Section 2. Finance

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IMPACT OF MACROECONOMIC FACTORS ON THE LEVEL OF NON-PERFORMING LOANS IN THE BANKING SECTOR IN KOSOVO

Abstract. Nonperforming loans adversely affect the performance and stability of the banking industry, increasing provisioning, never lending, and in more severe cases can bring a financial institution into insolvency. The banking industry in Kosovo has also been very cautious in terms of credit portfolio quality management, making the rates of these loans very low, which has made confidence in this sector even higher.

Keywords: Non-performing loans, Inflation, Interest rate, Macroeconomic factors.

1. Indroduction

In the last decade, non-performing loans have received a lot of attention around the world as their large and uncontrolled growth would lead to the potential bankruptcy of the banking system as a whole. We should also mention the fact that many scholars prove that the cause of bankruptcy is the quality of assets, which is an important predictor of bank insolvency and that bank financial institutions that are on the verge of bankruptcy have very high levels of bankruptcy. non-performing loans just before the announcement of bankruptcy. According to studies on non-performing loans, various analysts have attempted to directly link the level of non-performing loans with two categories of factors: (1) macroeconomic factors and (2) factors of a banking or banking specific nature. There is much discussion as to whether non-performing loans are one of the major causes of economic stagnation problems and that any non-

performing loans are seen as a mirror image of the failed venture. Another explanation for the high credit losses is the occurrence of banks in areas with poor economic conditions. But even specializing in a particular lending category can increase the probability of losing a loan. For example, intra-category credit may have a higher average probability of failure than loans in other categories or investing heavily in one bank category reduces the degree of diversification of the portfolio as a whole. The large variation in the level of credit losses between different markets suggests that banks would be less vulnerable to the destinies of individual areas or industries if they were to lend over a wide geographical area. The results of this study suggest policy-makers promote greater diversification to curb excessive risk-taking.

The consequences for the banking industry as a result of nonperforming loans can be severe if no precautionary steps are taken. Non-performing

loans adversely affect the performance and stability of the banking industry, increasing provisioning, never lending, and in more severe cases can bring a financial institution into insolvency. The banking industry in Kosovo has also been very cautious in terms of credit portfolio quality management, making the rates of these loans very low, which has made confidence in this sector even higher.

It is common for financial institutions to play a vital role in the economy by allocating capital from surplus agents to deficit agents in various economic sectors [1, 71–73]. This means that a sound banking sector is needed for economic growth because it provides macroeconomic stability and develops sound financial institutions [4]. However, over the past two decades, the liberalization process has strengthened competition among banks. Competition increased banks' credit risk, affecting their loan portfolios with regard to bad credit review procedures and borrowing mitigation criteria [4; 6; 8].

2. Literature review

Existing literature provides evidence suggesting a strong association between NPLs and macroeconomic factors. Some macroeconomic factors that the literature proposes as important determinants of NPLs are: real GDP growth, inflation rate, effective exchange rate, real interest rate, unemployment rate, broad money supply (M2) and GDP per capital [2].

2.1. Economic Growth (GDP)

The explanation given by the literature for this relationship is that changes in the business cycle affect borrower's ability to repay capacity. Thus, the strong positive growth of real GDP usually translates into more income that improves the borrower's debt service capacity, which in turn contributes to lower non-performing loans. Conversely, when there is a slowdown in the economy (low or negative GDP growth), economic activity is generally declining and the volume of cash for businesses or households is decreasing. These conditions contribute to the deterioration of borrowers' ability to repay loans, which

increases the likelihood of delays in their financial liabilities and thus exposes banks to increased credit risk. In this regard, Hou [4, 20–30] noted that every NPL in the financial sector is seen as an overview image of a weak loss enterprise.

2.2. Real interest rate

Asymmetric information and the selected negative selection problem can lead to "credit rationing," in which some borrowers are denied loans even when they are willing to pay a higher interest rate [5, 135–152]. This is because as interest rates rise, prudent borrowers are more likely to decide that it would not be wise to borrow, while borrowers with the most risky investment projects are often the ones willing to pay higher interest rates. In this general environment, a higher interest rate leads to a larger negative solution; [6, 488–489]. This means that higher interest rates increase the likelihood that the lender will take a risk. bad credit and ultimately increase [9].

2.3. Inflation

Inflation affects borrowers' debt service capacity through different channels, and its impact on the NPL can be positive or negative [3]. The explanation provided by the literature for this relationship is that higher inflation can facilitate debt service by reducing the fair value of outstanding loans especially when credit rates are fixed (banks do not adjust rates in line with inflation changes to maintain their real rates of return). it may also weaken some borrowers' ability to service debt by lowering real income. Moreover, when credit rates are variable (adjusted to inflation changes), inflation is likely to reduce borrowers' capacity to lending lenders to adjust rates to maintain their real returns let alone to pass on the rise in policy rates resulting from monetary policy actions to combat inflation. Against this backdrop, the relationship between NPL and inflation can be positive or negative.

2.4. Real effective exchange rate

Inflation a change in the effective exchange rate may also affect borrowers' debt service capacity

ity through different channels and its impact on the NPL can be positive or negative [6]. As mentioned in Pasha and Khemraj [7], exchange rate depreciation can have mixed implications on borrowers' debt capacity, on the one hand, it can improve the competitiveness of export-oriented firms as long as the value of the local currency is depreciated (lower), export-oriented firms may dominate the international market at a lower price (since their cost of production is covered by the local currency which is lower than the foreign currency and their income is collected in foreign currency, which has a higher value than the local currency, so the exchange rate depreciation can improve the debt capacity of export-oriented borrowers and in turn may adversely affect the debt capacity of borrowers who borrow in foreign currency (import-oriented firms).

3. Methodology of research

Descriptive data analysis was used in this study, where central variable statistical analysis used highly variable regression. Descriptive research involves collecting data, describing the phenomenon, and then organizing, collecting, describing the data, in the form of graphs and tables, in order to help the reader understand the distribution of data. In the literature, two logical ways of developing a study structure can be used, namely inductive approach and deductive approach. Inductive approximation is based on the assumption that theory is developed by empirical event research. This means that from individual research to build a general model. Deductive approach is realized by identifying the ideas set by the theories and then testing the theory. This method consists of the general in a given situation and is the opposite of the inductive approach. In this paper deductive approximation is more appropriate because of the theories given in the reviewed literature on nonperforming loans.

The paper addresses the macroeconomic and banking factors of nonperforming loans in the bank-

ing sector in Kosovo. The data collection was done through secondary data from the reports and bulletins of the Central Bank of Kosovo (CBK) for the period 2007–2017.

Among the factors that will be studied in this research are:

Macroeconomic Factors:

1. Economic Growth (GDP);
2. Inflation;
3. Unemployment rate;
4. Interest rate.

The econometric model of research is:

$$Y_t = C + \beta_1 t + \beta_2 t + \beta_3 t + \beta_4 t + \varepsilon$$

Where,

$$NPL_t = C + GDP_1 t + INF_2 t + UR_3 t + IR_4 t + \varepsilon$$

NPL – nonperforming loans, expressed in%;

GDP – Economic Growth, expressed in%;

INF – Inflation, expressed in%;

UR – Unemployment rate, expressed in%;

IR – Interest rate, expressed in%;

4. Research questions / hypotheses

Research questions are:

1. Which macroeconomic factors have the most impact on NPLs?

2. What correlation exists between inflation and the NPL?

3. What is the correlation between the interest rate and the NPL

Hypotheses are:

H0: GDP growth has no impact on the level of nonperforming loans;

H1: GDP growth has an impact on the level of nonperforming loans;

H0: Inflation rate has no impact on the level of nonperforming loans;

H2: Inflation rate affects nonperforming loans;

5. Statistical analysis

For the estimation of the econometric model, the analysis of the exclusion of extreme variables from the regression line of the econometric model will be used. SPSS software has the “Boxplot” modeling technique for eliminating extreme variables.

Tabel 1. – Boxplot Summary

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
GDP	11	100.0%	0	0.0%	11	100.0%
Inflacioni	11	100.0%	0	0.0%	11	100.0%
UR	11	100.0%	0	0.0%	11	100.0%
NPL	11	100.0%	0	0.0%	11	100.0%
IR	11	100.0%	0	0.0%	11	100.0%

The table shows that none of the variables has an “outliers” value, thus meeting the primary regression condition for the regression to have a linear line.

Table 2. – Summary of the econometric model

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.812 ^a	.660	-.532	2.37365%	.660	.554	7	2	.767	2.081

a. Predictors: (Constant), IR, GDP, UR, Inflacioni

b. Dependent Variable: NPL

The results of the econometric model summary show that the coefficient of determination is 66%, so a fairly reliable rate indicates that the independent variables included in the model are reasonable and explain the dependent variable quite well. The Durbin Watson coefficient, which measures

the presence of the correlation of the series, takes the values of 1 to 4, while the values of 1.5 to 2.5 indicate that the series has nothing to do with the econometric model used, so the value of 2.081 indicates the robustness of the econometric model used in the paper.

Tabel 3. – Regression Summary

Coefficients ^a									
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	26.581	37.861		.702	.555			
	GDP	-1.702	5.541	-.754	-.307	.788	-.518	-.212	-.127
	UR	.041	.399	.095	.102	.928	.084	.072	.042
	Inflacioni	.300	1.578	.514	2.190	.007	-.385	.133	.078
	IR	-.433	.868	-.619	2.499	.012	-.077	-.333	-.206

a. Dependent Variable: NPL

Based on the regression results, we see that 2 factors affect nonperforming loans in Kosovo, macro-

economic factors include inflation with a significant level of 0.7% and an interest rate of 1.2%.

Conclusion

The consequences for the banking industry as a result of nonperforming loans can be severe if no precautionary steps are taken. Nonperforming loans adversely affect the performance and stability of the banking industry, increasing provisioning, never lending, and in more severe cases can bring a financial institution into insolvency. The banking industry in Kosovo has also been very cautious in terms of credit portfolio quality management, making the rates of these loans very low, which has made confidence in this sector even higher. Kosovo has lower rates of non-performing loans compared to the coun-

tries of the region, including Albania, Macedonia, Montenegro, Serbia etc. According to the World Bank data, at the end of 2015, Kosovo recorded a percentage of non-performing loans of 7.1% in relation to the total loans the banking industry has issued to its clients. This lower level compared to all other countries presented for comparison shows the high quality of credit portfolio that the banking industry in Kosovo has to their clients.

The overall conclusion of the research is that within the macroeconomic and banking factors that affect nonperforming loans are the inflation rate and the interest rate on household loans.

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