

ANALYSIS OF NONPERFORMING LOANS: CASE OF ALBANIA

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Abstract

The presence of a high level of nonperforming loans has been a growing concern in the world. This problem has been present in Albania, as well, which is one of the countries with the highest level of nonperforming loans in the region. Nonperforming loans hamper economic growth and constrain the monetary policy transmission mechanism.

This paper examines the role of nonperforming loans in Albania by evaluating its level throughout the years and analyzing the ways in which these trends have shaped the credit market developments in Albania in terms of lending by economic sector and geographical position.

This study strives to examine nonperforming loans as a result of other macroeconomic factors: GDP, remittances and inflation. The methodology involves time series analysis, which is used to identify the possible association between non-performing loans and macroeconomic variables. Multiple regression is used as a model to identify any relationship among them. The period covered is from 2014 to 2020, and it uses quarterly data. The paper uses secondary data, obtained from the Bank of Albania, United Nations database, UNECE, INSTAT, World Bank. The results show that nonperforming loans and these variables are correlated in the long-run.

Keywords: *nonperforming loans, credit market developments, inflation, GDP, remittances, Albania, multiple regression model, time series analysis*

1. Introduction

Banks play a crucial role in the financial and economic system of a country. They allocate funds from savers to borrowers in an efficient way that helps the economy growth. In developing countries, like Albania the banking system plays a significant role in the financial system as the latter is composed mainly by banks. As for 2019, bank assets to GDP was about 87.92%, as shown in the Annual Supervision Report published by BoA (2020). Banks also represent the main transmission chain for the monetary policy. The Albanian banking system is considered to be relatively new as it has been developing in the last 20 years, after the fall of the communist regime. The banking environment in Albania has involved a lot of mergers and acquisitions throughout the years. Currently, there are 12 commercial banks with domestic and foreign capital in Albania. The main role of the banks is the allocation of credit within the economy. By doing so they promote economic growth and help build a business-friendly

environment. But offering credit is sometimes quite challenging for banks as they have to bear the credit risk as well. They have to make sure that the borrowers will repay their obligations. Failure to do so, imposes risks not only for banks, but for the whole economy, as it disrupts the banking and economic system of a country. In order to prevent such events, banks are careful with their credit supply and management, affecting the flow of funds available for households and businesses.

Generally, a loan is classified as nonperforming or bad debt, when there have passed more than 90 days without the borrower paying the negotiated instalments. The level of non-performing loans in an economy is a strong indicator on how credit allocation has performed and in forecasting future trend in credit management. Since 2009 banks have been experiencing a lot of difficulties, concerning lending. The issue of rising NPLs has been a global concern throughout the years, especially after the Financial Crises. Its effects have brought negative consequences, like credit stagnation, lower return

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on assets for banks, and lower GDP growth. Many authors have attempted to explain the main determinants of NPLs in different countries, so that the economies are prepared when to expect a rise in the ratios of NPLs and how to prevent the deterioration in banks 'assets and to reduce its macroeconomic and social effects.

This paper concerns with this topic by making an attempt in understanding NPLs in two perspectives: how NPLs have influenced the credit market and lending policies and how the main macroeconomic factors impact the level of NPLs in Albania. Some of the determining factors are GDP growth, interest rates, inflation, unemployment and remittances.

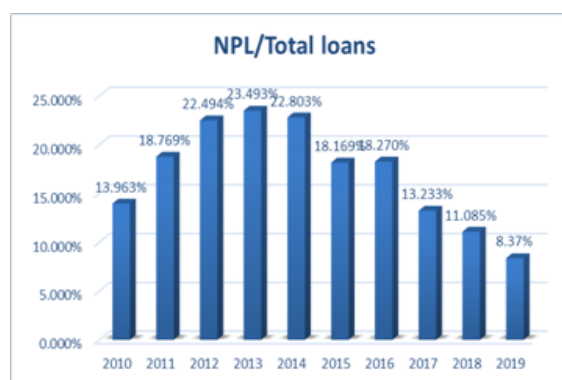
The next sections are organized as follows. The second section will focus on delivering a descriptive approach on the level and the trend of NPLs throughout the years and how this has affected the credit policies of the central bank and the commercial banks. I will highlight in this part the credit market developments in Albania. The third section will cover the literature review of NPLs and its main macroeconomic determinants. Section 4 describes the econometric model and presents the empirical findings of the study. Section 5 concludes the results and the limitations.

2. NPLs and Credit Analysis

2.1. NPLs in Albania: An Overview

Loans are classified into five categories: standard loans, special mention loans, sub-standard loans, doubtful loans and lost loans. The last three categories comprise the level of NPLs. An NPL is a loan, whose borrower has not paid the required instalments for more than 90 days. The banks need to set aside capital to cover up the loss from the loan, but this reduces on the other hand the capacity of the bank to make new loans, and as a result it decreases its profitability.

Figure 1 – NPLs in Albania 2010-2019



Source: World Bank

The level of nonperforming loans has increased from 2010 up to 2013, being in its highest level in 2013, which accounted for 23.493% of the total loans. Economic growth started to slow in 2009 until 2013. This happened because Albanian economy relies on remittances, since a great percentage of population lives abroad. According to a report published by BoA (2018) 1.15 million of Albanian emigrants send money and help almost 26% of Albanian families. However, it has been a challenge for Albania to collect data regarding this topic as it is estimated by BoA (2018) that 39% of remittances flow through unregulated channels, 57% through non-bank financial institutions and 4% through banks.

According to the World Bank (2016), more than 60% of remittances come from Greece and Italy, which both suffered the consequences of the Financial crises. This led to a decline in remittances and exports, by further declining the economic growth and increasing the number of nonperforming loans. The problem of NPLs continued for a long time in Albania, being affected by other factors as well, overexposure towards the construction sector and loans in foreign currency. According to World bank, the supply of credit declined from 57% annually in 2008, to 10 % in 2014. Since then, NPLs have been decreasing, accounting for only 11.085% of the total loans in 2018. The main reason for the decline in NPLs in 2014 and in the following years is the legal change in Article 24, Law 8438 Income tax, which recognized bad debt

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(nonperforming loans) as a deductible expense for commercial banks for a shorter time period (365 days). The change that has been made clarifies that if an execution procedure has been initiated and 365 days have passed, for fiscal effects this will be considered a deductible expense. This procedure would have taken years, but starting 2014 it took only one year.

Additional main causes that have contributed to the decline in the level of NPLs throughout the years are the following:

1. Loan restructuring through extension of the term or reduction of installments.

2. The write-off from the banks' balance sheets of the loans that had more than 3 years without being paid.

3. Increase of loan loss provisions. Based on the Bank of Albania's regulation and international financial reporting standards (IFRS), banks create provisions to cover possible future losses arising from non-payment of loans. Loan loss provisions is an expense, which is set aside as an allowance for bad debt, or renegotiated terms of a loan that are less than previously estimated. So, when loans are classified as "lost", they compensate this amount by decreasing with the same amount the loans loss provisions.

4. BoA's initiative to decrease informality among the business environment. In order to keep in control the level of NPLs, BoA requires banks and NBFIs to provide loans to businesses based only on tax-compliant statements starting from January 1st, 2018.

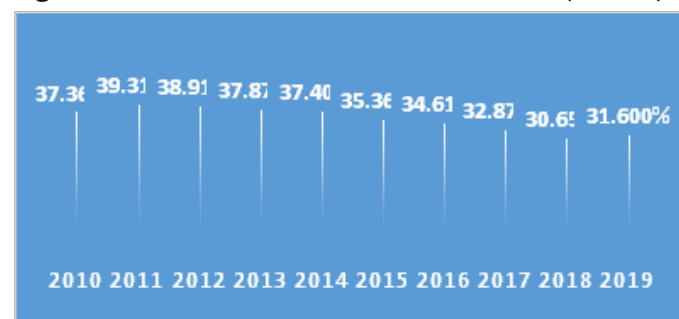
The nonperforming loans ratio has had in 2018 the same downward trend of recent years, which accounted for 11.085%, in comparison with the previous year 13.233%. The decline results from portfolio a 19% drop in nonperforming loans. The latter includes forms of restructuring, as well as partial and total repayments by borrowers. Meanwhile according to the annual supervision report of the BoA (2018), the loan portfolio itself led to a 3.36 percent decline, which was mainly affected by the decline in the foreign currency exchange rate against the Albanian lek. In the

absence of Euro and USD depreciation, the loan would have increased by about ALL 2.76 billion. According to the Financial Stability Declaration for the second half of 2019, published by the Bank of Albania, the ratio of NPLs has fallen to 8.37%, for the first time in single digits over the last decade.

2.2. Credit Market Developments

Credit supply has been decreasing in the last few years in Albania. Banks remain cautious in lending, as they continue to apply tight credit conditions especially for businesses. Figure 2 shows the domestic credit to the private sector by banks as a percentage of GDP, for the period of 2010-2018. It shows an increasing pattern in the first two years, and since 2012 the amount of credit has been decreasing with diminishing rates. It started decreasing by 1.01% in 2012, and in 2018 credit decreased by 6.75% compared to the previous year, accounting for 30.567% of GDP.

Figure 2 – Domestic Credit to Private Sector (% GDP)



Source: World Bank

The possible explanatory reasons behind such trend are considered to be the following:

- Albanian banks' evaluation of credit risk continues to be significant, even though the level of nonperforming loans has been decreasing.

- Loan portfolio quality: Since the banking sector has been dealing for quite a long time now with a declining quality of its loans, it is considering investing in safer securities. What proves this statement is the investment in Albanian government securities, which account for 24% of total assets, according to Bankieri (2019). This figure is the highest compared with the banking sector of the countries in the same region.

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-Appreciation of Albanian lek against Euro: Since the majority of outstanding loans in Albania are denominated in euro, and the trend in total banking industry loans takes into account only loans in ALL, this gives an inaccurate framework because of the strong appreciation of ALL against Euro.

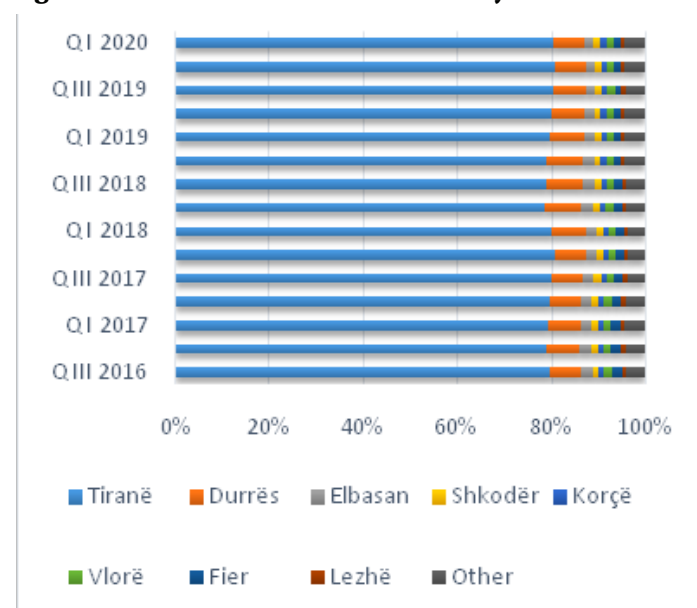
-Loan demand: According to WB (2018), 15% of SMEs in 2017 relied in informal sources of funds such as family and friends and 24% of them financed their operating investments through retained earnings.

-Loan supply: As a response to the Financial Crises, banks are increasing their loan loss provisions. In order to enhance their balance sheets, they are either increasing capital or reducing their lending exposures. Bank lending has stagnated relatively in recent years.

2.3. Loans by Districts

When analyzing the credit market development in Albania, it is important to look at the way banks choose to diversify their loans portfolio. The diversification of loans can be achieved through various ways: by district, by economic activity or by type of loans, etc.

Figure 3 – Total Loans to Businesses by Districts



Source: Bank of Albania

Figure 3 shows the geographical distribution of loans in Albania. The data are on quarterly basis

and cover the period from third quarter 2016 up to the first quarter 2020. As it is noticeable from the graph, Albanian banks lack geographical diversification in terms of lending, since almost 80% of all outstanding loans are concentrated in Tirana, followed by Durrës, Elbasan, Shkodër, etc. The reason behind such trend, is because of the high concentration of businesses in Tirana, compared to the other cities. Another explanation might be that most of the businesses in Albania are micro or small businesses and they rely a lot also on family and friends in terms of financing.

As for the third quarter of 2016 more than 79.59% of loans were distributed in Tirana. This percentage has been almost the same, with small decreases in 2018, and finally reaching 80.25% in the first quarter of 2020. In Durrës were concentrated 6.5% of all outstanding loans, as in the third quarter of 2016, and 6.88% in the first quarter of 2020. As for the other cities the percentage of outstanding loans is relatively low ranging from 0.77% to 1.86% throughout the years.

3. Macroeconomic Factors Affecting NPLs: Literature Review

Various studies have been conducted on the subject of nonperforming loans and its main determinants. The results are similar, but they might differ from one country to another, because of different economic and social differences.

Mohanty & Das & Kumar, (2018) found that real GDP and NPLs are negatively associated in India. Among real GDP, they investigated other variables, as well. They divided these variables into three major groups: macroeconomic specific, corporate specific and banking specific variables. According to their study, economic growth has a greater impact on the reduction of the Gross NPLs ratio among macroeconomic variables. As for the banking specific variables, the increase in credit deposit ratio, and higher return on equity (ROE) will lower Gross NPLs ratio. On the other hand, net sales growth and net profit margin have a negative effect on Gross NPLs ratio.

Farhan, Sattar, Chaudhry & Khalil (2012) studied

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the determinants of NPLs in Pakistani banking sector by using multiple regression analysis. NPL was the dependent variable and the independent variables used were: inflation rate, interest rate, GDP growth, unemployment rate, energy crises and exchange rate. The results of the study showed that interest rate, energy crises, exchange rate, inflation and unemployment have a significant and positive relationship with the NPL ratio, whereas GDP growth has a significant negative relationship with NPL ratio. The association of NPL with the exchange rates is explained by the increased global competition, which affects the credit risk of the domestic economy. In other words, whenever, we have an appreciation of the real effective exchange rate conveys into higher NPLs

Other studies concerning these issues have been published in Europe as well. Bofondi&Ropele (2011) used a single-equation time series regression to explain the determinants of NBLs (the ratio of new bad loans to the stock of performing loans at the end of previous period) in the Italian banks. The study used data from 1990 to 2010 and the results were divided into two groups: variables that affect NBLs in terms of lending to households and those in terms of lending to firms. The NBL ratio for lending to households was inversely related to real GDP growth and house prices, and it is positively related to the unemployment rate and short-term nominal interest rate. On the other hand, the NBL ratio for firms is positively associated with the unemployment rate and the ratio of net interest expense to operating profits, and negatively associated with the consumption of durables.

The determinants of NPLs were divided into two groups: macroeconomic and bank-related variables in a study conducted by Klein (2013) in an attempt to explain NPL level for CESEE (Central, Eastern and South-Eastern Europe) for the period 1998-2012. The concluding points of this paper showed that among the banking-variables, higher ROE and ROA seemed to lower the level of NPLs, reinforcing the 'moral hazard' effect and the fact that well-managed banks are associated with

lower levels of NPLs. However, the banking-related variables did not seem to contribute a lot to the level of NPLs compared to macroeconomic variables. As for the macroeconomic environment, the study showed the link between the business cycles and the banking sector.

GDP as the main driver of the NPLs was highlighted again in the study of Beck, Jakubik&PiloIU (2013). This paper analyzed data for 75 countries, in an attempt to find the main determinants of the NPLs. The results change from one country to another depending on their capital structure, export-import relationship and currency appreciations. For countries with large stock markets, like Germany, a decline in the stock market led to a considerable increase in the level of nonperforming loans. But in emerging countries, the stock market changes appear to not have a significant impact on NPLs. In these economies, the role of the exchange rates seemed to be more relevant.

Several studies on this subject have been conducted in Albania as well. Şan (2018) states that Albania has been having a large amount of NPLs as a result of the 2008 Financial Crises. He suggested that the reason for such a pattern could be explained because of the country's strong economic relations with Greece and Italy. Both these countries have faced significant economic downturns during this period. Şan (2018) holds accountable mainly the commercial banks for the high level of NPLs, as he points out that the main reasons for such a trend in Albania are: corrupted relations and improper risk management. Other reasons include the decrease in the prices of primary commodities in the global markets and deficiencies in external audit. According to a questionnaire conducted by the author itself, most of the bankers stated that business loans have higher NPLs ratio than retail loans, due to impractical investment projects.

4. Methodology

This paper will use time series analysis to identify the possible association between non-performing loans and macroeconomic variables. The study covers the period 2014 - 2020, with quarterly data.

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The data used are secondary data, obtained from the Bank of Albania, United Nations database, UNECE, INSTAT. The EViews 11 statistical package will be used to analyze these data.

4.1. Model Specification

To analyze the possible relationship between macroeconomic variables and nonperforming loans, multiple regression will be used. The dependent variable of the model is nonperforming loans (NPLs), while the dependent variables are: gross domestic product (GDP), remittances (REM) and inflation (INFL). GDP and REM will be entered into the model in logarithmic form, while NPLs and INFLs are measured in percentage.

$NPLs = f(\ln GDP, \ln REM, INFL)$.

4.2. Stationarity

A time series is called stationary when its mean and variance are constant over time, otherwise the series is called non-stationary, or has a unit root. Macroeconomic variables are generally non-stationary, due to the trend. Due to non-stationarity, the use of Ordinary Least Squares (OLS) in these cases may result in spurious regression. For this reason, the first step in time series analysis is to test for stationarity or unit root. There are many tests that can be used to test stationarity, but in this paper the Augmented Dickey-Fuller (ADF) test will be used. The hypotheses that will be tested are:

H_0 : There is a unit root

H_1 : There is not a unit root

Time series can be stationary at the level (with the data as they are), and in this case they are called order stations), I (0), or they can be higher order stations, I (I), I (II), etc.

A non-stationary time series can be transformed into a stationary time series. For example, a non-stationary time series at the level can be transformed into an integrated first-order stationary series if the differences of successive values the series are stationary: $\Delta u_t = x_t - x_{t-1}$

If the time series turn out to be stationary at the level, then the use of OLS does not result in spurious

regression. If time series are integrated in the first order I (I), OLS can only be used when residuals are stationary at level I (0). Otherwise OLS should not be used to analyze time series. In these cases, the most suitable tests are Cointegration tests, which tests for long-run relationship between variables which are first-order stationary, I (I).

The ADF test results show that the variables are non-stationary at the level, but they become stationary in first-difference, so they are integrated in order I. A summary of the results for each variable is given in the table.

Table 1 – ADF Test Results

Variables	t-statistics	p-value
D(NPLs)	-4.059413	0.0062
D(lnGDP)	-23.63143	0.0000
D(lnREM)	-7.689707	0.0000
D(INFL)	-26.24857	0.0000

Source: Own Calculations

The test results show that the variables are not stationary in the level, but they become stationary in the first difference, so they are integrated in the first order I (I).

4.3. Long Run Association

With this data the OLS test is used for the possible long-term relationship between the variables. The results are given in the table below.

Table 2 – OLS Test Results

Dependent Variable: NPLS

Method: Least Squares

Sample (adjusted): 2014Q1 2020Q1

Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	723.9515	82.89146	8.733729	0.0000
LNREM	-15.80433	5.921904	-2.668791	0.0144
LNGDP	-49.03621	7.430515	-6.599303	0.0000
INFL	-2.048024	0.372933	-5.491671	0.0000
R-squared	0.822880	Mean dependent var		16.99449
Adjusted R-squared	0.797577	S.D. dependent var		5.055571
S.E. of regression	2.274574	Akaike info criterion		4.627109
Sum squared resid	108.6474	Schwarz criterion		4.822129
Log likelihood	-53.83886	Hannan-Quinn criter.		4.681199
F-statistic	32.52122	Durbin-Watson stat		1.556271
Prob(F-statistic)	0.000000			

Source: Own calculations

For OLS results to be considered valid, given that all

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variables are I (1), we must first test the residuals, which must be I (0). The ADF result for residuals shows that they are integrated of order I (0).

Table 3 – ADF Test Results for Residuals

Null Hypothesis: RESID01 has a unit root
 Exogenous: Constant
 Lag Length: 2 (Automatic - based on SIC, maxlag=5)

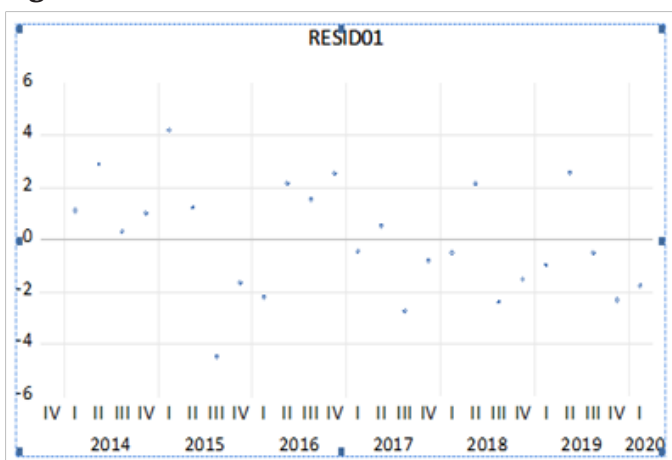
	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.622189	0.0138
Test critical values:		
1% level	-3.769597	
5% level	-3.004861	
10% level	-2.642242	

*MacKinnon (1996) one-sided p-values.

Source: Own calculations

Since the residuals are I (0), then the OLS results are statistically valid: R-squared = 0.82 and Adjusted R-squared = 0.79 show that the variables included in the model explain approximately 80% of the variation of nonperforming loans. The model is strong because F-statistic is 32.5 (P-value = 0.000). Durbin-Watson statistic = 1.56, so close to 2 and this shows that the model does not suffer from autocorrelation. Likewise, residuals do not exhibit any noticeable patterns, so the model is valid for making predictions. The test shows that all variables are statistically significant, because for each case p-value < 5% and |t| > 2

Figure 4 – Residuals Plot



Test results indicate a negative relationship between remittances and nonperforming loans. The REM coefficient is -15.8 which shows that a 1% increase in remittances is accompanied by a

15% decrease in nonperforming loans.

The GDP coefficient is - 49, which shows that a 1% increase in GDP is accompanied by a 49% decrease in nonperforming loans.

The Inflation Ratio is -2, indicating that a 1% increase in inflation is accompanied by a 2% decrease in nonperforming loans. This result seems contrary to expectations, given that the theory suggests a positive association between inflation and nonperforming loans. However, previous studies for Albania (Lleshanaku, 2015., Shingjergji and Shingjergji, 2013) have found a weak negative relationship between inflation and nonperforming loans. A similar conclusion was drawn in a study on Macedonia (Nikolov, Miso; Popovska-Kamnar, Neda, 2016).

5. Conclusions

The nonperforming loans have had a great impact in all countries, but these impacts are especially high in a country like Albania, where its banking sector plays a crucial role in the economy. Because of its strong relations with countries like Italy and Greece and since many Albanian families depend on remittances, the issue of nonperforming loans has been one of the main concerns in Albania and also one of the most delicate issues to deal with. Based on our econometric analysis of NPLs, we conclude that GDP, remittances and inflation are significant factors that help explain the level of NPLs in Albania in the long-run. However, one of the main limitations is the low number of observations (25). If this number were higher, it would yield results that are more accurate, but because of the lack of data for Albania prior 2014, it was impossible to increase this number. Other constraints of the model are the quality of the data used and the lack of banking, microeconomic and social variables, that would help explain the level of NPLs in Albania.

Another conclusion that can be drawn based on the analysis of the credit market developments is that the level of NPLs has affected the lending terms of banks, by using more conservative policies when this level is high, but also being more cautious

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by increasing their requirements when applying for a loan. Most of the outstanding loans are concentrated in the city of Tirana and are given to nonfinancial corporations. In comparison with other Balkan countries, Albanian banks have been following a conservative policy by increasing their capital and providing less loans to the economy. It is important to include in our analysis other macroeconomic factors, such as: unemployment, foreign exchange rates etc. as well as banking, social and microeconomic related variables, because in this way we would yield a more valid conclusion and this would help us predict future trends in NPLs, in order to take the required measures on time. The decline in outstanding banking loans might lower the probability of occurrence of NPLs but it does not help the economy grow. That's why it is important to focus more on the analysis of NPLs and prevent future trends that might hamper economic growth. Important measures that might be undertaken from the banks are: monitor the loan underwriting procedures, diversifying their portfolio in terms of district and economic sector, and further conducting more detailed researches on the topic of NPLs and its main determinants, by focusing not only on the macroeconomic ones, but taking into consideration other variables, as well.

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