey.

IFRS Foundation (2022). IFRS Accounting Standards - https://www.ifrs.org/issued-standards/list-of-standards/

Law on banks (2015). Official Gazette of RS, no. 107/2005, 91/2010 and 14/2015 - https://www.paragraf.rs/propisi/zakon_o_bankama.html

National Bank of Serbia (2022). Implementation of Basel Standards in Serbia - https://nbs.rs/en/finansijske-institucije/banke/bazelski-stendardi/

Tursoy, T. (2018). Risk management process in banking industry, Near East University.

Witzany, J. (2017). Credit Risk Management: Pricing, Measurement and Modeling, Springer Cham.