



## The Key Performance of Commercial Banks: Evidence from Republic of Kosovo

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### **Abstract**

**Purpose:** The purpose of this study is to analyze the factors that influence the main performance of commercial banks in the Republic of Kosovo. In order to assess the main performance of commercial banks, the authors used side data processed from financial reports of commercial banks as the main segment of Kosovo financial sector over a decade (2008-2018).

**Design/methodology/approach:** Data processing for financial reports included in the econometric analysis is done using the STATA software program, specifically using linear regression, fixed effect, random effect, Hausman Taylor Regression and GMM Model. Assuming that the profitability of a commercial bank is a key factor in measuring its financial performance, then internal factors that have an impact on financial performance are taken as econometric variables. The return on assets (ROA) has been taken as a subordinated variable, while the independent variables are: bank capital adequacy, bank liquidity rate, and operational efficiency of the bank.

**Findings:** The results show that the profitability of commercial banks in Kosovo has a positive impact on capital adequacy and liquidity of commercial banks, while the commercial banks' operational efficiency has a negative impact.

**Practical implications:** The article offers insights to commercial banks who should intensify their efforts to increase efficiency in rational management with operational and administrative costs, as well as, adapt the business model to market needs.

**Originality/value:** The article presents significant pragmatic evidence in terms of its meticulous approach towards checking the robustness of results.

## **1. Introduction**

Profit is the ultimate goal of every business, including also commercial banks. All designed strategies and activities carried out aim to achieve this major objective. Besides the intention to increase profitability, commercial banks, depending on the business environment and other economic and social factors, can also determine additional social, economic, educational and other goals.

Profitability is the main indicator to measure the performance of a commercial bank. It is precisely this indicator in the study which has been taken as a dependent variable, to measure the impact of internal factors within the commercial bank in increasing or decreasing profitability during activities of commercial banks in Kosovo.

Many authors see 'capital adequacy' as an important indicator with a significant impact on the performance of commercial banks. Different researchers have reached different results in their research in different countries in the world, and this has determined the inclusion of this indicator in the current research in the case of Kosovo.

Liquidity is another indicator that determines the level of commercial banks performance. Liquidity refers to the bank's ability to meet its short-term liabilities, mainly to depositors. A lot of authors have verified that a high level of commercial bank liquidity has a positive impact on banks' performance. This indicator has been taken as an explanatory variable in the econometric models of this study, in order to find out what the real impact on commercial banks of Kosovo is. Operational efficiency is the last indicator included in this study. This variable has been used by many authors who have conducted research in this area and who have commented on the impact of this indicator, in different ways, in the performance of commercial banks.

## **2. Literature review**

### **2.1. Why should we analyze the performance of commercial banks?**

Unlike other companies, commercial banks are unique in the services they offer and on the level of oversight by regulatory bodies (usually the central banks of the country). Besides, they help in the fulfillment of monetary policies.

From this point of view, commercial banks are unique to the types of assets and liabilities they manage. Managers, shareholders, depositors, regulatory agencies and other parties use the financial performance data estimated using bank financial statements.

It should be noted that in order to evaluate the overall security and health of the bank, the regulators use the financial data of commercial banks presented in financial statements. Given the high level of supervision of commercial banks and the requirements for publishing their financial information, we

can say that commercial banks' financial statements are ideal tools for reviewing and assessing the performance of commercial banks (Dermaku & Hoti, 2013).

## **2.2. The banking system in the Republic of Kosovo**

The banking system of Kosovo consists of the central bank (Central Bank of Kosovo), commercial banks and microfinance institutions. The institutional structure is diverse including Commercial Banks, Insurance Companies, Pension Funds, Microfinance Institutions, Loan Associations and non-banking Financial Institutions, that are all licensed and supervised by the Central Bank of Kosovo. The banking system of Kosovo consists of a commercial bank with private foreign capital, common capital and private domestic equity. In the period of analyses, commercial banks have faced a number of problems in the framework of their commercial activity.

The main feature of the analyzed period has been the low level of mediation and limited relationships with customers (businesses and individuals). The Central Bank of the Republic of Kosovo is the country's main financial institution for commercial banks and has the responsibility for managing monetary policy in Kosovo. Commercial banks are the second level banks which execute the policies and services of the financial system. The commercial banks in Kosovo are the following: Bank for Business, Economic Bank, Pro Credit Bank, Raiffeisen Bank, National Commercial Bank of Albania - Branch in Kosovo, TEB - Kosovo, Belgrade Commercial Bank Branch in Mitrovica, and NLB Prishtina. Commercial banks in Kosovo offer different products and services such as bank accounts, money transfers, deposits, various loans, bank cards, internet banking facilities, etc. From a microeconomic point of view, profitability of commercial banks is an essential element to support increased competition in the banking sector as the competition offers liquidity, promotes bank expansion, and improves prospects and trusts of stakeholders in the banking industry (Jamal, Karim, & M.Hamidi, 2012).

## **3. Bank Performance Indicators**

The profitability of the bank was determined by Rose (2002) as net income after taxation or net profit of a bank. Data from financial reports provide relevant information to measure this important indicator. This conclusion was supported by Mamatzakis and Remoundos (2003). This study has analyzed the determinants of the performance of Greek commercial banks and found that financial reports provide sufficient information to measure and explain the bank's profitability (Abduh & Idrees, 2013).

Financial Reports enable us to analyze and interpret accounting information from the commercial activity of commercial banks in order to ascertain the financial statement of a bank and help us to appreciate the trends in the bank's perspective. Financial performance indicators enable us to make

comparisons between banks of varying sizes and performance and serve as a benchmark for the banking industry by comparing the result of an individual bank with the industry average (Vasiliou & Frangouli, 2000). There are many indicators and financial reports that can be used to assess the performance of a bank.

**3.1. Rate of return from assets**

Generally, ROA is the best indicator of bank performance measurement as it reflects how effective the bank management is in generating revenue from asset management (Sharma & Ravichandran, 2016). This indicator was used by authors in studies such as Wasiuzzaman and Tarmizi (2010), Rao and Lakew (2012), Syafri (2012), Curak, Poposki, and Pepur (2009), Rivard and Thomas (1997), Hasan and Bashir (2003), Tafri, Hamid, Meera and Omar (2012), Muda, Shaharuddin and Embaya (2013), for representing banking profitability (Vasiliou & Frangouli, The banks' Profitability-concentrationrelationship in an era of financial integration, 2000), (Guru & Staunton, 2002). Return on assets is a report which measures the effectiveness of the use of general assets in the creation of commercial bank profits. This report determines the efficiency of a business in the realization of profit from general assets, regardless of the funding resources of that asset (Jakupi & Latifi, 2015). The table below presents the calculations for the Return on Assets (ROA) for commercial banks in Kosovo, including the period 2008 - 2018.

$$\text{Return on Assets (ROA)} = \frac{\text{Net Profit}}{\text{Total Assets}}$$

**Table 1:** Rate of returns from assets (ROA) in the Municipal Bank of Kosovo

<b>Banks</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>BE</b>	1,2%	0,5%	1,1%	0,6%	-0,4%	0,1%	-1,8%	0,6%	0,5%	2,0%	2,0%
<b>BPB</b>	-	-	-	-	-	-	-	0,01%	1,3%	1,4%	2,5%
<b>BKT</b>	-	1,4%	1,6%	0,9%	1,6%	1,5%	1,3%	1,4%	1,5%	1,8%	1,9%
<b>RBK</b>	2,8%	3,0%	2,5%	1,0%	1,4%	1,8%	2,2%	2,1%	2,0%	2,2%	1,9%
<b>NLB</b>	-	-	-	-	-	1,0%	1,0%	0,7%	1,1%	1,7%	2,1%
<b>TEB</b>	-	-	-	-	0,1%	1,3%	1,4%	1,0%	2,5%	4,2%	4,2%
<b>PCB</b>	-	-	-	-	-	-	2,3%	2,0%	1,8%	2,3%	2,0%

*Source: Authors' calculations (2019)*

In 2008, the average value of return on assets for the banking system in Kosovo was 2%. In 2014 it marked a decrease of 0.67%. From 2014 to 2018, the average return on assets was 2.37%. There is a positive trend of increasing this financial indicator for the period analyzed and the cumulative average value records a trend which rose 1.48%.

A rising trend of only 1.48% is very small compared to the fact that in the analyzed period the average interest rate on loans was 12.30% while the average deposit interest rate was only 2.64%, which

means that commercial banks have had a positive net interest margin of 9.66%. This very positive difference in net interest margin is considerably reduced as a consequence of the high banking sector operating costs.

### **3.2. Capital adequacy**

Capital, as a specific bank determinant of bank profitability, plays an important role in explaining and influencing the performance of financial institutions. Capital represents the amount of bank funds available that banks must keep in storage to support the daily activities of the bank and serve as a support against any sudden loss in the event of a bad condition (Ongore & Kusa, 2013).

Banking capital provides liquidity to banks in order to meet those obligations (deposits) and to withstand any unpredictable events, even reducing the bankruptcy risk that banks are exposed to. The ratio of total capital to total assets is used as a representative for capital adequacy. Capital ratio does not only represent capital adequacy or capital strength of banks, but it also needs to determine the risk and regulatory costs (Wasiuzzaman & Tarmizi, 2010).

Empirical evidence from Curak et al. (2012) and Dietrich and Wanzenried (2011) has shown negative profitability of banks compared to the capital adequacy ratio. Curak et al. (2012) investigated the internal and external impact of the performance of banks in the Macedonian banking sector from 2005 to 2010.

The result showed a negative impact of capital power on bank performance. The greater the ratio of capital adequacy, the lower the profitability of banks (Curak, Poposki, & Pepur, 2012). The level of capital should be assessed on the basis of the level of bank risks. In addition, Dietrich and Wanzenried (2011) suggested a significant and indirect impact on the profitability of commercial banks with ROA during the 2007-2009 financial crisis.

This happened due to Swiss high-capital banking institutions which encouraged savings deposits during the financial crisis, but these institutions were not able to transform the growing amount of deposits into significant income, while loan demand shrank during this period (Dietrich & Wanzenried, 2011).

When studying Islamic banks, Wasiuzzaman and Tarmizi (2010) also discovered a significant and negative impact between equity and bank profitability. It showed that Islamic banks with lower capital ratios resulted in lower agency costs, which in turn improved the bank performance (Wasiuzzaman & Tarmizi, 2010).

Demirguc-Kunt and Huizingha (1999) found out that well-capitalized banks have a higher net margin of interest and have resulted in higher profits. Berger (1995b), Mamatzakis and Remoundos (2003), and Staikouras and Wood (2003) discovered that the ratio of capital to assets (EA) has a positive

relationship with profitability. They show that argument is based on the fact that well-capitalized banks achieve a higher profit (Akhtar, Ali, & Sadaqat, 2011). However, Koehn and Santomero (1980) noted that rules that postpone capital adequacy requirements for minimizing the risk would lead banks to take higher risk in their investment portfolio in the hope of generating higher profits (Guru & Staunton, 2002).

Therefore, the equity ratio is also positively related to the bank profitability. A lot of research has directly supported the assertion that there is a positive relationship between the capital adequacy and the profitability of the bank, namely Ben Naceur and Goaid (2003), Sufian and Chong (2008), Syafri (2012), Sufian and Habibullah (2012), Ameer and Mhiri (2013), and Ongore and Kusa (2013), (Alexiou & Sofoklis, 2009). In addition, Ben Naceur and Goaid (2003) confirmed that capitalization and profitability of the bank are positively linked because it implies that capitalized banks with equity support a lower expectation of failure costs which ones decrease their capital costs (Sufian & Chong, 2008). Table 2 represents calculations of Capital Adequacy (CAR), for commercial banks in Kosovo, for the period 2008-2018.

$$\text{Capital adequacy} = \frac{\text{Total of capital}}{\text{Total of assets}}$$

**Table 2: Capital adequacy ratio in commercial banks in Kosovo**

<b>Banks</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>BE</b>	13,0%	19,8%	13,7%	12,7%	0,9%	7,5%	7,4%	7,0%	7,8%	9,1%	9,6%
<b>BPB</b>	-	-	-	-	-	-	-	7,1%	8,4%	8,7%	9,6%
<b>BKT</b>	-	5,3%	7,2%	7,0%	7,8%	7,4%	7,8%	8,0%	8,9%	10,7%	11,5%
<b>RBK</b>	11,7%	12,3%	12,3%	11,9%	13,4%	14,5%	15,7%	15,3%	16,1%	15,0%	13,9%
<b>NLB</b>	-	-	-	-	-	9,8%	10,1%	9,8%	11,1%	12,8%	12,1%
<b>TEB</b>	-	-	-	-	7,9%	7,4%	7,1%	7,0%	9,6%	12,9%	16,6%
<b>PCB</b>	-	-	-	-	-	-	12,4%	12,1%	11,9%	11,9%	11,3%

*Source: Authors' calculations (2019)*

For the period 2008 - 2018 there is a positive trend in the form of an increase in the capital adequacy ratio in commercial banks in Kosovo. The average value of this indicator in 2008 was 12.35%, however this decreased substantially in 2010, reaching 7.5%. From 2010 to 2018, the average value of capital adequacy ratio reached 12.08%. The cumulative average value of the trend for the analyzed period is 10.63%. This cumulative increase of the 10.63% adequacy ratio is the result of the high net lending margin, net profit reinvestment and four new banks coming into the banking market between 2012 to 2015 with a much higher capital adequacy structure in relation to the first banks.

### 3.3. Bank liquidity

Liquidity is another factor that determines the level of bank performance. Liquidity refers to the ability of the bank to meet its obligations, mainly to depositors. According to Dang (2011), the level of liquidity is positively related to the profitability of the bank. The nature of the banking business is the return of short-term deposits to long-term lending. Therefore, the bank will be constantly faced with the problem of maturity and inconsistency. Therefore, it is required to have sufficient liquid assets that can be easily converted into cash to avoid bankruptcy problems. Bank liquidity demonstrates the ability of the bank to meet its current obligations. However, liquid assets are usually associated with lower return rates.

A high rate of liquidity shows that banks are more liquid; the bank may lose lucrative investment activities and may result in lower profits. Therefore, we expect the bank liquidity to have an adverse impact on profitability. The results from empirical studies are mixed. Heffernan and Fu (2008) have found that bank liquidity has a positive impact on ROA and ROE. However, the study conducted in China and Malaysia has found that the level of liquidity of banks has no relationship with the banks' performance (Said & Mohd, 2011), (Ozen et.al; 2014)

$$\text{Bank liquidity} = \frac{\text{Total of loans}}{\text{Total of assets}}$$

**Table 3:** Bank liquidity ratio in commercial banks in Kosovo

Banks	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>BE</b>	41,6%	55,6%	61,9%	64,4%	72,1%	64,2%	66,2%	63,0%	69,9%	71,7%	66,3%
<b>BPB</b>	-	-	-	-	-	-	-	63,8%	69,4%	65,7%	63,0%
<b>BKT</b>	-	28,1%	33,2%	40,2%	41,2%	47,0%	44,7%	37,6%	39,7%	49,8%	38,6%
<b>RBK</b>	86,2%	84,4%	86,0%	77,3%	78,1%	63,4%	67,1%	70,9%	68,0%	59,0%	60,9%
<b>NLB</b>	-	-	-	-	-	53,8%	55,2%	64,7%	72,1%	62,2%	63,8%
<b>TEB</b>	-	-	-	-	69,7%	84,6%	77,2%	76,0%	84,5%	82,8%	82,1%
<b>PCB</b>	-	-	-	-	-	-	66,7%	63,4%	65,5%	65,4%	64,8%

*Source:* Authors' calculations (2019)

Given that commercial banks in Kosovo have a good liquidity position, the average value of this financial indicator in 2008 was 63.9%, which throughout the analyzed period had a positive growth movement from 60.26% to 65.08%. The average cumulative value of the linear movement is 65.67% and it is dedicated to the introduction of 4 new banks with a highly advanced capital structure between 2012-2015. This indicator follows the fact that commercial banks in Kosovo have excessive liquidity despite the fact that deposit rates are very low.

Despite the high liquidity as a result of political risk and investment risk and the inadequate level of institutional reforms, commercial banks allow loans to businesses with more bureaucratic procedures and with very high collateral, which prevents many businesses from meeting the high credit application and credit criteria. In spite of positive improvements in recent years (2014-2018), there are also many things to improve in this direction in order to increase the volume of commercial banks free assets in the business sector.

### **3.4. Operational efficiency**

According to Bashir (2003), Ben Naceur and Goaid (2003), Wasiuzzaman and Tarmizi (2010), and Muda et al. (2013), the operational efficiency is measured using the ratio of total expense to total assets. Most studies, such as Pasiouras and Kosmidou (2007), Sufian and Chong (2008) and Zeitun (2012) revealed a negative relationship between operational efficiency and ROA, stating that poor spending management would result in a poor profit. The main reason to explain the "opposing party" is that operational efficiency can be measured with different ratios (Wasiuzzaman & Tarmizi, 2010). Studies that have reported a negative impact represent operational efficiency by the cost of income ratio, while a positive impact is observed when operational efficiency is measured from total operating costs to total assets ratio. Studies by the authors Bashir (2003), Ben Naceur and Goaid (2003), Vong and Chan (2009), Wasiuzzaman and Tarmizi (2010), and Muda et al (2013) have found out a similar outcome for positive impact and important operational efficiency in the profitability of commercial banks.

The positive relationship is supported by efficiency payment theory which suggests that productivity growth increases as the wage rate improves with bank performance (Molyneux & Thornton, 1992). In addition, the positive relationship between operational efficiency and ROA can be explained by the use of advanced technologies (Bashir, 2003). This is a result of the use of new automated electronic technologies (such as ATMs) both at CB and IB as a service delivery tool, that not only improves productivity but also reduces wage costs effectively since work has been replaced by capital (Bashir, 2003).

Besides, the positive impact also reflects the ability of both CB and IB to shift the operating cost to their customers without causing a reduction in profitability (Olwney & Shipho, 2011).



$$\text{Operational efficiency} = \frac{\text{Operational costs}}{\text{Total assets}}$$

**Table 4:** Operational efficiency ratio in commercial banks in Kosovo

<b>Banks</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>BE</b>	5,8%	7,6%	5,5%	6,4%	6,4%	5,9%	7,8%	4,5%	5,7%	4,4%	3,5%
<b>BPB</b>	-	-	-	-	-	-	-	6,0%	6,0%	5,7%	4,6%
<b>BKT</b>	-	1,5%	2,2%	2,1%	2,1%	2,0%	1,7%	1,6%	1,6%	1,5%	1,4%
<b>RBK</b>	1,6%	2,4%	2,7%	2,3%	2,2%	2,3%	2,4%	2,1%	1,9%	1,8%	1,6%
<b>NLB</b>	-	-	-	-	-	1,3%	1,1%	0,7%	2,7%	2,3%	2,1%
<b>TEB</b>	-	-	-	-	6,1%	6,8%	2,0%	1,7%	0,2%	1,7%	1,7%
<b>PCB</b>	-	-	-	-	-	-	3,7%	3,6%	3,3%	3,4%	2,9%

*Source: Authors' calculations (2019)*

According to the processed data by financial statements of commercial banks, it results that for the period analyzed, there is a linear negative movement of operational efficiency of commercial banks. The initial value of the linear movement at the beginning of the period analyzed was 3.7%, which in 2018 decreased to 2.54%, while the cumulative average value of the trend was 3.36%.

Based on these results, it is verified that the decline in the value of operational efficiency has adversely affected the profitability of commercial banks in Kosovo. The average operative efficiency indicator should be carefully analyzed as this indicator has asymmetrical ratios at various commercial banks.

#### **4. Methodology, specification of the econometric model and findings of the study**

Several effective methods and techniques have been used to research the impact of selected internal factors on return on assets (ROA) through linear regression analysis, fixed effect, random effect, Hausman Taylor Regression and GMM model. These models define the relationships between the two variables and they are used to evaluate the dependent variables (Y) based on the independent variable (X).

Dependent variable (Y) is the projected or estimated variable required to be predicted or explained by the side of another variable. The independent variable (X) is the variable that provides the basis for the rating. By this variable, the prediction or explanation of the dependent variables is made. More specifically, through econometric models, we will test how the independent variables - the capital adequacy, bank liquidity and operational efficiency - are influenced by the dependent variable, the return on assets (ROA).

First, we will conduct the specification of the econometric models and the evaluation method and then, after the specification of the models, the data will be analyzed through statistical tests. The calculation of the econometric models and the interpretation of the results will be presented.

**Table 5:** Description of the variables including the econometric equation

<b>Variables</b>	<b>Description</b>	<b>Source of data</b>
<b>ROA</b>	Return on assets is a dependent variable	Annual Bank Reports
<b>AE</b>	Adequacy of Equity	Annual Bank Reports
<b>BL</b>	Bank Liquidity	Annual Bank Reports
<b>OE</b>	Operational Efficiency	Annual Bank Reports

*Source: Authors' calculations (2019)*

We will test the impact of performance factors on ROA through the simple linear regression method and the small square method application (OLS). The basic objective of regression is to estimate or predict the average value of a variable Y (dependent variable) based on the values of the other variable (independent variable) X;

Therefore, the specification of the linear three-dimensional regression model is as follows:

$$Y = B_1 + B_2X_1 + B_3 + u_i$$

- Y - Represents the dependent variable (variable clarified, regress, endogenous, predicted, etc.), in our case of research, the return to assets is the dependent variable.
- X - Represents the independent variable (regress, exogenous, predicting, etc.), the capital adequacy, bank liquidity and operational efficiency are the independent variable.
- B1, B2 and B3 are called parameters or coefficients of evaluation; where B1 is the constant parameter, while B2 and B3 are the independent variable evaluation parameters.
- $u_i$  is a stochastic or error term variable. It contains all the factors or variables that are not foreseen in the model and is a random and unobserved variable that captures positive and negative values. This indicates that the fully dependent variables are not clarified or does not give us information from independent variables. Otherwise, the stochastic component represents the unexplained part of the model.

The fixed effect model (FEM) is supposed to be a different intercept and it has no time effect. Whereas the Random Effect model (REM) is supposed to be a different intercept, and without time effect. REM is more suitable for use when crossing numbers that are higher than the number of parameters. In a

design, we allow some regressions to relate to individual effects. This preliminary option suggests that the researcher should consider a model of Hausman-Taylor, where some of the variables, but not all, may relate to individual effects. The generalized momentum method (GMM) is a commonly used evaluation methodology that is widely used in empirical research.

Therefore, the specification of Fix effect models, Random effect, Husman Taylor and GMM Model is as follows:

$$Y_{it} = \beta_1 X_{it} + \alpha_i + u_{it}$$

Where:

- $\alpha_i$  (i = 1....n) is an unknown intercept for each entity (n-specific entities).
- $Y_{it}$  is the dependent variable, where i = entity and t = time.
- $X_{it}$  represents the independent variables,
- $\beta_1$  is the coefficient for independent variables
- $u_{it}$  is the term of error.

**Table 6:** The results of econometric models

Dependent variable (ROA)	Linear regression (Model 1)	Fixed effect (Model 2)	Random Effect (Modeli 3)	Hausman Taylor (Model 4)	GMM Model (Model 5)
<b>ROAL1</b>	---	---	---	---	.235** (0.082)
<b>Mk</b>	.099 ** (0.002)	.154 ** (0.000)	.136 ** (0.000)	.142 ** (0.000)	.125 ** (0.001)
<b>Lb</b>	.017 ** (0.015)	.034 ** (0.007)	.027 ** (0.006)	.029 ** (0.006)	.039** (0.015)
<b>Eo</b>	-.272 ** (0.000)	-.378 ** (0.000)	-.326 ** (0.000)	-.346 ** (0.000)	-.316** (0.000)
<b>R<sup>2</sup> corrected</b>	0.4949	---	---	---	---

*Source: Authors' calculations (2019)*

**Model 1.** (Linear Regression) - Starting from the results obtained from the linear regression model, we find out that the three variables used in this study are significant at 5%, which means they have an impact on the dependent variable ROA.

Looking at the results of this model, we see that by 1% increase in capital adequacy, this will affect the growth of return on assets by 0.099 or 9.9%, and if it increases by 1% the bank liquidity will affect the return on assets ( ROA) by 0.017 or 1.7%. The 1% increase in operational efficiency will reduce ROA by -0.272 or -27.2%.

A large number of researches have directly supported the claim that there is a positive relationship between bank adequacy and bank profitability, namely Ben Naceur and Goaid (2003), Syafri (2012), Sufian and Habibullah (2012), Ameer and Mhiri (2013), and Ongore and Kusa (2013).

*Model 2 - (Fixed Effect)* - Based on the results derived from the Fixed effect model, we can see that 1% increase in the financial indicator (capital adequacy) will have an effect on return on assets of 0.154 or 15.4% and (p-value) is less than 5%. The result has significance.

Also, with 1% increase in bank liquidity, the return on bank assets will increase to 0.034 or by 3.4% and (p-value) is less than 5%, meaning that the result has significance. Also, 1% increase in operational efficiency, will affect the ROA reduction by -0.378 or -37.8%. This score has (p-value) less than 5%, so the result has significance.

Moreover, Ameer and Mhiri (2013) also discovered a positive effect of the capital ratio on the profitability of the commercial bank of Tunisia; or the net interest margin or return on assets is used as an intermediary for the bank performance.

*Model 3 - (Random Effect)* - From the results derived from the Random effect model we see that the three independent variables used in this paper have (p-value) significance less than 5% which means that the result is of statistical significance, thus with 1% increase in capital adequacy, this will affect the return on assets by 0.136 or 13.6% and with 1% of liquidity the bank will affect the dependent variable ROA by 0.027 or 2.7%. Also, 1% increase in operational efficiency will reduce the dependent variable ROA by -0.326 or -32.6%.

Moreover, Ben Naceur and Goaid (2003) confirmed that the capitalization and profitability of the bank are positively linked, meaning that capitalized capital banks support the lower expectations of bankruptcy costs which lower their capital costs.

*Model 4 - (Hausman Taylor Regression)* - Results from the Hausman Taylor Regression model only confirm the results in the preliminary models where it is seen that the three independent variables used in this paper have (p-value) less than 5% and the results have significance. By a 1% increase of the independent variables, the capital adequacy will affect the dependent variable ROA by 0.142 or 14.2%. 1% bank liquidity increase will affect the ROA increase by 0.029 or 2.9%. If operational efficiency increases by 1%, this will affect the ROA reduction by -0.346 or -34.6%.

*Model 5. (GMM Model)* - The results in the GMM model have (p-value) less than 5% which means that the results are of statistical significance. From the results we see that 1% capital adequacy increase will affect the dependent variable ROA by 0.125 or 12.5%. Also, 1% increase in bank liquidity will affect the dependent variable ROA by 0.039 or 3.9% and if operational efficiency increases by 1% then this will affect the decrease of the dependent variables ROA by -0.316 or -31.6%.

## **5. Conclusions and recommendations**

Measurement of the main performance (profitability) of commercial banks is based on theoretical research of relevant international authors. Based on the above research, the profitability of commercial banks is mainly influenced by: capital adequacy, bank liquidity, and operational efficiency. The econometric calculation for individual banks in the Kosovo banking market in the analyzed period resulted in different outcomes.

First variable: the capital adequacy in all applied models has a positive impact on bank profitability. Based on this result, the hypothesis that: the Capital adequacy has a positive impact on the profitability of commercial banks in Kosovo is proved. The second variable: liquidity of the bank also appears to have a positive impact with a significant level that proves at the same time the second hypothesis that: Bank liquidity positively affects the profitability of commercial banks in Kosovo. The third variable, analyzed in the econometric model, has a negative impact on the profitability of commercial banks by proving the hypothesis that: the Operational efficiency has a negative ratio with the profitability of commercial banks in Kosovo.

Considering that based on the results, operational efficiency has had downward movement and has adversely affected the profitability of commercial banks, then, the sector profit is expected to face the pressure of narrowing the space to reduce the cost of financing through deposits and pressures of ongoing competition to reduce the cost of mediation. As a result, it is recommended that commercial banks should intensify their efforts to increase efficiency in rational management with operational and administrative costs, as well as, they should adapt the business model to market needs. Narrowing the interest margins and technological advances in the finance sector will increase the pressures of commercial banks in Kosovo to advance their business processes and models in order to rationalize costs and to secure new generation resources of revenues.

It is a fact that Kosovo commercial banks have excess liquidity and that the government of Kosovo has seen progress in creating the most favorable business environment through the advancement of institutional reforms, particularly in the field of non-performing loans, efficient collateral management and low rates of profit tax. This positive business environment should be a stimulant for commercial banks in the function of increasing the volume of lending to the business, lowering interest rates on loans at the level of the countries of the region and achieving the highest profitability considering the insufficient competition that exists in the Kosovo banking market.

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