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CAMEL APPROACH FOR EVALUATING THE HEALTHY AND SOUND BANKING PERFORMANCES-CASE STUDY

Abstract

Banking sector plays an important role in economy and has significant impact on country's economic growth. The purpose of this study is by utilizing CAMELS approach to analyses the determinants of commercial banks' profitability through case study-Kosovo. Performance evaluation of commercial banks is grounded on the CAMEL approach, exploiting data for the period 2013-2016 for 10 commercial banks. For the research purpose, the return on assets (ROA) is taken as a dependent variable, whereas capital adequacy (C), asset quality (A), management competency (M), earnings (E) and liquidity (L) represent the independent variables. The regression analysis indicate that that commercial banks profitability in Kosovo has been driven mainly by factors such as capital adequacy, earnings and liquidity.

Key words: Bank Profitability; CAMEL, the profitability determinants, commercial banks, ROA.

JEL Classification: G21

Introduction

Commercial banks have always played an important role in the country's economy and play a decisive role in the development of industry and com-

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merce. They act not only as caretakers of the country's wealth, but also as domestic resources, necessary for country's economic development. The main role of a financial system all-over the world is to lubricate the gears facilitating the economic operations. The banking system plays a major role in transferring funds from the saving units to the investing units. If a financial system is efficient, it should demonstrate improvements in profitability, increasing the volume of funds flowing from saver to borrowers, and better quality services for consumers.¹

Commercial banks play a vital role in the economic resource allocation of countries. They channel funds from depositors to investors continuously. However they can perform such aim if they generate the necessary income to cover their operational cost incurring in the due course. In other words, for sustainable intermediation function, banks need to be profitable. Beyond the intermediation function, the financial performance of banks has critical implications for economic growth of countries. Good financial performance rewards the shareholders for their investment. Such approach, in return, encourages additional investment and brings economic growth. On the other hand, poor banking performances can lead to banking failure and crisis, which have negative repercussions on the economic growth.²

The performance of commercial banks may be influenced by specific (internal) and macroeconomic factors. Internal factors are the individual bank characteristics that affect the performance of the bank.³ Such factors are essentially influenced by internal management and board decisions. External factors are broad sectors or wide-ranging factors of the country that are beyond the control of the company and affect the profitability of the banks.⁴

The purpose of this research is to evaluate the financial performance of selected commercial banks for the period 2013-2016 in order by utilizing CAMELS standards to help interested groups such as regulators, supervisors, owners and management to identify and take appropriate measures. CAMEL is, basically a ratio-based model for evaluating the performance of banks. It is a

¹ Levine, R., Loayza, N., Financial Intermediation and growth: Causality and causes, *Journal of Monetary Economics*, 4(46), 2000. P: 31-77.

² Ongore, V.O., & Kusa, G.B., Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues*, vol.3, No.1, 2013. P: 237-252.

³ Poposka K., Trpkovski M., Bank Profitability prior and after the Crisis: Evidence from the selected Transitional Economies, *Economic Development . Journal of The Institute of Economics*, No. 1-2, 2016. P: 319-336.

⁴ *Ibid*, P: 310-311.

model for ranking of the banks. CAMEL is an acronym for the five components of bank safety and soundness: Capital Adequacy, Asset Quality, Management Quality, Earnings, and Liquidity.⁵ Controllers have enlarged bank supervision by utilizing CAMEL (Capital adequacy, Asset quality, Management competency, Earnings and Liquidity) model to evaluate and assess the performance and monetary soundness of the bank. CAMEL is an acronym for a rating model through which banks are evaluated and given a rating focuses on the premise of different parameters.⁶

The paper has been organized in the following manner such as an overview of the banking system in Kosovo, review of the related literature, the research methodology applied in this study, the results and discussions followed by the conclusions and finally, recommendations encouraged by the findings of the research.

1. AN OVERVIEW OF THE BANKING SYSTEM IN KOSOVO

In November 1999 based on UNMIK Regulation 1999/20, the Banking and Payments Authority of Kosovo (BPK) was established, and through Regulation 2001/24 it was amended as a public legal entity. In January 2001, the first bank in Kosovo, the Micro Enterprise Bank (MEB), was founded, and later it became the Pro Credit Bank, owned mainly by development agencies and international financial institutions.

The number of commercial banks in Kosovo increased gradually, hence at the moment, ten (10) banks operate in banking system in Kosovo, representing 69.0 percent of the total assets in the financial sector.

⁵ Dang, U., The CAMEL rating system in banking supervision: A case study. Arcada University of Applied Sciences. International Business, 2011. P: 17 – 27.

⁶ Babar, H.Z ., Zeb, G., Does CAMELS system provide similar ratings as PACRA system in assessing the performance of banks in Pakistan? Master's thesis, Pakistan: Umea School of Business, 2011. P: 1–82.

Table 1. The number of financial institutions

Description	2013	2014	2015	2016
Commercial banks	9	10	10	10
Insurance Companies	13	14	15	15
Pension Funds	2	2	2	2
Financial Auxiliaries	39	42	44	48
Micro Financial Institutions	17	16	18	16

Source: Central Bank of Kosovo (CBK), Annual report 2016

https://bqk-kos.org/repository/docs/2017/BQK-RV-2016_shqip.pdf

Banking products and services include banking accounts, loans, domestic and international payments, banking cards, banking guarantees, letter of credit, e-banking. The access to these services it is empowered through 263 branches and sub branches, 540 ATM's, 9,493 POS and 196,656 e-banking accounts. Their activity is dominated by loans with maturity up to 15 years, depending on the type of loan. Analyzed by the type of the loan, 65.2 percent of the total loans are loans to enterprises. Most of these loans are absorbed by trading enterprises sector (51.8 percent of loans to enterprises), whereas loans issued to the industrial sector (mines industry, production, energy and construction) compose 23.0 percent of total loans to enterprises. The agricultural sector represents 4.0 percent of total loans. The household loans participation is 34.4 percent of total loans. The structure of banking sector liabilities is dominated by deposits, which represent 80.2 percent of total liabilities. Deposits at the banking sectors have recorded an annual growth of 46.45 percent, amounting at euro 2.7 billion. Deposits in the banking sector consist of household deposits, which participate with a share of 74.4 percent in total deposits, whereas the deposits of private sector enterprises compose 17.5 percent of total deposits. There are 3,337 commercial banks employees.⁷

⁷ <https://www.bankassoc-kos.com/En/sektori-bankar>. Accessed 20/2/2018.

2. THEORETICAL CONCEPTS AND LITERATURE REVIEW

A number of previous research have been attempting to find the key determinants of profitability of commercial banks. The Uniform Financial Institution Rating system, commonly referred to the acronym CAMEL rating, was adopted by the Federal Financial Institution Examination Council on November 13 1979, and then adopted by the National Credit Union Administration in October 1987. It has proven to be an effective internal supervisory tool for evaluating the soundness of a financial firm, on the basis of identifying those institutions requiring special attention or concern.⁸ This system was proven by a very successful tool for overseeing and evaluating banks' performance. This is a system of classification composition based on the financial bank. The five key performance dimensions – capital adequacy, asset quality, management quality, earnings ability and liquidity– are to be evaluated on a scale of 1 to 5 in ascending order. Following is a description of the graduations of rating:

- Rating 1* indicates strong performance: BEST rating.
- Rating 2* reflects satisfactory performance.
- Rating 3* represents performance that is flawed to some degree.
- Rating 4* refers to marginal performance and is significantly below average and
- Rating 5* is considered unsatisfactory: WORST rating.

The numerical rating in the CAMEL is represented in the following numbers (Table 2)

⁸Uniform Financial Institutions Rating System ,Statements of Policy,The United States: Federal Deposit Insurance Corporation (FDIC), 1997. P: 1.

Table 2. Numerical ratings in CAMELS

1. <i>STRONG</i>	It is the highest rating and is indicative of performance that is significantly higher than average.
2. <i>SATISFACTORY</i>	It reflects performance that is average or above; it includes performance that adequately provides for the safe and sound operation of the banks.
3. <i>FAIR</i>	Represent performance that is flawed to some degree. It is neither satisfactory nor unsatisfactory, but is characterized by performance of below average quality.
4. <i>MARGINAL</i>	Performance is significantly at below average; if not changed, such performance might evolve into weaknesses or conditions that could threaten the viability of the bank.
5 <i>UNSATISFACTORY</i>	Represent the lowest rating and indicative of performance that is critically deficient and in need of immediate remedial attention. Such performance by itself, or in combination with other weakness, threatens the viability of the institution. Therefore, stakeholders are expected to take the necessary reactive and proactive measures towards the prosperity of the banks.

Source: Poposka Klimentina. Commercial Banking. Success and profitability. Institute of Economics-Skopje. 2008.

CAMEL model has been used for qualifying bank performances in many research papers. Azizi and Sarkani research is carried out to assess the performance of Mellat Bank by adopting the CAMEL model. Statistical tools were applied to analyze the data. Results of the study indicate that there is a positive significant relationship between the indices of liquidity, quality of management and earnings with financial performance. Yet, no relationship was seen between capital adequacy and assets quality with bank financial performance and multiple regression test showed only a positive significant relationship with financial performance in management quality section. As a result, Mellat Bank has better financial performance in management quality section.⁹

According to the Mohiuddin, study is carried out to evaluate the financial performance of the two major banks NCB and PCB operating in Bangladesh. This evaluation has been done by using CAMEL parameters and through this model, it is highlighted that the position of the banks under the study is

⁹ Azizi, M., Sarkani, DYA., Review Financial Performance of Mellat Bank According To Camel Model. A Journal of Multidisciplinary Research 3(1), 2014. P: 4 – 12.

sound and satisfactory, so far as their capital adequacy, asset quality, management capability and liquidity is concerned.¹⁰ According to other researchers, such as Muhmad and Hashim who analyze the performance of domestic and foreign bank operating in Malaysia by utilizing a CAMEL framework in the period 2008-2012, the outcome shows that capital, asset quality and liquidity have a significant effect on the execution of Malaysian banks.¹¹

Mishra analyzed the performance of different Indian public and private sector banks over the decade 2000-2011 using CAMEL approach and found that private sector banks are at the top of the list, with their performances in terms of soundness being the best.¹² Mishra and Aspal in 2013 analyzed the performance of State Bank Group through the help of the CAMEL model in India. They found that ranking of ratios is different for different banks in the State Bank group. But there is no statistically significant difference between the CAMEL ratios.¹³ Sangmi and Nazir (2010) highlighted that the banks in their study were in sound and satisfactory position so far as capital adequacy, asset quality, management capability and liquidity were concerned. This evaluation has been done by using CAMEL parameters, the latest model of financial analysis.¹⁴

Atikoğulları uses a CAMEL framework to assess the financial performance of five major banks in the post period of 2001, hence the results suggest that the profitability of banks and management quality have improved whereas capital adequacy and liquidity level, have deteriorated which requires a exceptional attention for the future of the banking sector.¹⁵ By exploring a number of empirical studies, this is strongly confirmed that a CAMEL framework is widely used to evaluate financial performance of banks.

¹⁰ Mohiuddin ,G., Use of CAMEL Model: A Study on Financial Performance of Selected Commercial Banks in Bangladesh .Universal Journal of Accounting and Finance 2, 2014 .P : 151 - 160.

¹¹ Muhmad, S.N. and Hashim, H.A. Using the CAMEL Framework in Assessing Bank Performance in Malaysia. International Journal of Economics, 23(1), 2015.P: 109-127.

¹² Mishra, S.,Analyzing Soundness in Indian Banking: A CAMEL Approach, Research Journal of Management Sciences , 2012. P: 9- 14.

¹³ Mishra, S.K., Aspal, PK., A Camel Model Analysis of State Bank Group. World Journal of Social Sciences,1(3), 2013. P: 36 -55.

¹⁴ Sangmi, M.-u.-D., & T. Nazir. .Analyzing Financial Performance of Commercial Banks in India: Application of Camel Model. Pakistan Journal of Commerce and Social Science, Vol.4 (1), 2010 P: 40-55.

¹⁵ Atikoğulları, M., .An Analysis of the Northern Cyprus banking Sector in the Post-2001 period Through the CAMEL approach .International Research Journal of Finance and Economics, Issue 32, 2009. P: 212-230.

3. VARIABLES AND HYPOTHESES

In order to achieve the purpose of the study, the variables are categorized into two groups: the first group - dependent variables and the second group - independent variables.

□ **Dependent variables**

Asset return (ROA) has been used as the main indicator of bank profitability measurement. ROA is calculated by dividing net profit after tax with total assets.¹⁶ In this sense, ROA presents the bank's management ability to convert the bank's assets to net profits and is seen as a key measure of bank's managerial efficiency.

ROA can be calculated as:

Return on asset = Net profit after tax / total asset

□ **Independent variables**

The major independent variables (determinants) or factors of the CAMEL model were capital adequacy, asset quality, management efficiency and liquidity status which shall be proxies by bank specific factors in relation to performance.

a. Capital adequacy

A banks' safety and financial stability can be scrutinized by the use of this ratio. The greater the value of this ratio, the smaller will be the chances of bankruptcy. Therefore to prevent the bank from bankruptcy it is necessary to maintain a significant level of capital adequacy.¹⁷ The capital adequacy for banking institutions the ratio should be superior to 8% or we can say that the total capital must be over 8% of its risk weighted assets. According to Basel III these ratios has been increased for the additional buffers such as Capital Con-

¹⁶ Dietrich, A. & Wanzenried, G., .Determinants of Bank Profitability before and during the Crisis: Evidence from Switzerland. *Journal of International Financial Markets, Institutions and Money*, 21(3), 2011. P: 307-327.

Kosmidou, K.,. The Determinants of Banks' Profits in Greece during the Period of EU Financial Integration. *Managerial Finance*, 34(3), 2008. P :146-159.

¹⁷ Chen, J. Capital adequacy of Chinese banks: Evaluation and enhancement .*Journal of International Banking Regulation*,4 (4) 2003. P: 21.

ervation Buffer and Countercyclical Buffer.¹⁸ However, it is important to note that in some countries the required minimum capital may vary depending on the local regulators. Capital adequacy can be calculated as:

$$\text{Capital adequacy} = \text{Total capital} / \text{total assets}$$

H0: There is no significant relationship between capital adequacy and bank performance .

H1: There is a significant relationship between capital adequacy and bank performance .

b. Asset quality

Bank's asset quality is determined with the help of total loans and non-performing loans' (NPL). The greater value of this ratio shows greater risk of non-performing loans. The smaller value of this ratio indicates that the bank requires less capital to support the portfolio of loans. According to Grier , "poor asset quality is the major cause of most bank failures".¹⁹ Asset quality can be calculated as:

$$\text{Asset quality} = \text{Provision for loans} / \text{Total loans}$$

H0: There is no significant relationship between asset quality and bank performance.

H2: There is a significant relationship between asset quality and bank performance.

c. Management capability

This ratio calculates salaries as well as advantages to average assets. The management's capability is highlighted by this ratio that shows bank's profitability. Management capability can also be measured by using total loans or total assets' growth; the greater amount of loans or assets shows management's capability. Grier suggests that management is considered to be the single most important element in the CAMEL rating system because it plays a substantial role in a bank's success; however, it is subject to measure as the asset quality examination. Management capability can also be measured by interest expenses / Total loans.²⁰ However, beside these quantitative ratios, the success of the

¹⁸ Poposka K., Stojanovska M., and Iloska-Trajkovska I., Banking from different angle, contemporary topics-from theory to practice. Magor, 2017. P: 152-160.

¹⁹ Grier, W.A., Credit Analysis of Financial Institutions. 2nd ed. Euro money Institution Investor PLC, 2007.

²⁰ Muhmad, S.N. and Hashim, H.A. Using the CAMEL Framework in Assessing Bank Perfor-

management can be measure by qualitative ratios as well.²¹

Management capability can be calculated as:

Management capability = Interest expenses / Total loans

H0: There is no significant relationship between management competency and bank performance.

H3: There is a significant relationship between management competency and bank performance.

d. Earnings ability

This ratio computes net interest income to average assets, which is an important element in determining financial performance of the bank. In sum, it shows bank's earning ability. Further, banks' ability can also be measured utilizing the return on equity (ROE) as well as return on assets (ROA). The greater the value of these ratios indicates bank's greater earning capability. This research work doesn't employ alternative methods for measuring bank's earning capability. Earnings ability can be calculated as:

Earnings ability = Net income / total capital

H0: There is no significant relationship between earnings quality and bank performance.

H4: There is a significant relationship between earnings quality and bank performance.

e. Liquidity

This ratio is estimated by total customer deposit/total assets. The bank's liquidity is measured by using this ratio, which aids in mitigating the risk of bank's failure. If the bank lacks sufficient liquidity, then it may fails in paying its depositors and financing its routine payments. Rudolf emphasizes that the liquidity expresses the degree to which a bank is capable of fulfilling its respective obligations.²² Liquidity can be calculated as:

Liquidity = Total loans / total costumer deposit

H0: There is no significant relationship between liquidity and bank performance.

H5: There is a significant relationship between liquidity and bank performance.

mance in Malaysia. *International Journal of Economics*, 23(1), 2015. P: 116 -120.

²¹ Poposka K., Stojanovska M., and Iloska-Trajkovska I., *Banking from different angle, contemporary topics-from theory to practice*. Magor, 2017. P:100-145.

²² Rudolf, D. *Managing Liquidity in Banks: A Top down Approach*, John Wiley and Sons. 2009. P: 5–20.

4. DATA AND METHODOLOGY

The used data are obtained from the CBK web site, respectively from the financial reports of commercial banks in Kosovo:²³

NLB BANKA

BANKA PËR BIZNES

TURKIYE CUMHURIYETI ZIRAAT BANKASI

BANKA EKONOMIKE

RAIFFEISEN BANK KOSOVO

PROCREDIT BANK

TEB SH.A.

BANKA KOMBËTARE TREGTARE

TURKIYE IS BANKASI

KOMERCIJALNA BANKA AD BEOGRAD²⁴

To prove empirically the profitability determinants of commercial banks in Kosovo, we use (OLS) as our valuation method. OLS is a method used to calculate unrecognized parameters in a linear regression model. For our research, we have used the following equation:

$$ROA_{i,t} = \beta_0 + \beta_1 * C_{it} + \beta_2 * A_{it} + \beta_3 * M_{it} + \beta_4 * E_{it} + \beta_5 * L_{it} + \beta_7 * Du_{it} + \epsilon_{it} \quad (1)$$

β_0	-	Constante
ROA_{it}	-	Return on asset at time t
C_{it}	-	Capital adequacy at time t-1
A_{it}	-	Asset quality at time t
M_{it}	-	Management efficiency at time t
E_{it}	-	Earnings at time t
L_{it}	-	Liquidity at time t
Du_{it}	-	Commercial banks
ϵ_{it}	-	Residuali

²³ <http://www.bqk-kos.org/?cid=1.42> accessed 18/01/2018/

²⁴ TURKIYE CUMHURIYETI ZIRAAT BANKASI and KOMERCIJALNA BANKA AD BEOGRAD are not included in the analysis because the first one started to work in 2014, while for the second we do not have data.

5. ANALYSIS AND DISCUSSION OF RESULTS

The result of the regression analyses has been indicated on the Table 3.

Table 3. Analysis results

Model 1: Pooled OLS, using 32 observations
Included 2 cross-sectional units
Time-series length = 16
Dependent variable: ROA

	Coefficient	Std. Error	t-ratio	p-value
const	-0.00150	0.00568	-0.26490	0.79317
C	0.14703	0.04612	3.18790	0.00371 ***
A	-0.06107	0.09133	-0.66870	0.50961
M	-0.06918	0.07965	-0.86850	0.39307
E	0.09031	0.00964	9.36840	<0.00001 ***
L	-0.01179	0.00237	-4.97070	0.00004 ***
Mean dependent var	0.01589		S.D. dependent var	0.01584
Sum squared resid	0.00060		S.E. of regression	0.00481
R-squared	0.92272		Adjusted R-squared	0.90786
F(5, 26)	62.08897		P-value(F)	0.00000
Log-likelihood	128.71020		Akaike criterion	-245.42040
Schwarz criterion	-236.62600		Hannan-Quinn	-242.50530
rho	0.34236		Durbin-Watson	1.22565

Source : Authors' calculations

* Significant in level 1%

** Significant in level 5%

*** Significant in level 10%

The regression Analysis result (Table 3.) shows R-squared statistics and adjusted R squared statistics value of 92.27% and 90.78% respectively. The result indicates that the change in the independent variable explain 90.78% of the change in the dependent variable. The remaining 9.22% of change was explained by other factors which are not included in the model.

Based on the result of Table 3. the coefficient of Asset quality, Management efficiency and Liquidity against ROA were negative. This indicates that there was an inverse relationship between the aforementioned three independent variables and ROA and statistically significant for Liquidity (L). On the other hand, Capital adequacy and Earning had a positive relationship with ROA with 0.147 and 0.090 respectively. This reveals that there is a direct relationship between the above independent variable and ROA and it is statistically significant. Considering ROA as a measure of profitability, the capital coefficient is positive and significant. This is consistent with previous prediction that the high ratio of capital improves overall bank profitability. The result is also consistent with finding that equity return and capital ratios are positively correlated. The coefficient of earnings ability has been statistically proven as an important factor in banks' profitability and has a positive impact on the profitability of banks. The liquidity coefficient is statistically verified as an important factor in banks' profitability and has a negative impact on banks' profitability. Similar results have also indicated negative relationship between the ratio of liquid assets to total assets and profitability in Russia.²⁵

Conclusion

The main objective of this research is to analyzes the banks determinant factors of profitability of commercial banks in Kosovo for the period 2013-2016. The study used a balanced panel data of thirty two observation from 2013 to 2016 of 10 commercial banks. The commercial banks were analysed using the OLS to examine the bank's profitability, which is measured by ROA as a the linear function of various specific variables. Continuing to take into account various research, we find that bank specifications such as Capital adequacy and Earning are positively correlated with ROA on the other hand it is inverse relationship between Liquidity (L) with ROA. In general, the results suggest that the three variables are important in determining the bank's profitability and

²⁵ Fungacova, Z. & Poghosyan, T., Determinants of bank interest margins in Russia: Does bank ownership matter?. *Economic Systems*, 35, 2011. P: 481-495.

statistically significant and banks in Kosovo need to consider them to increase soundness of the banking performances and their profitability.

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