The Effects of the Changes in Some Macroeconomic Indicators on the Non-Performing Loans in the Albanian Banking Sector (2007 – 2014)

Turan Şan - Ph.D. Candidate

University of Tirana – Institute of European Studies-Albania
Email: turansan2001@gmail.com

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Abstract

Having very high levels of non-performing loans (NPLs) has been one of the main problems of Albania since 2008 when the last global economic crisis started to affect Europe. In this paper, it was aimed to show how the changes in some macroeconomic figures of Albania have affected NPLs ratio in the banking sector knowing that it is also affected by some other factors related with the sector itself, borrowers and the legal system as well. The macroeconomic variables which were tested by using Least Squares Method are: real Gross Domestic Product (GDP) growth, unemployment rate, inflation rate, Albanian LEK (ALL)/EURO rate, remittances and foreign direct investments. The results show that NPLs has a negative correlation with remittances and unemployment rate (the latter is adverse according to economic theory) while its correlation with the other variables is not significant. The findings indicate that the huge decreases in remittances played a more important role than the general effects of the crisis in the continual and considerable increases of NPLs which have deteriorated financial tables of the commercial banks. As a result of this, the banks have become more selective in lending to business which also has caused NPLs rise (the vicious circle). Since the changes in these macroeconomic variables are, in general, not enough in explaining the big increase in NPLs, the other factors of NPLs such as bank risk management, structure of business entities and the legal system, which were not studied in this paper, should be analyzed to identify the other reasons behind this big problem. To decrease NPLs level; the banks should have more will to lend especially to private entities with paying attention to risk factors, the borrowers should try to find new partners/investors, markets to recover their businesses and meantime the government should encourage economic growth as well as strengthen and facilitate the legal system.

Keywords: Macroeconomic, economic crisis, non-performing loans, banks, Albania

1. Introduction

The global economic crisis, which started as a financial crisis in 2007, has become more effective with enlarging its coverage area starting from the second half of 2008 and has affected the world economy deeply. However, its effects show considerable differences among the regions and the countries as well. Although it affected mainly first the USA and then Euro zone where the financial markets have more products and are more complicated, Albania, as a developing country, has also been affected considerably due to her strong economic and social relations with Italy and Greece whose economies have worsened seriously in this period. The total number of Albanian emigrants in the World is about 1.4 million of which around 1.1 million live in Italy and Greece. (www.mfa.gov.al/ accessed on 13.02.2016). Considering that Albanian population is 2.893.005 in January 2015, the importance of remittances in the country’s economy becomes more evident. (www.instat.gov.al/ accessed on 13.02.2016.)

It is known that financial sector and real sector are generally interacted. More clearly, a problem in one of them affects the other. The recent economic crisis is a good example for this evidence. The problem firstly started in the financial markets and then affected the other sectors negatively in many countries, but especially in the developed ones.

In Albania, the financial system is underdeveloped. There is no financial capital and stock market. It is dominated by the commercial banks and the banks invest the remained funds from their main activity i.e. giving loan to business entities and individuals in treasury bills issued by Bank of Albania as it is the only financial instrument in the capital market. The Albanian financial market is isolated from foreign markets (Garo and Nikolla, 2015). According to the determination of Dornbusch et al. (as cited in Batten and Szilagyi, 2011), the higher the degree of financial market integration, the more pronounced the contagious effects of shocks will be.

In fact, the simplicity and non-integration of the local financial market with foreign markets as well as being a net importer – in the period of 2000-2015, the maximum rate of export/import is 47.6% in 2013- (www.instat.gov.al/ accessed on 05.03.2016.) in an economic crisis period, when the demand for goods and services go down considerably, were
chances for the country to be less affected from the crisis. However, the country has been affected seriously, mainly due to continual and considerable decreases in remittances though foreign direct investments have been in an increase trend (continually till 2010 and then with ups and downs). Although, deterioration in the global economy has naturally affected Albanian's economy negatively, the big part came from the country's special case, i.e., decreases in remittances which is a major element in running of the economic and commercial activities. Remittance decreases have led to shortage of money in circulation and devaluation of ALL against the foreign currencies. These negative monetary changes have caused less demand for goods/services and thus less production and sales. The slowdown in economic growth has led to more unemployment. According to Institute of Statistics, it rose from 13.5% in 2007 to 17.4% in 2014 (www.instat.gov.al, accessed on 07.05.2015.). All these negative changes in the economy have affected both business enterprises and households badly. Deterioration in financial situation of these two groups, who are borrowers of a big part of the credit exposure in the commercial banks, has caused them to repay their credits with delays or even no payment at all. This undesirable situation has made the banks more selective in evaluation of new credit requests and thus they have made less new credits. As a result of more unpaid loans and less new lending, especially to business, NPLs amount rose continually and considerably during the examined period except the last year, 2014. It is also necessary to state that, the factors, which were not analyzed in this study, such as bank- specific, borrowers related and legal system have also played role in reach of NPLs to such high ratios.

2. Literature Review

In the article prepared by Ali Shingjergji and Iva Shingjergji (2013), the relation between macroeconomic situation and NPLs was analyzed by taking into consideration some macroeconomic and banking factors of Albania belong to the period of 2009-2012. The results show that NPLs has a positive relation with the percentage of the loans in the bank assets and also with the real exchange rates, but there is a weak relation with the real interest rates while it has a negative relation with the inflation and also with the growth of the loans (the latter is against the international norms). In the study by Eliona Gremi (2013), similar results were found for Albania. The data was collected from the commercial banks for the period of 2005Q1-2013Q1. Besides banking, a set of macroeconomic and industry specific variables were included in the analysis. The results are: 1- The global economic crisis has deteriorated credit quality. 2- Credit quality has a negative relation with the inflation rate while it has a positive relation with the loan interest rate. 3- Devaluation of ALL against EURO has made negative impact on credit quality. In another paper for Albania by Gungor Turan and Arjeta Koskija (2014), the relation between NPLs increase and 5 macroeconomic indicators, namely real GDP growth, unemployment, inflation, loan interest rate and remittance were examined for the period of 2003-2013. It was found that NPLs and these variables are co-integrated, but it is weak in the long run. Nir Klein (2013) investigated NPLs by collecting data from sixteen countries in Central, Eastern and South-Eastern Europe for the period of 1998-2011. According to the findings, the level of NPLs can be attributed to both macroeconomic conditions and banks’ specific factors while the latter has a relatively low explanatory power. The results show that NPLs has a positive relation with unemployment rate, inflation rate and depreciation of local currency against foreign currencies while high NPLs ratio adversely affects real economy (feedback effect). It was also found that beyond the country specific factors, the euro area GDP growth and the global risk aversion have direct impact on banks’ asset quality. The study by Ričardas Mileris (2014) with aiming to understand the effects of changes in GDP, exports, compensation of employees, final consumption expenditures of households, unemployment rate and government expenditures on NPLs level in EU countries, especially mentioning Lithuania case in 2009-2011 period, indicates that, negative changes in these factors and in the number of bankrupted companies caused considerable NPLs rise in Lithuania. It is also stated that deterioration in these 6 factors generally led to increases in NPLs amount, but huge increases occurred in the countries with imperfect economies. İlhami Karahanoğlu and Harun Ercan (2015) analyzed the effects of changes in 3 macroeconomic variables, namely the index of 100 biggest companies in Istanbul Stock Exchange Market, value of EURO and US Dollar against Turkish Lira and the industry production index (SUE) on NPLs in the period of 2005-2015. According to the findings, there is causal relationship between these variables and NPLs level. Fawad Ahmad and Taqadus Bashir (2013) tested explanatory power of 9 macroeconomic variables, namely annual growth in GDP, unemployment rate, real interest rate, inflation rate, consumer price index, real exchange rate, industrial production, exports and foreign direct investments on NPLs in Pakistan from 1990 to 2011. The results indicate that annual growth in GDP, real interest rate, inflation rate, industrial production and exports are negatively associated while consumer price index is positively associated with NPLs. The other 3 factors do not have significant impact on NPLs. Irum Saba, Rehana Kouser and Muhammad Azeem (2012) examined US banking sector to determine the impact of real GDP per capita, inflation and total loans on NPLs in the period of 1985-2010 and they found that all the variables have significant impact on NPLs while the values of the coefficients are not so high. The general results of the
study by Angela Roman and Irina Bilan (2015) with the aim of evaluating the effects of GDP growth, unemployment, banks credits amount and public finance level on NPLs in 28 European Union Countries through the period of 2000-2013 show that NPLs increases when real economic growth decreases, unemployment increases, loans to private sector rises significantly in a short period of time and general government debt/GDP ratio exceeds a certain level (estimated rate is about 97%). Mohammadreza Alizadeh Janvisloo and Junaina Muhammad (2013) measured the sensitivity of NPLs to some macroeconomic variables in Malaysia in the period of 1997-2012. The findings are: 1- GDP and domestic credit amount (with 2 year delay) have negative effect on NPLs while lending interest rate (after 1 year), inflation rate and foreign direct investments outflow (after 1 year) have positive effect on it.

3. Methodology

In this study, the changes in some of the macroeconomic indicators of Albania and their effects on NPLs level in the country's banking sector were examined for the period of 2007-2014. The examination starts with the year of 2007 as it was the last year before the global economic crisis started to show its effects in Europe and by this way, it can be seen, to what extent these figures changed during the crisis. These changes are explained below and also shown in the following graphs. The graphs also include the year of 2006 as the percentage changes in the variables from year to year were used in the regression analysis. Least Squares Method was used in the analysis. The changes in the banking sector's profit were also examined in order to see better the effects of NPLs rise on it.

4. Results

The most drastic decrease—starting in the year of 2008—has been in remittances amount, from the level of around 1 billion EURO to around 500 million EURO in 2013 and finally an increase in 2014 (graph 1 below). For instance, GDP in 2011 was about 9.1 billion EURO (Bank of Albania’s annual report-2011). So, the importance of remittances in the economy can be seen better.

Graph 1: Remittances

Source: Annual Reports of Bank of Albania (2006-2014)

Unemployment rate did some ups and downs, but did not change too much in the examined period (graph 2 below).

Graph 2: Unemployment Rate

Source: Annual Reports of Bank of Albania (2006-2014)

Foreign direct investments was in an increase trend with rising continually till 2010 and then with ups and downs (graph 3 below).
Graph 3: Foreign Direct Investments

Inflation rate made some ups and downs until 2010 and then went down continually (graph 4 below).

Graph 4: Headline Inflation Rate

The value of ALL against EURO decreased considerably starting 2009, becoming 1 EURO= 140.3 ALL in 2011, but remained almost at the same levels in the last three years (graph 5 below).

Graph 5: Average ALL/EURO Rate

Real GDP growth decreased sharply in the year 2009, the first year when the crisis showed its effect in the entire period and then continued to go down till 2012 while keeping 1.45 % level in the last two years (graph 6 below).

Graph 6: Real GDP Growth Rate
NPLs increased continually and considerably, but huge rises in the period of 2008-2012 and a slight one in 2013. It finally went a little down in 2014 (graph 7 below).

Graph 7: NPLs Level

Source: Annual Reports of Bank of Albania (2006-2014)

The data was analyzed by using Least Squares Method to see how the changes in the macroeconomic indicators affected NPLs level. So, NPLs is the dependent variable while all the others are the independent variables. The model is as shown below.

\[ NPL = \alpha + \beta_1 FDI + \beta_2 INF + \beta_3 EUR + \beta_4 REM + \beta_5 RGDP + \beta_6 UE + e \]

Where,

- \( NPL \) shows the ratio of non-performing loans to total loans.
- \( \alpha \) is the intercept which shows NPLs level when all the independent variables are equal to 0.
- \( \beta_1 \) shows the expected slope of NPLs when foreign direct investments changes with 1%.
- \( FDI \) is the change of foreign direct investments amount in percentage.
- \( \beta_2 \) shows the expected slope of NPLs when headline inflation rate changes with 1%.
- \( INF \) is the change of yearly headline inflation rate in percentage.
- \( \beta_3 \) shows the expected slope of NPLs when ALL/EURO ratio changes with 1%.
- \( EUR \) is the change of the price of 1 EUR against ALL in percentage.
- \( \beta_4 \) shows the expected slope of NPLs when remittances changes with 1%.
- \( REM \) is the change of remittances amount in percentage.
- \( \beta_5 \) shows the expected slope of NPLs when real GDP growth changes with 1%.
- \( RGDP \) is the change of real gross domestic product growth rate in percentage.
- \( \beta_6 \) shows the expected slope of NPLs when unemployment rate changes with 1%.
- \( UE \) is the change of unemployment rate in percentage.
- \( e \) represents the standard error.

After running the regression analysis, the equation is as follows:

\[ NPL = -0.007 + 0.01 FDI + 0.38 INF + 0.39 EUR - 0.26 REM - 1.47 RGDP - 5.66 UE \]

Table 1: Regression Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>REM</td>
<td>-0.263123</td>
<td>0.028822</td>
<td>-9.129170</td>
<td>0.0695*</td>
</tr>
<tr>
<td>FDI</td>
<td>0.011170</td>
<td>0.005881</td>
<td>1.899390</td>
<td>0.3085</td>
</tr>
<tr>
<td>RGDP</td>
<td>-1.475074</td>
<td>0.380632</td>
<td>-3.875324</td>
<td>0.1608</td>
</tr>
<tr>
<td>UE</td>
<td>-5.662029</td>
<td>0.628391</td>
<td>-9.010360</td>
<td>0.0704*</td>
</tr>
</tbody>
</table>
None of the variables have a significant impact on NPLs at the significance level of 0.05. The variables that have negative significant impact on NPLs at 0.1 level are remittances (1% decrease in REM increases NPLs by 0.26%) and unemployment rate (1% decrease in UE rate increases NPLs by 5.66%) while the others do not have even at this level. Foreign direct investments, inflation rate and ALL/EURO rate have positive insignificant impact while real GDP growth rate has negative insignificant impact on NPLs. R-square equals to 0.9931. Thus, 99.31% of the data is explained by the model. Probability (F-Statistic) equals to 0.154 (more than 0.05). Therefore, all of the variables taken together are insignificant in explaining NPLs (table 1 above). The same result was found by the Wald Test. As Probability of F-Statistics (0.1414) is bigger than 0.05, it can be concluded that all of the independent variables taken together are insignificant in predicting the dependent variable (table 2 below).

Table 2: Wald Test Results

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Value</th>
<th>df</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
<td>28.43315</td>
<td>(5, 1)</td>
<td>0.1414</td>
</tr>
<tr>
<td>Chi-square</td>
<td>142.1657</td>
<td>5</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

It is also necessary to see the changes in some figures of the commercial banks in order to understand better how the sector was affected during the same period. The following graphs show the changes.

The commercial banks decreased sharply the lending to private entities once the crisis showed its effect in the country (2008, 2009). A second drastic decrease realized in 2012 due to considerable increases in NPLs and finally moved up in 2014 (graph 8).

Graph 8: Growth of Lending to Private Sector

Source: Annual Reports of Bank of Albania (2007-2014)
In this period, the banks have preferred to invest more funds in other instruments with lower profit margins rather than have given credit. Moreover, because of continual and considerable increases in NPLs, the banks have separated a bigger amount of their earnings as loan loss provision and in some cases have decreased the margin between the interest rates of deposits and credits to find new funds. These negative happenings led to sharp decreases – except the recovery in 2010- in their net profits and of course in the profitability ratios as well until the year of 2012. Starting 2012, it is seen a remarkable positive change in these bank figures as the banks have become more selective in making new credit and also the credits of hopeful clients have been restructured or some others have been liquidated by collateral sales (graphs 9,10,11 below). Although NPLs ratio went down in the last year, it is still at a very high level, i.e., 22.8 % as end of 2014, which was only 3.4% as at December 31, 2007.

**Graph 9:** Banking Sector's Net Profit

![Net Profit Graph](image)

**Source:** Annual Reports of Bank of Albania (2007-2014)

**Graph 10:** Return on Assets

![Return on Assets Graph](image)

**Source:** Annual Reports of Bank of Albania (2007-2014)

**Graph 11:** Return on Equity

![Return on Equity Graph](image)

**Source:** Annual Reports of Bank of Albania (2007-2014)

5. **Conclusion**

The global economic crisis, which started in 2007, has become more effective in Europe starting the second half of 2008 and has deteriorated almost all the economies in the world, but more that of the developed countries. Albania, as a developing country, has been affected more than it should be due to her strong economic and social relations with Italy and Greece - especially the existence of a huge number of Albanian emigrants in these countries - whose economies have worsened seriously in this period.

In general, financial sector and real economy are interacted and a problem in one of them affects the other immediately as it happened in many countries during the last global economic crisis. In Albanian case, it happened something differently due to the effect of the special factor, remittances which has played a bigger role than the other
commonly known ones. Continual and considerable decreases in remittances, which is one of the crucial elements in running of the economic and commercial activities of the country, together with the general effects of the crisis on the economy have created a liquidity problem which has caused lower business volumes and non-payment of obligations including bank credits. These negative developments have led to more unemployment, higher foreign exchange rates and thus remarkable decreases in GDP growth. In this bad economic situation, as a reaction to increases in non-performing loans and deteriorations in their financial tables, the commercial banks have decreased lending activities to private sector and NPLs has reached very high ratios as a normal result of the interaction among macroeconomic situation, banks’ attitudes in lending and NPLs. Besides that, banking sector and borrowers related factors as well as deficiencies in and slow working of the legal system have played role in the rise of NPLs.

The effects of the changes in 6 macroeconomic indicators of the country, namely real GDP growth rate, unemployment rate, inflation rate, ALL/EURO rate, remittances and foreign direct investments on NPLs for the period of 2007-2014 were analyzed. Although it is also seen deterioration in GDP growth and ALL/EURO rate, remittances is the only indicator which has changed likewise NPLs starting 2008 (remittances decreased while NPLs increased from 2008 to 2013 and vice versa in 2014). The data was analyzed by using Least Squares Method. The results of the regression analysis indicate that NPLs is in negative correlation with remittances and unemployment rate while it is in weak positive correlation with foreign direct investments, inflation rate and ALL/EURO rate, but in a weak negative correlation with real GDP growth rate. (Its relation with foreign direct investments and unemployment rate is adverse according to economic theory). It is also necessary to mention that, the banking sector’s net profit and profitability ratios have decreased considerably due to more provisioning for loan losses and decreasing profit margins as a result of investing on bonds rather than making loan as well as applying higher interest rates to deposits in order to find new funds. Although the net profit and the profitability ratios of the banking sector have recovered since 2012 and the profit amount in 2014 exceeded that of 2007, the profitability ratios are still considerably lower than the pre-crisis levels.

Although NPLs increased slightly in 2013 and even went down a little in 2014(22.8% as end of 2014), it is still one of the main problems of the country. As it is not expected any significant positive change in Euro zone and the Balkans economies in the short run, it is possible to say that Albanian economy will continue to have difficult periods too. Under these conditions, the things should be done by the parts to decrease NPLs ratio are: 1- The banks should have more will to make new loans, especially to private sector (of course with being very careful in evaluation stage) and restructure of the hopeful cases. 2- The companies having bad loans should look for new markets to sell their products and more important also think the option of finding new partners especially from out of the country or even selling their companies completely to prospective investors. 3- The government should play a more active role for economic recovery by opening more public tenders and encourage private investments by applying appropriate economic policies as well. 4-The legal system should be strengthened and facilitated to get better results in a shorter period of time from sales of the collaterals taken as guarantee for the loans.

The changes in these macroeconomic variables—except remittances—are in small amounts comparing to the increases in NPLs and even sometimes in directions which is adverse according to economic theory. This means that, the changes in macroeconomic variables, in general, are not enough in explaining the huge rise in NPLs level. It is thought that, the other possible factors of NPLs such as bank risk management, structure of business entities and the legal system, which were not studied in this paper, should be analyzed in order to identify the different reasons behind this big problem.

References


Appendix

Table 3: The Changes of Macroeconomic Indicators & NPLs in %

<table>
<thead>
<tr>
<th>Indicator/Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remittances</td>
<td>1.90</td>
<td>-12.44</td>
<td>-6.24</td>
<td>-11.71</td>
<td>-0.28</td>
<td>-1.85</td>
<td>-19.51</td>
<td>8.89</td>
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<tr>
<td>Foreign Direct Investments</td>
<td>85.18</td>
<td>38.27</td>
<td>7.77</td>
<td>10.66</td>
<td>-5.84</td>
<td>-0.29</td>
<td>19.90</td>
<td>-10.28</td>
</tr>
<tr>
<td>Unemployment Rate (%)</td>
<td>0.60</td>
<td>-0.50</td>
<td>0.90</td>
<td>0.20</td>
<td>-0.70</td>
<td>-0.30</td>
<td>0.60</td>
<td>-0.50</td>
</tr>
<tr>
<td>Headline Inflation Rate (p.a., %)</td>
<td>0.40</td>
<td>0.46</td>
<td>-1.08</td>
<td>1.28</td>
<td>-0.11</td>
<td>-1.41</td>
<td>-0.10</td>
<td>-0.31</td>
</tr>
<tr>
<td>ALL/EURO Rate (Average, p.a.)</td>
<td>0.41</td>
<td>-0.65</td>
<td>7.57</td>
<td>4.31</td>
<td>1.81</td>
<td>-0.93</td>
<td>0.94</td>
<td>-0.21</td>
</tr>
<tr>
<td>Real GDP Growth Rate (p.a., %)</td>
<td>1.00</td>
<td>1.50</td>
<td>-3.80</td>
<td>0.05</td>
<td>-0.58</td>
<td>-2.17</td>
<td>0.45</td>
<td>0.00</td>
</tr>
<tr>
<td>NPLs (%)</td>
<td>2.00</td>
<td>3.20</td>
<td>3.90</td>
<td>3.40</td>
<td>4.90</td>
<td>3.70</td>
<td>1.00</td>
<td>-0.70</td>
</tr>
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</table>

Source: Annual Reports of Bank of Albania (2006-2014)

Table 4: Banking Sector Figures

<table>
<thead>
<tr>
<th>Figure/Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lending to Private Sector (growth p.a. in %)</td>
<td>48.7</td>
<td>32.1</td>
<td>10.3</td>
<td>10.1</td>
<td>10.4</td>
<td>1.4</td>
<td>-1.4</td>
<td>2</td>
</tr>
<tr>
<td>Net Profit (Billion ALL)</td>
<td>9.98</td>
<td>7.33</td>
<td>3.54</td>
<td>6.72</td>
<td>0.71</td>
<td>3.8</td>
<td>6.6</td>
<td>11.2</td>
</tr>
<tr>
<td>Return On Assets (RoAA) %</td>
<td>1.57</td>
<td>0.91</td>
<td>0.42</td>
<td>0.72</td>
<td>0.07</td>
<td>0.33</td>
<td>0.54</td>
<td>0.89</td>
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<tr>
<td>Return On Equity (RoAE)%</td>
<td>20.74</td>
<td>11.35</td>
<td>4.58</td>
<td>7.58</td>
<td>0.76</td>
<td>3.78</td>
<td>6.43</td>
<td>10.53</td>
</tr>
</tbody>
</table>

Source: Annual Reports of Bank of Albania (2007-2014)