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Credit Risk Management in the Banking System of Republika Srpska in Crisis Period

Abstract: *Considering the character, development and the current economic conditions of business operations in Republika Srpska (undeveloped capital market, inadequate legal regulations for the realization and collection of collaterals, the dominant participation of loan business operations in the overall banking), the greatest attention in controlling the banking sector is paid to the control of loan, liquidity and foreign exchange risks. This sector has recently recorded a decline in non-performing loans and a slight growth in profitability, as shown by negative correlation coefficients a few years ago. The aim of this paper is to focus attention on the NPLs and the possibility of their growth, as well as the discovery of new models for controlling them. In this paper, the method of analysis shows indicators of banking sector's profitability, total loans and non-performing loans from the onset of the crisis to date. Hypothesis set in this paper is that the participation of non-performing loans in the banking sector of Republika Srpska is too great and threatens loan activities and successful business operation. After a bad experience with two banks and serious problems that depositors have been facing, as they have not received their money and it is questionable whether they will ever get it, it is necessary to more thoroughly monitor business operations of each bank as well as the overall banking sector in order to react in time to prevent major problems.*

Keywords: *credit portfolio, capital market, banking sector, credit risk, banks*

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Upravljanje kreditnim rizikom u bankarskom sistemu Republike Srpske u kriznom periodu

Apstrakt*: S obzirom na karakter i razvijenost, te trenutne ekonomske uslove privređivanja u Republici Srpskoj (nerazvijenost tržišta kapitala, neadekvatna zakonska regulativa za realizaciju i naplatu kolaterala, dominantno učešće kreditnog poslovanja u ukupnom poslovanju bankarskog sektora), najveća pažnja u kontroli poslovanja bankarskog sektora se posvećuje kontroli kreditnog rizika, rizika likvidnosti i deviznog rizika. U poslednje vrijeme u ovom sektoru bilježi se pad nekvalitetnih kredita i blagi rast profitabilnosti što pokazuju koeficijenti koji su prije nekoliko godina imali negativan predznak. Cilj ovog rada je usmjeravanje pažnje prema NPL i mogućnosti njihovog rasta kao i otkrivanje novih modela za njihovu kontrolu. U ovom radu, metodom analize prikazani su pokazatelji profitabilnosti bankarskog sektora, ukupni krediti i nekvalitetni krediti od nastanka krize do danas. Hipoteza rada je da je učešće nenaplativih kredita u bankarstvu Republike Srpske preveliko i ugrožava kreditne aktivnosti i uspješno poslovanje. Nakon lošeg iskustva sa dvije banke i ozbiljnih problema koje i danas imaju deponenti jer nisu dobili svoj novac i pitanje je da li će ga ikad dobiti, potrebno je temeljnije praćenje poslovanja svake banke kao i ukupnog bankarskog sektora kako bi se na vrijeme moglo reagovati da ne dođe do većih problema.*

Ključne reči*: kreditni portfolio, tržište kapitala, bankarski sektor, kreditni rizik, banke*

1. Introduction

Each loan carries a certain amount of risk caused by probability that the debt will be settled and that the debtor's obligation will be serviced in accordance with the agreed terms. If credit losses occur, they can cause reduced growth and development as well as endanger the bank's survival on the market. In order to prevent negative business operations and problems during the return of credit funds, one of the bank's priority tasks is to monitor the operation of the loan beneficiary, as it would be able to respond in time and prevent the consequences. Threats to the prospects of growth and development of the banking sector and its future successful operations in Republika Srpska are the weakening of external incentives for economic development and the deepening of internal economic weaknesses, while the implementation of regulatory and structural reforms is necessary. The continuation of trend of credit portfolio deterioration of both legal entities and natural persons is worrying. Non-performing loans are significantly higher in legal entities. Unwillingness of relevant institutions to timely implement required legal measures for establishing an adequate framework for resolving non-

performing loans related problem can result in further growth of non-performing claims and additional costs. Additionally, the analysis of the main factors behind the dynamic in volume of non-performing loans was made, with important implications for decision makers on both level, within banks and the supervisory institution.

2. Banking Sector of Republika Srpska - transition, development and management

One of the main differences between the developed countries of Western Europe and the countries of Central and Eastern Europe is that the former is mostly characterised by financial systems based on the securities market, while the financial systems of Central and Eastern European countries are mostly bank-centric (Delić, Rogić & Dumančić, 2017). Foreign banks' motives to enter transition countries are the expansion to new markets and new business opportunities. Political, macroeconomic stability of the countries in transition, the good prerequisites for these countries' accession to the European Union, as well as liberal economic policy are the most important for all banks operating in transition countries. Local supervising institutions, with the increased presence of foreign banks, must improve the skills of employees with the aim of supervising new more complex services introduced by foreign banks. Aiming at more efficient management of risks in the Republika Srpska banking sector, a number of decisions have been passed, which the banks must abide by, such as decisions defining minimum capital standards and minimum standards for the flow and implementation of capital management programmes. Since capital represents an economic and strategic resource, capital management has to be one of the most important components of careful, efficient and strategic planning of the bank management. Capital is the bearer of all positive and negative tendencies in the bank's operations and represents a guarantee to big clients in the event of bank liquidation (small clients are protected by the Deposit Insurance Agency of Bosnia and Herzegovina).

Regulator's task is to monitor the trends of the actual and prescribed capital ratio of the bank. If the actual ratio falls below the prescribed level, the regulator should take concrete measures against the bank. The prescribed capital adequacy ratio in Montenegro, Croatia and Bosnia and Herzegovina is 12%. Under the decision of the National Bank of Serbia in accordance with the Basel 1 Accord, capital adequacy ratio in Serbia has been 8%, since mid-2017. Regulatory authorities are trying to ensure the safety of the banking system through the insistence on maintaining the high capitalization of banks (Plakalović, Alihodžić, 2015).

The regulator may stipulate specific capital requirements that are higher than the statutory requirements if the regulator assesses that the bank is exposed to greater risks in its business operation. According to the decision on minimum standards for credit risk management, the bank is obliged to pass, implement and maintain clear and rational policies ensuring that its asset items are not too concentrated, i.e. the bank should be focused on implementing the principles of rational diversification and the maturity structure of the sources of its assets and placements. One of the basic goals of the Republika Srpska Banking Agency is maintaining a healthy and stable banking system and improving its safe and quality business. In order to achieve this goal, given the importance of the banking sector, it is necessary for the Banking Agency of Republika Srpska to efficiently assess the adequacy of risk management and capital by the bank and to improve the regulations in the field of banking supervision. Control of the banking sector and the introduction of new framework for institutional regulation of banking supervision (BASEL 1 and BASEL 2) is a challenge, but also an opportunity to harmonise the framework with the Basel standards and guidelines of the European Union.

Threat to the prospect of growth and development of banking sector is the weakening of external incentives to economic growth and the deepening of internal economic weaknesses, which are one of the key threats to successful banking sector in the future, while the challenges of economic environment and the implementation of structural reforms are necessity (Reforms in the financial sector to improve the business environment, 2018).

Figure 1. Participation of state capital in total capital for the period 2005 -2016
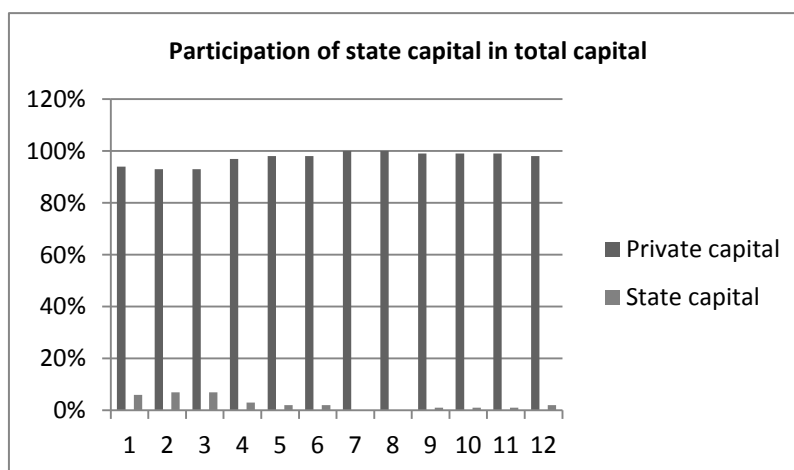
Source: www.abrs.ba

Credit expansion in Bosnia and Herzegovina was very strong in the period up to the spill over of the global economic crisis and the region of Southeast Europe and Bosnia and Herzegovina. Excessive credit expansion has been developing on the basis of a strong inflow of foreign capital in country that is largely touched by banking flows of financial resources (Alihodžić, Plakalović, 2016).

The Figure 1 shows the ownership structure of the Republika Srpska banking sector is characterized by majority private ownership with dominant amount of foreign private capital and a small amount of state capital. Austrian banks occupy the dominant position in the ownership structure with slightly less than 50% of the share. Shareholders from Slovenia, Serbia, Russia, Lithuania, the Netherlands and the USA each hold majority of shares in one of the banks. The presence of foreign banks in the domestic banking industry is often considered in the context of their significant benefits for the domestic banking sector. This primarily refers to the transfer of technology and managerial skills, which increased the operational capacity of local banks as well as better risk management practice, enhance financial stability and convergence with international prudential standards (Ganić 2014).

*Table 1. Participation of foreign and domestic capital in total capital, in %*

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016
Foreign capital	88%	88%	87%	82%	82%	76%	76%	77%	73%
Domestic capital	12%	12%	13%	18%	18%	24%	24%	23%	27%

Source: www.abrs.ba

Dependence on banks with majority foreign capital is still present, and the participation of local banks in the banking sector market remains relatively small (Table 1). The banking sector of Republika Srpska makes between eight and ten banks during the analysed period, and currently there are nine operating in the entire Bosnia and Herzegovina through branch offices with over 336 organisational units. Three banks are majority-owned by local shareholders, while one bank is state-owned. The total shareholders equity for the period 2005 – 2016 is shown in Figure 2.

The spillover of the crisis from the countries of parent banks to the financial area of Republika Srpska is reflected primarily in the reduced volume of funding sources. The inflow of capital depends on the parent banks' financial power and whether the parent banks will be ready and able to finance their branch offices. The impact of crisis on banks around the world has been precisely manifested through the lower availability of funding sources and increased uncertainty as to the quality of debtors.

*Figure 2. Total shareholders equity for the period 2005 – 2016, thous. KM*
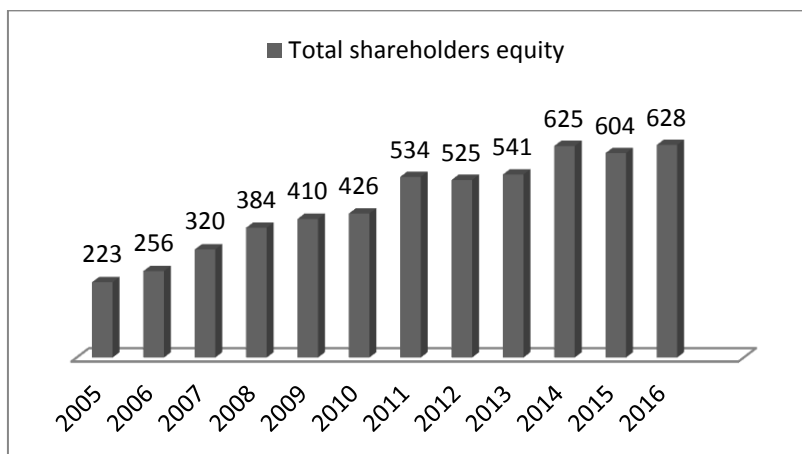
2.1. Establishment of loan activity

Continuous total loans growth is an important indicator of the situation and trends in banks' business, which has been declining since the end of 2008. The reason is that due to financial crisis, loan activity is being reduced over financial resources and rigorous terms and conditions for loan approval. Furthermore, there is less loan applications as greater precaution of natural persons and legal entities in terms of new borrowings is initiated by a high degree of uncertainty. The banks were demanded for a more cautious loan policy, which implies strict control and criteria in selecting clients to whom the reduced volume of loan disbursement will be available. In times of crisis, due to risks and uncertainty that are closely related to bank's yields, the banks are committed to tightening lending terms and conditions, which leads to a reduction in loans availability, and consequently to a reduction in consumption, investments and further deepening of the crisis (Krunić, 2017). Starting from the fact that banking sector's capital in Republika Srpska is mostly of foreign origin, and that these are banks that are mostly members of international banking groups, it is clear that, in the past period, the parent banks were ready for the capital support of their banks located in our region.
Between 2004 and 2008, total gross loans had a growing trend. At the end of 2008 and early 2009, there was a decline in the placement of loan resources, as banks focused on credit risks due to the decline in creditworthiness of clients and the possibility of regular loan servicing. There was already a slight recovery in 2010 and growth in placing loan resources (Figure 3).

Figure 3. Structure of total loans for the period 2008 - 2016
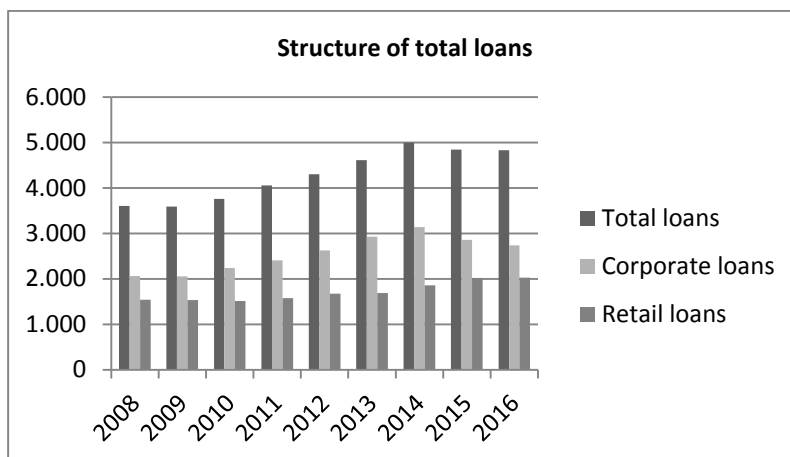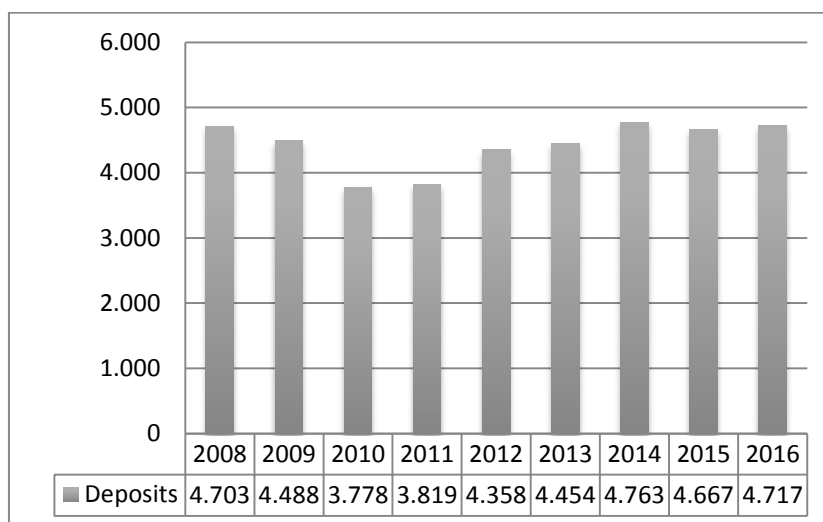
Structure of total loans

Considering the character, development and the current economic conditions of business operations in Republika Srpska (undeveloped capital market, inadequate legal regulations for the realization and collection of collaterals, the dominant participation of loan business operations in the overall banking), the greatest attention in controlling the banking sector is paid to the control of loan, liquidity and foreign exchange risks. One of the basic activities of Republika Srpska banks is loan activity; the amount of loans in bank balance sheet in 2017 was 64%. There is growth in total loans in the banking sector of Republika Srpska, but this growth is influenced by household loan growth for general consumption (approximately 70%) and credit growth in the public and government sectors. There is no loan growth in the private sector, which should be the basis of economic development.

Banking sector's investment in the government sector of Republika Srpska is notable through investing in securities, i.e. treasury bills and bonds. In 2017, the investment of banks headquartered in Republika Srpska in securities for trading amounted to approximately BAM 626 million, while this amount was approximately BAM 55 million a few years back.

After 2007, deposits have a downward trend, especially due to the fact that a large part of the deposits of government institutions, businesses and citizens have been trapped in failed banks (Figure 4). The downward trend in deposits of banking institutions in the banks headquartered in Republika Srpska is the result of banks deleveraging towards parent groups from the European Union. This trend has started in 2008 and is still underway because parent banks, due to poor loan demand, risk growth, stricter regulations by the European

Union, reduce exposure to the banks in Bosnia and Herzegovina, as well as the lack of interest of banks to invest in this region. In a situation where there are problems in the banking sector, depositors who are not fully informed on banks' business operations, doubt their imminent insolvency, and will withdraw funds, even in absence of an initial deterioration of their balance sheet (Krstić, Radojčić, 2012). When the bank gets in situation that a large number of clients massively withdraw their deposits in a short period of time presenting a bad image of the bank to other clients, inevitably there is a problem in the management of liquidity.

Figure 4. Total deposits in the banks headquartered in Republika Srpska, thousand KM

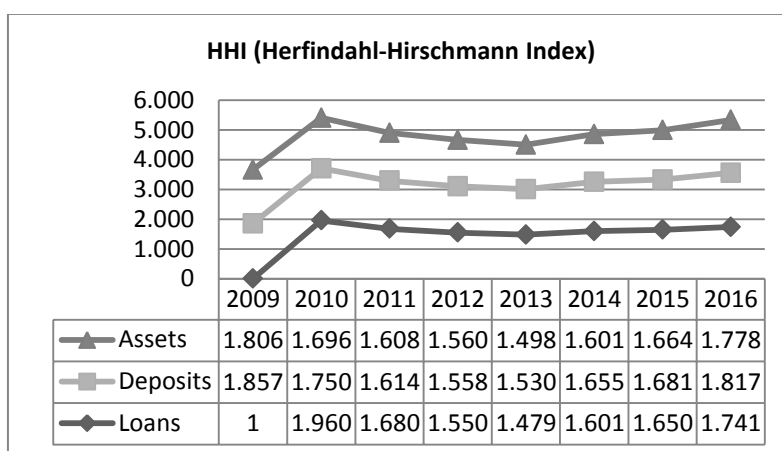|	2008	2009	2010	2011	2012	2013	2014	2015	2016
■ Deposits	4.703	4.488	3.778	3.819	4.358	4.454	4.763	4.667	4.717

Source: www.abrs.ba

The effects of the economic crisis in Republika Srpska have caused the certain citizens' distrust in the banking system, primarily in the form of keeping deposits in the banks. It is certain that, in the coming period, the household deposits will represent a significant source of Republika Srpska banking sector's potential, however it is difficult to foresee whether and how much the deposit will grow (Milaković, 2012). The Herfindahl-Hirschman Index (HHI) is the most commonly used measure of market concentration in the banking sector and is calculated by squaring market shares, taking into account the overall structure of the banking sector in certain categories such as assets, deposits, loans.

According to regulatory provisions, an HHI up to 1,000 is considered a low level of concentration, between 1,000 and 1,800 is considered moderate

concentration and an HHI of 1.800 and greater is considered increased level of concentration. In Figure 5 we can see that HHI values for the three main business segments have a growth trend compared to 2012 - 2013 period, when the lowest values were recorded. HHI shows high concentration of loans in 2009, 2010 and 2016 (more than 1,800).

Figure 5. Herfindahl-Hirschmann Index in categorise assets, deposits, loans for the period 2009 - 2016

HHI (Herfindahl-Hirschmann Index)

	2009	2010	2011	2012	2013	2014	2015	2016
Assets	1.806	1.696	1.608	1.560	1.498	1.601	1.664	1.778
Deposits	1.857	1.750	1.614	1.558	1.530	1.655	1.681	1.817
Loans	1	1.960	1.680	1.550	1.479	1.601	1.650	1.741

Source: www.abrs.ba

Figure 6. Concentration rate (CR3) in categories: loans, deposits, assets for the period 2009 - 2016
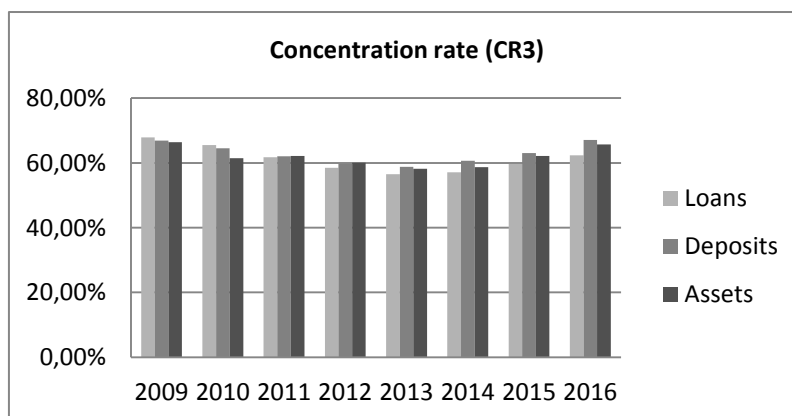
Source: www.abrs.ba

Another indicator of market concentration in the banking sector of Republika Srpska is the concentration ratio (CR3) that usually shows the number of institutions involved in the calculation. After the downward trend in 2012, 2013 and 2014, concentration ratio (CR3) is increasing again (Figure 6).

The three largest banks (the composition of the banks group was being changed within the analysed period) make up approximately 65% of the loan market, 66% of the deposit market and 65% of the asset market. The results of profitability indicators in the banking sector are shown in Table 2.

Table 2. Profitability indicators in the banking sector, thousand KM

	2009	2010	2011	2012	2013	2014	2015	2016
ROA	1%	003%	1.05%	0.3%	-1.2%	0.42%	1.29%	0.7%
ROE	10.57%	1.3%	8.2%	8.2%	-3.5%	3.39%	10.26%	5.9%
Profit	55.3	1.5	58.9	15.6	-35.9	10.5	21.3	45.3

Source: www.abrs.ba

The impact of economic crisis has left a mark on the total profit of the banking sector in 2009, amounting to BAM 55.3 million, profitability indicator ratios were ROA (Return on Assets) 1% and ROE (Return on Equity) 10.57% with even greater reflection in 2010 when a minimum profit of BAM 1.5 million was made, which significantly influenced the decline in the profitability ratio, so ROA was 0.03% and ROE 0.03%. The result of a bank that made a profit of BAM 23.2 million or 40% of total profit at the level of the entire sector had a major impact on the banking sector profitability in 2011, while one bank was operating with losses. Total profit at sector level amounted to BAM 58.9 million. Profitability ratios were increased, so ROA was 1.5% and ROE 8.2%. In 2012, profitability was affected by the loss of one bank, which amounted to BAM 33.7 million, so the net profit of the total sector amounted to BAM 15.6 million, which is 73% less than in the previous year. Profitability ratios also show significant deterioration, so ROA was 0.3% and ROE 8.2% (coefficient values were below the standard ones).

Two banks faced operational loss in 2013 in the amount of BAM 80 million, and although other banks positively operated, the total banking sector realized a loss of BAM 35.9 million. Profitability ratios show significant deterioration with a negative sign ROA -1.2% and ROE -3.5%. Net profit of BAM 10.5 million was made at the sector level in 2014, so profitability was improved compared to the previous year. Profitability ratios were ROA 0.42% and ROE 3.39%. In 2015, the total sector's net profit amounted to BAM 21.3 million, with an increase of 31% compared to the previous year, while the ratios were ROA 1.29% and ROE 10.26%. In 2016, two banks faced operational loss of BAM 26.2 million, while the total sector's net profit amounted to BAM 45.3 million, profitability ratios amounted to ROA 0.7% and ROE 5.9%.

3. Influence of risk on credit portfolio

Any uncertainty, unplanned and sudden occurrence in certain activities of a bank can be defined as a risk. Bank's financial risk could be defined as the probability of loss (decline in profit) arising from the effects of uncertain events in the banks' business operations. In modern conditions, due to very dynamic and turbulent changes in the environment or the economic environment in which banks operate, the bank's exposure to the risk increases (Ivaniš, 2012). The bank's loan portfolio can also be viewed from a broader aspect (complex portfolio), whereby it includes not only loans but also liabilities of the bank's balance sheet. In this way, a balance is established between the loans and the liabilities of the bank (Subotić, 2013). In order to attract as many clients as possible, the bank should have as many loans as possible for different purposes and different maturities in its credit portfolio. There are numerous classifications of banking risks due to the diversity and complexity of modern banks' operations. The division and grouping of risks are not easy, given the inexhaustible number of risk sources.

In principle, risks in banking industry can be divided into four basic categories: financial (basic risks - including liquidity, solvency risks, credit risk - can result in a loss for the bank if it is not properly managed and speculative risk - interest, foreign exchange and price risks), operational (related to the overall organisation of the bank and the functioning of the internal system including information and other technologies, compliance of banking policies and procedures, protection measures against business mistakes and frauds), business (linked to the banking business environment, including macroeconomic and political factors, legal environment and overall infrastructure of the financial system and payment transactions), event risk (includes all types of external risks that, if materialized, can distort banking operations or impair financial stability and capital adequacy). (Van Greuning, Bratanović, 2006) By applying loan monitoring, it is possible to notice the problem and weaknesses in repayment of individual loans within the credit portfolio so that the bank can respond in a timely manner.

3.1. Credit portfolio quality

The gradual deterioration of macroeconomic indicators at the time of the financial crisis, together with an increase in the percentage of non-performing loans, is typical for banking systems that dominate the countries of Central and Eastern Europe (Mileris, 2014). Banking risk management has two main goals.

The exposure to credit risk depends on many factors including the relations in force, selection of suitable credit strategies and policies, level of development

of the country and macroeconomic developments in the market in which banks operate. The empirical indicator which is commonly used for determining the level of banks exposure to credit risk is the share of NPLs in total loans (asset quality). It is believed that the share of NPLs testifies that there is growing exposure to credit risk and vice versa (Račić, Barjaktarović, 2016).

When analysing and evaluating the loan applicant's creditworthiness, it is very important to determine as precisely as possible whether the loan applicant is capable and willing to repay the loan she/he tends to take, i.e. whether the loan applicant will be able to repay the loan when the loan is due. The bank needs to measure the repayment risk more accurately based on these elements. Thereto, the ability of loan applicant is his/her objective characteristic, and readiness is his/her subjective property (Radović, 2010). The effect on the real economy NPL is mainly explained by the weakening borrower's ability to repay outstanding debts while the reverse effect of NPL in the real sector is often identified by offering loans (Klein, 2013).

Macroeconomic determinants of non-performing loans also indicate the relationship between the NPL s and systemic risk: real GDP growth, prices of stocks, Exchange rates and interest rates on loans (Beck, Jakubik & Piloiu, 2013). The banks mainly use standard risk assessment methods. These methods provide banks with information on the strength of the bank, possible problems, unfavourable trends, deteriorating conditions. The bank allocates certain reserve funds to cover possible losses both in a particular business case and in general, if it enters business by taking responsibility for risks. The specific amount of funds for covering the risk of total bank business operation (capital adequacy ratio, risk capital ratio, economic assets, etc.) depends on bank's financial capacity. The quality of commercial bank loan portfolio depends on the quality of each individual loan in the given portfolio. Loan portfolio management is the manner in which credit is granted, evaluated, monitored and charged. The bank is obligated to perform loan classification by taking into consideration all factors related to the characteristics of a loan user and his/her ability to repay. The bank is obliged to adjust its classification system to the classification of supervisory institutions if these institutions have more stringent classification than the one made by the bank.

The studies confirmed that NPLs play a central role in the credit deterioration of macroeconomic performance for enhancing the risk of financial instability (Vuković, Domazet, 2013). Some of the basic characteristics of credit risk are: credit risk is a systemic risk, very much depends on economic cycles, increases during the recession and decreases during the expansion; credit risk is a specific risk, it changes in accordance with specific events affecting the loan applicants; credit risk is directly related to the success in the business operation and the structure of the loan applicant's capital (Mekinjić, 2014).

Given that credit risk dominates the banking sector of Republika Srpska, the banks have begun to protect themselves from this type of risk in different ways; some banks decided to restructure existing debt by replacing it with new loans with more accessible repayment and debt consolidation.

As the banks have largely tightened credit policies and criteria for placing new loans, and the focus has shifted significantly from quantity and market share to portfolio quality and profitability, other factors seem to continue to influence the growth of NPLs (non-performing loans) (Živković, 2011). Over the past two years, the amount of non-performing loans in total loans has been reduced and has affected the growth trend. This trend was not influenced by the improvement of portfolio, but the exclusion of the Bank of Srpska from the system, since the non-performing assets of this bank at the end of 2015 made 7.2% of the total non-performing assets of the banking sector.

In the household sector, non-performing loans continued downward trend due to the permanent write-off of non-performing loans, while the other part of this reduction can be attributed to the conversion process of Swiss franc loans. From the point of view of economic activities, the decrease in NPL in the loan portfolio was recorded in nearly all industries. The largest decrease in NPL in total loans was recorded in the hotel industry and catering, which is the result of economic growth in this sector. Within last few years, the decline in NPL has been recorded in the fields of civil-engineering, manufacturing, power production, agriculture.

*Figure 7. The share of NPL in total loans for the period 2009-2016*
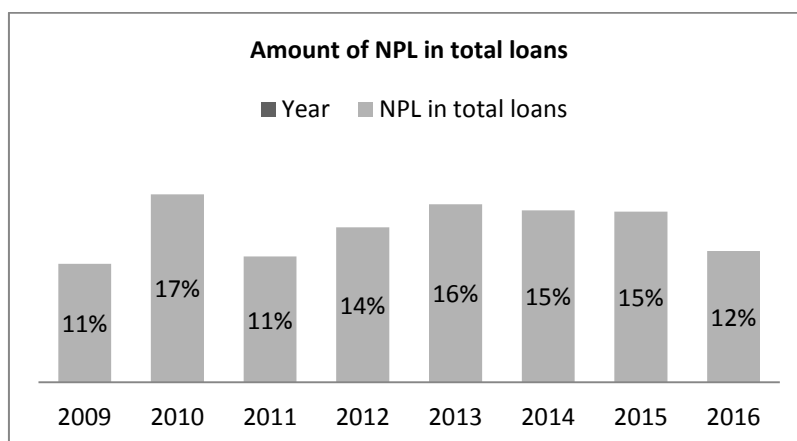
Source: www.abrs.ba

The Figure 7 shows the amount of non-performing loans in total loans, which was 17.14% in 2010 and 11.46% in 2011. In 2012, the amount of non-

performing loans continued to grow amounting to 14.12% in total loans. In 2013, it continued growing to 16.23%. It was 15.69% in 2014, and since then it has been declining slightly, which was recorded in 2015 when it was 15.56%, and 11.98% in 2016.

Figure 8. Structure of NPL s for the period 2010 - 2016
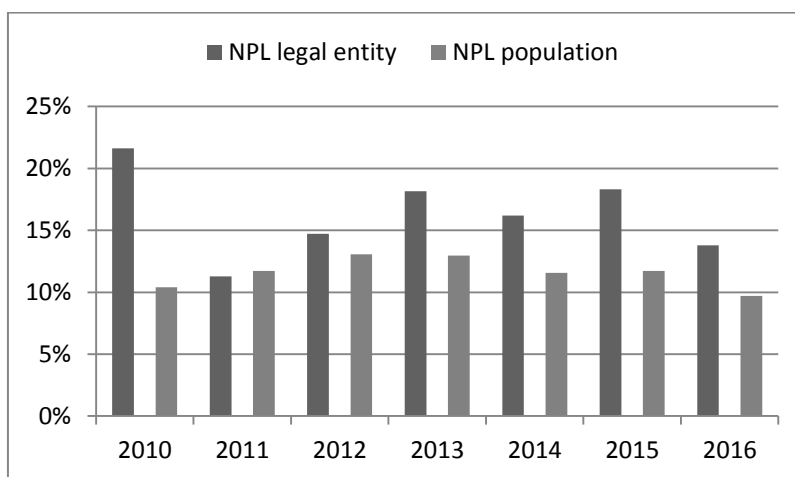
Figure 8 shows the structure on NPLs for the period 2010-2016. Given that a large number of loans are contracted with a variable interest rate, the loan portfolio structure indicates that there is a potential risk, since there might be a delay in repayment by some of the clients and deterioration in the quality of loan portfolio in the banking sector. The amount of non-performing loans in total loans is still particularly visible in the private non-financial sector. Under the new Law on Banks adopted at the beginning of 2017, the issue of trade of bank investments was regulated. In order to complete a comprehensive framework for solving non-performing loans issue, additional improvements regarding the amendments to the tax law are required in order to establish a special tax term for the purchase of non-performing loans and the establishment of a framework for the settlement of natural persons' debts in cases where the debtor can no longer settles liabilities towards banks (Central bank of Bosnia and Herzegovina, 2018).

Bank's individual approach to solving problems of non-performing loans has not shown long-term results, which indicates the need to establish a framework for resolving non-performing loans issue at the level of the overall banking sector.

In the countries of the Central and Easter Europe, it is not a rare that the NPL values exceed 20%. In Serbia and Montenegro, the values were 23% and 21%, and in Albania 23.5%.

Table 3. Participation of Non-Performing Loans in total loans in the Central and Easter Europe countries (%), 2008 - 2014

	2008	2009	2010	2011	2012	2013	2014
Slovenia	4.2	5.8	8.2	11.8	15	22	16
Hungaria	3	5.9	7.8	11.5	19.7	14	13.3
Bulgaria	2.4	6.1	11.9	14.9	16.6	16.9	16.8
Romania	2.8	7.9	11.9	14.3	18.2	21.9	13.9
Croatia	4.9	7.8	11.2	12.4	13.8	15.6	17
Serbia	11.3	15.8	16.9	19	18.6	21.1	23
BiH	3.1	5.9	1.4	11.9	13.5	18.4	17.2
Montenegro	7.2	13.5	21	15.5	17.6	18.4	17.2
Macedonia	6.7	8.9	9	9.5	10.1	10.9	10.8
Albania	6.6	10.5	14	18.8	22.5	23.5	22.8

Source: Reports from the central banks

In the countries such as Macedonia and Bosnia and Herzegovina, the NPLs level is moderate due to a smaller volume of approved loans. In Romania the share of NPLs in total loans amounted to 21.9%, in Bulgaria 16.9%, in Croatia this value was 17% (Table 3).

3.2. Structure of classified assets

The asset quality assessment takes into account the amount of non-performing assets in the total balance and off-balance of assets. The structure of possible loans by classification categories and results are presented in Table 4.

Table 4. Structure of classified assets for the categories A, B, C, D, E, thousand KM

Year	Structure of classified assets				
	Category A	*Category B*	*Category C*	*Category D*	*Category E*
2008	3.702.417	475.817	78.593	51.856	0
2009	3.646.137	524.920	85.974	56.034	0
2010	3.373.270	536.971	357.928	202.755	179.914
2011	3.524.011	558.474	359.435	208.174	183.429
2012	3.905.007	606.926	525.487	206.844	242.425
2013	4.007.947	584.682	892.064	213.442	245.371
2014	4.301.231	665.247	312.256	239.226	305.850
2015	4.312.727	510.923	203.399	236.629	402.950
2016	4.342.470	548.837	173.250	233.247	407.614

Source: www.abrs.ba

High level of "A" category may lead to unrealistic classification and thus to unrealistic bank profitability. During asset quality assessment, particular attention is paid to the amount and structure of non-performing assets in the total classified assets that are classified as the highest risk categories "C", "D" and "E". The amount of category "A" in 2008 is the same as in the year before and is 86% with a growth rate of 2%. Assets classified as risk category "B" also retained the same amount and increased by 8% compared to the previous year. In 2010, non-performing assets amounted to 15.9% of total classified assets, while at the end of 2009 non-performing assets amounted to 6.8%. Loans classified as "E" category are concentrated in the private enterprise sector; this sector's due claims made 71% of total claims with a growth rate of 113%.

Assets classified as category "C" increased in 2012 by 19% compared to the previous year, the risk category "D" increased by 46%, while "E" increased by 47% compared to the previous year. The growth of such assets in one small bank had significant impact on the growth of non-performing assets at the end of 2012. This year, assets classified as risk category "A" are facing high growth and have increased by 1% compared to the end of 2013, which makes 77% of total qualifying assets. Risk category "B" drops by 9%. In the structure of non-performing assets, the risk category "C" was reduced by 22%, "D" category also drops by 12% and risk category "E" by 4%. Assets classified as category "A" increased by 1% in 2016 compared to the previous year and made 76% of the total classified assets. Risk category "B" has a growth rate of 7%. It is evident that the risk category "C" is reduced by 15% and "D" by 1%, while "E" grew by 1%.

4. Unsatisfactory bank's business operation and their impact on Republika Srpska banking sector

In the past few years in Republika Srpska, we have witnessed unsatisfactory business operation of two banks. The first one was the Balkan Investment Bank, which was owned by the Lithuanian BA UKIO BANKAS. The bankruptcy of this bank was launched at the beginning of 2013. According to the financial statements, the stated investment loss was BAM 33.6 million. The Banking Agency of Republika Srpska accepted these financial statements and conducted a continuous inspection of the Balkan Investment Bank, which established numerous illegalities but without any sanctions.

The Banking Agency of Republika Srpska imposed provisional measures on the Balkan Investment Bank, but these bans were quickly abolished, although the shortcomings were never removed. The audit report was made by Delloite Audit Company that has its representative office in Republika Srpska, and

which refrained from giving opinions on the financial statements of the Balkan Investment Bank for 2012, i.e. it harshly qualified the authenticity and objectivity of the Balkan Investment Bank's report (Independent auditors report, 2016). The Government of Republika Srpska saved the Balkan Investment Bank by recapitalization and subsequently renamed it to the Bank of Srpska. After Republika Srpska became the majority owner of the bank by paying BAM 30 million for recapitalization, the same bank became loss-making (BAM 13.642.609) at the end of 2013 (Banja Luka Stock Exchange, 2016). At the end of 2015, the Banking Agency of Republika Srpska introduced the provisional administration to the Bank of Srpska because it did not work in accordance with the Law on Banks of Republika Srpska, other legal acts and by-laws. Although the Government of Republika Srpska suggested the restructuring of the bank, the Banking Agency of Republika Srpska, in accordance with the recommendations of the IMF, decided to liquidate the Bank of Srpska.

The second bank that experienced its final collapse at the end of 2014 is the Bobar Bank a.d. Bijeljina. This bank was founded in 1998, and its business strategy was focused on money transfers in the country and abroad, granting loans to natural persons and economic entities. The bank had a Supervisory Board, as well as the Audit Committee. The bank was organized into eight branch offices, seven sister companies and thirty-eight bank window units, and employed 206 workers. While operating, the bank had an inadequate credit policy and was turned towards large loans for legal entities instead of approving a larger number of small loans, which would be in line with its limited capacity. Due to the deteriorated financial situation in November 2014, the Banking Agency of Republika Srpska introduced a provisional administration in the bank and appointed a temporary administrator. The temporary administrator cited in his report on the bank that there are no real preconditions for proposing measures for bank rehabilitation, merging it to another bank or selling the bank. The Banking Agency adopted a report and seized the banking license. The Banking Agency of Republika Srpska had not taken any measures that were inevitable to timely prevent the collapse of this bank. Reports by independent auditors, as well as the results of inspections carried out by the banking controllers of the Republika Srpska Banking Agency, should have resulted in taking some measures, but instead of reaction, the lawlessness was silently observed. The Bobar Bank was giving loans to related legal entities from the Bobar Group. Those were multi-million loans without adequate loan insurance funds, which were unlawfully granted. Neither was the repayment of such loans realistic nor the loan was adequately insured. The procedures and guarantees defined by the Law on Banks of Republika Srpska were often breached. In this way, the bank financially collapsed and deposits given to the bank by firms, bodies and citizens, whose assets reached millions, were ruined. In the opinion of an independent

auditor, the Bobar Bank's income was illegally increased by more than BAM 17 million in 2013, although it was directly ordered by the Banking Agency of Republika Srpska not to record the revenues into the books. According to the independent auditor's findings, the bank's loss should have been close to BAM 16 million, instead of reported profit of BAM 1.4 million. This is confirmed by the fact that the Bobar Bank's loss in the first half of 2014 was BAM 13.8 million (Banja Luka Stock Exchange, 2016).

The independent auditor expressed doubts in his report about the legality of two recapitalisations, and cited that the Bobar Bank approved loans to related parties that subsequently made recapitalisation of the Bobar Bank by: the issuance of ordinary shares at the end of 2013 in the amount of BAM 10 million, additional capital increase through the issue of priority shares in the amount of approximately BAM 5 million; it was therefore established that the illegal increase of procurement proceeds for approximately BAM 6 million was attempted in a way that the Bobar Bank sold the real estate to a related company from the Bobar Group only on the basis of a contract of sale, although the money has never been paid to Bobar Bank's account (Financial report of the Bobar group, 2015). In order to prevent the collapse of the Bobar Bank, the companies of the Republika Srpska Electric Power Industry System made nearly BAM 13 million fixed-term in the Bobar Bank in 2013. The negative consequences of such business operation are huge, because the bank has captured the money of numerous institutions and local communities. The payment of the insured deposits up to BAM 50.000 was made through the Deposit Insurance Agency of Bosnia and Herzegovina and the UniCredit Bank. Natural persons and legal entities that had funds up to this limit got their money back in this way. Future of all those who have millions in the Bobar Bank is uncertain.

After the initiation of liquidation process, the results of receivables collection were below the expected ones and the blocked account did not make any progress, which led to initiating bankruptcy proceedings. The investigation into the Bobar Bank case is one of the most complex investigations of financial crime conducted in Bosnia and Herzegovina and the first case in which the amount of damage exceeds BAM 100 million.

5. The Analysis of dynamics of non-performing loans in Republika Srpska

The research is based on the data contained in the reports of the Banking Agency of Republika Srpska and covers the period between 2009 and 2016, as a period of economic crisis. The following variables were used during the econometric analysis, that could explain the movement of non-performing

loans (NPL) in the Republika Srpska banking sector during the analysed period: capital adequacy ratio (CAR), return on assets (ROA), state banks' share in the banking sector (STATE), foreign banks' share in the banking sector (FOREIGN), real gross domestic product (REAL GDP) (Stakić, 2014). First, by using descriptive statistics of the variables, as shown in the Table 5, the value of the average NPL in the analysed period is 13.62%, the maximum value of the NPL is 17.14%, recorded in 2010, while the lowest value is 10.8%. The capital adequacy ratio indicators did not get close to the statutory rate of 12%, all the values were above. Return on assets values were preceded by negative sign in a certain period due to a negative financial result in the banking sector. The standard deviation is high in non-performing loans 2.61 and in the ownership shares of foreign banks 4.51. The average return on assets in the maximum value is 1.29, while the minimum value is preceded by negative sign. In the correlation matrix, there is a high level of non-performing loans both in state (0.96) and in foreign banks (0.92).

Table 5. Descriptive statistics of the model variables

	NPL	Capital adequacy	ROA	State – owned banks share	Foreign – owned banks share	Real GDP
Arithmetic mean	13.62	16.33	0.44	20.79	79.2	1.08
Median	14.5	16.5	0.56	20.50	78.50	0.50
Minimum	10.8	14.11	-1.20	13	72.92	-3.2
Maximum	17.14	17.42	1.29	27	87	3.07
Standard deviation	2.61	1.06	0.78	1.59	4.51	1.96
Kurtosis, Compression coefficient	-1.81	2.38	2.33	-0.22	-0.20	3.48
Skewness, Asymmetry coefficient	-0.29	-1.39	-1.38	-0.38	0.38	-1.61
Jarque-Bera test	4.29	8.16	7.83	0.112	0.096	3.59
Number of observations	8	8	8	8	8	8

Source: Calculation by Author

As can be seen from the Table 6, negative values are due to a number of factors that affect the banking sector, such as poor client ratings before granting loans, unsuitable corporate management, legal regulations, and politics impacts lead to higher business risks. Value preceded by negative sign is in relation to non-performing loans and banking performance, which affects the lower return on assets (-0.12).

The average interest rates on deposits amount to 2.5%, while interest rates on loans amount to approximately 7%, making based on interest is approximately 75% of the total operating profit. Interest rates record a minimal

decline in value and their amount affects the probability of failing to meet obligations related to the return of loans, especially in the crisis periods.

Table 6. The matrix of correlation coefficients between the parameters: NPL, CAR, ROA, STATE, FOREIGN, REAL GDP; for the period 2008 - 2016

	NPL	Capital adequacy	ROA	State – owned banks share	Foreign – owned banks share	REAL GDP
NPL	1.00	0.95	-0.12	0.96	0.92	-0.06
Capital adequacy	0.95	1.00	-0.06	0.92	0.92	-0.08
ROA	-0.12	-0.06	1.00	-0.27	-0.45	0.85
State – owned banks share	0.96	0.92	-0.27	1.00	0.95	-0.10
Foreign – owned banks share	0.92	0.92	-0.45	0.95	1.00	-0.37
REAL GDP	-0.06	-0 .08	0.85	-0.10	-0.37	1.00

Source: Calculation by Author

Table 7. Econometric analysis – basic model

Dependent Variable: NPL				
Method: Least Squares				
Included observations: 8				
Variable	Coefficient	Std. Error	t - Stat	P - value
CAR	-1.878	2.071	-0.906	0.460
ROA	2.885	2.281	1.264	0.333
STATE	0.343	0.541	0.633	0.591
FOREIGN	0.462	0.529	0.872	0.474
Real GDP	-0.888	0.583	-1.524	0.266
Multiple R	0.994100			
Adjusted R – squared	0.958828			
R – squared	0.988236			
Standard error	1.478696			
ANOVA /Analysis of variance				
	SS	MS	F	Significance F
Regression	367.3848	73.476	33.604	0.029
Residual	4.373088	2.186		
Predicted NPL		Residuals		
13.482		0.137		
13.601		0.898		
11.147		-0.347		
17.855		-0.715		
1.239		1.370		
-0.916		-0.893		
0.195		-0.485		
4.253		0.036		

Source: Calculation by Author

Using the basic model, the result of econometric analysis was obtained (Table 7). Bearing in mind the high value of R^2, it can be concluded that the econometric model highly explains the movement of the dependent variable of NPL. The following variables have proved to be significant: capital adequacy rate, ROA, ownership shares of state and foreign banks. Capital adequacy rate variable has a negative sign and tells us how its movement affects the growth of non-performing loans in total loans. Banks, driven by higher profits, are consciously entering various risky activities with a capital level that is above the regulatory minimum.

ROA has a positive sign that can be interpreted as a link between the return on assets and the growth of the non-performing loans. State and foreign banks' shares also have a positive sign, while real GDP has a negative sign. The coefficient of determination is 0.988%.

Conclusion

Although declining, a high level of non-performing loans is still present in the banking sector of Republika Srpska, as a result of the financial crisis. This confirms the hypothesis for more cautious credit policy implying strict control in granting the loans and selecting the clients in order to reduce the amount of non-performing loans in the total amount of loans. Due to the negative consequences of the liquidation of the two banks, greater accountability of institutions is required, and among other things, consideration should be given to the possibility of additional increase in secured deposits. At the same time, natural persons and legal entities are more cautious in terms of new borrowings due to a high degree of uncertainty. Despite all the challenges, the banking sector of Republika Srpska is going through a certain period of stagnation, since banks headquartered in Republika Srpska are not interested in investing in economic development. Due to the problematic importance of non-performing loans, attention has been paid to the definition of variables that could more precisely explain these results; statistical calculations show values that are not favourable to a more stable banking sector.

Possible solution to strategy implementation may be found in applying more rigorous classification of banking sector assets quality with adequate provision for non-performing assets, the strengthening of legal framework related to receivables collection, the establishment of agencies for resolving non-performing loans issue, the possibility of restructuring liabilities and out-of-court settlements. There is no unique solution for this category of loans. Usually solutions are applied, which depends on the degree of centralization. If a centralized approach to addressing the NPLs is applied, an advantage will be gained in terms of clearing the balance of banks, while in the application of

the decentralized approach the bank in direct contact with clients finds the best solution. One way of resolving the NPLs could be through the establishment of a special service in the bank itself that would focus on more detailed monitoring of each client. The problem with the growth of NPL is due to the lack of well-trained personnel, which is a characteristic of developing countries.

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