

# **AN EMPIRICAL EVALUATION OF THE DETERMINANTS OF ALBANIAN BANKS' PROFITABILITY BY FOCUSING ON THE RELATIONSHIP BETWEEN BANK PROFITABILITY AND STAFF SALARY**

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## **Abstract**

*The main aim of this paper is to find the determinants that significantly impact the profitability of Albanian Banks and to evaluate the relationship between bank profitability and staff salary. As internal determinants of banking system are take data from 2009 to 2014 for top three largest banks in Albania. The internal determinants included in the empirical analysis are capital ratio, bank size, credit risk, cost management, staff expenses and liquidity risk. As external variables are take the growth rate of Money Supply, growth rate of Gross Domestic Product and Inflation Rate. As bank profitability variables is take Return on Assets, Return on Equity and Net Interest Margin. The impact of the determinant on the bank profitability is tested by Panel Data Regression Model and the results indicate that Capital Ratio, Cost Management, Inflation and Staff Salary impacts significantly on Albanian banks' profitability. The long run relationship between Bank Profitability and Staff Salary is tested by Pedroni Residual Cointegration Test and results indicate that among the variables exists a long run relationship.*

*Keywords: Bank Profitability, Staff Salary, Organizational Performance, Panel Data, Albania, Pedroni Residual Cointegration Test*

## INTRODUCTION

Prior to early 90s, while Albania was under communist regime, banking system was centralized. During this period, Central Bank of Albania (BOA) used to implement monetary policies in the benefits of the government rather than in the benefit of financial system and/or citizens. The communist period, as in many countries on South East Europe (SEE) was followed by a transitory phase to an open economy which was accompanied by numerous social and economic changes. As in many sectors, also in banking sector privatization process started. However, 90 percent of the sector continued to be controlled by the state. Moreover, the period of 1992 – 1997 is known for the infamous pyramid schemes that caused a financial bubble that erupted in the end of 1996. These crises caused a financial and economic distress, a rapid devaluation of Albanian Lek and were followed by a civil war that ended only with the intervention of state and foreign aids in March 1997. The period of distress was followed by a period of changes and reconstructive in the banking system. First bank that opened after the crisis that Albanian American Bank (AAB) which was allowed to fully operate on its own not early that August 1998. Nowadays, the banking system of Albania is conducted by only 16 privately commercial banks and it represents 97 percent of the assets of the financial system. According to Ongore and Kusa (2013), commercial banks play a vital role in the allocation of economic resources of a country. Moreover, commercial banks act as funds providers to investors.

Numerous studies have been conducted to determine the main determinants of bank profitability by using internal and external variables. Banks are profit-oriented organizations thus, profitability is their main aim. Profitability denotes a financial situation where for a specific period a business, in this case a bank, generates income which are higher than the total expenses on the same period (Sami, 2206). There are three indicators for bank profitability: Return on Assets (ROA), Return on Equity (ROE) and Net Interest margin (NIM).

Determinants of bank profitability can be grouped in two groups: internal and external determinants where internal determinants are the ones that are affected by the management decisions of the bank and the objectives of the bank. According to Zimmerman (1996) management decisions especially the ones relating to the concentration of the loan portfolio have a significant effect on the bank performance. Many researchers attributed the performance of the bank to the quality of senior management. External determinants are the once that cannot be affected by management decisions and banks policies, such as market structure, inflation, Gross Domestic Product etc.

The main objective of this study is to determine the factors that have a significant impact on profitability of Albanian banking system. Moreover the paper also focuses of the relationship

between bank profitability and staff expenses as per fact that many studies show opposite findings regarding their long and short run relationship.

## LITERATURE REVIEW

One of the internal determinants selected by many studies is capital ratio. According to Modigliani and Miller (1958) the perfect capital market is a behavior of value maximization with no frictions such as taxes, market entry barriers, bankruptcy, asymmetric information, and no deposit insurance. In this situation the market rate of return equals the book rate of return. Thus, a substitution of debt by additional equity reduces the respective risks and decreases the market rate of return. Therefore it can be concluded that according to this model the relationship between profitability and capital ratio is negative. Nonetheless, the market today is not perfect thus; many time studies have found positive direction between these two variables. According to Bourke (1989) capital ratio and profitability have a positive relationship with each other because well capitalized bank have access to asset markets with better quality and also to cheaper and less risky funds. Berger (1994) found through a Granger Causality test a positive relation between these two variables. He indicated that the reason behind this relationship may be because an increase in capital ratio cause return on equity to increase because of the increase of uninsured dept.

Many studies have recognizes the size of the banks as another determinants that affect profitability. According to Berger and Humphrey (1997) the size of the bank and profitability are positively related as per fact that larger banks are more efficient. Moreover, Short (1979) concluded that large banks raises cheaper capital and thus are more profitable.

Another variable that is recognized as determinant of bank profitability is credit risk. According to Bourke (1989) the relationship between these two variables is negative because banks which have in their portfolios high-risk loans such as accumulated unpaid loan have faced losses that have caused a decrease in their returns. Same findings were found by Miller and Noulas (1997). Authors concluded that higher credit risk generate higher provisions against the losses of the high-risky loans. Therefore, the bank expenses increases causing a decrease the return of the bank.

Many studies have indicated that the controlling the cost of the bank increases the profitability of the bank. Athanasoglou et al. (2005) divided the total cost of a bank into two groups, operational cost and other costs. The authors implied that the cost that are the outcomes of the management of the bank are the operational costs. Moreover, they implied that the ration of these costs to total assets should have a negative relationship with profit as per fact that better management increases efficiency and thus it increases profit.

Furthermore, staff expenses and profitability are expected to have a negative relationship with each other because these expenses increase the operational cost of the bank. According to Guru et al (2002) an efficient management of expenses and costs is the most significant determinant in generating high bank profitability. A similar finding was found in the study of Bourke (1989) where staff expenses had a negative impact on ROA of the banks. However, Molyneux (1993) found the opposite. He argued that a bank with higher profit may adopt higher payroll programs for their employees.

One of the reasons for bank failures are liquidity problems. During instability banks increase the level of cash and cash equivalents in order to mitigate risk. Molyneux and Thornton (1992) concluded that there is a negative relationship between liquidity and bank profitability. However, the opposite result was found by Bourke (1989).

One of the external determinants that influence the profitability of banks is the market structure which represents the number and the size of competitors. When in the market exist a weak competition banks may create a monopoly profit and thus charge higher prices on loans and low interests on deposits. Thus, a higher concentration may lead to monopolistic profit and is a deviation from competitive markets. Some studies have examined the relationship between market concentration and banks profitability. According to Gilbert (1984) indicated that banks in highly concentrated markets have a tendency to earn monopolistic profit. Moreover, Kosmidou (2008) concluded that market concentration has a significant negative impact on bank profits because high concentration causes non-efficient operating management thus, reducing bank profitability.

Furthermore, other macroeconomic variables have resulted to impact profitability of banks. Gross Domestic Product is the most often analyzed variable due to the fact that it is the variable which represents the total economic growth of a country. According to Bourke (1989) economic growth that is associated with entry barrier to the financial market will have a significant negative impact on profitability of banks. Furthermore, Gerlach et al. (2005) indicated in their studies that economic growth has a significant impact on bank performance. On the other hand Hoggarth et al. (1998) concluded that GDP cannot explain the reason behind a high variability in profit among UK and Germany. Yet, they never indicated that GDP did not impact profit.

Moreover, inflation is another macroeconomic variable that – according to the studies of Molyneux & Thornton (1992) and Bourke (1989). Moreover, Revell, (1979) – has a significant impact on bank profitability. An unexpected increase in inflation causes difficulties on the cash flow of the borrowers thus, may increase the level of loan losses.

## METHODOLOGY

The data for the banking system need for this study was absence. Therefore, to examine the determinants that affect the profitability of Albania banking system is used a panel data regression with data of 2009-2014 period from the top three largest banks in Albania: National Commercial Bank sh.a, Raiffeissen Bank sh.a and Intesa Sanpaolo Bank Albania sh.a. The data for the internal determinants are retrieved through the annual reports of the banks download online from their web site while the external determinants data is retrieved through World Bank Database. Moreover, the regression model is used as per fact that is the aim of this paper is to determine the relationship between variables.

Table 1: Variable Selected

<b>Variable</b>	<b>Expected Impact on profitability</b>
<b>Capital Ratio</b>	
Total Equity to Total Asset Ratio	-
<b>Bank Size</b>	
Total Assets	+
<b>Credit Risk</b>	
NPL ratio	-
Loan Provision to Total Loan Ration	-
<b>Cost Management</b>	
Operational Cost to Net Profit	+
<b>Staff Expenses</b>	
Staff Salary	-
<b>Liquidity Risk</b>	
Total Deposit to Total Assets	-
<b>Macroeconomic Determinants</b>	
Growth Rate of Money Supply	+
Growth Rate of Gross Domestic Product	+
Inflation Rate	+

The internal determinates selected for the examination are capital ratio represented by the ratio of equity to total asset, the size of bank represented by the value of total assets, credit risk represented by the ratio of nonperforming loans and the ratio of loan provisions to total loans, cost management represented by operational cost to net profit ratio, staff expenses represented by total staff salary, and liquidity risk represented by the ratio of total deposits to total assets. The selected external variables are growth rate of Money Supply (M2), growth rate of Gross Domestic Product (GDP) and Inflation Rate. As representative of bank profitability are taken separately is three model ROA, ROE and NIM. Table 1 shows the expected impacted of the variables on each bank's profitability. The variables that are expected to have a positive impact of bank's profitability are Bank's Size, Cost Management and all three Macroeconomic

Variables. While Capital Ratio, Credit Risk, Staff Expenses and Liquidity Risk are expected to have a negative impact of bank's profitability.

The models of the empirical analysis are a follow:

$$(1) \text{ roa} = \beta_0 + \beta_1 \text{cap} + \beta_2 \text{size} + \beta_3 \text{npl} + \beta_4 \text{provis2loan} + \beta_5 \text{cost2profit} + \beta_6 \text{salary} + \beta_7 \text{deposits} + \beta_8 \text{m2} + \beta_9 \text{gdp} + \beta_{10} \text{inf}$$

$$(2) \text{ roe} = \beta_0 + \beta_1 \text{cap} + \beta_2 \text{size} + \beta_3 \text{npl} + \beta_4 \text{provis2loan} + \beta_5 \text{cost2profit} + \beta_6 \text{salary} + \beta_7 \text{deposits} + \beta_8 \text{m2} + \beta_9 \text{gdp} + \beta_{10} \text{inf}$$

$$(3) \text{ nim} = \beta_0 + \beta_1 \text{cap} + \beta_2 \text{size} + \beta_3 \text{npl} + \beta_4 \text{provis2loan} + \beta_5 \text{cost2profit} + \beta_6 \text{salary} + \beta_7 \text{deposits} + \beta_8 \text{m2} + \beta_9 \text{gdp} + \beta_{10} \text{inf}$$

### Dependent Variables

- ROA represents natural logarithm of return to assets ratio
- ROE represents natural logarithm of return to equity ratio
- NIM represents natural logarithm of net interest margin

### Independent Variables

- CAP represents natural logarithm of capital ratio (the ratio of total equity to total assets)
- SIZE represents natural logarithm of total assets
- NPL represent the natural logarithm of NPL ratio
- PROVIS2LOAN represents natural logarithm of loan provisions to total loan ratio.
- COST2PROFIT represents natural logarithm of cost to net profit ratio
- SALARY represents natural logarithm of total staff salary expenses
- DEPOSITS represents natural logarithm of total deposits to total assets ratio
- GRM2 represents natural logarithm of Albanian Growth Rate of Money Supply (M2)
- GDP represents natural logarithm of Albanian Growth Rate of GDP
- INF represents natural logarithm of Albanian Inflation Rate.
- $\beta_0$  is the intercept that shows the value of the dependent variables when independent variables equal zero
- $\beta_1 - \beta_{10}$  are all the coefficient of the respective independent variables that indicate the impact of them on the dependent variable.

### ANALYSIS

Table 2 shows the coefficient and P-value of the result of the Panel Data Regression for all Models when profitability of represented by Return to Asset ratio.

Table 2: Panel Data Regression Results

Variable	ROA		ROE		NIM	
	Coeff.	P-Value	Coeff.	P-Value	Coeff.	P-Value
<b>CAP</b>	0.0445	0.901	-0.9555	0.0376	0.59371	0.0137
<b>SIZE</b>	0.30906	0.6765	0.30906	0.6765	0.35098	0.3325
<b>NPL</b>	-0.1655	0.1455	-0.1655	0.1455	-0.1021	0.0728
<b>PROVIS2LOAN</b>	0.14378	0.1533	0.14378	0.1533	0.0689	0.1461
<b>COST2PROFIT</b>	-0.2331	0.0096	-0.2331	0.0096	0.01784	0.5356
<b>SALARY</b>	0.62896	0.0839	0.62896	0.0839	1.15965	0.0004
<b>DEPOSITS</b>	-5.1755	0.206	-5.1755	0.206	-5.3011	0.0247
<b>M2</b>	-0.1242	0.5684	-0.1242	0.5684	0.05491	0.5898
<b>GDP</b>	0.24298	0.4617	0.24298	0.4617	-0.1293	0.4071
<b>INF</b>	0.91204	0.0375	0.91204	0.0375	0.46518	0.0282

Accordingly, the table show that the variables that have a positive effect on ROA are CAP (Capital Ratio), SIZE, PROVIS2LOAN, SALARY, GDP and INF while the other variables have a negative effect of profitability. Among the independent variables, the ones that have significant impact of ROA are COST2PROFIT and INF at significance level 0.05 and SALARY at significance level 0.1. Therefore the estimated equation of Model with ROA is:

$$(4) \text{ roa} = -21.6 + 0.04\text{cap} + 0.3\text{size} - 0.17\text{npl} + 0.14\text{provis2loan} - 0.23\text{cost2profit} + 0.63\text{salary} - 5.17\text{deposits} - 0.12\text{m2} + 0.24\text{gdp} + 0.91\text{inf} + u$$

Moreover, the variables that have a positive effect on ROE are SIZE, PROVIS2LOAN, SALARY, GDP and INF while the other variables have a negative effect of profitability. Among that independent variables, the ones that have significant impact of ROE are CAP, COST2PROFIT and INF at significance level 0.05 and SALARY at significance level 0.1. Therefore the estimated equation of Model with ROE is:

$$(5) \text{ roe} = -21.6 - 0.96\text{cap} + 0.31\text{size} - 0.17\text{npl} + 0.14\text{provis2loan} - 0.23\text{cost2profit} + 0.63\text{salary} - 5.17\text{deposits} - 0.12\text{m2} + 0.24\text{gdp} + 0.91\text{inf} + u$$

Furthermore, the variables that have a positive effect on NIM are CAP, SIZE, PROVIS2LOAN, COST2PROFIT, SALARY, M2 and INF while the other variables have a negative effect on profitability. Among that independent variables, the ones that have significant impact of ROE are CAP, SALARY, DEPOSITS and INF at significance level 0.05 and NPL at significance level 0.1. Therefore the estimated equation of Model with NIM is:

$$(6) \text{ nim} = -8.59 + 0.59\text{cap} + 0.35\text{size} - 0.10\text{npl} + 0.07\text{provis2loan} + 0.02\text{cost2profit} + 1.15\text{salary} - 5.30\text{deposits} + 0.05\text{m2} - 0.13\text{gdp} + 0.46\text{inf} + u$$

According to tables 3 which show the R-squared value of all the three models indicate that R-square 0.93% of data explain the model with dependent variable ROA, R-square 0.96% of data explain the model with dependent variable ROE and R-square 0.98% of data explain the model with dependent variable NIM. Also Prob(F-statistic) of all the three models are lower than 0.05 indicating that at significance level 0.05 all the variables together are significant in explaining the respective model.

Table 3: R-Squared and Prob (F-statistic) for Each Model

Dependent Variable	ROA	ROE	NIM
R-squared	0.93459	0.96061	0.98903
Prob(F-statistic)	0.02123	0.00645	0.00029

In order to determine if between Albanian banks profitability and staff salary exists a long run relationship Panel Cointegration Test is conducted. The condition that should be fulfilled before running the cointegration test is that all the variable should be stationary at 1<sup>st</sup> difference. Thus, Unit Root tests for all three variables of profitability and for the variable of staff salary are conducted. The method included in Unit Root Test are Levin, Lin and Chin method and Fisher Methods Type ADF and Type PP. Levin, Lin and Chin method Levin, Lin and Chin method a common unit root process while both two Fisher methods assume individual unit root process. The null hypothesis of all methods predict a not-stationary series.

Table 4: Unit Root Tests

	ROA		ROE		NIM		SALARY	
	at Level	at 1. Diff						
Levin, Lin & Chu t	0.3934	0.0000	0.4169	0.0000	0.9177	0.0001	0.9995	0.0011
ADF - Fisher Chi-square	0.6716	0.0003	0.7304	0.0007	0.9543	0.0036	0.9929	0.0171
PP - Fisher Chi-square	0.5578	0.0003	0.7602	0.0003	0.96	0.0024	0.9967	0.0076

Table 4 should the results of the unit root test respectively for ROA, ROE, NIM and SALARY at level and at 1<sup>st</sup> difference. Accordingly, that all the methods included on the respective unit test have a probability higher than 0.05 and 0.01, it can be concluded that at level all the four variables have unit root are not stationary at significance levels 0.05 and 0.1. Thus, respective unit root test at 1<sup>st</sup> difference is conducted. As shown in the table, all the methods included on

the respective unit test have a probability lower than 0.05 thus, it can be concluded that at 1<sup>st</sup> difference all the four variables do not have a unit root and are stationary at significance levels 0.05.

Table 5: Pedroni Residual Cointegration Test between Each Profitability variable and Salary

Methods:	Prob.		
	ROA	ROE	NIM
Panel v-Statistic	0.4790	0.5209	0.6431
Panel rho-Statistic	0.3022	0.3897	0.3518
Panel PP-Statistic	0.0070	0.0523	0.0579
Panel ADF-Statistic	0.0192	0.0566	0.0606
Panel weighted v-Statistic	0.5076	0.4851	0.7961
Panel weighted rho-Statistic	0.2912	0.3078	0.4456
Panel weighted PP-Statistic	0.0117	0.0404	0.1662
Panel weighted ADF-Statistic	0.0219	0.0426	0.1617
Group rho-Statistic	0.7390	0.7529	0.8192
Group PP-Statistic	0.0001	0.0031	0.0192
Group ADF-Statistic	0.0000	0.0017	0.0045

Due to the fact that the stationary condition is fulfilled, Pedroni Residual Cointegration Test is conducted. This test include 11 methods: 8 Panel Methods which are v-Statistic, weighted v-Statistic, rho-Statistic, weighted rho-Statistic, PP-Statistics, weighted PP-Statistics, ADF-Statistics and weighted ADF-Statistics; and 3 Group Methods which are rho-Statistic, PP-Statistics and ADF-Statistics. The null hypothesis of all the variables indicted that there is no integration between variable.

Table 5 shows the Pedroni Residual Cointegration Test between each profitability variable and SALARY. Accordingly to the results of Pedroni Residual Cointegration Test between ROA and Salary, 6 out of 11 methods (Panel PP-Statistics, Panel weighted PP-Statistics, Panel ADF-Statistics, Panel weighted ADF-Statistics, Group PP-Statistics and Group ADF-Statistics) have a probability lower than 0.05. The results of Pedroni Residual Cointegration Test between ROE and SALARY indicate 4 out of 11 methods (Panel weighted PP-Statistics, Panel weighted ADF-Statistics, Group PP-Statistics and Group ADF-Statistics) have a probability lower than 0.05. However Panel PP-Statistics and Panel ADF-Statistics have a probability lower than 0.1. Moreover, the Pedroni Residual Cointegration Test between NIM and SALARY resulted to have 2 out of 11 methods that have a probability lower than 0.05 and 4 out of 11 methods that have a probability lower than 0.01.

## Interpretation of Results

Table 6 shows an overall view of the type of impact and its significance of each dependent variable on profitability variables. Also the last two columns show the overall result of the models. Capital Ratio has a positive effect of ROA and NIM, and a significant impact on ROE and NIM. In overall Capital Ratio has a significant positive effect on bank profitability. The same findings were also concluded of the studies of Bourke (1989) and Berger (1995b). This result may come because National Commercial Bank sh.a, Raiffeissen Bank sh.a and Intesa Sanpaolo Bank Albania sh.a are well capitalized banks and such banks generate high profit.

Table 6: Panel Data Regression Results

Variable	ROA		ROE		NIM		Overall	
	Effect	Sig.	Effect	Sig.	Effect	Sig.	Effect	Sig.
<b>CAP</b>	+	N	-	Y	+	Y	+	Y
<b>SIZE</b>	+	N	+	N	+	N	+	N
<b>NPL</b>	-	N	-	N	-	Y(0.1)	-	N
<b>PROVIS2LOAN</b>	+	N	+	N	+	N	+	N
<b>COST2PROFIT</b>	-	Y	-	Y	+	N	-	Y
<b>SALARY</b>	+	Y(0.1)	+	Y(0.1)	+	Y	+	Y(0.1)
<b>DEPOSITS</b>	-	N	-	N	-	Y	-	N
<b>M2</b>	-	N	-	N	+	N	-	N
<b>GDP</b>	+	N	+	N	-	N	+	N
<b>INF</b>	+	Y	+	Y	+	Y	+	Y

Moreover, Operational Cost to Net Profit ratio which represented cost management determinant has resulted to have an overall significant negative impact on profitability. Cost to Net Profit ratio has a positive impact on NIM only and significant impact on ROA and ROE. The results is in according with the findings of Guru et al (2002) and Brouke (1989) by indicated that well managed Operational Cost results of higher income for banks.

Inflation Rate has resulted to have a significant positive impact of all the profitability variables. This finding indicates an increase in inflation significantly increases the profit of banking system. The same results were found by Molyneux & Thorton (1992) and Bourke (1989). This have have been a result that both Raiffeissen Bank sh.a and Intesa Sanpaolo Bank Albania sh.a are foreign bank with capital denote in EUR while National Commercial Bank sh.a. is an Albanian Bank but its capital is denoted in USD. Thus a devaluation of Albanina Lek will increase the value of their value of capital, income and profitability.

Furthermore, Staff Expenses were represented by total staff salary. At significance 0.1 which indicates a considerable level of statistical significance, variable has resulted to have a significant positive impact on each profitability variable. This finding is in accordance Molyneux (1993). Some reasons behind these results may be that higher profitable bank can afford higher payroll which usually are accompanied with employees which have higher academic level, more job experience and are more efficient and effective at their job.

Table 7: Overview of the results of Pedroni Residual Cointegration Test between each profitability variable and SALARY

Methods:	ROA	Prob.	
		Methods:	ROA
Panel v-Statistic	N	N	N
Panel rho-Statistic	N	N	N
Panel PP-Statistic	Y	Y(0.1)	Y(0.1)
Panel ADF-Statistic	Y	Y(0.1)	Y(0.1)
Panel weighted v-Statistic	N	N	N
Panel weighted rho-Statistic	N	N	N
Panel weighted PP-Statistic	Y	Y	N
Panel weighted ADF-Statistic	Y	Y	N
Group rho-Statistic	N	N	N
Group PP-Statistic	Y	Y	Y
Group ADF-Statistic	Y	Y	

Moreover, the paper aimed to evaluate if there is a long run relationship between profitability variables and Staff Salary by using cointegration test. The overview of the respective results is shown on table 7. Accordingly, 6 out of 11 methods show cointegration between ROA and SALARY at significance level 0.05, 4 out of 11 methods show cointegration between ROE and SALARY at significance level 0.05 while at significance level 0.1 cointegration between ROE and SALARY is found in 6 out of 11 methods. On the other hand only 2 out of 11 methods show cointegration between NIM and SALARY at significance level 0.05 and 4 out of 11 methods show cointegration between NIM and SALARY at significance level 0.1. As per the majority rule it can be concluded that there is enough evidence to reject the null hypothesis that there is no cointegration between ROA and SALARY at significance level 0.05 and the null hypothesis that there is no cointegration between ROE and SALARY at significance level 0.1. Yet, there is not enough evidence to reject the null hypothesis that there is no cointegration between NIM and SALARY. Due to the existence of the cointegration between ROA and SALARY and between ROE and SALARY (two main variables of profitability) it can be concluded that there exist a long run relationship between Albanian banks profitability and staff expenses.

## CONCLUSIONS

The focus of this paper was to identify the variables that have a significant impact of Albanian banks' profitability and also the evaluation of the relationship between staff salary and bank profitability. Following, the result of the empirical data the determinants that significant impact of profitability are Capital Ratio, Cost Management, Inflation and Staff Expenses.

The finding indicates the determinants that have a significant impact on bank profitability are Capital Ratio, Operational Cost to Net Profit Ratio, Inflation Rate and Staff Expenses. Apart from Operational Cost to Net Profit Ratio, all other three variables have significant positive effect on bank profitability.

The positive effect of capital ratio indicate that well capitalized banks generate higher income as per fact that they have easier access to best market assets therefore to less risky funds. The positive effect of Inflation Ratio indicate that banks that have capital denoted in foreign currency that are more stable than Albania Lek avoid its volatility in the market therefore generate higher income by avoiding unexpected increase in inflation that may cause loan losses. Also staff expenses have a positive effect on bank profitability. This indicates that banks that have higher staff salaries and more trained staff generate more income. This may be due to the fact that staff is more qualified and also satisfied with their job. The negative effect of Operational Cost to Net Profit Ratio on bank profitability indicates that banks with better management have higher income.

Moreover, the paper was focused of the long run relationship between profitability variables and Staff Salary. According to the results the bank profitability has a positive long run relationship with staff salary. This result indicate that training and increasing staff expenses will continue to generate positive effect in the long run as the staff becomes more qualified and effective in their work. Therefore investing in the work force, banks invest in their future incomes.

Overall, the findings of this paper emphasize the importance of a well capitalized bank, well operational cost management, imposing healthy managerial politics in accordance with Inflation Targeting policies in Albania and by focusing in development of the work force.

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## APPENDICES

Table 8: Panel Data Regression Model with dependent variable ROA

Dependent Variable: ROA				
Method: Panel Least Squares				
Date: 07/25/15 Time: 18:30				
Sample: 2009 2014				
Periods included: 6				
Cross-sections included: 3				
Total panel (unbalanced) observations: 16				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-21.59900	14.83827	-1.455628	0.2053
CAP	0.044500	0.340255	0.130783	0.9010
SIZE	0.309059	0.698062	0.442739	0.6765
NPL	-0.165476	0.096042	-1.722950	0.1455
PROVIS2LOAN	0.143783	0.085464	1.682374	0.1533
COST2PROFIT	-0.233122	0.057228	-4.073572	0.0096
SALARY	0.628963	0.292135	2.152988	0.0839
DEPOSITS	-5.175543	3.562453	-1.452803	0.2060
M2	-0.124151	0.203461	-0.610196	0.5684
GDP	0.242979	0.304933	0.796828	0.4617
INF	0.912039	0.324467	2.810884	0.0375
R-squared	0.934588	Mean dependent var		-4.227147
Adjusted R-squared	0.803764	S.D. dependent var		0.348603
S.E. of regression	0.154426	Akaike info criterion		-0.686352
Sum squared resid	0.119237	Schwarz criterion		-0.155198
Log likelihood	16.49082	Hannan-Quinn criter.		-0.659153
F-statistic	7.143839	Durbin-Watson stat		2.508462
Prob(F-statistic)	0.021229			

Table 9: Walt Test of the Panel Data Regression Model with dependent variable ROA

Wald Test:			
Equation: Untitled			
Test Statistic	Value	df	Probability
F-statistic	7.143839	(10, 5)	0.0212
Chi-square	71.43839	10	0.0000

Table 10: Panel Data Regression Model with dependent variable ROE

Dependent Variable: ROE				
Method: Panel Least Squares				
Date: 07/25/15 Time: 18:47				
Sample: 2009 2014				
Periods included: 6				
Cross-sections included: 3				
Total panel (unbalanced) observations: 16				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-21.59900	14.83827	-1.455628	0.2053
CAP	-0.955500	0.340255	-2.808186	0.0376
SIZE	0.309059	0.698062	0.442739	0.6765
NPL	-0.165476	0.096042	-1.722950	0.1455
PROVIS2LOAN	0.143783	0.085464	1.682374	0.1533
COST2PROFIT	-0.233122	0.057228	-4.073572	0.0096
SALARY	0.628963	0.292135	2.152988	0.0839
DEPOSITS	-5.175543	3.562453	-1.452803	0.2060
M2	-0.124151	0.203461	-0.610196	0.5684
GDP	0.242979	0.304933	0.796828	0.4617
INF	0.912039	0.324467	2.810884	0.0375
R-squared	0.960608	Mean dependent var		-1.884643
Adjusted R-squared	0.881825	S.D. dependent var		0.449219
S.E. of regression	0.154426	Akaike info criterion		-0.686352
Sum squared resid	0.119237	Schwarz criterion		-0.155198
Log likelihood	16.49082	Hannan-Quinn criter.		-0.659153
F-statistic	12.19304	Durbin-Watson stat		2.508462
Prob(F-statistic)	0.006449			

Table 11: Walt Test of the Panel Data Regression Model with dependent variable ROE

Wald Test:			
Equation: Untitled			
Test Statistic	Value	df	Probability
F-statistic	12.19304	(10, 5)	0.0064
Chi-square	121.9304	10	0.0000

Table 12: Panel Data Regression Model with dependent variable NIM

Dependent Variable: NIM				
Method: Panel Least Squares				
Date: 07/25/15 Time: 18:58				
Sample: 2009 2014				
Periods included: 6				
Cross-sections included: 3				
Total panel (unbalanced) observations: 16				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-8.587044	6.956396	-1.234410	0.2719
CAP	0.593713	0.159517	3.721951	0.0137
SIZE	0.350983	0.327261	1.072485	0.3325
NPL	-0.102053	0.045026	-2.266535	0.0728
PROVIS2LOAN	0.068900	0.040067	1.719620	0.1461
COST2PROFIT	0.017839	0.026829	0.664897	0.5356
SALARY	1.159646	0.136957	8.467225	0.0004
DEPOSITS	-5.301145	1.670129	-3.174093	0.0247
M2	0.054910	0.095385	0.575663	0.5898
GDP	-0.129331	0.142957	-0.904687	0.4071
INF	0.465184	0.152115	3.058111	0.0282
R-squared	0.989028	Mean dependent var		22.75065
Adjusted R-squared	0.967083	S.D. dependent var		0.399035
S.E. of regression	0.072397	Akaike info criterion		-2.201449
Sum squared resid	0.026207	Schwarz criterion		-1.670294
Log likelihood	28.61159	Hannan-Quinn criter.		-2.174250
F-statistic	45.06910	Durbin-Watson stat		2.548112
Prob(F-statistic)	0.000287			

Table 13: Walt Test of the Panel Data Regression Model with dependent variable NIM

Wald Test:			
Equation: Untitled			
Test Statistic	Value	df	Probability
F-statistic	45.06910	(10, 5)	0.0003
Chi-square	450.6910	10	0.0000

Table 14: Unit Root Test at Level of ROA

Panel unit root test: Summary				
Series: ROA				
Date: 07/25/15 Time: 19:59				
Sample: 2009 2014				
Exogenous variables: None				
Automatic selection of maximum lags				
Automatic lag length selection based on SIC: 0				
Newey-West automatic bandwidth selection and Bartlett kernel				
Balanced observations for each test				
Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-0.27035	0.3934	3	15
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	4.03742	0.6716	3	15
PP - Fisher Chi-square	4.89171	0.5578	3	15
** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.				

Table 15: Unit Root Test at 1<sup>st</sup> Difference of ROA

Panel unit root test: Summary				
Series: D(ROA)				
Sample: 2009 2014				
Exogenous variables: None				
Automatic selection of maximum lags				
Automatic lag length selection based on SIC: 0				
Newey-West automatic bandwidth selection and Bartlett kernel				
Balanced observations for each test				
Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-7.31553	0.0000	3	12
Null: Unit root (assumes individual unit root process)				

ADF - Fisher Chi-square	25.4098	0.0003	3	12
PP - Fisher Chi-square	25.4260	0.0003	3	12
** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.				

Table 16: Unit Root Test at Level of ROE

Panel unit root test: Summary				
Series: ROE				
Date: 07/25/15 Time: 20:00				
Sample: 2009 2014				
Exogenous variables: None				
Automatic selection of maximum lags				
Automatic lag length selection based on SIC: 0				
Newey-West automatic bandwidth selection and Bartlett kernel				
Balanced observations for each test				
Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-0.20995	0.4169	3	15
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	3.60151	0.7304	3	15
PP - Fisher Chi-square	3.37711	0.7602	3	15
** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.				

Table 17: Unit Root Test at 1<sup>st</sup> Difference of ROE

Panel unit root test: Summary				
Series: D(ROE)				
Sample: 2009 2014				
Exogenous variables: None				
Automatic selection of maximum lags				
Automatic lag length selection based on SIC: 0				
Newey-West automatic bandwidth selection and Bartlett kernel				
Balanced observations for each test				

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.05484	0.0000	3	12
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	23.4127	0.0007	3	12
PP - Fisher Chi-square	25.4290	0.0003	3	12
** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.				

Table 18: Unit Root Test at Level of NIM

Panel unit root test: Summary				
Series: NIM				
Date: 07/25/15 Time: 20:01				
Sample: 2009 2014				
Exogenous variables: None				
Automatic selection of maximum lags				
Automatic lag length selection based on SIC: 0				
Newey-West automatic bandwidth selection and Bartlett kernel				
Balanced observations for each test				
Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	1.38984	0.9177	3	15
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	1.57571	0.9543	3	15
PP - Fisher Chi-square	1.49161	0.9600	3	15
** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.				

Table 19: Unit Root Test at 1<sup>st</sup> Difference of NIM

Panel unit root test: Summary				
Series: D(NIM)				
Date: 07/25/15 Time: 20:01				
Sample: 2009 2014				
Exogenous variables: None				
Automatic selection of maximum lags				
Automatic lag length selection based on SIC: 0				
Newey-West automatic bandwidth selection and Bartlett kernel				
Balanced observations for each test				
Method	Statistic	Prob.**	Cross- sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.68742	0.0001	3	12
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	19.3664	0.0036	3	12
PP - Fisher Chi-square	20.3685	0.0024	3	12
** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.				

Table 20: Unit Root Test at Level of SALARY

Panel unit root test: Summary				
Series: SALARY				
Date: 07/25/15 Time: 20:02				
Sample: 2009 2014				
Exogenous variables: None				
Automatic selection of maximum lags				
Automatic lag length selection based on SIC: 0				
Newey-West automatic bandwidth selection and Bartlett kernel				
Balanced observations for each test				
Method	Statistic	Prob.**	Cross- sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	3.27451	0.9995	3	15

Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	0.76995	0.9929	3	15
PP - Fisher Chi-square	0.57910	0.9967	3	15
** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.				

Table 21: Unit Root Test at 1<sup>st</sup> Difference of SALARY

Panel unit root test: Summary				
Series: D(SALARY)				
Date: 07/25/15 Time: 20:02				
Sample: 2009 2014				
Exogenous variables: None				
Automatic selection of maximum lags				
Automatic lag length selection based on SIC: 0				
Newey-West automatic bandwidth selection and Bartlett kernel				
Balanced observations for each test				
Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.06616	0.0011	3	12
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	15.4357	0.0171	3	12
PP - Fisher Chi-square	17.5192	0.0076	3	12
** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.				

Table 22: Pedroni Residual Cointegration Test between ROA and SALARY

Pedroni Residual Cointegration Test				
Series: ROA SALARY				
Date: 07/25/15 Time: 19:58				
Sample: 2009 2014				
Included observations: 18				
Cross-sections included: 3				

Null Hypothesis: No cointegration				
Trend assumption: No deterministic intercept or trend				
Automatic lag length selection based on SIC with a max lag of 0				
Newey-West automatic bandwidth selection and Bartlett kernel				
Alternative hypothesis: common AR coefs. (within-dimension)				
	<u>Statistic</u>	<u>Prob.</u>	Weighted	
			<u>Statistic</u>	<u>Prob.</u>
Panel v-Statistic	0.052565	0.4790	-0.019172	0.5076
Panel rho-Statistic	-0.518183	0.3022	-0.549744	0.2912
Panel PP-Statistic	-2.457337	0.0070	-2.266723	0.0117
Panel ADF-Statistic	-2.071216	0.0192	-2.016835	0.0219
Alternative hypothesis: individual AR coefs. (between-dimension)				
	<u>Statistic</u>	<u>Prob.</u>		
Group rho-Statistic	0.640224	0.7390		
Group PP-Statistic	-3.862976	0.0001		
Group ADF-Statistic	-3.992184	0.0000		

Table 23: Pedroni Residual Cointegration Test between ROE and SALARY

Pedroni Residual Cointegration Test				
Series: ROE SALARY				
Date: 07/25/15 Time: 20:03				
Sample: 2009 2014				
Included observations: 18				
Cross-sections included: 3				
Null Hypothesis: No cointegration				
Trend assumption: No deterministic intercept or trend				
Automatic lag length selection based on SIC with a max lag of 0				
Newey-West automatic bandwidth selection and Bartlett kernel				
Alternative hypothesis: common AR coefs. (within-dimension)				
	<u>Statistic</u>	<u>Prob.</u>	Weighted	
			<u>Statistic</u>	<u>Prob.</u>
Panel v-Statistic	-0.052382	0.5209	0.037468	0.4851
Panel rho-Statistic	-0.279992	0.3897	-0.501985	0.3078
Panel PP-Statistic	-1.622719	0.0523	-1.745960	0.0404
Panel ADF-Statistic	-1.583658	0.0566	-1.721084	0.0426
Alternative hypothesis: individual AR coefs. (between-dimension)				
	<u>Statistic</u>	<u>Prob.</u>		

Group rho-Statistic	0.683616	0.7529
Group PP-Statistic	-2.741479	0.0031
Group ADF-Statistic	-2.927517	0.0017

Table 24: Pedroni Residual Cointegration Test between NIM and SALARY

Pedroni Residual Cointegration Test				
Series: NIM SALARY				
Date: 07/25/15 Time: 20:04				
Sample: 2009 2014				
Included observations: 18				
Cross-sections included: 3				
Null Hypothesis: No cointegration				
Trend assumption: No deterministic intercept or trend				
Automatic lag length selection based on SIC with a max lag of 0				
Newey-West automatic bandwidth selection and Bartlett kernel				
Alternative hypothesis: common AR coefs. (within-dimension)				
	<u>Statistic</u>	<u>Prob.</u>	Weighted	
			<u>Statistic</u>	<u>Prob.</u>
Panel v-Statistic	-0.366661	0.6431	-0.827870	0.7961
Panel rho-Statistic	-0.380542	0.3518	-0.136686	0.4456
Panel PP-Statistic	-1.572760	0.0579	-0.969443	0.1662
Panel ADF-Statistic	-1.549433	0.0606	-0.987668	0.1617
Alternative hypothesis: individual AR coefs. (between-dimension)				
	<u>Statistic</u>	<u>Prob.</u>		
Group rho-Statistic	0.912165	0.8192		
Group PP-Statistic	-2.070990	0.0192		
Group ADF-Statistic	-2.611362	0.0045		