Determinants of the Probability of Non-repayment of Loans Granted to Individuals

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ABSTRACT

This paper presents non-performing loans granted to individuals as well as methods of prevention and recovery. This risk of non-repayment is recorded when the debtor cannot honor his due obligations to the bank in time according to the credit agreement. The objectives of the homework are to understand the credit system of natural persons, to know and carefully analyze the client's file with the aim of making or not the credit decision and finally granting the loan. Credit restructuring is an essential method in counteracting the appearance of non-performing loans, which aims to support a bank's customers, so that they can deal with financial impasse situations that have temporarily arisen in the various stages of the development of credit contracts. The process of periodic verification of the contract with the borrower, the guarantees offered, including visits to the place where the client operates are essential factors in order to prevent the risk of default. Loans approved for borrowers who, during the course of the lending period, experience a worsening economic-financial situation are called non-performing loans, that is, they can no longer meet the terms of repayment of the loan, nor can they cover the interest expense and related commissions.

Key words: bank, COVID-19, credit, loans

1. Introduction

Loans approved for borrowers who, during the course of the lending period, experience a worsening economic-financial situation are called non-performing loans, that is, they can no longer meet the terms of repayment of the loan, nor can they cover the interest expense and related commissions (Bischof & Laux, 2021).

The factors that determine the appearance of these non-performing loans are multiple and difficult to define and in continuous transformation, due to the dynamics that manifest both in the economic and financial systems (Hasan & Hossain, 2022).

The recovery of non-performing loans can be done by applying several means, namely recovery by amicable means, recovery by the institution of banking supervision or by means of economic recovery or by forced execution (Lu& Nikolaev, 2021). Credit restructuring is an essential method in counteracting the appearance of non-performing loans, which aims to support a bank's customers, so that they can deal with financial impasse situations that have temporarily arisen in the various stages of the development of credit contracts.

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Loans obtained by natural persons can be of two types, namely short- and medium-term loans that cover certain temporary discrepancies between income and expenses and long-term loans that refer to the financing of real estate investments (Costello, 2020).

Short-term loans are usually consumer loans (Looney& Yannelis, 2022). These loans refer to the fact that the assessment of the quality of the person who contracts such a loan is based on income. For the second type of medium and long-term credit, its object is the purchase or execution of works on real estate. The value of the loan for this last type is slightly higher than in the case of short-term loans (Shang, 2020).

The grant medium-term loans for a period of time from one to five years (Hashim& Li., 2022).   This form of credit is generally granted for foreign trade activity and investment activity (Luo *et al.,* 2020). Long-term loans are granted and repaid over periods of more than five years. It is usually contracted for those investments with long lead times (Burlacu et al., 2020).

A loan can be called non-performing in any phase of the lending process, including the first analysis phase, due to reasons dependent or independent of banking practice. A loan can be considered non-performing, depending on the degree of prudence adopted by each individual credit institution (Yannelis& Zhang, 2021).

The factors that determine the appearance of these non-performing loans are multiple and difficult to define and in continuous transformation, due to the dynamics that manifest both in the economic and financial systems (Zhang, 2019).

2. The impact of the COVID-19 pandemic on non-performing loans

The National Bank of Romania provides monthly data on the rate of non-performing loans. Non-performing loans represent the sum of non-bank loans and interest classified as losses that are more than three months past due and/or for which judicial methods have been initiated against the debtor (Keys & Mahoney 2023). Off-balance sheet items and loans from foreign bank branches are excluded (Laux & Leuz, 2010).   The non-performing loans report covers both banking institutions that calculate the minimum capital requirement for credit risk according to the recommendations of the National Bank, as well as banks that use internal rating methods (Fabbri & Klapper, 2016).

The data on the rate of non-performing loans in Romania is updated monthly and an analysis of the rates was carried out over a five-year period from February 2018 to February 2022.

Table 1. The rate of non-performing loans in Romania 2018-2022

Year	The rate of non-performing loans
2018	4,96%
2019	4,09%
2020	3,83%
2021	3,4%
2022	3,37%

Source: National Bank of Romania data

Romania's economy coped in an excellent manner with the crisis created by the COVID-19 pandemic, as can be seen from the table, the rate of non-performing loans is decreasing from 2018 until now (Radulescu et al., 2021) (Burlacu et al., 2021) (Sarbu et al., 2021).

The measures instituted to limit the effects produced by the pandemic had predominantly positive results (Negescu et al, 2021), for example a chosen method is the moratorium on the temporary suspension of loan rates, it was adopted immediately after the beginning of the pandemic, it eased the financial difficulties of people in deadlock (Popescu et al. 2021), as for example, without an employment contract or with affected incomes (Blank & Hanson et al., 2020).

This moratorium is initially authorized for the year 2020 and extended until the year 2021, it expired at the end of 2021 and it remains to be seen with what percentage the rates suspended from repayment will be able to be supported in the future by those customers of the banks who have resorted to this method (Florescu & Burlacu, 2021).

The National Bank of Romania presents the fact that the following fluctuations in the rate of non-performing loans, at the level of organizations, as well as in the case of individuals, will be influenced by the dynamics of the entire economic system and the income situation of debtors who have accessed the moratoria payment of installments (Li&Strahan, 2020). According to the BNR, the share of non-performing loans owned by customers is 14.7% of the total contracted loans, so the effect on the banking system could be significant, if after the moratorium expires these debtors will not be able to pay their installments up to date.

The data showed an improvement, in February 2018 the NPL ratio reaches 4.96% compared to 3.37% in February 2022.

The rate of non-performing loans in May 2021, in the case of organizations that accessed the suspension of payments at banks, had a value of 12.3%, compared to 5.2% for those companies that did not access moratoriums, respectively 7.4% compared to 3.1% for individuals.
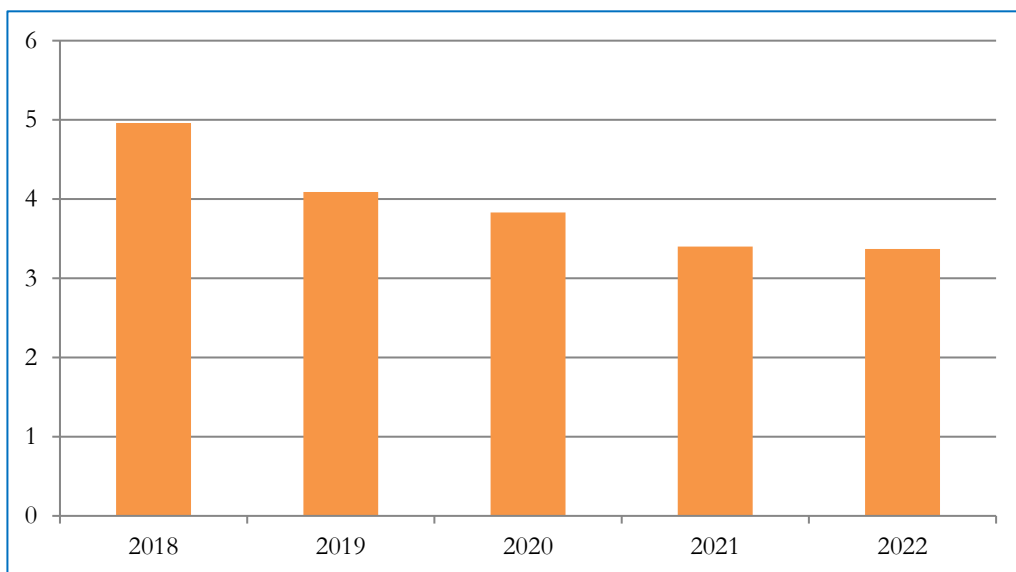
Figure 1. Analysis of the rate of non-performing loans over a five-year period 2018-2022. Source: author

The NBR also draws attention to the situations of the stress test exercise carried out at the end of 2021 on banking institutions, this test shows that the rate of non-performing loans would register 9.2% in 2021 and 9.9% at the end of 2022.

In the sixth month of 2021, this rate is 3.78%, down from previous months, but the forecasts are not clear, if you take into account the doubts about the development of the pandemic that still hang over the economy, and the mentions of aggravation of credit clauses both internally and externally, especially the increase in interest rates.

Analysts on the financial market predict that due to rising inflation, NBR will double the interest rate in the next year, resulting in more expensive loans for legal entities and individuals, as well as higher funding balances for the state.

Therefore, according to these arguments, the banking system is prepared to withstand a possible collapse due to an increase in the level of non-performing loans. The NBR wants to take all the necessary measures to prevent a phenomenon similar to that of the previous crisis, and following the crisis the non-performance rate exceeded 20% in 2014.

These methods taken by the NBR regarding the fluctuation of non-performing loans and the doubts related to the development of the pandemic, as well as the methods that the authorities could use in the event of a deterioration of the situation, would be favorable and would have timely consequences in the chain, from the improvement of the situation financial of credit organizations, to increase access to credits for companies, individuals and the state and, finally, to raise additional balances to the state budget.

Loan losses are expected to increase from 2.2% in 2021 to 3.9% in 2023, surpassing the 3.2% threshold in 2019. Total bank loans are expected to grow by 3.7% in 2022 and only 2.9% in 2023, a reduction from the pandemic value of 4.3% in the reference year.

3. Comparative analysis of the largest banks in Romania, Switzerland and Germany regarding the evolution of non-performing loans from 2017-2021

As part of this analysis, the evolution of the rate of non-performing loans in Romania, Germany and Switzerland was followed, and three of the largest banks in each state were chosen.

In Romania, the National Bank of Romania provides monthly information on the evolution of the rate of non-performing loans. According to NBR data in Romania, the rate of non-performing loans decreased in September 2021 and recorded a value of 4% of total loans.

The year 2020 ended with a rate of non-performing loans of 3.84% of total loans, lower than that of 2019 when a rate of 4.19% was recorded and that of 2018 with a value of 4.96%. This downward trend is a favorable result influenced by the flexibility of the prudential framework adopted by the NBR.

In March 2022 the rate of non-performing loans according to the definition of the European Banking Authority recorded a value of 3.31%, down from the previous year when it was 3.35%, but it could increase according to the NBR because there may be a probability that some customers will not be able to honor the payment of their deferred loans because they are affected by the sharp increase in prices produced by this coronavirus crisis.

In Germany, the World Bank annually transmits information on the rate of non-performing loans. Non-performing loans are recorded before deducting specific provisions for loan losses.

Germany's non-performing loans rate stood at 1.1% at the end of 2019, compared to 1.2% in 2018 and 1.5% in 2017.

The information on the rate of non-performing loans in Germany is updated annually, and in the case of Romania, this data is provided monthly. As in the case of Romania, the rate over the years had a downward trend, the country withstood the Covid 19 pandemic well and recorded much better values than Romania, having only a non-performing loan rate of 1.1% compared to of a value registered at the level of Romania of 3.4%.

In Switzerland, the situation is the same as in Germany, that is, also in the case of this country, the World Bank annually provides data on the rate of non-performing loans. Non-performing loans in this country are also recorded before the deduction of specific provisions for loan losses. Switzerland's non-performing loan rate was 0.8% at the end of 2020, compared to 0.6% in 2019 and 0.66% in 2018.

The rate of non-performing loans in Switzerland had a slight increase in 2020 by 0.2%, this being a cause of the Covid 19 crisis, but the value is much more favorable than the other two countries, Romania recorded in 2020 a much higher value of 3.83%. We can see that compared to Germany, the difference is not very big, in 2020 it registers a rate of 1.2% and the rate of non-performing loans in Switzerland is 0.8%, therefore more optimal than in the case of the other countries analyzed.

Table 2. Analysis of the rates of non-performing loans in the three countries presented in the period 2018-2020

Country Year	Switzerland	Germany	Romania
2018	0,64%	1,5%	6,4%
2019	0,66%	1,2%	4,96%
2020	0,6%	1,1%	4,09%

Source: author

The credit rate is advantageous throughout the analyzed years, especially in the case of Switzerland, which registers the best rate. The coronavirus crisis has affected Romania the most, which has the highest rate among all the countries analyzed.

Switzerland is the state that manages its loan portfolio best and recorded in 2020 a record value of the rate of non-performing loans in total loans. It is followed by Germany with a non-performing loan rate recorded at the end of 2020 of 1.1%, 0.5% higher than that of Switzerland.
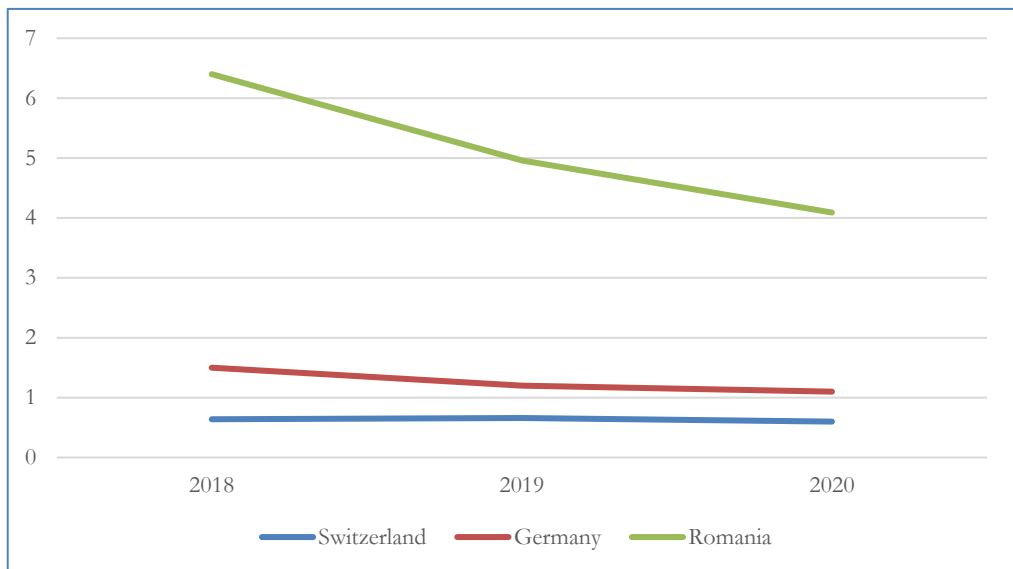

Figure 2. Analysis of the rates of non-performing loans in the three countries presented in the period 2018-2020. Source: author

In conclusion, the rate of non-performing loans in Switzerland is much more favorable than the other two countries, Romania recorded a much higher value than the other two countries in 2020 at 4.09%. We can see that compared to Germany, the difference is not very big, in 2019 it recorded a rate of 1.1% and the rate of non-performing loans in Switzerland is 0.6%, therefore more optimal than in the case of the other countries analyzed.

4. Conclusion

In conclusion, as individuals it is important for us to consult very carefully the products offered by as many lenders as possible, in order to identify the most suitable one for our needs and not face a risk of default later on.

The steps to identify the right type of credit for each person as well as the steps that we as individuals must follow in applying for and contracting a bank loan are very important. The probability of credit default risk can appear in any phase of the lending process, including the first analysis phase.

These loans are non-performing and appear when the client encounters difficulties in paying the loan, the factors that cause the production of these loans are multiple and difficult to define and in continuous transformation, due to the dynamics that manifest both in the economic and financial systems.

Determining the effective measures to eliminate these causes depend on the way of organization and the experience of each individual financial institution, as well as on the training, talent and insight of the personnel engaged in the lending activity. The recovery of non-performing loans is done by applying several means, namely by amicable means, by establishing banking supervision, by means of economic recovery and by forced execution.

If they see that the client is evasive or obstructing the bank, it resorts to the last phase of credit foreclosure and all the expenses caused by the recovery action are taken into account, in order to determine if the guarantees provided have the level to cover these expenses as well.

Banks anticipate all the events that may occur when faced with the risk of non-payment and resort to all the necessary measures provided in the credit agreement to recover the amount lent to the borrowers.

From my point of view, two of the essential methods taken by banks to deal with the risk of non-payment of loans are moratoria and restructuring of loans.

Credit restructuring is a banking operation that aims to support a bank's clients, so that they can deal with temporary financial impasse circumstances arising during the duration of the credit contracts. .

In conclusion, the application of appropriate lending and default risk management measures by banks are considerable to reduce the risk that loans become non-performing and that these banks concentrate bad loans.

References

Bischof J.& Laux C., 2021. Accounting for financial stability: Bank disclosure and loss recognition in the financial crisis. Journal of Financial Economics, 141(3): 1188–1217

Blank M, Hanson S.G et al., 2020. How should us bank regulators respond to the covid-19 crisis? Hutchins Center on Fiscal and Monetary Policy at Brookings, Hutchins Center Working Paper, 63

Costello, A.M., 2020. Credit market disruptions and liquidity spillover effects in the supply chain. Journal of Political Economy, 128(9), 3434-3468

Fabbri, D. & Klapper, L.F., 2016. Bargaining power and trade credit. Journal of Corporate Finance, 41, 66- 80

Harris S., Khan U., 2018. The expected rate of credit losses on banks' loan portfolios. The Accounting Review, 93(5):245–271

Hasan, M.M.& Hossain, A.T., 2022. CEO inside debt holdings and trade credit. Accounting & Finance, 62(3), 3677-3709

Hashim N & Li W., 2022. The development of expected-loss methods of accounting for credit losses: A review with analysis of comment letters. Accounting Horizons, 36 (3):71–102

Keys B.J & Mahoney N., 2023., What determines consumer financial distress? place-and person-based factors. The Review of Financial Studies, 36(1):42–69

Laux C.& Leuz C. 2010. Did fair-value accounting contribute to the financial crisis? Journal of economic perspectives, 24(1):93–118

Li L.& Strahan P.E, 2020. Banks as lenders of first resort: Evidence from the covid-19 crisis. The Review of Corporate Finance Studies, 9(3):472–500

Looney A.& Yannelis C., 2022. The consequences of student loan credit expansions: Evidence from three decades of default cycles. Journal of Financial Economics, 143(2):771–793

Lu Y.& Nikolaev V., 2021. Expected loan loss provisioning: An empirical model. Chicago Booth Research Paper, (19-11)

Luo J. *et al.,* 2020. Unsupervised quadratic surface support vector machine with application to credit risk assessment, European Journal of Operational Research

Shang, C., 2020. Trade credit and stock liquidity. Journal of Corporate Finance, 62, 101586

Yannelis C.& Zhang A., 2021. Competition and selection in credit markets. Technical report, National Bureau of Economic Research

Zhang, Z., 2019. Bank interventions and trade credit: Evidence from debt covenant violations. Journal of Financial and Quantitative Analysis, 54(5), 2179-2207

Negescu, M. D. O., Burlacu, S., Biner, M., Gombos, S. P., Kant, A., & Troacă, A. V. (2021). Paradigms of Public Administration Digitalization in The Context of The Covid-19 Pandemic. *In Proceedings of Administration and Public Management International Conference* (Vol. 17, No. 1, pp. 109-115).

Florescu, M.S. & Burlacu, S. (2021.) Needs and expectations of researchers during the COVID-19 pandemic. *The 29th NISPAcee Annual Conference "Citizens' Engagement and Empowerment - The Era of Collaborative Innovation in Governance"* Ljubljana, Slovenia New term: October 21-23, 2021

Popescu, M. L., Gombos, S. P., Burlacu, S., & Mair, A. (2021). The impact of the COVID-19 pandemic on digital globalization. In *SHS Web of Conferences* (Vol. 129, p. 06008). EDP Sciences.

Burlacu, S., Patarlageanu, S. R., Diaconu, A., & Ciobanu, G. (2021). E-government in the era of globalization and the health crisis caused by the covid-19 pandemic, between standards and innovation. *Les Ulis: EDP Sciences.* doi: http://dx.doi.org/10.1051/shsconf/20219208004

Sarbu, R., Alpopi, C., Burlacu, S., & Diaconu, S. (2021). Sustainable urban development in the context of globalization and the health crisis caused by the covid-19 pandemic. *Les Ulis: EDP Sciences.* doi: http://dx.doi.org/10.1051/shsconf/20219201043

Radulescu, C.V.; Ladaru, G.-R.; Burlacu, S.; Constantin, F.; Ioanăş, C.; Petre, I.L. (2021) Impact of the COVID-19 Pandemic on the Romanian Labor Market. *Sustainability 2021*, 13, 271. https://doi.org/10.3390/su13010271

Burlacu, S., Profiroiu, M. C., Rădulescu, C. V., & Angheluţă, S. P. (2020). IT Governance in Romania During the Covid-19 Pandemic. *In Proceedings of Administration and Public Management International Conference (Vol. 16, No. 1, pp. 83-88). Research Centre in Public Administration and Public Services, Bucharest, Romania.*