The Determinants of Commercial Bank Profitability In CEE Countries

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ABSTRACT

The aim of our paper is to identify key factors that affect the evolution of the banking profitability and to empirically evaluate the effects of different micro and macroeconomic elements that could affect the profitability of commercial banks from seven Central and Eastern European countries (Bulgaria, Czech Republic, Hungary, Lithuania, Latvia, Poland and Romania) during ten years (2003-2012). Our research is based on data provided by the Bureau Van Dijk database, the annual reports of the banks from our sample, the databases of the World Bank and ECB (Statistical Data Warehouse) and uses panel data estimation techniques. Our empirical research results show that the profitability of the sample banks is affected especially by the ratio of cost to income, loan loss reserves, GDP per capita growth and domestic bank credit to private sector, which is in line with our expectations as well as with the empirical results of the other researchers.

Keywords: *banks, profitability, determinants, Central and Eastern European Countries, panel data*
JEL Classification: *G21, C33, P52, E44*

1. INTRODUCTION

Since the '90s, the banking sector from Central and Eastern European Countries (CEE) included in our analysis (Bulgaria, Czech Republic, Hungary, Lithuania, Latvia, Poland and Romania) has undergone major transformations,

because of privatization, legislative, financial and structural reforms, capital flows liberalization, which led to the diversification of the banking products and services, increase in credibility, soundness and performance of the banking sector. The EU accession and legislation harmonization have had a significant and positive impact, and the analyzed countries have known a rapid financial and economic growth.

Our paper aims to identify and evaluate the effects of different micro and macroeconomic factors that affect the banking profitability for a period of ten years (2003-2012) in seven Central and Eastern European countries, which adhered to the EU during 2004 - 2007. Our study is in line with the economic literature related to banking profitability in the EU countries.

In order to reach our objectives, the paper is structured as follows: section two is dedicated to literature review; section three describes the data, selected variables and estimation methodology; section four provides the principal results of empiric analysis. The paper ends with conclusions.

2. LITERATURE REVIEW

The analysis of major factors that have an impact on banking profitability is an important topic for researchers, being demonstrated by the significant number of empirical studies which investigate the profitability either in one country (Naceur, 2003; Kosmidou et al., 2005; Athanasoglou et al., 2008; Naceur and Goaied, 2008; Naceur and Kandil, 2009; Sufian, 2009; Dietrich and Wanzenried, 2011; Alper and Anbar, 2011; Trujillo-Ponce, 2013, Ayaydin and Karaaslan, 2014), or in a panel of countries (Bourke, 1989; Molyneux and Thornton, 1992; Demirgüç-Kunt and Huizinga, 1999; Demirgüç-Kunt and Huizinga, 2000; Goddard et al., 2004; Athanasoglou et al., 2006; Pasiouras and Kosmidou, 2007; Barros et al., 2007; Micco et al., 2007; Claeys and Vander Vennet, 2008; Kasman et al., 2010; Naceur and Omran, 2011; Fang et al., 2013; Lee and Hsieh, 2013; Mirzaei et al., 2013; Dietrich and Wanzenried, 2014).

Naceur (2003) analyzes the impact of bank-specific characteristics, of the financial structure and macroeconomic environment on the performance of banking sector in Tunis. The results of the study show that a higher level of capital and a developed stock market have a positive effect on banking profitability.

An empirical study conducted by Pasiouras and Kosmidou (2007) focuses on the comparative analysis of major internal and external factors that affect commercial domestic and foreign banks profitability in 15 EU countries, from 1995 to 2001. The authors find that the impact of the investigated factors on profitability and profit is different, varying by the two major types of banks.

Claeys and Vander Vennet (2008) analyze the determinants of the banking profitability (investigated as net interest margin) in a comparative approach for a sample made of 1,130 banks from Central and Eastern European countries (CEEC), from 1994 to 2001. The study results show that capital is an important determinant of net interest margin both for the banks from the Western European countries and also for the banks from Central and Eastern European countries, while the quantitative effect is more accentuated in CEEC countries. The authors also find that the pricing of lending risk is important when explaining the interest margins, but the effect is significantly different between the groups included in the analysis.

Sufian (2009) analyzes the determinant factors of the commercial banks profitability in Malaysia from 2000 to 2004. The author shows that a higher credit risk and a higher loan concentration banks have a lower level of profitability, while banks with a high level of capitalization, more capitalized and a high weight of income from non-interest sources and higher operational expenses have a higher profitability. As regards the impact of macroeconomic environment on banking profitability, the study reveals that economic growth has had a negative effect while higher inflation rates have had a positive impact.

In a similar way, Kasman et al. (2010) investigates by means of a comparative technique the determinants of the net interest margin in the banking sectors from EU member countries and candidate countries during 1995-2006. The empirical results suggest the existence of a heterogeneity regarding the determinants of the net interest margins as a consequence of the legal, financial and macroeconomic environments differences.

Among the recent studies focusing on the analysis of the major factors that affect banking profitability, we outstandingly mention those written by Mirzaei, Moore and Liu (2013), Trujillo-Ponce (2013), Ayaydin and Karaaslan (2014), Dietrich and Wanzenried (2014).

Mirzaei, Moore and Liu (2013) empirically investigate the effect of market structure, of the bank-specific characteristics, but also of the financial structure and macroeconomic conditions on banking profitability for 1,929 banks from 40 European emergent economies for the period 998-2008. The study results show important differences in the profitability of the banks from the sample. A higher profitability in emergent banking sectors is explained by less competitive market conditions, while higher profitability in advanced economies is explained by greater market share.

Trujillo and Ponce (2013) focus on major internal and external determinants of the profitability in Spanish banks, highlighting the differences in commercial and savings banks performance, for 1999-2009. The authors

find out that the banks with higher loans to total assets ratios, higher customer deposits ratio, good efficiency and lower doubtful assets recorded a higher profitability ratio.

Dietrich and Wanzenried (2014) empirically evaluate for a long period of time (1998 to 2012) the determinants of banking profitability on a large sample of banks (over 10,000 from 118 countries), that have different levels of economic development. The countries of the study were divided into three categories related to their income – low, middle, and high-income countries, the results suggesting that there are important differences between banks regarding the profitability level and its determinants, depending on country's income level where the banks operate.

Ayaydin and Karaaslan (2014) focus on the examination of profitability determinants based on a sample formed of 25 commercial banks from Turkey (2003-2011). The authors find that higher banking profitability in the analyzed period can be explained by large loans in total assets, lower liquid assets, good efficiency and low rate of the doubtful assets. The empirical study shows a negative relationship among financial development, foreign ownership and banking profitability.

We consider that our study has an important contribution to the existing literature on the determinants of banking profitability, through the empirical evidence provided on the major factors that affected the profitability evolution of commercial banks from the EU members, Central and Eastern European Countries.

3. DATA AND METHODOLOGY

The paper is based on a strongly balanced sample formed by 96 commercial banks which operate in seven Central and Eastern European countries, respectively 14 banks from Bulgaria, 15 banks from Czech Republic, 9 banks from Hungary, 16 banks from Latvia, 8 banks from Lithuania, 17 banks from Poland and 15 banks from Romania, analyzed for a ten-year period (2003-2012), the data set having 960 observations.

We have analyzed in our sample only the commercial banks that have all the data available for the analyzed period, as reported by the Bureau Van Dijk database and the annual reports of the banks from our sample. Data is also obtained from the databases of the World Bank (Global Financial Development Database), and those related to banking industry were provided by ECB (Statistical Data Warehouse).

According to the literature in the field, banking profitability is determined by the Return on Average Assets, Return on Average Equity

and the Net Interest Margin, being expressed through internal and external determinants. Our study focuses on Return on Average Assets (ROAA), which expresses the ability of banking management to generate profits based on assets, and also on Return on Average Equity (ROAE), which shows the return on shareholder funds. These two indicators are used alternatively as dependent variables in our study.

With regard to the independent or explanatory variables used in the paper, we took into consideration several determinants of banking profitability which refer to bank-specific factors (internal determinants), factors specific to the banking industry and macroeconomic environment (external determinants). Based on previously mentioned studies, the most internal determinants used as explanatory variables of banking profitability are capital adequacy, asset quality, management quality, liquidity, funding costs, income diversification of bank and bank size. In terms of external determinants, one can notice the frequent use of banking industry concentration, stock market capitalization, annual real GDP growth rate, annual inflation rate and real interest rate.

Capital adequacy is used in our study through the ratio of total equity to total asset (EA), which reflects which proportion of the bank's total assets is financed by its shareholders. Regarding the relationship of this indicator with banking profitability, the results of the other studies are unclear. In conventional risk-return hypothesis approach, a lower equity-to-asset ratio leads to a higher expected return. On the other side, a higher equity-to-asset ratio has a positive impact upon profitability because the bank's financing costs are reduced.

The variable loan loss reserve rate (LLR) is used as proxy of credit risk, but it can also indicate the quality of the portfolio of banking loans. The variable is expected to have a negative impact on banking profitability.

The management quality has a powerful effect on banking profitability and it is analyzed in our study in reference with the cost to income ratio (CIR). This indicator reflects the capacity of the bank to cover its operating expenses from the obtained income and we expect to get a negative relationship with bank profitability.

Another internal determinant is the liquidity, measured through the ratio of liquid assets to total assets proxy variable (LIQA). According to the empirical studies, liquid assets generate lower return, thus we expect a negative relationship between liquidity and bank profitability.

For funding costs, we use as a proxy variable the interest expenses to deposits ratio, which reflects the ability of a bank to attract deposits at a low cost. Thus, a low level of this indicator has a positive effect on the bank profitability.

Income diversification of the bank is used in our study through non-interest income over total gross revenues proxy variable (NIIR). A growth in the non-interest income in total gross revenues, subsequent to the diversification of the bank's activities, is expected to have a positive effect upon bank profitability.

Another important determinant of profitability is bank size. We use the natural logarithm of the accounting value of the total assets of bank (LNTA) as a proxy for its size. In the empirical studies, the impact of bank size on profitability is not very clear (Pasiouras and Kosmidou, 2007; Athanasoglou et al., 2008; Sufian, 2009; Trujillo-Ponce, 2013; Ayaydin and Karaaslan, 2014; Dietrich and Wanzenried, 2014). On one hand, a great size of the LNTA can generate economies of scale and thus raise profitability. On the other hand, high dimension can have negative effects due to agency costs and bureaucracy.

Besides internal determinants (bank-specific factors), banking profitability can be influenced by macroeconomic conditions and by specific banking sector determinants (external determinants).

For economic growth we use as a proxy variable, the GDP per capita growth. A raise in the level of this indicator can lead to a raise in demands for the banking products with positive effects on banking profitability. According to empirical studies (Mendes and Abreu, 2003; Naceur, 2003; Naceur and Omran, 201; Dietrich and Wanzenried, 2014) and our point of view, we expect this variable to have a positive effect on banking profitability.

Inflation ratio effect (INF) on profitability depends on the extent in which inflation is anticipated or unanticipated (Mendes and Abreu, 2003; Naceur, 2003; Pasiouras and Kosmidou, 2007; Athanasoglou et al., 2008; Naceur and Omran, 2011; Mirzaei et al., 2013; Dietrich and Wanzenried, 2014).

In anticipated inflation situation, banks raise the interest rates and thus the banking profitability is expected to grow. If inflation is not anticipated, banking costs can increase, determining a decline in banking profitability.

Another external determinant included in our study is domestic bank credit to private sector (DCPSB), which reflects the level of financial development and measures the importance of bank financing in the economy (Demirgüç-Kunt and Huizinga, 2000; Naceur and Omran, 2011; Ayaydin and Karaaslan, 2014). Demirgüç-Kunt and Huizinga (2000) find that this indicator can have a negative impact on profitability due to competition intensification in well-developed financial systems. A higher level of this indicator can determine the raise of the credit risk, with negative impact on profitability. But if the loans are used for successful viable projects, an increase in profitability can be witnessed (Mirzaei et al., 2013).

Bank profitability may also be influenced by banking industry concentration (CR), reflected in our study as the 5-bank concentration ratio. This indicator shows the weight of assets of the five largest banks in the total assets of commercial banks. The relationship between this variable and bank profitability is not clear.

The selected variables and their expected relationships can be found in *Table 1*.

Definition of the variables and their expected relationship

Table 1

Variables	Symbol	Description	Expected Effect
Dependent variables			
Profitability	ROAA	The return on average total assets of the banks (%). ROAA calculated as net income divided by average total assets. Or	
	ROAE	The return on average equity is defined as net income by average total equity	
Independent variables			
Bank-specific (internal factors)			
Capital adequacy	EA	Capital adequacy of a bank is measured by equity to asset ratio	+/-
Loan loss reserves rate	LLR	Loan loss reserve to gross loans	-
Management Quality	CIR	Cost to income ratio calculated as the operating costs over total income	-
Liquidity	LIQA	the ratio of liquid assets (cash and due from banks+ available for sale securities + government securities) to total assets (LIQA)	-
Funding costs	FC	Interest expense on customer deposits as a percentage of average customer deposits	-
Income diversification of bank	NIIR	calculated as non-interest income over total gross revenues	+
Bank size	LNTA	Bank size is measured by the natural logarithm of the accounting value of the total assets of bank	+/-
Macroeconomic and Industry-specific Factors (External Factors)			
Economic Activity	GDP	GDP per capita growth (annual %)	+
Inflation	INF	The annual inflation rate (consumer prices)	+/-
Domestic credit	DCPSB	domestic bank credit to private sector (% of GDP)	+/-
Banking industry concentration	CR	Calculated as the assets of the five largest banks over total commercial banking assets (%)	+/-

Source: authors' elaboration based on the academic literature

The general regression equation is the following:

$$Dv_t = c + \sum_{i=1}^{n} \alpha_i BSV_{it} + \sum_{j=1}^{m} \beta_j MV_{jt} + \sum_{k=1}^{l} IS + \mu \quad [1]$$

where: Dvt – dependent variable, represented by banking profitability; BSV – bank specific variables; MV – macroeconomic variables; IS - industry-specific variables; i, j, k – counters by categories in independent variables; t – time period (2003-2012); N, M – numbers of independent variables; α, β – coefficients (estimated parameters); c – constant; u_i – idiosyncratic errors.

4. EMPIRICAL RESULTS AND DISCUSSIONS

The descriptive statistics of the variables included in our study are presented in *Table 2*. We can see important differences between countries both regarding standard deviation and minimum and maximum values for the majority of the variables included in our research.

Descriptive statistics of the variables used in our analysis

Table 2

Variables	Obs.	Mean	Std. dev.	Min	Max
ROAA	940	0.76	2.49	-43.68	8.23
ROAE	940	8.79	32.31	-298.10	510.17
EA	940	10.77	7.52	-23.74	93.33
LLR	940	4.90	5.48	-0.22	55.07
CIR	940	65.30	41.47	14.35	767.47
LIQA	940	25.03	17.51	0.01	109.32
FC	940	4.93	9.48	0.00	110.53
NIIR	940	38.26	24.23	-300.00	272.46
LNTA	940	8.56	2.22	1.44	15.56
GDP	940	4.01	5.27	-16.59	13.27
INF	940	4.69	3.36	-1.15	15.40
DCPSB	940	51.23	20.48	13.74	104.56
CR	940	58.60	9.83	43.37	84.75

The correlation matrix between independent variables can be seen from *Table 3*. The coefficients are low which suggests no multicollinearity problems.

Correlation matrix

Table 3

Variable	EA	LLR	CIR	LIQA	FC	NIIR	LNTA	GDP	INF	DCPSB	CR
EA	1										
LLR	0.091	1									
CIR	0.031	0.249	1								
LIQA	-0.090	0.134	0.027	1							
FC	0.039	-0.082	-0.017	0.016	1						
NIIR	-0.247	0.085	0.196	0.143	0.029	1					
LNTA	-0.198	0.086	-0.206	0.211	-0.010	0.037	1				
GDP	0.037	-0.234	0.013	-0.046	0.008	-0.014	-0.173	1			
INF	0.016	-0.230	-0.039	-0.025	0.080	-0.132	-0.264	0.145	1		
DCPSB	-0.044	0.140	0.019	-0.245	-0.110	0.028	-0.279	-0.339	0.051	1	
CR	-0.019	-0.104	0.031	-0.349	-0.099	0.015	-0.152	0.075	0.045	0.219	1

Source: authors' calculations

In panel data models, the panel id variable is Bank, and the time variable is Year. The results of fixed effects (within) regression and random effects (robust – controlled for the presence of heteroskedasticity) are displayed in *Table 4*.

The coefficient of the ratio of total equity to total asset (EA) is negative but not statistically significant for both profitability equations, a result similar to those obtained by Goddard et al. (2004), Athanasoglou et al. (2008) and Trujillo-Ponce (2013).

The coefficient loan loss reserves rate (LLR) indicates a negative relationship, in line with our expectations and with the results of Athanasoglou et al. (2008), Trujillo-Ponce (2013), Ayaydin and Karaaslan (2014), but the results are statistically significant only in the case of ROAA profitability. We can explain this situation through the reduction in the banking assets quality and banking loans that negatively affect banking profitability, because banks should create reserves in order to cover the expected credit loss.

The coefficient of the ratio of cost to income (CIR) is negative and statistically significant in all cases. This indicates that the increase in cost-to-income ratio leads to the decrease in profitability, fact that is in line with our expectations and the results obtained by Pasiouras and Kosmidou (2007), Dietrich and Wanzenried (2011), Trujillo-Ponce (2013), Dietrich and Wanzenried (2014).

The liquidity indicator is negative, in line with our expectations, but it is not statistically significant.

The funding costs (FC) do not have a significant effect on profitability. The coefficient estimated in both equations is negative, according to the expectations and results obtained by Dietrich and Wanzenried (2014) but statistically insignificant. During recent international financial and economic crises, commercial banks from most of the analyzed countries have raised the

deposit interests in order to attract financial resources. In the last years, it can be seen that the ratio of interest expenses to total deposits has lowered partly because banks have attracted sufficient liquidity from their deponents, and partly because of the monetary policy promoted by central banks reflected in progressively lowering the monetary policy rate.

Empirical results - robust fixed effects (within) regression and random effects regression

Table 4

	Dependent variable			
	ROAA		ROAE	
	fixed	random	fixed	random
EA	0.097	-0.056	-0.913	-0.06
	(0.124)	(0.116)	(0.663)	(0.116)
LLR	-0.164***	-0.125**	-0.843	-0.843
	(0.050)	(0.049)	(0.713)	(0.049)
CIR	-0.018***	-0.020**	-0.164***	-0.017**
	(0.006)	(0.008)	(0.049)	(0.008)
LIQA	0.005	-0.002	-0.113	-0.083
	(0.008)	(0.005)	(0.098)	(0.005)
FC	-0.005	-0.008	-0.093	-0.08
	(0.008)	(0.007)	(0.081)	(0.007)
NIIR	0.003	0.002	-0.196	-0.15
	(0.031)	(0.018)	(0.209)	(0.018)
LNTA	0.499	0.163**	0.810	0.86
	(0.390)	(0.069)	(2.989)	(0.069)
GDP	0.084***	0.091***	0.719	0.0838
	(0.015)	(0.015)	(0.565)	(0.015)
INF	0.011	0.022	0.175	0.13
	(0.027)	(0.019)	(0.396)	(0.019)
DCPSB	-0.025*	-0.015**	-0.260***	-0.185**
	(0.015)	(0.007)	(0.086)	(0.007)
CR	0.052*	0.046*	0.552	0.042
	(0.030)	(0.027)	(0.338)	(0.027)
Factor (Country) Czech Republic		-0.018***		-0.018***
		(0.006)		(0.006)
Factor (Country) Hungary		-0.008		-0.008
		(0.005)		(0.005)
Factor (Country) Latvia		-0.014**		-0.014**
		(0.006)		(0.006)
Factor (Country) Lithuania		-0.028***		-0.028***
		(0.009)		(0.009)
Factor (Country) Poland		-0.002		-0.002
		(0.006)		(0.006)
Factor (Country) Romania		-0.012***		-0.012***
		(0.004)		(0.004)
Constant		0.006		0.006
		(0.020)		(0.020)

Note: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$.

Regarding income diversification of bank (NIIR) variable, the empirical results show a positive relationship, in line with our anticipations, only in

ROAA case, but the coefficient is not statistically significant. Our results can be interpreted and explained through the fact that the incomes of the commercial banks from our sample are mostly represented by interest incomes, and the earnings other than interests did not have an important effect on profitability.

With respect to bank size (LNTA), our results show a positive impact on banking profitability, in accordance to the results obtained by Pasiouras and Kosmidou (2007), Athanasoglou et al. (2008), Dietrich and Wanzenried (2010, 2014), but the coefficient is statistically significant only for ROAA. Such a situation can be explained by the fact that commercial banks included in the analysis have an increased level of diversification of the banking products, with positive impact on the profitability.

The GDP per capita growth has a positive effect in line with our expectations and in compliance with the results previously obtained by Dietrich and Wanzenried (2014).The coefficient is statistically significant only for ROAA.

The annual inflation rate (INF) has a positive effect, conforming our expectations and in accordance with the results obtained by Athanasoglou et al. (2008), Trujillo-Ponce (2013), Dietrich and Wanzenried (2014). The coefficient is not statistically significant, suggesting that the inflation effect is not as important.

The domestic bank credit to private sector (DCPSB) constitutes an important determinant of banking profitability. The sign of the coefficient indicates a negative relationship with the banking profitability, according to our expectations. We can explain this situation by the fact that in most countries (especially in Romania and the Baltic States) an accelerated (even non-sustainable) increase in loans has been registered, which significantly raised the unperformed loans, with negative impact on profitability.

Our results on the banking industry concentration (CR) variable show a positive relationship with profitability, which is in accordance with the results found by Pasiouras and Kosmidou (2007), Trujillo-Ponce (2013), Dietrich and Wanzenried (2014), but the coefficient is only significant in the case of ROAA. According to Dietrich and Wanzenried (2014), the positive and significant coefficient of the size variable and the positive sign of the bank concentration variable show that it is possible for banks to obtain higher revenues because the markets where they operate are not highly competitive.

The results of the statistical tests

The results that we have obtained are consistent, being confirmed by the outcome of the statistical test.

The results of the variance inflation factor (vif) suggest that the coefficients indicate no problem. The results are presented in *Table 5*.

Variance Inflation Factor

Table 5

Variable	GVIF	Df	GVIF^(1/(2*Df))	Variable	GVIF	Df	GVIF^(1/(2*Df))
EA	1.199074	1	1.095023	LLR	1.328026	1	1.152400
CIR	1.206502	1	1.098409	CR	15.687272	1	3.960716
LIQA	1.353465	1	1.163385	GDP	1.598622	1	1.264366
FC	1.069672	1	1.034249	INF	1.756265	1	1.325241
NIIR	1.249946	1	1.118010	DCPSB	3.484610	1	1.866711
LNTA	3.158716	1	1.777278				

Source: authors' calculations

The results of the poolability test show that we should accept the presence of individual effects (both ROAA and ROAE), so the panel data estimation (fixed and random) is better than pooled OLS (Ordinary Least Squares) model (see *Table 6*).

Hausman Test suggests (see *Table 6*) that the fixed model is more appropriate. We choose to estimate both models (fixed and random), based on Baltagi's suggestion to also use the information criteria in order to choose between fixed effects and random effects models (Baltagi, 2008).

The results of the statistical tests

Table 6

Test	Fixed and OLS	
	fixed ROAA	*Fixed ROAE*
F test for individual effects	F = 4.5013, df1 = 87, df2 = 835, p-value < 2.2e-16 alternative hypothesis: significant effects	F = 1.8691, df1 = 87, df2 = 835, p-value = 8.103e-06 alternative hypothesis: significant effects
	Random and OLS	
	ROAA	*ROAE*
Lagrange Multiplier Test - (Breusch-Pagan)	chisq = 101.2762, df = 1, p-value < 2.2e-16 alternative hypothesis: significant effects	chisq = 16.4804, df = 1, p-value = 4.915e-05 alternative hypothesis: significant effects
	ROAA	ROAE
Hausman Test	data: F chisq = 208.7915, df = 11, p-value < 2.2e-16 alternative hypothesis: one model is inconsistent	data: F chisq = 208.7915, df = 11, p-value < 2.2e-16 alternative hypothesis: one model is inconsistent
Breusch-Pagan BP test	BP = 22449.45, df = 104, p-value < 2.2e-16	BP = 18865.92, df = 104, p-value < 2.2e-16

Source: authors' calculations

The Breusch-Pagan BP test (see *Table 6*) confirms the presence of heteroscedasticity.

CONCLUSIONS

Banking profitability constitutes one of the most important indicators used for evaluating the soundness and performances of the financial and banking sector. The analysis and monitoring of the evolution of banking profitability are of major importance because its deterioration hinders the development of the financial sector and implicitly the financing of the real economy. This is of outmost importance especially for the European countries, whose financial systems are bank-based.

Our study aimed to investigate the internal and external determinants of the profitability for a sample of 96 commercial banks that operate in seven countries from Central and Eastern European countries under analysis.

The empirical results suggest that profitability, mostly expressed as ROAA, has been mainly influenced by bank-specific factors (ratio of cost to income, loan loss reserves and the bank size), but also by external factors such as GDP per capita growth and domestic bank credit to private sector, our results being in line with our anticipations as well as in accordance with other empirical studies.

Based on our analysis, we consider that the investigated commercial banks can improve and increase their profitability especially through the improvement of quality management, increase in the loan portfolio quality and raise of non-interest income. As future developments, due to the importance of the topic debated in our paper, we take into consideration the necessity to expand the analysis to all 28 EU member states.

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