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Key Macroeconomic Drivers on Reducing Non Performing Loans in Albania

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Abstract

The financial system in Albania is really fragile, mainly focused in banking system. This banking system faced a sharp rise in non- performing loans after 2009. The level of NPL-s has increased from 10.48% on 2009 to the pick of 23.49% on 2013. Then, it started the decline arriving to 13.23% on 2017. The focus of this study it is the determination of the main macroeconomic factors affecting the level of bad loans. We tested statistically the role of GDP growth, inflation, unemployment level, Money Aggregate M2, Exchange rate and interest rates for loans, in the level of NPL-s. The data were taken from World Bank and Bank of Albania database. The data were elaborated through statistical program E-views 10. We conducted a multiple regression and the macroeconomic factors explaining NPL-s resulted: the GDP growth, the monetary aggregate M2 and the interest of loan. This connection resulted negatively correlated with GDP growth which began to grow after 2013 arriving at 3.84% on 2017, and positively correlated with M2 which has experienced a slight increase in these years; and interest of loans which is still low in Albania, decreasing from 2001 and on. These macroeconomic factors should be taken in consideration by Albanian authorities when compiling their plans and strategies.

Keywords: NPL-s, GDP growth, monetary aggregate M2, inflation

1. Introduction

The financial system in Albania is really fragile considering that it is developed in the post communism period, after 1990 and especially after the 2000. This financial system is mainly focused in banking system, which makes almost 85-90% of it. Although the banking system has had a sharp increase up to 2007-2008, the financial crisis has its impact in the economic development, impacting the banking system which was the main financial source for the businesses, as well. This is evident if we have a look at the NPL-s trend, which had a significant

upward trend in 2008, 2009 to double-digit in 2010. The NPL-s continued with a scary rise until 2013 when they reached the peak level of 23.5%.

Table 1. NPL-s level for the period 2008-2017

Years	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
NPL	6.64%	10.48%	13.96%	18.77%	22.49%	23.49%	22.80%	18.22%	18.27%	13.23%

Source: World Bank data

The economic crisis and the drastic growth of NPLs prompted the reaction of both: the savings and commercial banks and the national bank of Albania. The savings and commercial banks after the 2008 strengthened the lending criteria, affecting the decline in lending to individuals and businesses, but especially to the second ones, affecting the deceleration of investments. So we had a lack of proper functioning of the banking system, because while the deposits level continued to increase, lending was decelerated. For this reason, it began to be increased the phenomenon of money-giving, which influences the increase of informality, stumbling the economic development of the country.

The Albanian economy in this period also faced another problem. While the country was affected by the financial crisis, there was an increase in deposits, which means that the individuals were increasing their savings (we have to keep in mind that referring to financial cultures we are a saving society). The growth of savings, in the situation of a decrease in the economic growth, led to consumption reduction by giving another hit to the economy. The intensity of this stroke is relatively low as Albania is a predominantly an importing country.

An important factor that influenced the NPL's decrease was the adoption of the 2014 law which takes off the NPL-s from Balance Sheet by providing provisions and recognizing it as an expense. When credits are classified as "lost", the banks create provisions at 100% of the outstanding amount and for the part for which there are no reasonable expectations for their recapture, delete them from the balance sheets. This is evident if we see the trend of ROE and ROA for the banks in the period 2014-2018.

Table 2. Banks' ROA and ROE for the period 2014-2018

Years	2014	2015	2016	2017	Up to Nov. 2018
ROA	1.2%	1.44%	0.77%	1.51%	1.33%
ROE	12.29%	15.19%	7.06%	15.71%	12.06%

Source: Authors' calculations based on data from National Bank of Albania

Meanwhile, another precaution taken by the government was the borrowing of a $ 300 million high debt by the IMF to pay back the nonpaid expenses that the government owes to businesses for the public investments and works that they have completed.

Below down we present an overview of GDP growth in Albania. The GDP growth has had a decline trend up to 2013 reaching the lowest peak, to start rising in 2014 to reach 3.84% in 2017. This has effect the softening of the NPL-s problems after 2013. For the 2018 the growth was forecasted at 4%.

Table 3. GDP growth for the period 2008-2017

Years	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
GDP growth	7.5%	3.35%	3.71%	2.55%	1.42%	1%	1.77%	2.22%	3.35%	3.84%

Source: World Bank data

There are a number of macroeconomic and macro financial factors of the last years, mainly 3-4 years ago, which would explain the growth of problem loans, but since we are focused on this paper in the factors that explain the changes in the values of NPL-s in these years, we consider coherent factors.

It would be really worthy a study of the main factors that led to the extraordinary growth of bad loans in Albania and in other region countries, but the lack of data (or the limited ones) prevents us from carrying out such a study.

2. Theoretical Background

Economic crises have a significant impact on the growth of non-performing loans. It is no coincidence that most Western Balkan countries, but also more widely, began to report a scary rise in the level of loans after 2008, as soon as the effects of financial crisis of 2007 started to be evident.

That is why it explains the significant growth of the scientific works in determining key factors affecting bad loans, as well as providing advice mainly to commercial banks and public bank authorities.

Banks' management and oversight issues are a very important explanatory factor for the increase of bad loans. The problems of cost efficiency in banks impact the fast growing of bad loans in transition countries (Podpiera, J., Weil, L., 2008). That is why that bank supervisory authority has to be focused on banks cost efficiency in order to prevent the problems in loans.

A number of micro, domestic factors affecting bad loans are determined, mainly related to financial performance indicators: profitability of banks and loan loss reserves to total loans (Messai, A. S., Jouini, F.,2013), capital adequacy ratio, rate of nonperforming loans of the previous year and return on equity (Makri, V., Tsagkanos, A. et al., 2014), return on assets, return on equity growth of gross loans, and equity to total assets ratio, size of the banks and foreign ownership (Petkovski, M., Kjosevski, J., et al., 2018). However, these factors are less important in the explanation that macroeconomic factors (Klein, N,. 2013). Mainly analyzes conducted with micro factors are combined with macroeconomic factors, which more clearly explains the importance of macro factors. Our study also focuses on the macroeconomic factors affecting non-performing loan performance, so there are pointed out the advices for banking institutions, mainly for the national bank.

Among the most important factors affecting NPL is GDP growth, which has an inverse relation with the NPL-s. Similar studies have found this factor very important. Khemraj, T., Pasha, S. 2009, for Guyanese banking sector found GDP with a negative impact but interest rate and excessive lending with a positive connection with the increase of NPL-s.

Petkovski, M., Kjosevski, J., et al., (2018) in a study for Czech banking system found negative relationship between NPLs and GDP growth and inflation, but a positive relationship with unemployment.

Bogdan, F. (2017) found that the determinants of bad loans in the banks from Central and Eastern Europe are Real GDP growth rate (%) and inflation rate- CPI with a negative effect, Unemployment rate with a positive effect.

Mazreku, I., Morina, F., et al., (2018) in a study for 10 transition countries, part of CEE, found that GDP growth had the strongest inverse relationship with NPL, meanwhile significant relationships had inflation and unemployment, with a negative and positive relationship respectively. We have to emphasize that Albania has been part of this study as well.

Very interesting is a study of the countries of West Europe and CEE countries from Staehr, K., Uusküla, L. (2017). There were four factors that have significant impact on NPL-s in both group countries: GDP growth, inflation and debt and unemployment. But the three first have the same inverse relationship with NPL-s, meanwhile the unemployment has a positive relationship in Western Europe, and negative one for the CEE countries, possibly reflecting the different properties in the business cycles in the two regions.

Donath, L., Cerna, V. (2014) in a study for Romania and for Baltic countries found that for Baltic countries the GDP and Unemployment were significantly impacting respectively with negative

and positive effect in NPL-s for all four countries considered in this study, meanwhile the inflation had a negative relationship for Estonia, Latvia and Romania, but a positive one for Lithuania. The lending interest was significant with a positive impact for Estonia and Lithuania and with a negative impact for Romania. The lending interest has a positive relationship for Latvia, but not as significant as others.

Tanasković, S., Jandrić, M.(2015) in a study for selected CEEC and SEE countries (included Albania) found a negative relationship between increases in GDP and NPL ratio, and a positive relationship between foreign currency loans ratio and level of exchange rate and NPL ratio.

Abid, L., Ouertani, M., et al., (2014) in a study for households' NPLs in the Tunisian banking system found significant the macroeconomic variables GDP, inflation, and interest rates, but the bad management as well.

Škarica, B. (2014) found that the slowdown of economy has been the main indicator explaining the rise of NPL-s in CEE countries. The increase in inflation has impact the rise in NPL-s as well.

Louzis, L., Vouldisac, A., et al., (2012) in a study for banks in Greece found that NPL-s can be explained mainly by macroeconomic variables as GDP growth, unemployment, interest rates and public debt.

Klein, N,. 2013 studying the NPL-s in CESEE (Central Eastern and South Eastern Europe) countries found the macroeconomic indicators: GDP growth, unemployment and inflation as the robust for the explanation of relationship.

3. Data and Methods

We want to determine which the most important factors are affecting the NPL's trend in Albania. This study has a special importance if we keep in mind that the NPL level reached at about 24% of GDP on 2013. We are focused only in the role of macroeconomic factors influence on NPL-s.

In this study we have used secondary data, derived from World Bank Database and the Database of National Bank of Albania. This data covers a period of 11 years, because there is a lack of data for the period before 2008. This is the main limitation of this study. Meanwhile the NPL-s started to be an evident problem for Albanian banking sector and economy after 2008, as the finance crises gave the first impacts. So, we think that this fact can justify the study for this limited period.

To determine the effect of macroeconomic factors on NPL-s we conducted a multiple regression equation. The data are elaborated through statistical program E-views 10.

We have determined the NPL as a dependent variable. The variable NPL express the ratio of non-performing loans to total bank loans. As independent variables we tested statistically the GDP growth, inflation, unemployment level, Money Aggregate M2, Exchange rate and interest rates for loans.

It is expected GDP growth to have a negative impact in NPL-s growth. Economic development will increase the profitability of businesses, giving them the possibility of loans repayment. Meanwhile the growth of economy will increase the individuals' revenues so they will fulfill the payments for mortgage and consumer loans.

A low level of inflation will make money more valuable so it can impact negatively the NPL-s growth. But at the other hand, as people will have less money in their hands, they will be tighter in their payments, and it can affect the NPL-s increase.

The decrease of unemployment level will decrease the level of NPL-s because it means financial resources in borrowers' hands so loans repayment potential. More financial resources mean an increase in consumption and investments, so the probability of having new NPL-s decreases, as well.

The money aggregate M2, which measures the sum of deposits, electronic money, certificates of deposits and REPO-s, means more money in the economy and as soon as they are productive it can decrease the NPL-s. But at the other hand, more money in the market means more loans, a part of which can be turned in non- performing ones because of the wrong credit judgment, or as problems in any sector of economy can be displayed.

The increase in Interest on loans will make these loans more expensive, so it can affect an increase in the level of non-performing loans. The increase in interest of loans will increase the cost of old loans, but in the same time will decrease the level of new loans. So we will have the both part of medals, a restriction of credits and more expensive credits- both with a negative effect in NPL-s.

Exchange rate has a direct impact in the loans in foreign currencies, especially in euro as this is the dominant foreign currency used in bank sector and economy as well. But considering a lot of transactions in euro in a country that has a national currency (Lek), the exchange rate is expected to be a determinant in all NPL-s in Albania.

4. Results and Discussion

There are three independent variables that are statistically significant for explaining the NPL-s in Albania.

In the graphs below we present the trend for the three macroeconomic factors which resulted significant to explain the NPL-s and the trend of NPL-s as well, for the period 2006-2017.
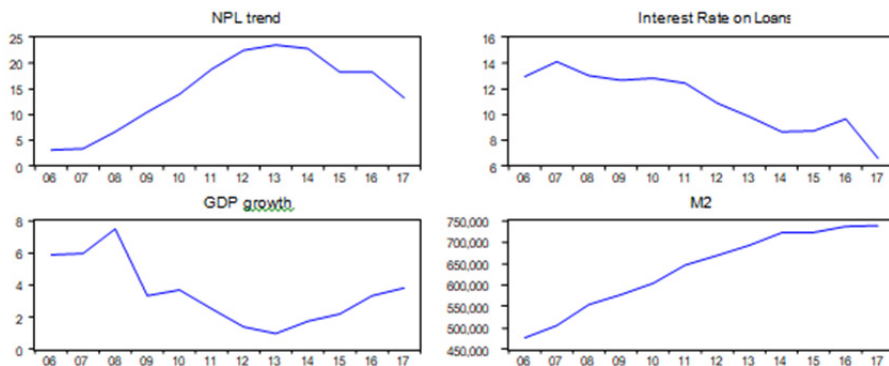
Figure 1. Macroeconomic trend over the period 2006-2017
Source: World Bank and National Bank of Albania Data

The first driver of NPL-s is the GDP growth. Its significance is really high (***) and it has a negative impact. This converges with literature review findings. When the economy of a country has a stable economic growth, the economic agents have much more potential to settle the financial obligations, affecting both the reduction of current NPL-s and the reduction of potential of creating new NPL-s, reducing the risk that banks face.

Meanwhile the unemployment and inflation variables have not resulted statistically significant for Albania, even though these variables have proved to be statistically significant in explaining NPL-s for Mazreku, I., Morina, F., at al (2018) in a study for 10 transition countries, part of CEE. We think that maybe the averages of data as they have elaborated the data for the 10 countries in group, can cause such conclusions.

Table 3. Results of testing the determinants of NPL-s

Depended Variable	NPL	
Independent Variable	Coefficients	Probability
GDP growth	-2.11***	0.0032
M2	6.03**	0.0160
Interest of Loan	1.21*	0.0957
R-squared	0.936	
Adjusted R-squared	0.912	

Notes: :***, **, * denote statistical significance at the 1, 5, 10 percent level respectively.

Source: Authors' calculations

So the equation of regression is:

NPL = -29.75 - 2.11*GDP_G + 6.03*M2 + 1.21*INT_L

We have used M2 as a indicator for the money supply. This aggregate take a great importance in our analysis as it is a critical factor impacting inflation. Finding the M2 as a significant variable (**) in explaining the NPL-s, is a great finding for our research because the inflation was considered as an independent variable but it has resulted non-significant. Referring the literature review inflation is a significant determinant of NPL-s, mainly with a negative impact in it. We didn't arrive in this conclusion for Albania, but finding the M2 as a significant determinant, considering the impact of M2 to inflation, we can approach to literature review findings.

M2 has a positive connection with the level of NPL-s, meaning that although the money in economy are increased, their efficiency has been weak, or although the level of loans was increased, a part of them are turned in non-performing loans, because of the wrong credit judgment, or as problems in any sector of economy can be displayed.

The third factor explaining the level of NPL-s that resulted statistically significant (*) is the interest of loan. This connection is positive, so an increase in the interest of loans will increase the non-performing loans. This result converges with literature review findings. An increase in interest of loans will cause more liquidity needs by the borrowing businesses and as soon as this liquidity issues are not managed in the right way by the businesses, the possibility for transforming these loans in non performing ones will be increased.

Than we decided to test the model if it suffers from multicollinearity, as there are a considerable number of explaining variables compared with the number of observations, or if there is a polynomial connection between explaining variables

Table 4. Variance Inflation Factors

Varable	*Coefficient Variance*	*Centered VIF*
GDP growth	10.65	2.41
M2	413.38	7.75
Interest of Loan	132.04	5.12

Source: Authors' calculations

As the centered VIF≤10, this model has not multicollinearity.

Another test that we conducted was the normality of model remains. Jarque-Bera is the test of valuating if the remains have normal distribution or not.
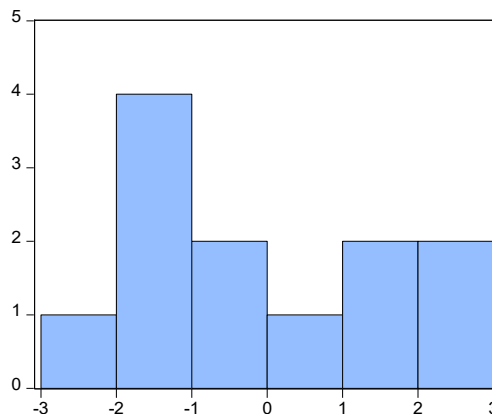
Figure 2. Histogram of Model Remains
Source: Authors' calculations

The value of Jarque-Bera is 0.758. So the remains have normal distribution because the J-Bv = 0.758 < $\chi k2$ = 6.

5. Main Findings

The Albanian banking system faced a sharp rise in non- performing loans after 2009. There are a number of microeconomic and macroeconomic factors that explain NPL-s. However, in the focus of this study it is the determination of the main macroeconomic factors affecting the level of bad loans. Different research studies has found as the most important macroeconomic factors explaining NPL-s: GDP growth rate, inflation rate, unemployment rate and interest rate. We tested statistically the GDP growth, inflation, unemployment level, Money Aggregate M2, Exchange rate and interest rates for loans.

The first driver which affects with a great significance NPL-s is the GDP growth. When the economy of a country is experiencing economic growth, the economic agents have much more potential to settle the financial obligations, affecting both the reduction of current NPL-s and the reduction of potential of creating new NPL-s.

The second driver which affects the NPL-s is monetary aggregate M2. This is an indicator used for measuring the money supply. We have found that M2 has a positive connection with the level of NPL-s, meaning that although the money in economy are increased, their efficiency has been weak, or although the level of loans was increased, a part of them are turned in non-performing loans, because of the wrong credit judgment, or as problems in any sector of economy can be displayed. This is a great finding for our research because when we tested inflation it did not result to be important. But knowing the close relations between M2 and inflation, we can approach to literature review findings for the role of inflation, which in some studies results with positive connections, in some others with negative ones. So it's not a surprise that the connection between the M2 and NPS-s in our study is positive.

The third driver affecting the level of NPL-s is the interest of loan. An increase in interest of loans will cause more liquidity needs by the borrowing businesses and as soon as this liquidity issues are not managed in the right way by the businesses, the possibility for transforming these loans in non performing ones will be increased.

6. Conclusions

This study addresses issues concerning the role of macroeconomic factors in the level of nonperforming loans. The role of this study has been to identify the key drivers of NPL-s, considering literature review, as well as to identify this key drivers and their impact in NPL-s in Albania. There are tested statistically GDP growth, inflation, unemployment level, Money Aggregate M2, Exchange rate and interest rates for loans. It was conducted that the macroeconomic factors explaining NPL-s resulted: the GDP growth, the monetary aggregate M2 and the interest of loan. This connection resulted negatively correlated with GDP growth, and positively correlated with M2; and interest of loans.

So it has to be focused in these three macroeconomic factors, for managing in the right way the problems with NPL-s. The strategies proposed by the Bank of Albania and Government have to consider the above mentioned indication. We think that an important role, except the growth of GDP, has the efficiency use of money supply in our country. This has to be kept in mind by the commercial and saving banks as well.

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