DOI 10.20544/HORIZONS.A.31.2.22.P07
UDC 336.77:[336.71:658.155(497.7)

# NON-PERFORMING LOANS AND BANKS' PROFITABILITY:EVIDENCE FROM NORTH MACEDONIA[1]

**Tatjana Spaseska, PhD**
Faculty of Economics – Prilep, tatjana.spaseska@uklo.edu.mk
**Dragica Odzaklieska, PhD**
Faculty of Economics – Prilep, dragica.odzaklieska@uklo.edu.mk
**Aneta Risteska-Jankuloska, PhD**
Faculty of Economics – Prilep, aneta.risteska@uklo.edu.mk

**ABSTRACT**

One of the basic preconditions of establishing dynamic economic development is founding a stable and contemporary banking system. Namely, the commercial banks are the backbones of the financial system of each country, especially in developing countries such as North Macedonia where the capital market is in initial phase of development. Consequently the banks' loans are the main source for financing the businesses which in turn contributes to the economic development of the countries.

Loans play dominant role in banks' activities and they are related with credit risk. Therefore, the banks usually want it to be a performing one, since its nonpayment leads to incidence of huge loss. Consequently, the quality of credit portfolio determines the performance of the banks and it is a crucial factor affecting the profitability of individual banks and the entire banking sector.

In the relevant literature, one of the most commonly used proxies of banks' credit portfolio quality is non-performing loans ratio (NPLs).Regarding this, the main objective of the paper is to investigate the relationship between the non-performing loans and banks' profitability in the Macedonian Banking System.

**KEY WORDS**: banks, non-performing loans, return of assets, return of equity, net interest margin.

[1] original research paper

## INTRODUCTION

Banking institutions have a crucial role in the economic development of each country, since they have irreplaceable role in providing financial resources of non-state sector which contribute to accelerate economic growth. Such role of the commercial banks is especially stressed in developing and transition economies like North Macedonia, where the banking sector has a dominant participation in the total assets of the financial system.

Explicitly, banks have the highest share in the Macedonian financial system assets of80.5 % (NBRM, 2020). Consequently, the security and stability of the Macedonian financial system as a whole depends on the security and stability of the banking system.

Although, the activities of the commercial banks are not limited only to traditional banking activities (such deposits and loans), and nowadays they offer many other non-banking services, bank loans are the most dominant activities of the banks and the main source for banks' revenues. Since crediting is a major banks' activity, it is logically to conclude that dominant risk in their working is the credit risk. The credit risk is usually expressed by inability of the banks' client to meet their obligations towards the bank in the agreed amount or within the agreed terms. These loans are known as non-performing loans and their relation to total loans (non-performing loans ratio) is basic indicator of the banks' credit portfolio quality.

The consequences of non-performing loans are common at the macro level, they prevent the placement of loans in the economy because capital is tied to non-performing loans, which limits investment and consumption and thus threatens growth potential and even financial stability. At the micro level, NPLs are a burden on banks 'profitability and efficiency. Actually, they result in increased financing costs and banks' capital.

Thus, increased NPLs are equal with decreased profitability rate and banks' capital adequacy because if the bank wants to cover its credit risk exposure, it must increase reservation costs and decrease the reserves, which in turn has negative influence on banks' solvency. So, in order to minimize the negative effects of increased volume of NPLs, the bank need to put money aside as a safety net and this results in decreased ROE (Return on Equity rate). From all this above, it could be concluded that non-performing loans have negative influence on the banks' financial results, it decreased the net profit or increased the bank losses on the first side, and NPLs reduced the return on equity, on the other side (Ranka Mitrović, 2014).

Regarding all this above, the main goal of this study is to examine the relationship between the non-performing loans and banks' profitability. The research is focused on the analysis on one independent variable, the non-performing loans ratio as a proxy of the banks' credit portfolio quality and its influence on the banks' profitability expressed by return of average assets (ROAA), return of average equity (ROAE) and net interest margin (NIM).

The rest of the paper is organized as follows. Section 2 gives a brief overview of previous findings regarding non-performing loans as a determinant on the banks' profitability. This section also examines the relationship between non-performing loans and banks' profitability in different countries worldwide. Section 3 briefly introduces the reader into the level of non-performing loans and profitability analysis of the Macedonian Banking System. The last section concludes and recommends.

## LITERATURE REVIEW

Numerous theoretical and empirical studies have attempted to establish a relationship between the banks' performance and non-performing loans and some of them revealed that there is an ambiguous positive relationship between these variables, while others reject these results.

Notable among them is study conducted by S.K.Singh et al. (2021). The main objective in their research was to find out the effect of Non-Performing Loan (NPL) of Nepalese conventional banks' profitability. In order to reach this goal the authors used multiple regression analysis and the results of study have shown that ROA, Bank Size, GDP, and Inflation have a significant effect on NPL. In a similar study in Vietnam, HoaiLinh Do *et al.* (2020) found that when the rate of non-performing loans increases, the bank's ROA will decrease, meaning that the bank profitability will be lowered. The study conducted by Muhammad A.K. et al. (2020) aimed to scrutinize the determinants of NPLs observing a case of the banking sector in Pakistan over the period from 2005 to 2017. Their findings revealed that the operating efficiency and profitability indicators have a negative association with NPLs but were statistically significant. Such relationship between the banks' profitability and NPLs was confirmed by Michael N.B. (2018). On the other hand, Rathria*et al.* (2018) aims to shed light on bank-specific factors that affect loan default problems in developing countries whose banking sectors play a major role in the overall economy. Applying fixed effects panel regression model reveals that Indonesian banks' profitability and credit growth negatively influence the NPLs. Moreover, banks with higher profitability are proven to have lower NPLs because they can afford adequate credit management practices. Likewise, banks with higher credit growth evidently have lower NPLs in the sense that they demonstrate more specialized lending activity and thus have better credit management systems. These findings imply that, in order to lower loan defaults that can deteriorate banks' asset quality, banks should maintain their level of profitability and increase, rather than decrease, their credit supply to debtors. Similar results are obtained of the research by Ozurumba, B. A. (2016). He explored the impact of NPLs on the performance of selected commercial banks in Nigeria and found out that return on asset and return on equity have inverse relationship with non-performing loans and loan loss provision respectively while they are positively related to loans and advances. The conclusion therefore is that the effects of non-performing loans on commercial banks' performance is negative and cannot be underestimated, and poses a fundamental danger to the very existence of the banks as corporate business entities. The same relationship between the NPLs and banks' profitability were confirmed byJohn N. N. Ugoani (2016) who revealed that non-performing loans portfolio has negative effect on bank profitability. Also, the study conducted by Peter K. *et al.* (2018) have shown that occurrence of non-performing loans is negatively associated with the level of profitability in commercial banks in Tanzania. Similarly, Huseyin Cetin (2019) observed the relationship between non-performing loans and Selected EU Members Banks Profitability. Their findings indicate that non-performing loans had significant negative impact on return on asset ratios for 10 EU members' banks. In another study, Kingu et al. (2018) examined the impact of Non-performing loans on bank's profitability using information asymmetry theory and bad management hypothesis. The study found that occurrence of non-performing loans is negatively associated with the level of profitability in commercial banks in Tanzania. The study conducted by Ahmadu A. *et al.* (2019) examined the effect of credit risk management on the banks financial performance. Regression results from the fixed effects model (FEM) reveals that capital adequacy ratio (CAR), return on asset (ROA) and loans-to-deposit ratio (LDR) have positive and significant impact on the financial performance; while non-performing loans ratio (NPLR), cost-to-income ratio (CIR) and liquidity ratio (LR) have no significant impact of the financial performance measured by the ROE. Athanasoglou *et al.* (2005) found a negative relation between credit risk and bank profitability. Their findings have shown that in the Greek banking system, capital is important in explaining bank profitability and that increased exposure to credit risk lowers profits. This again confirms the negative relationship between bad debt and the ability to make profit of banks.

Regarding the research related to the impact of non-performing loans on banks' profitability in North Macedonia, it can be concluded that the studies are limited. One of the recent studies is the research revealed by Kjosevski et al. (2019). Using Autoregressive Distributed Lag Modelling Approach (ARDL) for the period 2003Q4 to 2014Q4 they conclude that the profitability of banks, the growth of loans to enterprises and to households respectively, as well as the growth of GDP, all have a negative impact, while banks' solvency and unemployment have a positive impact on the rise of non-performing loans in both models. K. Poposka (2015) concluded that liquid assets/total assets and personnel expenses/non-interest expenses represent key factors influencing the level the NPLs in the banking sector in the Republic of Macedonia. On the other side, Jolevski (2017) investigates the relationship between non-performing loans and the basic indicators for banks' performance in the Republic of North Macedonia for the period 2007-2015. His findings indicate a significant impact of the non-performing loans on banks' performance indicators, e.g. a large share of non-performing loans to total loans leads to deterioration in the financial and liquidity position. The same author, in other study investigates the influence of the non-performing loans ratio on profitability indicators in the banking system of the Republic of Macedonia for the period 2007-2015. His findings have shown a moderately high negative correlation between the non-performing loans ratio and rates of return on equity and return on assets. Regression analysis shows that increasing the nonperforming loans ratio has influence by reducing bank profitability. M. Nikolov and N. Popovska-Kamnar(2016) examines macroeconomic and bank specific determinants of NPLs in Macedonia using descriptive and econometric analysis. Their finding confirmed that as long as the economy is stable and banks are profitable and have adequate capital, nonperforming loans are on a level suitable for the banks.

## NON–PERFORMING LOANS AND PROFITABILITY OF THE MACEDONIAN BANKING SYSTEM

The banking system of North Macedonia is the core of the financial system of the economy, since it participate with 80.5 % in the financial system assets. Consequently, the security and stability of the Macedonian financial system as a whole depends on the security and stability of the commercial banks.

One of the most dominant activities in the operations of the commercial banks in North Macedonia is banks' loans. According to published reports of the National Bank of North Macedonia, it is evidently continuous growth of the total credit exposure in the period during 2005 to 2020, but our analysis shows that the level of non-performing loans to total loans has declining trend. Namely, it is evidently (figure 1) that in 2005 the NPLs to total loans were on a level of 15% and it decrease to 3.4% at the end of 2020.

Although, the Macedonian banks were working in hard conditions due to the pandemic, the non-performing loans ratio as a basic indicator of the loan portfolio quality was at the historic low level of 3.4% at the end of 2020 (Figure 1). The reduction of non-performing loans was influenced by the regulatory measure for mandatory write-off of fully provisioned nonperforming loans and by regulatory measures undertaken by the National Bank in the area of credit risk management, primarily the introduction of the possibility for temporarily delayed repayment of loans due to corona crisis (NBRM, 2020). Such dynamic of the non-performing loans ratio was as a result from the decrease of the volume of the non-performing loans in enterprises by 31.4%. Similar trend was evident to households where NPLs decreased by 12.6%. As a result of such movements, the quality of loan portfolio of banks, measured by share of non-performing to total loans in non-financial sector, improved by 1.4 percentage points in 2020, e.g. reached historically lowest level of 3.4%. On the other side, it should be noted that the coverage of non-performing loans with impairment remained relatively high and increased in 2020 (73.2%), which along with the satisfactory volume and quality of own funds, limited the potential adverse effects on the banks' solvency from default of these loans. The level of NPLs in North Macedonia during the period 2005-2020 is shown in Figure 1.

The NPL ratios in the CESEE region have greatly improved over the last five years and NPL levels have continued to decline in the last 12 months, despite the Covid-19 pandemic. As of 30 June 2020, the average NPL ratio reached 3.6% (a decrease of 0.4 percentage point) the region NPL ratio is now only slightly above the EU average of 2.9%. North Macedonia with NPLs ratio from 3.4% in 2020, has a little smaller ratio of about 0.2% compared to the level of NPL ratio in CEESE region. (Vienna Initiative 2020).

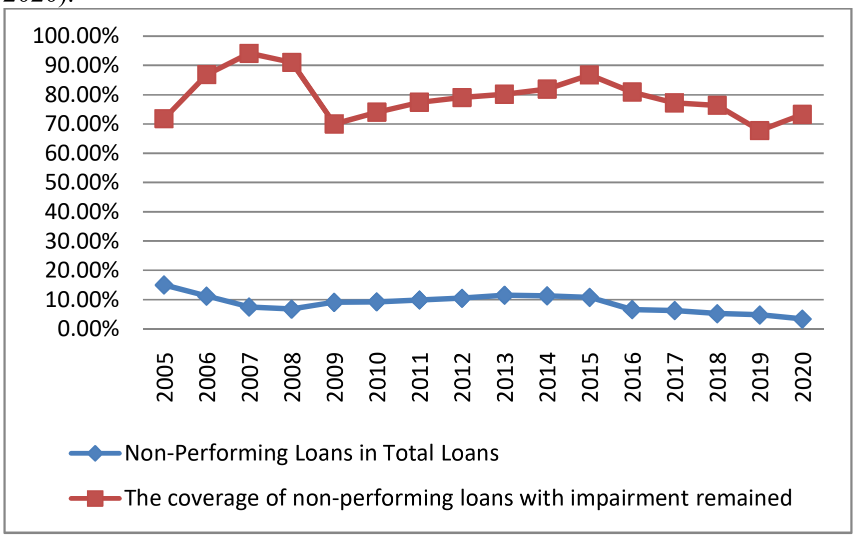


Figure 1. Non-performing Loans to Total Loans and the coverage of NPLs with impairment remained

*Source: Authors compilation from the Reports on the risks in the banking system of the Republic of Macedonia during the period from 2005 to 2020*

Regarding the profitability of the Macedonian banks, despite the COVID-19 pandemic, they continue to gain high profits (Spaseska et al, 2022). Profitability of banks is generally measured by return on asset (ROA), return on equity (ROE) and net interest margin (NIM) (Spaseska et al, 2018). In our study we used Return on Average Assets (ROAA) as a measure of profitability in banks because ROA incorporates the broadest aspect of the banking business as it mirrors the ability of bank management to generate profits from the available bank asset, Return on Average Equity (ROAE) as an indicator that shows the return rate that the shareholders have realized on the invested capital in the bank, such as Net Interest Margin which shows the net return interest realized by the bank on the available resources.

The following graph (Figure 2) shows the profitability of banking institutions in the Republic of North Macedonia, measured by Return on

Average Assets (ROAA), Return on Average Equity (ROAE) and Net Interest Margin (NIM). According to the National Bank of the Republic of North Macedonia, the profitability of the banking sector has a trend of continuous improvement during the last 10 years.

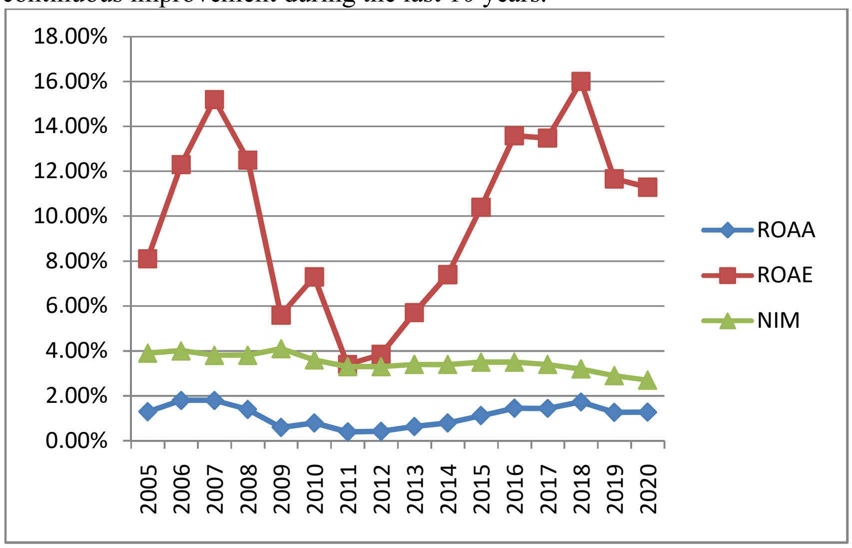


Figure 2. Return on Average Assets (ROAA) and Return on Average Equity (ROAE), 2005-2020

*Source: Authors compilation from the Reports on the risks in the banking system of the Republic of Macedonia during the period from 2005 to 2020*

From the graph above it can be concluded that during the period of 2009 up to 2015, the value of ROAA was under one, and from 2016 up to nowadays the value is greater than one. On the other hand, the banks' profitability measured by ROAE is in a slight increasing. Actually, in 2016, against a background of historically low interest rates and in conditions of slower economic growth and domestic political instability, banks registered a positive financial result and realized solid rates of return on average assets and average equity and reserves. According to NBRNM the improvement of profitability and strengthening of the operational efficiency in banks is most significant, in conditions of higher growth of net interest income relative to the growth of operating costs, primarily costs for employees. However, banks face a challenge in terms of the further maintenance of the level of profitability, in conditions of less room for "managing" profitability due to historically very low interest rates and the intention to gradually abandon the application of adjustable interest rates, which in the medium run will impose a need for changes in their participation in the credit and deposit market and in the area of the risk management.

During 2018 as the most successful year, banks registered high profit from their operations, which significantly improved the rates of return on average assets and average capital and reserves equaled 1.7% and 16%, respectively, which is at the level registered in 2007, when the banking sector was in a high-growth stage. The net interest income decreased moderately on annual basis, thus contributing negatively to the annual growth of the banking sector's profit for the first time since 2010.

In 2019, Macedonian Banking System continued to be profitable, but with lower financial results compared to 2018. Consequently, the profitability and efficiency indicators decreased significantly, but still maintain at an appropriate level. Thus, the challenge remains for banks to generate positive growth rates of net interest income or expand their sources of income through diversification of banking activities, but also to reduce operating costs in order to ensure sustainable profitability of the banking sector in the medium and long term. Such positive financial results of the Macedonian banking sector continued in 2020, despite the fact that it was extremely difficult year of global pandemic which affected all society segments. Namely, according data of listed companies on the Macedonian Stock Exchange, three banks are in top 5 companies with the highest financial results. It means that in terms of global pandemic and health crisis, the banking sector in Macedonia is the most profitable sector.

## CONCLUSION

Banking institutions has a crucial role in the developing countries with bank-based economic systems such North Macedonia. They are the main source for financing the corporate sector, since the capital markets of these countries are still emerging. So, banks play a major role in the economic growth in most transition and developing economies.

Credit activity is a core banking activity in the Banking System in Republic of North Macedonia. The quality of the banks' credit portfolio is related with the level of non-performing loans. Increased level in non-performing loans requires increased banks provisions against probable loan losses and carry out internal consolidation to improve asset quality, including writing-off loans. Consequently, high level of NPLs leads to a lower ROA and ROE, and affects the solvency and liquidity of the banking system in general.

The analysis in this paper has shown that the level on non-performing loans continuously decreased for the analyzed period with exception of the period after the global financial crisis, and increased profitability indicators of the Macedonian banking system. Such results confirm that despite the convulsive shock caused by COVID-19 pandemic the Macedonian banking system has the capacity to support the corporate sector and households and it remains sound and stable.

REFERENCES:

1. Jordan Kjosevski, MihailPetkovski, Elena Naumovska (2019) Bankspecific and macroeconomic determinants of non-performing loans in the Republic of Macedonia: Comparative analysis of enterprise and household NPLs, Economic Research, 32:1, 1185-1203, DOI: 10.1080/1331677X.2019.1627894
2. Ahmadu, A., Sulaiman, A. S., Bello, U. &Mijinyawa, U. M. (2019). Credit Risk Management and Financial Performance of Quoted Deposit Money Banks in Nigeria. University of Port Harcourt Journal of Management, 1(4), 178-192. ISSN: 2536-7048 *(PDF) Credit Risk Management and Financial Performance of Quoted Deposit Money Banks in Nigeria*. Available from: https://www.researchgate.net/publication/333774216_Credit_Risk_Management_and_Financial_Performance_of_Quoted_Deposit_Money_Banks_in_Nigeria [accessed Feb 14 2022].
3. Athanasoglou, P.P., Sophocles, N.B. and Matthaios, D.D. (2005), "Bank-specific, industry-specific and macroeconomic determinants of bank profitability", *Working paper, Bank of Greece,* pp. 3-4.
4. HoaiLinhDoa, ThanhXuanNgoa, QuocAnhPhunga (2020) The effect of non-performing loans on profitability of commercial banks: Case of Vietnam, *Accounting 6*, 373–386
5. Huseyin Cetin (2019) The Relationship between non-Performing Loans and Selected EU Members Banks Profitabilities, International Journal of Trade, Economics and Finance, Vol. 10, No. 2
6. Kingu, P. S., Macha, S., &Gwahula, R. (2018). Impact of non-performing loans on bank' profitability: Empirical evidence from commercial banks in Tanzania. International Journal of Scientific Research and Management, 6(01). https://doi.org/10.18535/ijsrm/v6i1.em11

7. LjubeJolevski (2017) Non-performing Loans and Profitability Indicators: The case of the Republic of Macedonia, JCEBI, Vol.4 No.2, pp. 5 – 20
8. LjubeJolevski (2017) The Impact of Non-performing Loans to Bank's Performance: The case of the Republic of Macedonia, Journal of economy and market communication, No II, p.184-19
9. Michael N.B. (2018) Effects of Non-Performing Loans on the Profitability of Commercial Banks - A Study of Some Selected Banks on the Ghana Stock Exchange. Global Journal of Management and Business Research: C Finance Volume 18 Issue 2 Version 1.0 Publisher: Global Journals
10. Muhammad Asif Khan, AsimaSiddique, ZahidSarwar (2020) Determinants of non-performing loans in the banking sector in developing state, Asian Journal of Accounting Research. Vol. 5 No. 1, 2020 pp. 135-145 Emerald Publishing Limited 2443-4175
11. NBRM (2020) Report on Risks in the Banking System of the Republic of North Macedonia in 2020
12. NBRM (2020) Financial Stability Report for the Republic of North Macedonia in 2020
13. Nikolov, Miso; Popovska-Kamnar, Neda (2016) : Determinants of NPL growth in Macedonia, Journal of Contemporary Economic and Business Issues, ISSN 1857-9108, Ss. Cyril and Methodius University in Skopje, Faculty of Economics, Skopje, Vol. 3, Iss. 2, pp. 5-18
14. Ozurumba, B. A. "Impact of Non-Performing Loans on the Performance of Selected Commercial Banks in Nigeria. Research Journal of Finance and Accounting, 7(16), 95-109, 2016.
15. Peter Stephen Kingu, SalvioMacha, Raphael Gwahula (2018) Impact of Non-Performing Loans on Bank's Profitability: Empirical Evidence from Commercial Banks in Tanzania, International Journal of Scientific Research and Management (IJSRM) Volume 06 Issue 01 Pages EM-2018-71-79 2018
16. Poposka, K. (2015). *Bank specifi c determinants of non-performing loans in the Republic of Macedonia*, Economic Development, No.1-2/2015, Skopje, pp.101-116.
17. RankaMitrović, (2014) Problematičnikrediti - kamenspoticanjarealnogifinansijskog sector, *UDK336.77:330.322 336.717* Vol. 11, No 4, p.161
18. RathriaArrinaRachman, YohanesBerenikaKadarusman, Kevin Anggriono, RobertusSetiadi, 2018, Bank-specific Factors Affecting Non-performing Loans in Developing Countries: Case Study of Indonesia, *Journal of Asian Finance, Economics and Business* Vol 5 No 2, 35-42

19. Sanju Kumar SINGH, Basuki BASUKI, Rahmat SETIAWAN (2021) The Effect of Non-Performing Loan on Profitability: Empirical Evidence from Nepalese Commercial Banks, Journal of Asian Finance, Economics and Business Vol 8 No 4
20. Spaseska T., Risteska A., Odzaklieska D., Risteska F. (2018) Profitability Analysis of the Banking Sector in Republic of Macedonia, VIII. Internatonal Balkan and Near Eastern Social Sciences Congress Series - Plovdiv / Bulgaria
21. T. Spaseska, D. Odzaklieska, I. Hristoski, A. Risteska-Jankuloska, F. Risteska (2022)The Impact of COVID-19 pandemic on Banks' Profitability: Evidence from North Macedonia. XVII. IBANESS Congress Series on Economics, Business and Management – Plovdiv / Bulgaria
22. Vienna initiative (2020) NPL monitor for the CESEE region H2-2020