

The Performance of the Albanian Banking System, an Econometric Analysis			Economy Keywords: Albanian banking system, internal banking factors, total loans, interest rate, capital adequacy ratio.
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Abstract			
The aim of this paper is to analyze the influence of some internal banking factors in the performance of the Albanian banking system. From the literature review is noticed that the banks’ performance is influenced by both macroeconomic and banking factors. We use ROA as a dependent variable and capital adequacy ratio, exchange rate euro/ALL, total loans, NPL ratio and interest rate spread as independent variables. The relation between the performance of the banking system and the banking factors will be tested by using a regression model like the ordinary least squares (OLS). The Albanian banking system was affected by the global financial crises of the 2007 especially in terms of performance measured by ROE and NPL. For example ROE decreased very much in the first trimester of 2009 while the NPL ratio had a rapid increase especially in the fourth trimester of 2008. Despite the measures taken from the Bank of Albania the NPL ratio is still a concerning problem because is about 24% in March 2014 while the ROA and ROE seem to be stabilized respectively by 0.64% and 6.70%. The regression results find out that the performance of the Albanian banking system is positively related to capital adequacy ratio and negatively related exchange rate euro/ALL, total loans and NPL ratio while the interest rate spread seems to be not significant to explain the banks’ performance. JEL: G2, G21.			

1. Introduction

The Albanian banking system occupies 85% of the financial system demonstrating the weak role of the capital markets in our country. The global financial crises that affected the major part of the countries had its implications even in the Albanian banking system. Especially in terms of profitability is noticed a sharp reduction of ROE and ROA in 2008 – 2009. The Bank of Albania has taken different precautionary measures to attenuate the negative effects of the global financial crises such as: the approval an anti-crises package, the facilitation of the loans' restructuring, the interruption of the banks' profits during 2008 – 2009 and the proposal to increase the deposit insurance adopted by the Parliament of Albania. Despite the measures taken from the Bank of Albania the high level of nonperforming loans and the reduction of the credit level still remain two big problems to be resolved.

2. Literature review

A lot of academic and non academic research has been done in order to determine the real factors that influence banks performance because of the great importance that the banking systems have taken especially in developing countries. Is important to emphasize that in developing countries the banking system takes more than almost 80% of the financial system and as a result is noticed a weak role of the financial markets.

M. Kabir Hassan, Abdel-Hameed M. Bashir (2002) analyze the impact of some bank characteristics and the overall financial environment in the performance of Islamic banks using worldwide data from 1994 – 2001. To measure the performance of Islamic banks the authors use four indicators like: net non interest margin, bank's before tax profit, ROA and ROE while as independent variables are used as macroeconomic variables ratio GDP/Cap, growth, inflation rate and real interest rate while as bank specific variables used fund source management, funds use management, leverage and liquidity ratios. As a conclusion the authors find out a positive relationship between capital and bank's profitability while there is a negative relationship between loan

ratios and profitability. The profitability in Islamic banks is also related to short-term funding and non-interest earning assets. Another important factor influencing the bank's profitability is the regulatory frame and the macroeconomic environment.

Yuqi Li (2007) analyzes the impact of bank's specific factors and macroeconomic factors on bank's profitability measured by ROAA in the UK banking industry from 1999 – 2006.

As dependent variables the author used: ratio of liquid assets to deposit and borrowings, loan loss reserves to net interest revenue, the ratio of equity to total assets, annual growth rate measured by GDP, inflation rate and interest rate. As conclusions the author finds out: an ambiguous relationship between liquidity and bank's profitability, the ratio of loan loss reserves to net interests revenue has a negative impact on ROAA, a positive relationship between capital strength and bank's profitability.

From the empirical results is noticed that the macroeconomic factors have no impact on bank's profitability. As a result the profitability of the UK banking system is influenced more by internal factors than by external factors.

Andreas Dietrich and Gabrielle Wanzenried (2009) in order to analyze the performance of the commercial banks in Switzerland took a sample of 453 with 1.919 observations for the period from 1996 – 2006. The aim of the authors was to determine the relation between the performance of commercial banks and some macroeconomic and industry specific variables. ROAA and ROAE were used as dependent variables while the banking variables: equity over total assets, cost-income ratio, loan loss provisions over total loans, yearly growth of deposits, difference between bank and market growth of total loans, bank size, interest income share, bank age, bank ownership, nationality, region, bank category and macroeconomic variables like: effective tax rate, yearly change of regional population, real GDP growth, 6 month Libor, stock market capitalization, bank concentration were used as independent variables. As a conclusion is noticed that better capitalized banks seem to be more profitable, banks with higher interest income share are less profitable. Bank age has no influence on bank profitability while the geographic distribution seems to be influent. Foreign banks are less profitable than Swiss owned and private banks have a slightly higher profitability than state-owned banks. GDP growth was positively related to ROAA and ROAE while the effective tax rate and the market concentration rate have a negative impact on bank profitability.

Ekşi İbrahim Halil, Özçalıcı Mehmet, Büyükkonuklu Buket (2011) study the bank's profitability analyzing 22 private, state or foreign owned deposits banks in Turkey from 2003 – 2008. As independent variables the authors choose the market share and number of branches. According to the empirical results the independent variables explain 43% of the dependent variable (the profitability of the banks in Turkey). In the same time is noticed a positive relationship between market share and bank performance and positive relationship between number of branches and bank performance. The authors emphasize that the increase of number of branches may decrease the profitability of banks because they will have to undertake new costs.

Saira Javaid, Jamil Anwar, Khalid Zaman, Abdul Gafoor (2011) analyzes the determinants of 10 bank's profitability in Pakistan for the period 2004 – 2008 using the pooled Ordinary Least Squares analysis. The indicator used as a proxy for the bank's profitability was ROA while as independent variables the authors used: total assets, total equity to total assets, total loans to total assets and total deposits to total assets. From the empirical results is noticed that the independent variables explain 63% of the variation of the dependent variable (bank's profitability). As a conclusion is noticed a negative relationship between size measured by total assets

and profitability, a negative relationship of loans towards profitability, a positive and significant relationship between total deposit to total assets and total equity to total assets with bank's profitability.

Syafri (2012) analyzes the performance of commercial banks in Indonesia using panel data during the period 2002 – 2011. The author used ROA as a proxy of the performance of the banks while as dependent variables used: total assets, loan to total assets, total equity to total assets, loan loss provision to total loans, non interest income to total asset, operational expense to operational income, inflation rate and economic growth. As a conclusion the performance of banks in Indonesia is influenced by loans, total equity, inflation rate and operational efficiency. The economic growth and non interest income have not significant effect statistically on bank performance.

Fatemeh Nahang, Maryam Khalili Araghi (2013) study the relationship between some internal factors and the performance of the banking system in Iran during 2009 – 2012. As dependent variable the authors use ROA while as independent variables are used: deposit amount, the payment facilities, credit risk management, cost management and the amount of liquidity.

As a conclusion is noticed a negative relationship between the amount of bank deposits and profitability, a negative relationship between the inverse indicators of credit risk management and profitability, a negative relationship between the inverse indicators of cost management and profitability and a negative relationship between the amount of liquidity and bank's profitability.

Eliona Gremi (2013) analyses the internal factors influencing the profitability of the Albanian banking system. The author used ROA as dependent variable while used bank size, total loans to asset ratio, NPL ratio, deposits to asset ratio and net interests' income as independent variables. This study was based using panel data from 2005 – 2012 for 12 commercial banks in Albania.

As a conclusion the author finds out a positive relationship between size and profitability, a positive relationship between loans and ROA, a negative relationship between NPL ratio and ROA. Deposits and net interests' income showed also a positive and significant relationship with bank profitability in Albania.

3. Econometric model

In this paper we use a regression model like Ordinary Least Squares to analyze the data. We consider a period from 2002 – 2013 using quarterly data with a total of 48 observations. The source of data is the official site of the Bank of Albania. As a dependant variable we use ROA while as independent variables are used: the capital adequacy ratio, exchange rate between euro and Albanian Lek, total loans, NPL ratio and interest rate spread.

3.1 Description of the variables

In this section we give a short explanation of the variables used in this study which are as follows:

- Return on Assets (ROA) in the banking industry indicates how effectively the bank's assets are used to generate higher incomes. This indicators is determined as the ratio between earnings after taxes (EAT) to total assets (TA), $ROA = EAT/TA$;
- Capital adequacy ratio (CAR) measures the bank's capital and it is expressed as a percentage of a bank's risk weighted credit exposures. $CAR = (TIER\ 1\ CAP + TIER\ 2\ CAP)/RISK\ WEIGHTED\ ASSETS$;

- Foreign exchange rate (FXC) between euro and ALL demonstrates how much ALL one should pay to buy 1 euro. The last years is noticed a depreciation of ALL towards euro in Albania;
- Credit Growth is determined as difference in percentage between the consecutive quarters of the whole period taken in consideration like $CRED/GR = (Cred\ t - Cred\ t-1) / Cred\ t-1$;
- NPL ratio is determined as the ratio between non performing loans to total loans. In the Albanian banking system a non performing loan is considered a loan that presents delays in principal and interest payment for more than 90 days.
- Interest rate spread is determined as a difference between the average lending rate minus average deposit rate $IRS = (LR - DR)$. This indicator has decreased especially in the last 5 years and actually is about 5.57% which is very low if compared to the second quarter of 2004 (9.98%).

3.2 Hypothesis of the study

In this paper we want to test five **hypotheses** as follows:

- H0,1 Capital adequacy ratio does not affect banks' profitability;
- Ha,1 Capital adequacy ratio affects the banks' profitability;
- H0,2 Exchange rate between euro and ALL²⁰ does not affect banks' profitability;
- Ha,2 Exchange rate between euro and ALL affects banks' profitability;
- H0,3 Credit growth does not affect the banks' profitability;
- Ha,3 Credit growth affects banks' profitability;
- H0,4 NPL ratio does not affect banks' profitability;
- Ha,4 NPL ratio affects banks' performance;
- H0,5 Interest rate spread does not affect banks' profitability;
- Ha,5 Interest rate spread affects banks' performance;

3.3 Interpretation of the regression results

After analyzing the data with Microfit software we have the regression results as follows (table 1).

- ❖ The regression analysis confirms that the coefficient of determination, *R-Squared*, is equal to 68.75% and shows that the independent variables explain 68.75% of the variation of the ROA in the Albanian banking system.
- ❖ The *DW – statistic* is equal to 1.66 indicating that the residuals are not correlated.
- ❖ The indicator of *F-Statistic* shows that the observed value (18.33) is greater than its critical value (5.42) so the alternative hypothesis wins and the model is globally significant.

Table 1. Regression results*

Regressor	Coefficient	Standard Error	T-Ratio	Prob.
Constant	0.037303	0.015427	2.418	0.020
CAR	0.04721	0.019002	2.4844	0.017
FXC	-2.20E-04	1.02E-04	-2.1594	0.037
CRED/GR	-8.99E-09	4.32E-09	-2.0802	0.044
NPL	-0.011242	0.004853	2.3164	0.029
IRS	-0.05083	0.058624	-0.867	0.391

Dependent Variable ROA

²⁰ Albanian Lek

Analyzing the results of table 1 we derive the econometric model that explains the dependent variable (ROA, bank's profitability) and is shown as follows: $ROA_{i,t} = 0.037303 + 0.04721CAR_{i,t} - 2.20E-04FXC_{i,t} - 8.99E-09CRED/GR_{i,t} - 0.011242NPL_{i,t} - 0.05083IRS_{i,t}$

To analyze the relation and statistical significance of Beta coefficients of the independent variables we review the values of the probability p. For p-values (*observed level of significance*) major of 0.05 the influence of the independent variable on the dependent variable is unimportant when the other variables remain unchanged while for p-values smaller than 0.05 we refuse the hypothesis of the absence of relationship.

Hypothesis #1. Beta coefficient of CAR is positive 0.04721, showing a positive relationship between CAR and bank's profitability. P-value is 0.017 that is smaller than 0.05 and in this case zero hypothesis falls while alternative hypothesis wins, that is the CAR affects the bank's profitability in the Albanian banking system. In this case we can conclude that the increase of capital adequacy ratio (CAR) leads to higher profits in terms of ROA. This conclusion is in line with other studies in this field²¹.

Hypothesis #2. Beta coefficient of FXC is negative -2.20E-04, showing a negative relationship between FXC and bank's profitability. P-value is 0.037 that is smaller than 0.05 and in this case zero hypothesis falls while alternative hypothesis wins, that is the FXC between euro and ALL affects the profitability in the Albanian banking system. The negative sign of beta coefficient is interpreted like follows: an increase of FXC leads to a reduction of bank's profitability. It is to mention that in the Albanian banking system more than 60% of the credit is granted in euro, from here we can deduct the increase of FXC can deteriorate the payment conditions of creditors leading to higher NPL ratio and lower profits.

Hypothesis #3. Beta coefficient of CREDIT/GR is negative -8.99E-09, showing a negative relationship between CREDIT/GR and bank's profitability. P-value is 0.044 that is smaller than 0.05 and in this case zero hypothesis falls while alternative hypothesis wins, that is the CREDIT/GR affects the profitability in the Albanian banking system.

The negative sign of beta coefficient shows that the increase of credit growth determines the reduction of bank's profitability in the Albanian banking system. This conclusion is in contrast with other studies in this field²² which say that an increase in credit growth leads to higher profitability.

Hypothesis #4. Beta coefficient of NPL ratio is negative -0.011242, showing a negative relationship between NPL ratio and bank's profitability. P-value is 0.029 that is smaller than 0.05 and in this case zero hypothesis falls while alternative hypothesis wins, that is the NPL ratio affects the profitability in the Albanian banking system. The negative sign of beta coefficient shows that the increase of NPL ratio determines the reduction of bank's profitability in the Albanian banking system. This conclusion is in line with other studies²³ in this field showing that a higher NPL ratio leads to lower the bank's profitability.

Hypothesis #5. Beta coefficient of IRS ratio is negative -0.05083, showing a negative relationship between IRS ratio and bank's profitability. P-value is 0.391 that is greater than 0.05 and in this case zero hypothesis wins while alternative hypothesis falls, that is the IRS does not affect the profitability in the Albanian banking system. This is in contrast with theory because if we increase the IRS this will lead to higher profits of the banks and as a result a higher ROA.

²¹ M. Kabir Hassan, Abdel-Hameed M. Bashir (2002)

²² Eliona Gremi (2013)

²³ Syafri (2012), Fatemeh Nahang, Maryam Khalili Araghi (2013)

Conclusions

The aim of this paper was to determine the relationship between some internal banking factors and the bank's profitability measured by ROA. From the regression results we found out the following results related to the Albanian banking system:

- ✚ A positive and significant relationship between capital adequacy ratio and bank's profitability;
- ✚ A negative and significant relationship between foreign exchange rate FXC euro/ALL and bank's profitability;
- ✚ A negative and significant relationship between credit growth and bank's profitability;
- ✚ A negative and significant relationship between NPL ratio and bank's profitability;
- ✚ A negative but not significant relationship between interest rate spread and bank's profitability;

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