STUDY ON THE IMPACT OF CREDIT RISK ON THE QUALITY OF THE LOAN PORTFOLIO IN THE ROMANIAN BANKING SECTOR

ELENA VIOLETA DRĂGOI
Faculty of Economics, “Valahia” University of Târgoviște
Strada Aleea Sinaia, no. 13, ROMANIA
violeta_dragoi@yahoo.com

LARISA ELENA PREDA
Faculty of Economics, “Valahia” University of Târgoviște
Strada Aleea Sinaia, no. 13, ROMANIA
larisapreda@yahoo.com

ANA-MARIANA DINCU
Faculty of Agricultural Science, University of Life Sciences” King Mihai I” from Timisoara
Calea Aradului no.119 , ROMANIA
maridincu2004@yahoo.com

Abstract: This study aims to explore and evaluate the composition and performance of the loan portfolio of commercial banks in Romania, identifying the main risk factors and development trends. Starting from a historical analysis and reaching the assessment of the impact of some macroeconomic and regulatory factors, the study aims to provide a comprehensive picture of the state of lending in the Romanian context. In this analysis, we will adopt a multidisciplinary methodology, combining statistical analysis, evaluation based on econometric models and qualitative data interpretation, with the aim of providing a comprehensive and detailed perspective. The work will also try to shed light on how lending policies and banking sector regulations have evolved over time and how they influence financial performance and credit risk.

Keywords: credit risk, banking system, the interest rate, *loan, efficiency, macroeconomic determinants*

JEL Classification: E51; E52; E60; G21; G32.

1. Introduction

In the financial sector, risk is an essential component of banking activity, and the way it is managed has a significant impact on the quality of loans granted. In a globalized economy and a constantly changing financial world, banking institutions face various challenges and risks that can affect their stability and sustainability.

According to specialized studies, banks represent the pillars of financing the national economy, channelling savings to productive investments and thus contributing to economic growth and social development. In this context, the banks’ loan portfolio becomes a key indicator, reflecting not only the financial health of the banking sector, but also general economic trends. Recent financial crises have demonstrated the vulnerability of banking systems to external shocks and economic fluctuations, emphasizing the importance of rigorous analysis of loan portfolios. Thus, understanding the dynamics and structure of these portfolios, as well as identifying associated risk factors, become essential for anticipating potential problems and implementing effective risk mitigation strategies.

Banking regulations, at national and European level, are in a continuous evolution, with the main purpose of protecting deposits, ensuring financial stability and promoting responsible lending practices. Analysing the loan portfolio in light of these regulations provides valuable insight into the degree of compliance of banks and the impact of these regulations on lending behaviour.

2. Bank management approach to risk management

Risk is a phenomenon that appears throughout the course of the bank's operations and activities and that can cause negative effects that affect the entire activity, by deteriorating the quality of business, decreasing profit or even recording losses and affecting the bank's functionality and image.

The regulatory authorities requires banks to hold adequate capital for the many and various risks that arise in their activity: liquidity risk, interest rate risk, market risk, credit risk, off-balance sheet risk, technological and operational risk, currency risk, country or sovereign risk, insolvency risk, etc. Effective management of these risks is critical to banks' performance. The most important risk that banks are exposed to is credit risk, which involves loans that are not returned and comes from the lack of performance of a borrower, and its management has a major influence on the bank's performance. [16, 4]

The credit risk management process is a complex one and begins with the identification of existing and potential risks, inherent in the lending activity, the analysis and assessment of risks, their monitoring and control in order to maintain them within the accepted limits. [7, 1]

Despite its complexity, effective management of credit risk is a prerequisite for the success of a bank and the banking system in general.

The main objective of the credit risk quantification analysis is to know the evolution of the client from the past periods and to forecast his future performances, in order to forecast his viability. [13]. This risk increases as the size of the loan increases. Its restriction leads to a decrease in the cases of insolvency of the bank's debtors, because the increase in their obligations increases, as a rule, the obligations of the beneficiaries of loans, and the customers who are assessed as risky will have a lending regime with higher interest rates. Thus, an increased risk of insolvency determines a lower credit offer.

By manifesting the credit risk, the lending bank records a loss of income from the loan granted, and therefore a decrease in its profit, and the loan granted turns into a non-performing loan [16, 7, 5, 10]. Increasing bad loans in a bank can lead to bankruptcy and a loss of efficiency in the banking sector. It is also one of the symptoms of a banking crisis.

The management of bad loans is a problem of the banking sector, and managing these loans in a less than adequate manner is dangerous to the survival of banks and threatens to endanger the overall stability of a financial system.

In general, research conducted in the field of credit quality analysis has shown that non-performing loans can hinder economic growth and reduce economic efficiency.

Shocks to the financial system can arise from bank-specific factors or macroeconomic conditions. In general, research from developed economies has confirmed that macroeconomic conditions affect credit risk. [18,3,6,11,15]

Macroeconomic variables such as GDP growth rates, inflation rate, unemployment rate, exchange rate of exchange rates, public and private spending rates, and savings and money sizes are the major factors that could explain systematic credit risk. On the external level, the risk is generated by currency volatility, while on the internal level, competition or political-economic instability are causes of its appearance. Credit risks can be generated by individual economic phenomena or by a certain economic situation. [10, 9]

In the conditions of the permanent manifestation of the risk, under the influence of the determining factors, both at the financial, monetary, and banking level, its management is vital. In this way, the unwanted effects can be removed, and the presence of risk can become a prosperous business opportunity. An effective management of banking risks will also leave its mark on the public image of the bank.[5]

2.1. Fundamental principles in credit risk management

Risk management includes the identification, evaluation, measurement, monitoring and control of all risks inherent in banking activity.

Credit institutions should have a mechanism to identify stress situations early and plan to deal with such unusual situations in a timely and effective manner. Contingency planning activities include disaster recovery planning, public relations damage control, litigation strategy, response to regulatory criticism, etc. Contingency plans should be reviewed periodically to ensure that they cover reasonably likely events that could impact the bank.

Banks do not have a separate risk management department. The main responsibility for risk management rests with the credit administration department, which takes into account credit risk in particular. In credit risk management the main focus is the management of non-payment by the customer, the credit process having as its common objective the prevention, identification and resolution of potential customer problems. To minimize the negative impact of major borrower problems, it is essential to maintain a balance between risk and effective credit recovery.

If a bank's lending rules are excessively rigid, this can limit the number of loans it makes, thereby reducing its customer base, service opportunities, and interest and fee income. On the other hand, if the standards are too permissive, the increase in the volume of loans and the expansion of the customer base may be counterbalanced by the increase in bad loan losses.

Failure to meet contractual obligations by customers can lead to various risks for the bank, including credit risk, borrower insolvency and deterioration in the quality of bank assets. This risk increases with the growth of the loan portfolio. By limiting this risk, the cases of debtor insolvencies can be reduced, as the increase in customer obligations is balanced by the increase in financing costs, which leads to a reduction in the supply of credit due to the increased risk of insolvency.

At the macroeconomic level, to prevent and mitigate insolvency, various banking regulations and methodological standards are implemented, which protect depositors - the banks' main sources of funding. These standards are intended to balance customer relationships, minimizing the impact of insolvency. [16,17,18]

Specific regulations include:

• Minimum bank capital requirement, regulation that ensures banks hold an adequate level of capital to absorb potential losses.

• Risk coverage ratio, this standard, also known as Norma Cooke, establishes that banks must have a capital of at least 8% of total risk-weighted assets.

• Risk concentration limit, this rule limits the maximum amount a bank can lend to a single borrower, relative to the bank's equity, to prevent the bankruptcy of a large borrower from destabilizing the bank's financial situation.

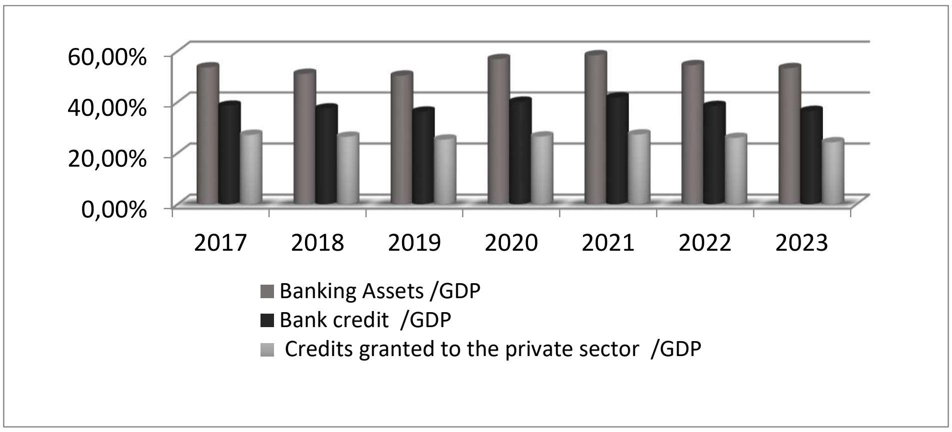
The division of risks and their limitation are fundamental principles in credit risk management. The problems associated with the concentration of the loan portfolio, where the bank's assets are disproportionately oriented towards a group of borrowers' resources, are mitigated by the diversification of loans, which include different geographic criteria, maturities, forms of ownership of borrowers and sectors of activity. This diversification is crucial to minimizing risk exposure and ensuring adequate profitability, and is an essential part of any bank's lending strategy.

2.2. Analysis of the credit portfolio of the banking sector in Romania

The Romanian banking system has a key role for the optimal functioning of economic and financial mechanisms. Also, the Romanian banking industry has an impact on the macroeconomic developments of the dynamics of the business environment and for improving the degree of Romanian economic prosperity.

The banking system in Romania, during the pandemic, recorded a downward evolution in terms of financial intermediation, the ratio of non-governmental credit to GDP, reaching below 25% at the end of 2023 (graph 1).

Graph 1: Indicators of Financial Intermediation



Source: NBR's anual report *[19, 20,21]*

The share of bank assets in GDP, the ratio of bank credit to GDP and that of non-governmental credit to GDP are decreasing compared to the values recorded in previous years, for all these indicators Romania is below the EU average, but also below the countries with emerging economies.

The evolution of these indicators shows that the indebtedness of the real sector continued to advance at a rate lower than economic growth, the dynamics of the demand for bank loans being more pronounced in the case of the population sector compared to that of non-financial companies, due to the increase in demand for mortgage and consumer loans. [16,] (RSF, 2023, page 28.)

The decrease in financial intermediation calculated as the ratio between private sector credit and GDP was generated by a number of factors, the most important being the volatility of the legislative framework and the precarious economic situation of SMEs (negative capital, declining profitability and liquidations). The process of cleaning up the balance sheets of non-performing loans started by banking institutions in the period immediately following the financial crisis of 2008 also contributed to the decrease of financial intermediation.

Currently, 32 banks operate within the Banking System in Romania, of which 8 are branches of foreign banks, 2 banks with majority state capital, 22 banks with majority private capital, 2 banks with full or majority state capital and 18 banks with majority foreign capital (table 1).

Table 1: Structural indicators of the banking system in Romania

Indicators	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Financial institutions	40	36	37	35	34	34	34	34	32	32
Financial institutions with majority privat capital	29	27	27	26	25	25	23	23	22	-
Financial institutions with majority foreign capital	25	23	24	22	21	21	20	19	18	-
- branches of foreign banks	9	7	8	7	7	7	8	8	8	8

Source: NBR's anual report *[21]*

As regards the assets held by foreign-owned banks, including branches belonging to foreign credit institutions, it can be argued that there is a slight decrease attributed to changes in the shareholding structure (table 2).

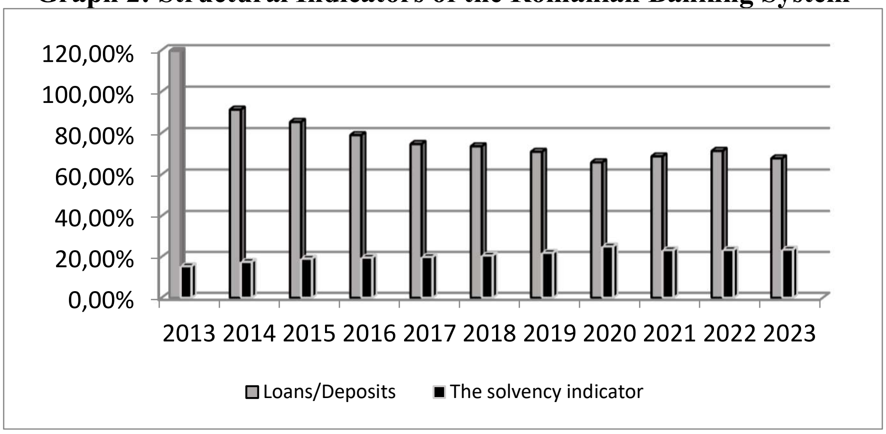
Table 2: Proportion of assets in the Romanian banking system

Indicators	2014	2015	2016	2017	2018	2019	2020	2021	2022
Share in total assets of banks with majority private capital (%)	91,3	91,7	91,8	91,3	91,9	91,8	89,4	88,6	87,9
Share in total assets of banks with foreign capital (%)	89,9	90,4	91,3	77	75	73,7	70,5	68,2	68,1

Source: NBR's anual report *[21]*

From 2019, the share of credit institutions with majority private and foreign capital in the total assets of banks has decreased, the territorial network of credit institutions following the same downward trend, on account of the adverse influences exercised in the economic activity by the Covid 19 pandemic. The progress of the Romanian banking sector, despite the health crisis, was worth noting, in the last period, through the structural indicators of the banking system regarding liquidity and solvency. Romanian banks have the necessary resources for lending, the loans/deposits indicator being placed at 67.82% at the end of December 2023, while the solvency indicator is almost three times above the minimum allowed [18,19].

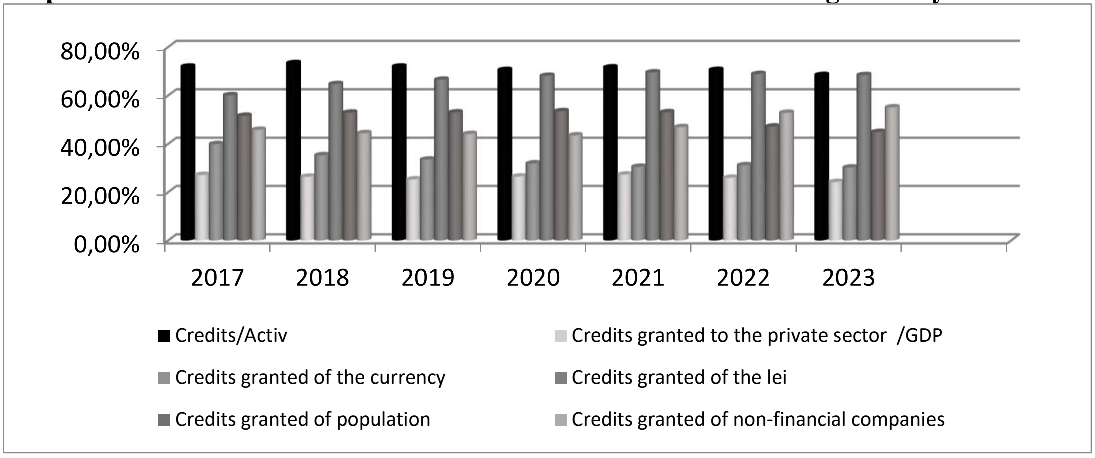
Graph 2: Structural Indicators of the Romanian Banking System



Source:BNR*[19, 20,21]*

According to the data from the aggregate monetary balance of credit institutions, the year 2023 was characterized by the upward attenuation of the rate of growth of non-governmental credit compared to the previous year, a rapid growth of non-financial companies higher than the rate of population growth, as well as by further modification of the lei/currency structure in favor of the lei component, (its share in the total volume of non-governmental credit increased to 68,41% in 2023).

Graph 3: Evolution of the Indicators that Characterize the Lending Activity in Romania



Source: NBR*[19, 20,21]*

The indicator regarding loans granted to customers in total assets was on a downward trend from 73.35 % în 2017, compared to 68.46% at the end of 2023. According to the data from the aggregate monetary balance of credit institutions, the year 2023 was characterized by the drastic reduction in the growth rate of non-governmental credit compared to the previous year (+6.4% in nominal terms and -0.2% in real terms in 2023), as well as by the further modification of the lei/currency structure in favour of the lei component (its share in the total volume of non-governmental credit increased to 68.41% in 2023).

The average growth rate of loans granted to the private sector increased to 6.4 percent in 2023 (compared to 12.1 percent in 2022), the acceleration of the rate being determined by the substantial increase in lending activity in lei (-0.8 percent in real terms) and by 7.9 percent of the foreign currency component expressed in lei (7.3 percent in the case of expressing the indicator in euros), both on the population segment and on that of non-financial companies, in the context of tempering the pace of credit outsourcing operations carried out by credit institutions.

For 2023, lending data showed non-government credit growing by 5.5% to €58 billion. Thus, in 2021, paradoxically, we witnessed an increase in financial intermediation to 26.8% - from 25.3% in 2019. The new credit granted to corporations and the population was 84 billion lei in 2021 and had a weight of almost one third of the balance of non-governmental loans.

The structural analysis of loans granted by credit institutions provides an important perspective on how they direct their lending activity to various segments of the economy, as well as depending on the currency in which these loans are granted.

In 2021, consumer loans denominated in lei represented 8.8% of the total, while loans denominated in euros and other currencies registered significant decreases (-14.1% and -16.7%) - table 3.

Table 3: Credits granted to population by destination and currency

Period	Consumer loans (%)			Home loans (%)			Loans for other purposes (%)		
	Lei	Euro	Other currencies	Lei	Euro	Other currencies	Lei	Euro	Other currencies
2021	8,8	-14,1	-16,6	20,4	-10,9	-10,1	3,4	-2,1	-
2022	4,1	-15,1	-13,8	8,9	-9,2	-10,3	32,9	40,1	-
2023	6,7	-15,9	-10,3	2,0	-12,9	-7,4	7,5	-10,9	-
2024 T1	10,6	-16,7	-14,1	3,5	-15,2	-11,8	7,9	-13,6	-

Source: https://www.bnr.ro/Credite-acordate-gospodariilor-populatiei-5771.aspx#peloc

Home loans denominated in lei represented 20.4% of the total, while those denominated in euros and other currencies registered moderate decreases (-10.9% and -10.1%). Loans for other purposes were predominantly expressed in euros and other currencies, representing 3.4% of the total for lei and -2.1% for euros.

In 2022, we observe a reduction in the percentage of consumer loans denominated in all currencies, but a significant increase in the percentage of home loans denominated in lei (8.9%). Loans for other purposes expressed in euros registered a significant increase, representing 40.1% of the total. In 2023, the percentage of consumer loans expressed in lei increased to 6.7%, while those expressed in euros and other currencies continued to decrease. Home loans denominated in lei decreased to 2.0%, while those denominated in other currencies registered a significant decrease (-12.9%). The percentage of loans for other purposes fell in all currencies.

The percentage of home loans denominated in all currencies fell significantly. In conclusion, the analysis of loans granted to the population shows that, in general, credit institutions have adapted their lending policy according to market requirements and economic and financial evolution. They concentrated their lending more in lei and decreased the granting of loans denominated in other currencies. We are also seeing significant changes in the structure of loans for various purposes, such as an increase in loans for housing and a decrease in loans for other purposes, especially those denominated in other currencies.

The analysis of loans granted to non-financial institutions, public administration and non-residents shows that credit institutions adjusted their lending policy according to the needs and requirements of the market in each analysed period (table 4).

In 2021, the percentage of loans granted to non-monetary financial institutions was 33.2%, while those granted to public administration were extremely high, representing 116.0% of the total.

Table 4: Credits granted to the public administration, non-financial companies and non-residents

Perioada	Loans granted to non-financial companies (%)	Loans granted to the public administration (%)	Loans granted to non-residents(%)
2021	33,2	116,0	19,4
2022	38,0	27,8	-5,9
2023	17,8	21,4	27,8
2024 T1	15,4	65,4	33,5

Source: https://www.bnr.ro/Credite-acordate-institutiilor-financiare-nemonetare,-administratiei-publice-si-nerezidentilor-5793.aspx#peloc

The percentage of loans granted to non-residents was 19.4%. In 2022, we see a significant increase in the percentage of loans granted to non-monetary financial institutions (38.0%), while the percentage of loans granted to the public administration decreased to 27.8%. The percentage of loans granted to non-residents was negative, indicating a possible reduction in lending to this segment. In 2023, the percentage of loans granted to non-monetary financial institutions decreased to 17.8%, and the percentage of loans granted to public administration increased slightly to 21.4%. The percentage of loans granted to non-residents increased significantly, reaching 27.8%. The percentage of credits granted to the public administration increased significantly, reaching 65.4%. The percentage of loans granted to non-residents continued to increase, reaching 33.5%.

The total of loans granted to non-financial companies registered a significant increase during the analysed period, from 148,528.1 million lei in 2021 to 191,170.6 million lei in February 2024. This increase indicates an increase in lending activity in the corporate sector.

Overall, the analysis of loans to non-financial corporations indicates an increase in lending activity in the corporate sector, which may be a sign of economic growth or increased interest in investment and corporate expansion. This can be influenced by various factors such as general economic conditions, the level of interest rates and the level of confidence of the corporate sector in the economy.

Loans in lei dominate the total of loans, but there is also a significant proportion of loans in euros and other currencies (table 5).

The fluctuations of loans granted to non-financial companies in the analysed period reflect changes in credit demand, economic conditions and other factors.

Table 5: Loans granted to non-financial companies

Period	Loans in RON (%)	Loans in euro (%)	Loans in other currencies (%)
2021	26,0	10,4	13,8
2022	4,3	46,4	-12,5
2023	8,8	11,8	25,7

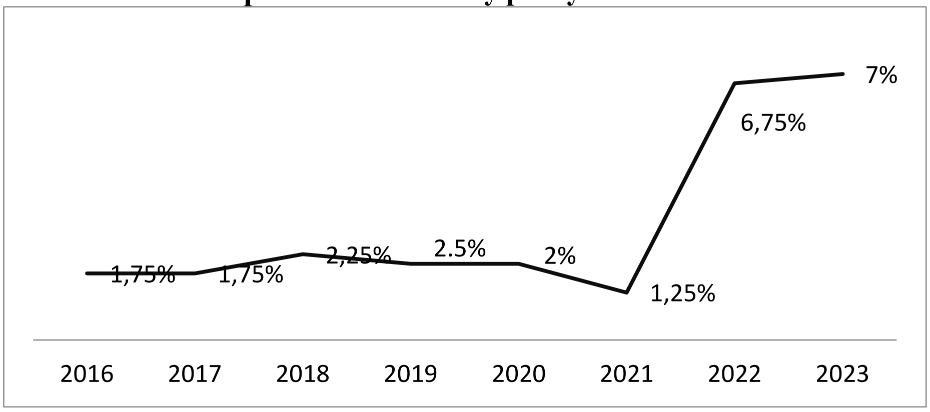
2024 T1	6,9	3,8	-14,1

Source: https://www.bnr.ro/Credite-acordate-societatilor-nefinanciare-5792.aspx#peloc

In conclusion, the analysis of loans granted to non-financial institutions, public administration and non-residents shows that credit institutions have adjusted their lending policy according to the needs and requirements of the market in each analysed period. Although the percentage of loans granted to non-monetary financial institutions generally decreased, the percentage of loans granted to public administration and non-residents experienced significant fluctuations during this period. These adjustments were influenced by economic factors, regulations and market demands, as well as the strategy of each lending institution. The interest rate on loans is influenced both by endogenous factors (the cost of financing, the cost of credit risk related to the loans granted and operational costs), and by exogenous factors, such as fiscal instability and the higher volatility of the economic cycle.

The monetary policy acted consistently in the sense of mitigating the amplitude of the economic cycle. From the previous table it can be seen that the reference interest rate fluctuates from year to year. Thus, from 2015 to 2017 it decreased from 2% to 1.75%, and then reached 2.25% in 2018 (Graph 4). This increase implies an encouragement of saving, being influenced by all users who have loans with variable interest (increase in loan rates in lei).

Graph 4: The monetary policy interest rate



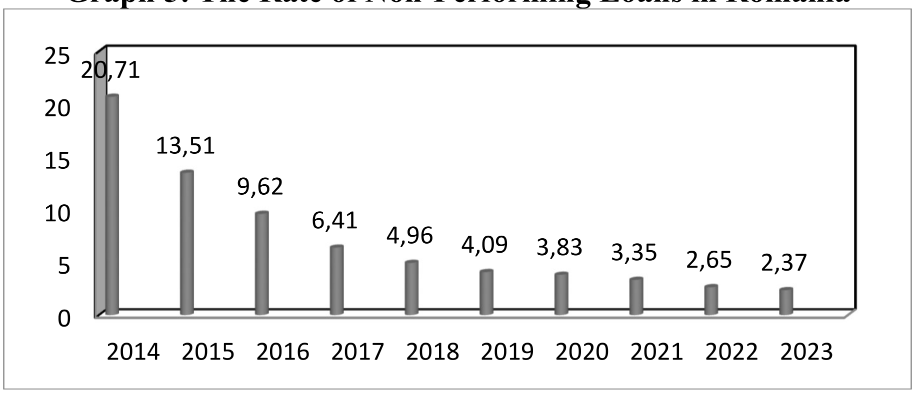
Source: www.NBR.ro - Statistics

Subsequently, a decrease of one percentage point is visible from February 2018 to October 2021, thus encouraging consumption and investment. Inflation is also accentuated, and emphasis is placed on facilitating access to credits.

Since 2022, the monetary policy interest rate has been rising as a result of persistent inflation,

Regard of assets quality non-performing loans rate (according to EBA classification) improved at 3.3% in March 2022, compared to 3.83% at the end of 2020, but remains in the medium risk zone, with an EU average of 2% (Graph 5).

Graph 5: The Rate of Non-Performing Loans in Romania

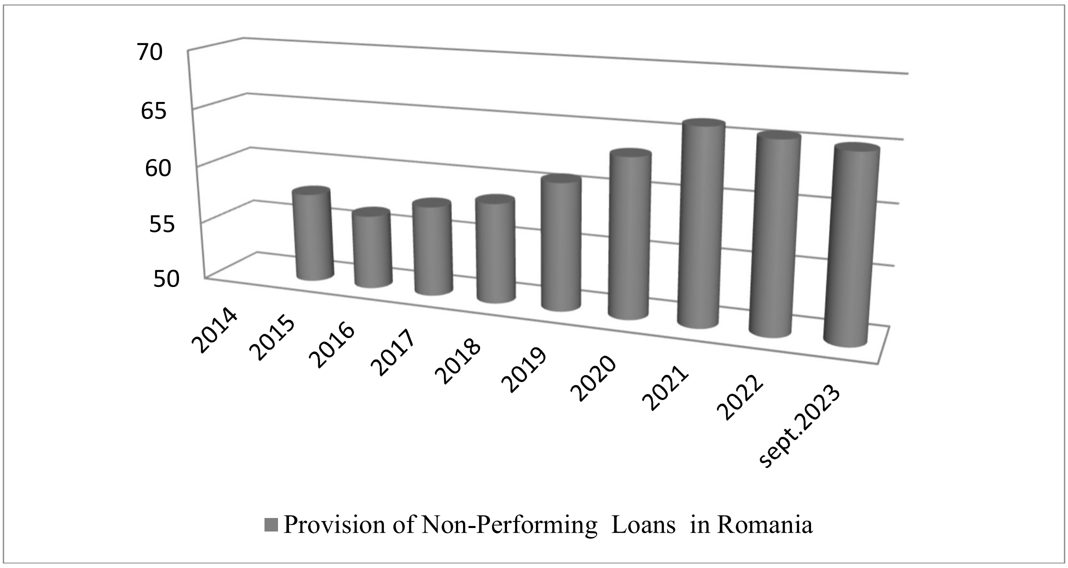


Source: NBR*[19, 20,21]*

The dynamics of the rate of non-performing loans show an improvement in the quality of the portfolio of loans granted both to the population and to corporations, but the credit risk remains important for the Romanian banking sector, at the high level of uncertainty that characterizes current economic developments and the increase in interest rates.

The degree of provision coverage of non-performing loans continued to increase, evolving up to 65.08% in september 2022, its dynamics placing Romania at the top of the European ranking (Graph 6).

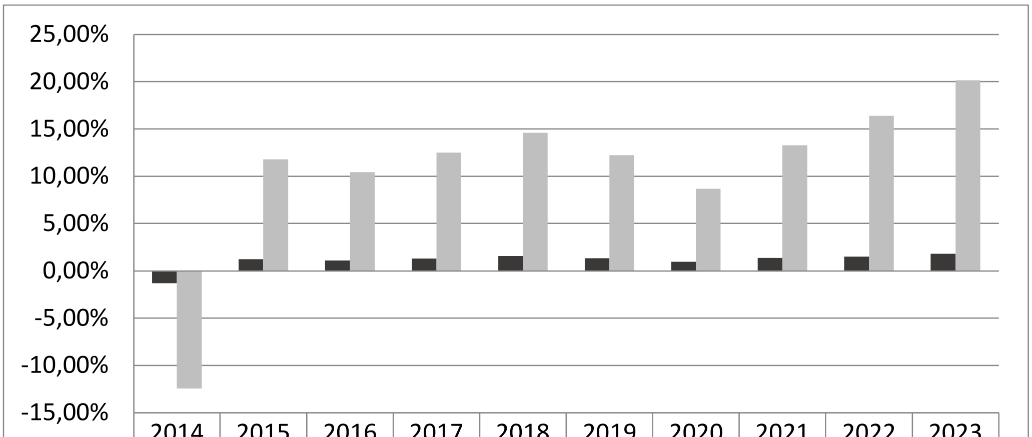
Graph 6: The Degree of Cooperation with the Provision of Non-Performing Loans in Romania



Source: NBR*[19, 20,21]*

Regarding the performances recorded by the Romanian banking system, starting from 2018, the ROA and ROE indicators began to decline, which stood at 1.55% and 14.58%, respectively, until 2020, decreasing by 0.6 p.p. and respectively by 5.92 p.p. compared to 2018. From 2021, the positive trend resumes in the level of ROA and ROE indicators that had positive values higher than 2020 from 0.95% to 1.36% and respectively 8.66% to 13.28% (Graph 7).

Graph 7: The Evolution of Performance Indicators in Romania



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
ROA	-1,32%	1,24%	1,08%	1,30%	1,55%	1,34%	0,95%	1,36%	1,50%	1,80%
ROE	-12,45	11,77%	10,42%	12,51%	14,58%	12,21%	8,66%	13,28%	16,40%	20,13%

Source: NBR*[19, 20,21]*

The profitability of the banking sector continued to increase due to the increase in net interest income through the increase in interest rates and the efficiency of operational expenses (including through digitalization).

3. Estimating the development of the rate on non-performing loans with the help of an economic model

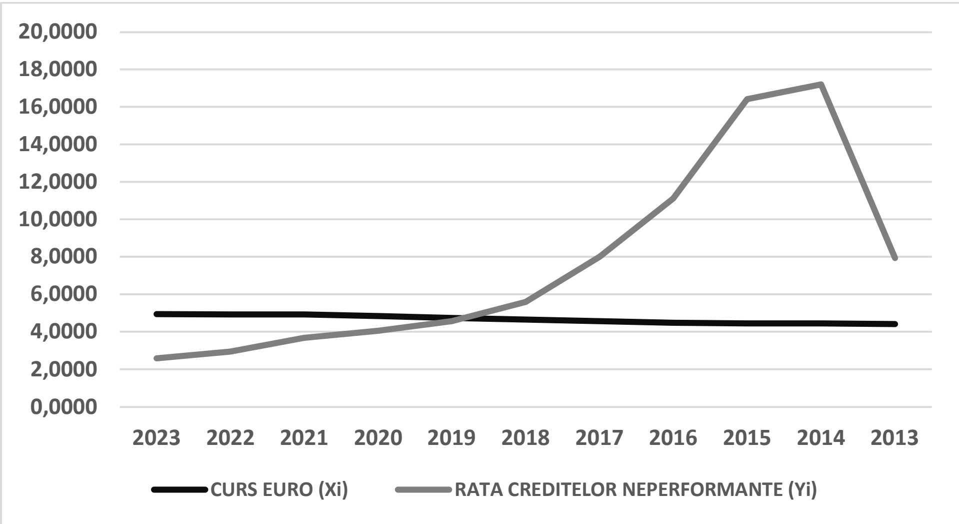
Through the following econometric study, we aim to determine the extent to which the rate of non-performing loans is influenced by the evolution of the Euro/leu exchange rate. For this purpose, we used the data provided by the BNR on the level of the exchange rate and the rate of non-performing loans, between september 2013 and september 2024, and we built a unifactorial econometric model of the form: y= ax+b+u

Where: u represents the residual variable and ax + b represents the first-degree function associated with the unifactorial model.

Therefore, y represents the real values of the dependent variable (the rate of non-performing loans) x represents the real values of the independent variable (the Leu/Euro exchange rate) u is the residual variable, with insignificant influences on the y variable.

In the case of a unifactorial model, the most frequently used procedure is the use of the "Method of the smallest squares". To apply this method, the data set is represented graphically, and the representation of these values must indicate an ascending line.

Graph 8: Development of the rate on non-performing loans



Source: www.NBR.ro – Statistics

From the graph it can be seen that the distribution of empirical points (Y) can be approximated by a straight line.

As such, the econometric model that describes the link between the two variables is transformed into a unifactorial linear model Y=a+bx+u, a and b representing the parameters of the model.

Application of M.C.M.P to estimate parameters a and b.

$$\sum\left[y_i-(a+bx)\right]^2=\min$$

From this condition, differentiating with respect to a and b, the following system of equations results:

$$\begin{cases} na+b\sum x_i == \sum y_i \\ a\sum x_i + b\sum x_i{}^2 = \sum x_i y_i \end{cases}$$

$$a=\frac{\begin{vmatrix} \sum y_i & \sum x_i \\ \sum x_i y_i & \sum x_i^2 \end{vmatrix}}{\begin{vmatrix} n & \sum x_i \\ \sum x_i & \sum x^2{}_i \end{vmatrix}}=\frac{\sum y_i \sum x_i^2-\sum x_i \sum x_i y_i}{n\sum x_i^2-(\sum x_i)^2}=$$

$$=\frac{84.09*240.64-51.4017*383.666}{11*240.6423-(51.4017)^2}=104.215$$

$$b = \frac{\begin{vmatrix} n & \sum y_i \\ \sum x_i & \sum x_i y_i \end{vmatrix}}{\begin{vmatrix} n & \sum x_i \\ \sum x_i & \sum x_i^2 \end{vmatrix}} = \frac{n \sum x_i y_i - \sum x_i \sum y_i}{n \sum x_i^2 - \sum x_i \sum x_i} =$$

$$\frac{11 * 383.666 - 51.4017 * 84{,}09}{11 * 240.6423 - 51.4017 * 51.4017} = \text{-}20.87$$

The econometric model is:

$$y(x_i) = 104.215 - 20.876x_i$$

The two parameters of the function are interpreted as follows:

a = 104,215 represents the rate of non-performing loans when the exchange rate is zero (theoretical case)

b =-20.876 represents the slope of the right and indicates that, when the exchange rate increases by one unit, the rate of non-performing loans decreases by 20 units.

In order to establish the proportion in which the amount of non-performing loans is determined by the value of the euro/leu exchange rate, the correlation coefficient and the correlation ratio must be calculated:

The linear correlation coefficient

$$r_{y/x} = \frac{n \sum x_i y_i - \sum x_i \sum y_i}{\sqrt{(n \sum x_i^2 - (\sum x_i)^2} \sqrt{(n \sum y_i^2 - (\sum y_i)^2}} =$$

$$\frac{11 * 383.666\text{-}51.4017\text{*}84.09}{\sqrt{(11\text{*}240.6423\text{-}51.4017^2)} * \sqrt{(11 * 913.3789 - 84.04^2}} = \text{-}0.8301$$

Conclusion: the correlation is strongly negative between variables r = -0.8301

The econometric model suggests that exchange rate variation has a negative impact on non-performing loans.

4. Conclusions

During 2023, the banking sector continued to perform adequately from a financial and macroprudential perspective, despite the challenges associated with the health crisis and the geopolitical situation in the region.

The ratio of bad loans and the ratio of restructured loans show that the banking sector in Romania is in the low risk category, while the adequate amount of non-performing loans covered by provisions had a counterbalancing influence.

The results of the study reveal that the level of non-performing loans consistently causes a lower profitability of the banking sector, as the spread of banks shrinks due to lower loan recovery and low loan yield.

Adequate credit risk management and the application of appropriate credit standards are essential to reduce the risk of non-performing loans and to ensure that banks" profitability is not affected.

References:

[1] Badea L.(coord.), Socol A.,Dragoi V., Diga I.A, (2010), *Managementul riscului bancar,* Editura Economică, Bucureşti .

[2] Berhani R., (2014), *Macroeconomic Determinants of Nonperforming Loans of in albanian banking system",* Conference: International Conference on Economic and SocialStudies, Sarajevo,Volume: Part 1, ISBN 978-9958-834-39-4.

[3] Castro, V. (2013) *„Macroeconomic determinants of the credit risk in the banking system: The case of the GIPSI,"* Econ. Model, vol. 31, no. 1, p. 672–683, doi: 10.1016/j.econmod.2013.01.027.

[4] Dănilă, O.M. (2012) *„Evaluarea riscului de credit din perspectiva Acordului Basel"* Finance, Economie teoretică şi aplicată, Volumul XIX, No. 3(568), pp. 60-75, ISSN 1841-8678 (print), SSN 1844-0029 (online)

[5] Dedu, V. (2010), *„Gestiunea riscurilor bancare prin prisma acordului Basel II," Economie teoretică şi aplicată* Volumul XVII, No. 2(543), p. 85-98.

[6] Dragoi E.V., (2013), *Gestiune bancară,* Editura Valahia University Press, Târgovişte

[7] Driga, I. (2004), *„Means of Reducing Credit Risk",* Annals of the University of Petrosani, Economics, Vol. IV, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1322830.

[8] Elsiger H., Lehar A., Summer M.,(2006), *Risk assessment for banking systems,* Management Science 52(9), 1301-1314, DOI: 10.1287/mnsc.1060.0531.
[9] Ekanayake, N., Athambawa A.A. (2015*) „Determinants of non-performing loans in licensed commercial bans : wvidence from Sri Lanka" ,* Researchgate.net.
[10] HadaT., Barbuta-Misu N., Iuga I.C.,Wainberg D.,(2020), *Macroeconomic Determinants of Nonperforming Loans of Romanian Banks, Sustainability*, 12, 7533; doi:10.3390/su12187533.
[11] Haneef S., Riaz T., Muhammad R., Mansoor R.A., Ishaq H.M., Karim Y., (2012*), Impact of Risk Management on Non-Performing Loans and Profitability of Banking Sector of Pakistan,* International Journal of Business and Social Science, 3(7), pp. 307-315 .
[12] Johannes P., Sheefeni S*., (2015), The Impact of Macroeconomic Determinants on Nonperforming Loans in Namibia, International Review of Research in Emerging Markets and the Global Economy* (IRRE), 1(4).
[13] Olteanu A., Olteanu (Rădoi) M. Antoaneta, (2007), *Managementul riscurilor financiar-bancare, vol. I, Editura Dareco, Colecţia „Cartea Universitară"*, pag. 55-56;
[14] Radoi M.A., (2009*), Gestiune bancară, Editura Economică,* Bucureşti
[15] Saom Shawleen A., Tasanova N., Nawar N., (2022), *Are non-performing loans sensitive to macroeconomic determinants?* An empirical evidence from banking sector of SAARC countries, Future Business Journal, https://doi.org/10.1186/s43093-022-00117-9.
[16] Santomero, A.M. (1997) *„Commercial Bank Risk Management: An Analysis of the Process" Finance,* Res., vol. 12, no. 2/3, p. 83–115, doi: 10.1023/A:1007971801810.
[17] Syed, A.A., (2021*), Determinants of Nonperforming Loans:A Review of Empirical Evidence,* New Challenges for Future Sustainability and Wellbeing, ISBN: 978-1-80043969-6, eISBN: 978-1-80043-968-9.
[18] Yurdakul F., (2014) *„Macroeconomic Modelling of Credit Risk for Banks",* Procedia - Soc. Behav. Sci., vol. 109, p. 784–793, doi: 10.1016/j.sbspro.2013.12.544.
[19] *** BNR, Raport asupra stabilității financiare, 2022, Anul VII (XVII), nr. 12 (22)
[20] *** BNR, Buletin lunar , 2013-2023
[21] *** BNR, Annual report, 2013-2022