

## Links between Non-performing Loans (NPL) and GDP Growth – Case of Albania

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### Abstract:

*This article intends to examine the connection between bad loans (non-performing loans-NPL) and GDP growth in the banking sector in Albania. Due to the understanding and the usage of this relationship as an important indicator of the systemic risk it can be achieved a reduced gap that already exists between the real economy and the financial economy.<sup>1</sup> The connection between these two variables suggests that the stability of the banking sector requires continuous progress assessment of the real economy in order to predict the reduced solvency of borrowers on the basis of cyclical fluctuations of the economy.*

*Through the comparison between these variables it will be explained the way and how it impacts the performance of the real economy rate change NPL (non-performing loans) in the banking sector. Regarding the facts based on the records of the Albanian economy, bad loans has an inverse relation with the growth of the real economy. In order for banks to ensure their financial stability, protection against systemic risk and to prevent the growth rate of bad loans, they had to follow the progress of the economic cycle carefully.*

**Key words:** Non-performing loans, GDP growth, macro-financial linkages, financial stability.

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<sup>1</sup> M. Kabir Hassan- Mervyn K. Lewis, "Handbook of Islamic Banking", ISBN 978 1 84542 083-3, pages 27-28

## **Introduction**

A large number of scientific financial studies have been focused on assessment models that link the credit risk in the banking sector with the pace of economic activity in which commercial banks operate<sup>2</sup>. The development process of new models regarding business cycles in the financial sector environment aim to find a balance between the quality of financial assets and economic activity because the data suggest that the relationship between the net profits of companies and the business cycle has a critical importance. In this sense, the quality of bank loan portfolio depends not only on internal management factors of the banking sector, but also to a substantial extent they are influenced by the performance of the real economy.

By referring to the data for the last 14 years regarding the banking sector in Albania, the aim of this paper is to examine the relationship between the real economy and the quality of the loan portfolio by comparing the rate of NPL (non performing Loans) and growth rate of GDP. The GDP is considered as the independent variable and the rate of NPL (non performing loans) in the banking sector will be the dependent variable. Our goal is to understand correctly the strength of the connection between them, and to understand the direction of fluctuations in growth rates over a period of considerable time. A link of the dependent variable would suggest a change into the approach of banks in relation to the real economy.

Our empirical analysis study the impact of the changes in the rate of GDP in front of the changes in the rates of bad loans (NPL) in the banking sector. In fact, without putting into question the dominant importance of GDP, we are dealing with

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<sup>2</sup> Roland Beck, Petr Jakubik and Anamaria PiloIU, " Non-performing loans. What matters in addition to the economic cycle?" Working Paper Series NO 1515 / February 2013

bilateral relations and after a dramatic increase of uncertainty in financial markets and due to non-positive evolution of the economy and the growth of bad loans it can be said that this makes it difficult for credit institutions to distinguish the difference between a good loan from a credit that contain the non-payment risk. Decreasing the credit due to the possibility of adding to finance an investment risk makes banks less willing to grant loans. This behaviour results in decreasing the lending to economy's crediting and contractions of economic activity. Due to the growth rate of bad loans, it can be seen that a contraction of the real economy affects negatively the overall rate of the lending process.

On the other hand, the stock market performance is an important indicator that predicts the evolution of the real economy. A fall in the prices of the stock market<sup>3</sup> can harmfully affect the quality of bank assets, especially in countries with large markets stocks in relation to GDP rate. However, a downward trend in the stock market is connected indirectly with interest rates of loans. Furthermore, the decline in stock prices related with the deterioration of economic indicators causes an increase in the price of loans. By increasing the price of loans through its interest rates, it would be increased even the risk of non turning backs of it, but banks follow this strategy to discourage the demands for new loans and furthermore<sup>4</sup>, trying to reduce the amount of credits in the market. The pursued strategy is not qualitative but it has a quantitative nature. Banks that are using the following measures do not intend to reduce the average rate of nonperforming loans, but tend to reduce losses from NPL by reducing the total nominal loan amounts.

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<sup>3</sup> The economics of money, banking and financial markets, 7th " Mishkin, Frederic S., ISBN 0-321-12235-6, page 159 -162

<sup>4</sup> The economics of money, banking and financial markets, 7th " Mishkin, Frederic S., ISBN 0-321-12235-6, page 552 -557

During the recent financial crisis a good part of the banks were bankrupt or the banks were helped by the governments in order to survive because of the large disconnection with the performance of the real economy. The financial bubbles, which came in force from the great value of bank assets involved in the crisis, had a tremendous impact on the worldwide economy. Fortunately, the global crisis has not had a significant influence in the Albanian banking sector and this not only because of a lower lending rate in the market, but also because of a strong regulatory framework of the Central Bank, before and after the effects of the global crisis in the region has set strict conditions of the banking sector. Since 1999, the official data there have been reported regarding the Albanian banking system, present a drastic decline in the percentage of bad loans, and that only because of the improved economic indicators and the entry into the market of foreign private banks, and last but not least, the management of second-tier banks that have had continuous improvement of the regulatory framework. In 2003 the privatization of the largest bank in the country "Savings Bank", the banking sector was introduced to a normal course of a free market.

It can be easily noted, that during the last decade the NPL rate has stayed in a moderate level during the years and instead the trend that followed the GDP growth. When the economy enters a negative cycle, the rate of increase in bad loans will be accelerated immediately. Regarding the banking sector it can be cited that an increase in the rate of bad loans due to systematic risk, well-known as the market risk, would poses a potential threat to its stability. In Albania due to the lack of stock exchange market, commercial banks must keep under review the ongoing macroeconomic indicators and growth rates regarding the real economy. The given data suggests a "cause-effect" relationship between the growth rate of GDP and the rate of bad loans.

## **Fluctuations in the GDP rate and in nonperforming loans rate in banking sector in Albania.**

In the table below, we have collected data for the past 14 years for Albania's GDP and nonperforming loan (NPL) rate in the banking sector of the country. Also to have a clearer picture we have collected the nominal value of total deposits and we have calculated the increase in percentage GDP growth. We have shown the net profit ratio of the banking sector on GDP in order to value the contribution of banking sector in the GDP of the country. In other columns of the table have accrued, also report the nominal value of net credit and total credit and the value of ROA (return on assets) of banking sector in percentage. All figures are expressed in millions ("000 000) of Albanian LEK (All).

**Table 1: Data on GDP and NPL (nonperforming loan) in the banking sector 1999-2013**

Year	ROA	Deposits	Credit/net	Total Credit	GDP	NPL	Net Profit/GDP	GDP growth %
1999	0.15	211,534	27,100	41,691	409,209	47.20%	0.27%	15.24%
2000	1.54	228,865	16,729	28,214	471,578	33.40%	1.01%	10.91%
2001	1.80	275,224	27,413	28,276	523,043	6.90%	0.25%	11.53%
2002	0.98	285,909	37,820	38,942	583,369	5.60%	0.43%	6.74%
2003	1.23	323,236	49,328	50,824	622,711	4.60%	0.35%	11.46%
2004	1.32	369,107	68,168	70,148	694,097	4.20%	0.68%	8.20%
2005	1.42	428,355	125,949	127,758	751,022	2.30%	0.76%	8.49%
2006	1.32	511,017	194,557	197,962	814,797	3.10%	0.80%	8.27%
2007	1.52	547,289	287,824	292,459	882,209	3.37%	1.09%	9.69%
2008	1.17	628,087	385,492	396,768	967,670	6.64%	0.67%	12.57%
2009	0.22	627,547	425,730	449,891	1,089,293	10.48%	0.31%	5.40%
2010	0.69	724,968	457,730	490,861	1,148,082	13.96%	0.55%	6.48%
2011	0.18	830,197	511,159	566,217	1,222,462	18.80%	0.06%	4.89%
2012	0.45	908,296	505,747	577,816	1,282,255	22.50%	0.28%	3.41%
2013	0.28	942,248	480,233	567,160	1,326,000	23.50%	0.48%	2.41%

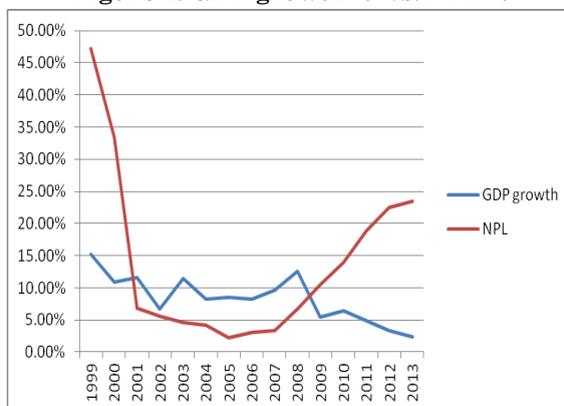
Source: Bank of Albania, INSTAT

We can easily observe from Table 1 that fluctuations in GDP growth in percentage rates and the rates of nonperforming loans in the banking sector have an inverse link among them.

High rates of nonperforming loans for the period of 1999 to 2000, relate to the extraordinary situation of the financial sector in Albania after pyramid scheme crisis of 1997. Starting from 2001 and onwards, the banking sector have moved into a normality in which the link between the evolution of the real economy and the banking sector indicators are still being represented. Despite some fluctuations in the pace of growth in 2002 and 2004, the rate of the GDP growth tendency has been a increasing one. While in the other hand, the rate of nonperforming loans has suffered and have faced a continuous contraction until 2005.

Despite the considerable increase in the rate of lending, the rate of nonperforming loans increased moderately by 2008, which marked a double-digit economic growth in the level of 12.57 percent. At Table1 we could notice a rapidly increasing rate of nonperforming loans from 2009 onwards going in parallel with a gradual deterioration growth rate for the real economy. The rate of nonperforming loans reached uncertain and problematic levels in 2011, peaking in 2013 at the level of 23.5 percent.

**Figure 1: GDP growth % vs. NPL %**



Source: Bank of Albania, INSTAT

It can be seen in the image above that both directions by both variables have constant fluctuations. By observing the rate of

nonperforming loans in the banking sector, we will be able to conclude that inverse fluctuations in positive and negative directions increase the real economy. The inverse link between the nonperforming loan rate in the banking market and the rate of GDP growth shows that Banks should not have followed the economic growth cycle, in order to prevent the risk of the nonperforming loans rate. The main divergence in the indicators of GDP and the nonperforming loans indicators of the banking sector are certainly to the detriment of the financial economy. Income inconsistencies that come from the contraction of economy get visible through the inability of borrowers to meet the terms of contracts with bank loans. This way, it can be obviously said that this will intend to increase the possibility of an increased percentage of bad loans in the banking sector.

With the deterioration of the real economy indicators in the banking sector start to deteriorate the portfolio condition, including delays in payments of loans and non-performing loans indicators gradually grows. The connection and the relationship between the evolution of the real economy it is presented or easily understood from the rate of nonperforming loans that are submitted through a moderate reduction during different times even though the economy performance is good enough and in the other hand the drastic increase in the risk of bad loans in the event of deterioration of the real economy indicators.

## **Empirical Analysis**

In the empirical analysis we will show through the use of regression between the dependent variable, the nonperforming rate in the banking sector and the independent variable, the growth rate of GDP, if there exists a connection between these two variables.

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**Descriptive Statistics**

	Mean	Std. Deviation	N
NPL	13.7700	13.10391	15
GDP	4.3070992	3.60000815247	15
	927E0	E0	

**Correlations**

		NPL	GDP
Pearson Correlation	NPL	1.000	-.536
	GDP	-.536	1.000
Sig. (1-tailed)	NPL	.	.020
	GDP	.020	.
N	NPL	15	15
	GDP	15	15

**Model Summary<sup>b</sup>**

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	.536 <sup>a</sup>	.288	.233	11.47787	.288	5.248	1	13	.039	1.135

a. Predictors: (Constant), GDPgr

b. Dependent Variable: NPL

By analyzing the data, appear to be a negative correlation between the variables, referring to the Pearson Correlation with -0.536. (The two variables appear to be negatively correlated between them).

By applying regression we can see from  $R^2$  that the two variables are connected between them (23.3% or 0.233) and dependent of each other. The regression shows that the value of  $R^2$  is low, meaning that there is not a strong connection between the variables.

Consequently this means that the nonperforming rate of the financial system in Albania is inversely connected in comparison with the economic performance of the country.

The Durbin-Watson statistics is 1.135, and is greater than 1, there is evidence of positive correlation, and for this reason this analysis retains a semblance of seriousness.

Regarding the given data of the banking sector in Albania, it can be accepted that there is a inversely connection between the GDP rate and the rate of nonperforming loans in

the banking sector. The increase of the rate of GDP and the stabilization of macroeconomic indicators we noticed a reduction in the rate of nonperforming loans, thereby reducing systematic risk in the banking sector. In the case of reducing the rate of GDP growth it has been noticed an acceleration of the rate of nonperforming loans. This high rate of nonperforming loans may seriously put in danger the stability of the banking sector.

The empirical analysis suggests that the link between the rate of nonperforming loans and GDP may be of much interest to policy makers<sup>5</sup> in the banking sector for the periodic assessment of the overall asset quality and credit risk avoidance. Through continuous monitoring, the relationship between the two variables will tend to facilitate the identification of the main weaknesses of the banking sector. To have an effective surveillance of developments in the banking market we can build a model that provides continuous monitoring of the connection to the real economy rates with potential risks to growth rate nonperforming loans.

Theoretically, the relationship between two variables should have had a more negative correlation because the income of the bank borrowers directly depends on the performance of the real economy. In order to explain the value the negative correlation it would have been better if there would have been detailed data regarding the structure of GDP. However, the banking sector in order to be maintained from the systematic risk and credit risk non-paying should prepare new lending policies in accordance with the fluctuations of the real economy. In table 1 we can see that although the total amount of deposits has increased over the years (2011, 2012, 2013), the nominal value of the loan amount is reduced. The reduction of the nominal value of the loan on the market has not affected

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<sup>5</sup> Roland Beck, Petr Jakubik, Anamaria PiloIU, "Non-performing loans :What matters in addition to the economic cycle?, Working Paper Series, No. 1515, February 2013

the inhibition of growth of nonperforming loan rate, which has reached a very high level to 23.5% of the loan portfolio in the country in 2013.

The analysis may conclude a detachment of lending technology that leads in relation to the performance of the real economy. Narrowing the gap between the Bank's forecast for the return of principal and interest as provided therefore and the insolvency of borrowers because of the deterioration of economic indicators still remain an open challenge for the banking sector. In the banking sector's current circumstances, when we are dealing with a variable credit price (variable rate), it can be presumed an increase in the price of loans because of the dependence on deposits' market conditions, but in general it does not happen a reduction of credit rates in the case of reduction "prices" of deposits. The banking sector, referenced to current loan contracts, sees itself ready at a distance from the risk of the real economy<sup>6</sup>, while loan guarantees are properties (assets) with fluctuating prices on the performance of the real economy.

The performance of the real economy constitutes an important indicator in predicting the evolution of the financial economy. A decrease of the rate of GDP could adversely affect the quality and the value of bank assets<sup>7</sup>. The decline in the value of assets due to the deterioration of economic indicators also causes an increase in systematic risk in the banking sector. The strategy that goes through the discouraging the demand for new loans can't reduce the average rate of nonperforming loans, and therefore cannot reduce the systematic market risk. By granting loans policy, in order to reduce the risk of non-payment of loans it can be applied a variable price of credit

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<sup>6</sup> M. Kabir Hassan- Mervyn K. Lewis, "Handbook of Islamic Banking", ISBN 978 1 84542 083-3, pages 120-124

<sup>7</sup> Greg N. Gregoriou, "Banking Crisis Handbook", ISBN: 978-1-4398-1853-4 , pages 338-341

related to a direct correlation with the performance of the real economy.

One of the reasons for the high growth rates of nonperforming loans may be caused from the temporary inability of borrowers to repay their liabilities to the bank on time. While the interest rate applied to the outstanding principal of the loan stays in the initial levels of loan (in the contract signed between the parties) and together with the penalties provided in case of delay may constitute an unaffordable cost for borrowers. This can add cost to the detriment of borrowers and in the case of the increasing percentage of borrowers who are unable to pay the bank, than definitely the bank can be in front of a boomerang <sup>8</sup>. This gap is created between the bank and the borrower, to the detriment of both parties and forms actually a gap between the financial economy and the real economy. Now days, the banking sector does not take into serious account the fluctuations of the GDP in relation to the price of the loan applied in the market. Furthermore, in terms of deteriorating economic indicators, as a response, the banks increased the price of credit in order to discourage the demand for loans.

## **Conclusions**

From the empirical analysis, referring to the official data of the last 14 years in Albanian economy, we could demonstrate that there is a negative correlation between the real economy and the nonperforming loans rate in the banking sector. Because of this connection, the construction of models of monitoring of the financial sector to assess the link between the quality of financial assets and the trend of economic activity can provide a great help in preventing nonperforming loans in the banking sector. Data suggest that the relationship between the rate of

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<sup>8</sup> Jill M. Hendrickson, "Regulation and Instability in U.S. Commercial Banking", ISBN 978-1-4039-4872-4 pages 218-220

bad loans and the business cycle is of major importance. In this sense the quality of bank loan portfolios depend on internal management of the banking sector, as well as the ability of management to read the performance of the real economy.

The empirical analysis also suggests that the relation between the rate of nonperforming loans and GDP may be of interest to policy makers in the business long-term banking sector. Continuous monitoring of the evolution of the economy is important for the periodic assessment of overall asset quality and credit risk avoidance. The study of the relationship between two variables, through continuous monitoring of interaction between them, facilitates the identification of the main weaknesses of the banking sector. To have an effective surveillance of developments in the banking market the real economy rates effects can be predicted of the potential risk of increasing the rate of nonperforming loans.

Data ascertain a detachment of lending technology in relation to the performance of the real economy. Reducing the gap between the bank and the solvency of borrowers because of the deterioration of economic indicators remain an open challenge for the banking sector. The banking sector, referring to the current loan contracts, tends to totally avoid the risk of the real economy, while loan guarantees are assets with fluctuating prices directly influenced by the performance of the real economy. In this context, the performance of the real economy constitutes an important indicator in predicting the evolution of the financial economy.

Through analysis of the data of the Albanian economy in the past 14 years we can notice that the rate of bad loans has an inverse relation with the growth rate of the real economy. In order to prevent the growth of bad loans rate and to ensure the stability of the financial sector banks have to follow very carefully the progress of the economic cycle. In this way they could avoid systematic risks and prevent the growth of nonperforming loans in worrying levels. Inverse connection

between two variables suggests that the stability of the banking sector requires constant monitoring of the evolution of the real economy to predict the deterioration of the solvency of borrowers on the basis of cyclical fluctuations of the economy.

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