DETERMINANTS OF BANKS' PROFITABILITY IN REPUBLIC OF MACEDONIA

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Abstract

The commercial banks are important financial institutions in the financial system and the economy. As financial intermediaries, banks play a crucial role in the economic growth of the country through making available the funds for investors to borrow as well as financial deepening in the country.

Therefore, the success of working in the banks creates possibilities for more efficient (cheaper) crediting of economic entities which results in an increased potential for investing of the enterprises and encouraging the personal *people's spending.*

Namely, the banking system profitability is the most important instrument of the financing system that has positive influence on potential growth of each national economy.

The objective of this study is to investigate the determinants in bank profitability in R. Macedonia. For that *reason, Return of Assets, Return of Equity and Net Interest Margin, are taken as indicators of the banks' profitability.* On the other hand, the determinants influencing profitability are grouped into two categories, i.e. internal and external.

The bank internal determinants, which were thought to have effects on profitability, are total loans, asset quality (non-performing loan to total loan ratio), capital adequacy and total deposit to total assets.

In our study we use the gross domestic product and inflation rate as external determinants of bank profitability.

The results indicate that the bank specific determinants have been more effect than macroeconomic factors on profitability of the banks.

Key words: bank profitability, Return of Assets, Return of Equity, Net Interest Margin
JEL classifications codes: G21

1. Introduction

The financing system is very important for the economic development of each national economy. This in most cases refers to the possibility for the best transformation of savings into productive investments, which in turn represents an engine for economic development. In fact, the financial system is a zone where there is a trade between the economic agents that have surplus and those that have lack of financial resources.

The banks have the highest importance in the financial system. They, as key financial institutions, make deposits transformation into financial resources; in fact they canalize the resources of the entities that have surplus of liquid assets, to those that lack them. With that, they make the capital flows and trade easier. The banks, as financial mediators, accumulate resources from several sources and allocate them into a credit portfolio, comprised of different securities. Here, they face "exchange" between the risk and the return. So, at a given risk level, they attempt to maximize the returns.

The banks are financial institutions that constitute the core of the financial system and have high influence on its effectiveness and security, and on the entire economy effectiveness. Namely, the banking system in each country has irreplaceable role in providing financial resources of non-state sector in order to support the economic development.

Because of the a.m., the improvement of the total banking system effectiveness is of a big importance. Namely, the success of the banks working creates possibilities for more efficient (cheaper) crediting of the economic entities, which results in an increased potential for investing of the enterprises and encouraging the personal people's spending.

The banking system in R. Macedonia is a dominant segment of the country's financial system. Namely, 86,8% of the total resources of the financial system in R. Macedonia are owned by the banking institutions. The trust into the Macedonian banking sector has been discredited many times, from the frozen foreign currency saving, through pyramidal collapsing of saving banks, and of some smaller banks. But, with the improvement of the overall situation in the country, and by supervision and law regulative strengthening, the lost trust in the banking sector has been gradually restored.

2. Institutional set-up of the banking sector in R. Macedonia

The banking sector is the main column of each national economy. The banking sector in R. Macedonia consists of 15 banks and 3 savings banks. 11 of the banks are mainly in the ownership of foreign shareholders, while 7 are subsidiaries of foreign banks. Namely, the participation of foreign capital into the total banking system in R. Macedonia is 74,8%[1].

Depending on the total assets volume, the banks are grouped into three groups, i.e. big, medium and small banks. The largest part of the total assets (67%) is concentrated in the four big banks that indicate high concentration of the banking system in R. Macedonia. The high concentration sets apart several banks that have systematic importance, which realizations have crucial role for the total banking system and domestic economy.

The stability of the banking system of R. Macedonia is kept on a relatively stable level. The most important factors for stability and resistance of the banking sector to internal and external shocks are its high liquidity and solvency. Macedonian banks are very conservative regarding the volume of the liquid assets kept by them and which "occupies" one third of the total assets, and covers about 60% of the households' deposits and over 90% of the liabilities by a contractual remaining maturity of 30 days.

The capital adequacy is almost twice higher than the minimum recommended by the law and it is 15,7%. The profit is the main source for strengthening the banks' capital position, which highlights the profitability importance, not only for the banking system stability, but also for increasing the banks activities. We see continual improvement of the banking system profitability, mainly due to expenditures for interest rates decreasing, but spending efficiency is also improved, due to the decrease of operating expenses, after a longer period. In this situation of continuous decreasing of deposits interest rates, which is generally a driver for improved profitability of the banks, but as well for an existence of a risk for gradual exhausting of the space for continuing this trend, the banks are faced with a challenge for maintaining the profitability.

3. Research Methodology

3.1. Objectives of the Study

The primary objective of the study is to find out the effect of internal and external variables on banks profitability.

The secondary objectives with this study are as follows:

1. To identify the current situation of profitability of banks in Republic of Macedonia for year 2011 to 2015.
2. To explore the significance of relationships between the researched variables related and profitability.

3.2 Description of Variables

In the empirical study, in order to analyze the determinants of banks' profitability, the study used nine variables, three of them are the dependent and the others are independent variables. The independent variables are comprised of bank-specific (total loans, asset quality**,** capital adequacy and total deposit to total assets) and macroeconomic determinants (gross domestic product and inflation rate) of bank profitability.

4. Profitability of Macedonian Banking Sector from 2011 to 2015

4.1. Dependent Variables

A large number of empirical studies covered developed economies have been conducted about factors influencing bank profitability or determinants of bank profitability. However, there is much less studies covered emerging economies [2].

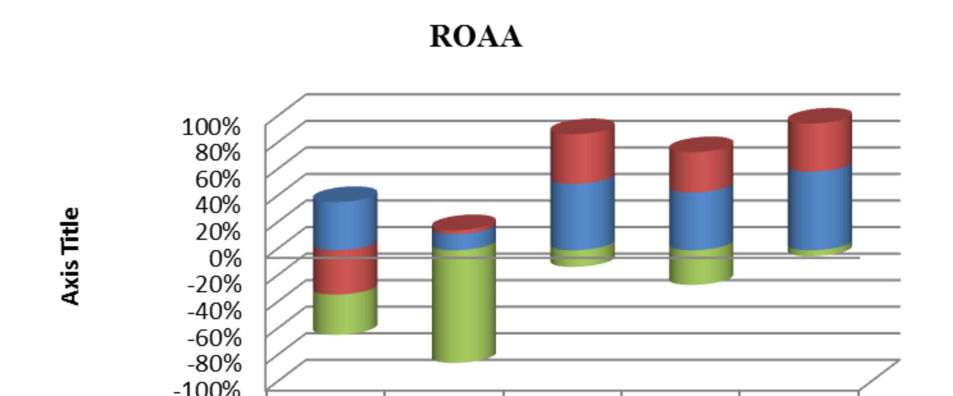
In the literature, profitability of banks is generally measured by return on asset (ROA), return on equity (ROE) and net interest margin (NIM) [3].

Return on assets (ROA) is an indicator of how profitable a bank is relative to its total assets (loans and investments). ROA gives an idea as to how efficient management is at using its assets to generate earnings. The ROA figure gives investors an idea of how effectively the bank is converting the money it has to invest into net income. The higher the ROA number, the better, because the company is earning more money on less investment [4].

On the other side Return on equity (ROE) is the amount of net income returned as a percentage of shareholders equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested [5]. Low values of this indicator shows on very little earnings of the banks [6].

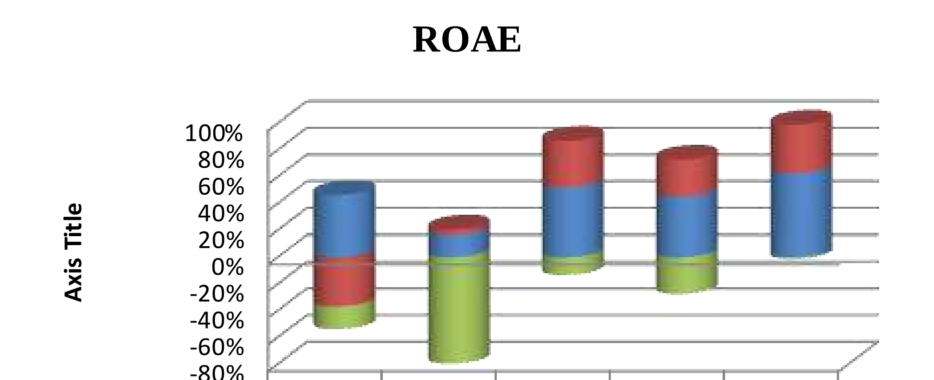
The Net Interest Margin (NIM) variable is defined as the net interest income divided by total assets. Namely, NIM reflects the difference between interest income and interest expense as a percentage of total assets [6]. NIM is focused on the profit earned on interest activities.

In following tables is shown the profitability of banking institutions in Republic of Macedonia measured by these three indicators.



	2011	2012	2013	2014	2015
Small banks	-1,00	-5,6	-0,2	-0,6	-0,1
Medium banks	-1,10	0,2	0,6	0,7	0,8
Big banks	1,20	0,8	0,8	1	1,3

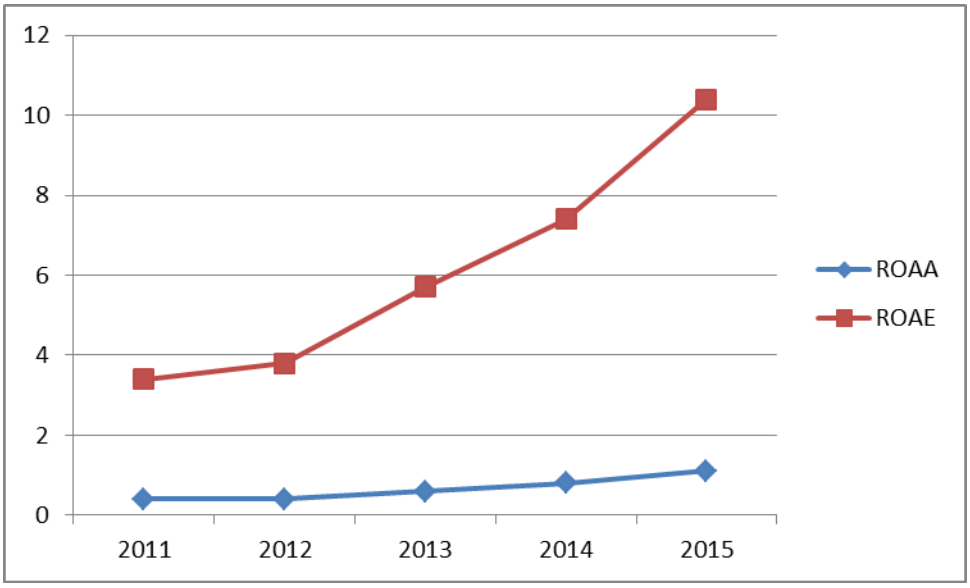
Fig. 1: Rate of Return of Average Assets(ROAA)
Source:http://www.nbrm.mk/?ItemID=B72D99AC6F95284EB030D0E10BD53369



	2011	2012	2013	2014	2015
Small banks	-4,5	-39,3	-1,8	-5,5	-0,2
Medium banks	-9,7	1,7	4,7	5,5	7,2
Big banks	12,2	8,4	7,1	9,1	12,5

Fig. 2: Rate of return of Average Equity (ROAE)

Source:http://www.nbrm.mk/?ItemID=B72D99AC6F95284EB030D0E10BD53369



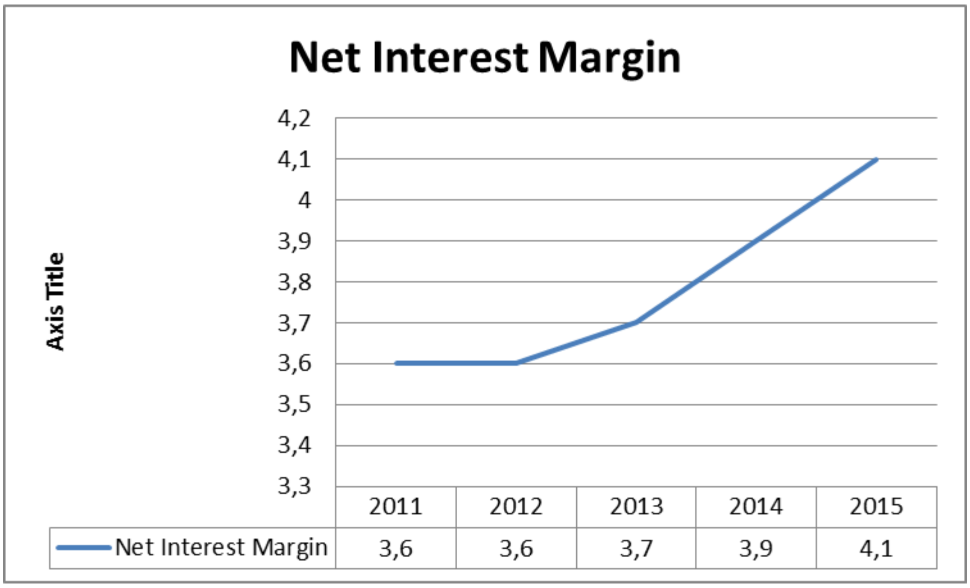
Graph no 1: Source: authors' compilation from the banks financial statements

On the basis of the results shown in the previous two tables, it can be concluded that the profitability of the banking institutions in the period up to 2013, is in a mild decreasing as a result of the world economic crisis, while in the period after 2013, a positive trend can be seen. So, we can state that the bigger banks bring the positive financial result, with which 86% of the total financial result are concentrated in 2015.

Furthermore, it can be seen that the medium banks show positive tendencies of their profitability, as well.

The exemption are the small banks, that have not created enough high and stable revenues yet, which will enable them positive financial result and long-term perspective for survival. Namely, the small banks are characterized by negative financial results, that in 2014 and 2015 showed positive movements in respect of decreasing the negative result compared to that in the previous years. The reasons for such situation of the small banks is mainly due to the small market share of the small banks group in the banking system of RM (only 3,7%), continuing credit activity decreasing, decreased amount of deposits , and the decreased operating efficiency of these banks. Therefore, it is most possible that part of them will face a need for changing the business model or changing the working strategy. Just because of these reasons, one of the measures to be recommended in the future is a concentration of the capital in the banking sector through a merger of the smaller banks.

The Interest rate margin, that is a difference between the average interest rate of credits and deposits, is an important indicator for the working efficiency of a bank or a banking system as a whole. The difference between the price that the banks collect on the given credits and that one which is paid on the collected deposits, shows how big the operating expenses of the bank's working are, i.e. how efficient the banking system is in its function of financial intermediation. Also, the interest rate margin reflects the competition level between domestic banks, and external competition in the banking sector (available credits abroad, foreign credit lines in the country etc.).



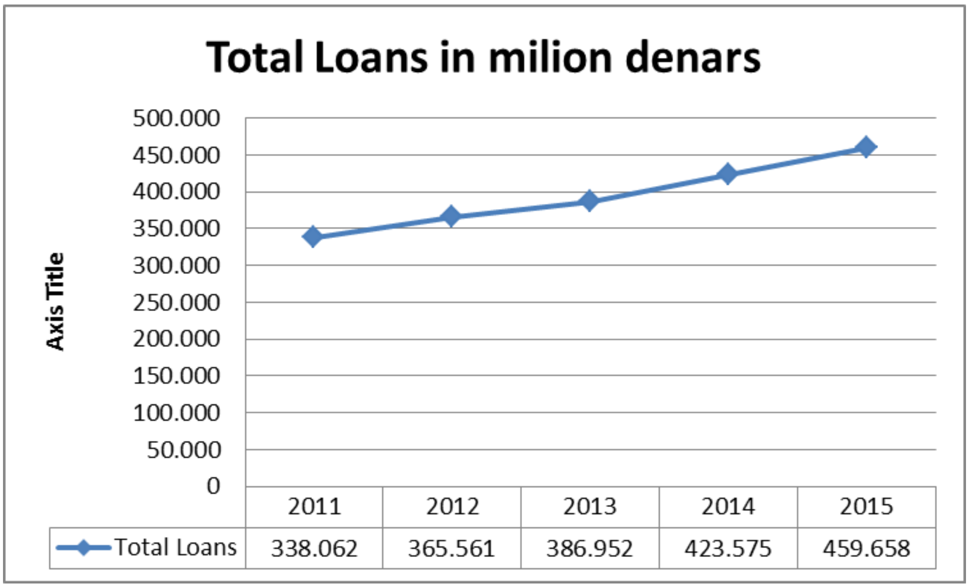
Graph no. 2: Net Interest Margin in percent
Source: Indicators of the Banking System of Republic of Macedonia, NBRM
Reports on the risks in the banking system of the Republic of Macedonia in the fourth quarter from 2011 to 2015

As it can be seen in the graph no. 2, there is a positive trend in the net interest margin movement within the observed period. The annual increasing of the net interest margin is a reflection of a more pronounced annual growth of the net interest revenue from the average interest-bearing assets growth. In fact, the main cause for the interest margin increase is the decreasing of the interest expenditures, which at the same time have contributed to an annual decrease of the expenditures from interests per interest-bearing liabilities unit.

4.1. Independent Variables

The determinants of banks' profitability are usually assorted into internal and external factors.
According to Husni [8] the internal determinants of banks profitability are normally consisting of factors that are within the control of commercial banks. They are the factors which affect the revenue and the cost of the banks.
In our study we use the following four bank-specific characteristicsas internal determinants of bank profitability: total loans, asset quality (non-performing loan to total loan ratio), capital adequacy and total deposit to total assets are used.
On the other side, in terms of external determinants, generally two macroeconomic variables are used: annual real gross domestic product growth rate (GDP) and annual inflation rate (INF).

Total Loans: In the literature its quiet common to find as a result that the bank profitability is increased when the loan portfolio is increased related to other more secure assets. This greater relative proportion of loans in the portfolio of the bank is usually coupled with a greater liquidity risk arising from the inability of banks to accommodate decreases in liabilities or to fund increases on the assets side of the balance sheet [9].

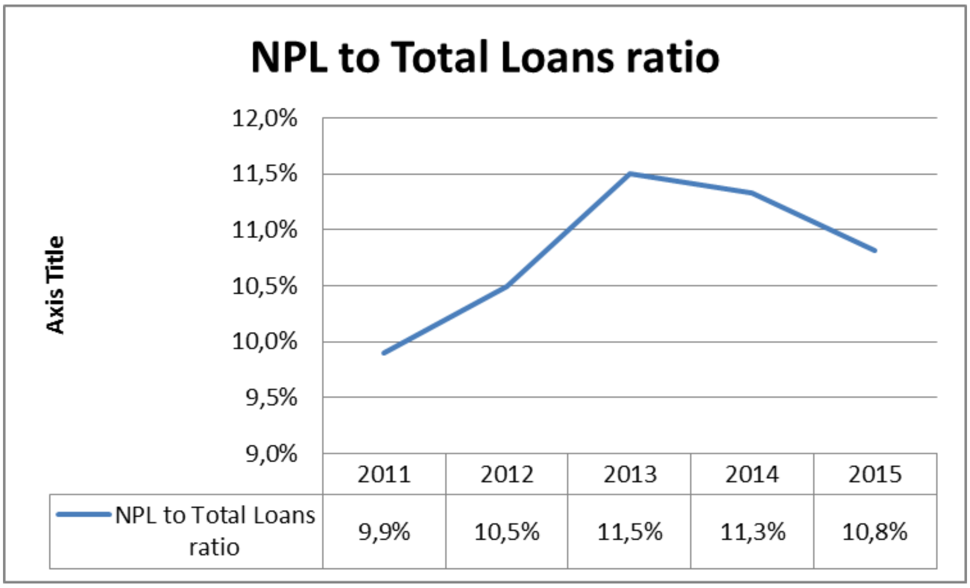


Graph no.3: Total Loans in Banking System of Republic of Macedonia (in million denars)
Source: Indicators of the Banking System of Republic of Macedonia, Credit Exposure, NBRM

As it is shown in the previous graph, the level of total loans has increased during the years. According to the literature that should be accompanied with an increase of performance or profitability because higher level of loans means higher incomes from the interest of the loan. The results of the conducted analysis in our country have proved the positive correlation between the profitability and the increased level of the Credit Exposure of the banking institutions.

Asset Quality: The quality of assets held by a bank depends on exposure to specific risks, trends innonperforming loans, and the health and profitability of bank borrowers. Poor asset quality and low levels ofliquidity are the two major causes of bank failures [10].

Poor asset quality led to many bank failures [11]. The theory proposes that firm profitability will decrease if the firm is highly exposed by creditrisk, hence we expect the inverse relationship between bank profitability and non-performing loan to total loanratio (NPL). For the purpose of this study, non-performing loan to total loan ratio (NPL) used to measure asset quality.

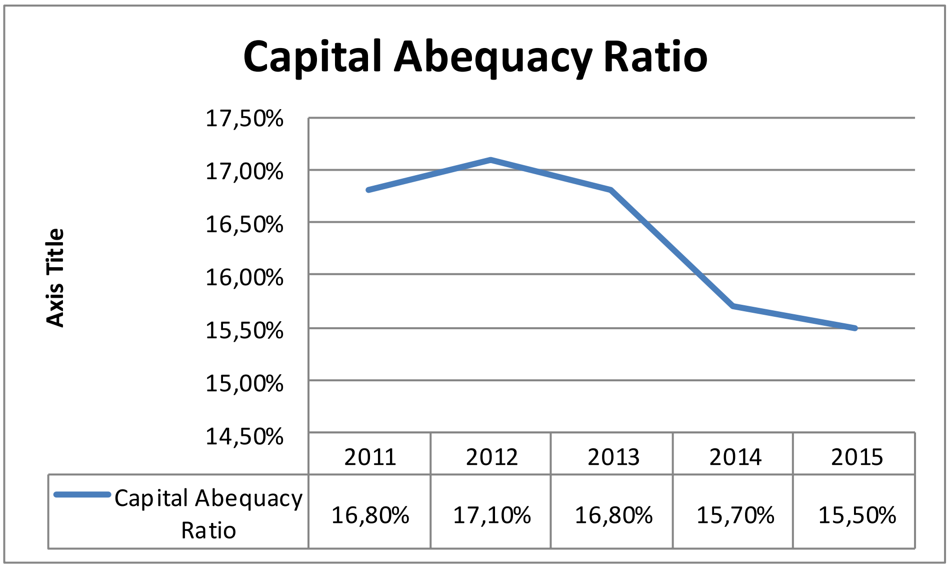


Graph no 4: NPL to Total Loans ratio
Source: Indicators of the Banking System of Republic of Macedonia, Indicators for the quality of the credit portfolio, NBRM

From the previous graph, it can be seen that there are some dramatic changes in the level of non-performing loan with respect to the total credits. Namely, up to 2013, there was a slight increasing of these credits, but in the following two years, the level of these credits gradually decreased.

Slow growth of the non-functional credits in the conditions of higher acceleration of the banks' credit activity, led to decreasing of the non-functional credits into the total credits to 10,8%. Coverage of non-functional credits by the separated correction of the value is high, that indicates satisfactory capacity of the banking system for absorbing potential credit losses. Compared to some countries in our neighborhood and wider, the share of the not-reserved part of the total non-functional credits in the own resources of the banking system of R. Macedonia, is significantly lower. This indicator is more favorable only for the banking system of Turkey. The share of the not-reserved part of the non-functional credits in the own resources of the banking system of R. Macedonia, is three times lower than the estimated average value for the banking systems of the analyzed countries (Turkey, Macedonia, Poland, Romania, Slovakia, Czech R., BIH, Croatia, Hungary, Slovenia, Montenegro)[12].

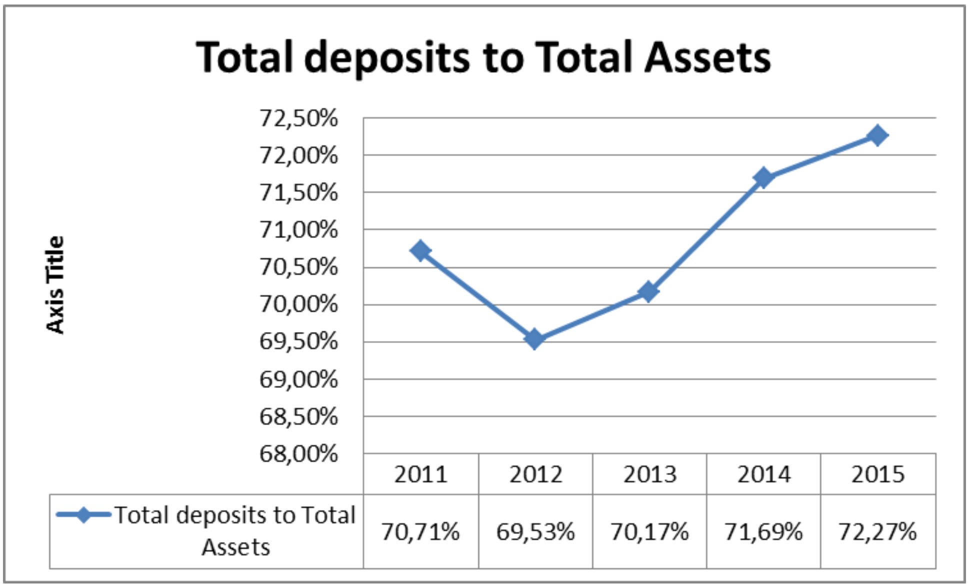
Capital adequacy: The ratio of equity to total assets (CA) is considered one of the basic ratios for capitalstrength. It is expected that the higher this ratio, the lower the need for external funding and the higher theprofitability of the bank. It shows the ability of bank to absorb losses and handle risk exposure with shareholder.Equity to total assets ratio is expected to have positive relation with profitability that well-capitalized banks face lower costs of going bankrupt whichreduces their costs of funding and risks [13].



Graph no 5: Capital Abequacy Ratio
Source: Authors' compilation from the banking system indicators and reports, NBRM

Although there is a trend for decreasing the capital adequacy rate (graph no.5), it is still twice higher than the minimum of 8% determined by the law. Additional factor for strong solvency of Macedonian banking system is the high quality of the own assets, of which only a half has been "used" for regular risks covering [14].

Total deposit to Total Assets: The total deposit to total assets (DEPOS) ratio is a variable measuring the amount of deposits held by a bank proportional to its size. Deposits are banks' primary sources of funds that they can invest to generate income. According to the literature a higher share of customer deposits in bank liabilities should increase a bank's profitability, considering that deposits constitute a cheap and stable financial resource compared with other financing alternatives [15]. Thus, we examine whether there is a direct relationship between the proportion of customer deposits in a bank's total liabilities and the bank's profitability.



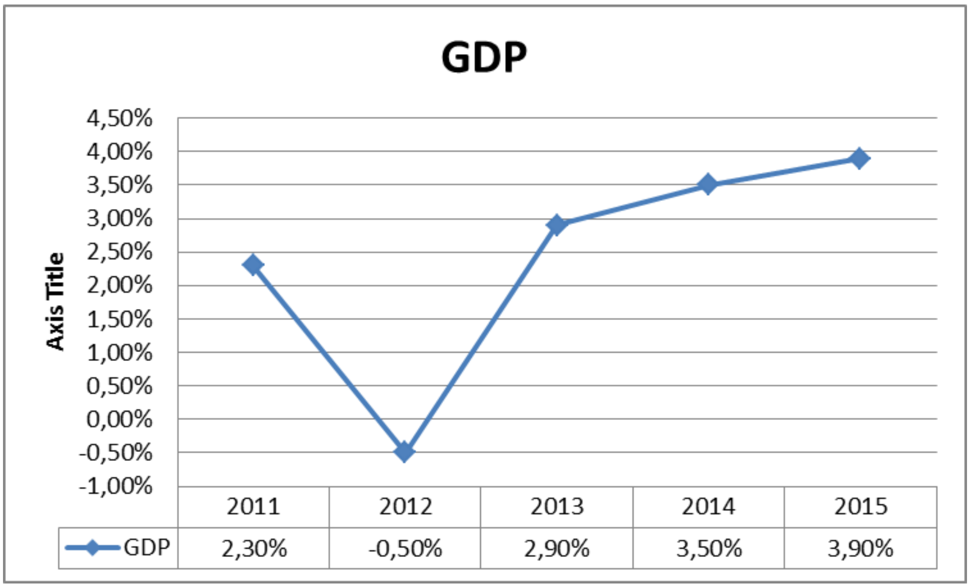
Graph no 6: Total deposits to Total Assets

4.3 Independent Variables

Some of the recent literature emphasizes the importance of changes in macroeconomic conditions on bank performance. According to the external factors that influence the banking sector we analyze the GPD and inflation rate.

GDP: It is a measure of the total economic activity and it is adjusted for inflation. According to P. I. Vong et al [16] the economic growth, which is measured by the real GDP growth rate (RGDP), was expected to affect banking profitability positively. Namely, higher economic growth may lead to a greater demand for loans which will result in both interest and non-interest incomes hence increase in the profits of commercial banks.

In following graph are shown GDP growth rates for the period of 2011 to 2015.



Graphic no 7: GDP growth rates

Source: Authors' compilation from the reports of the State Statistical Office of Republic of Macedonia

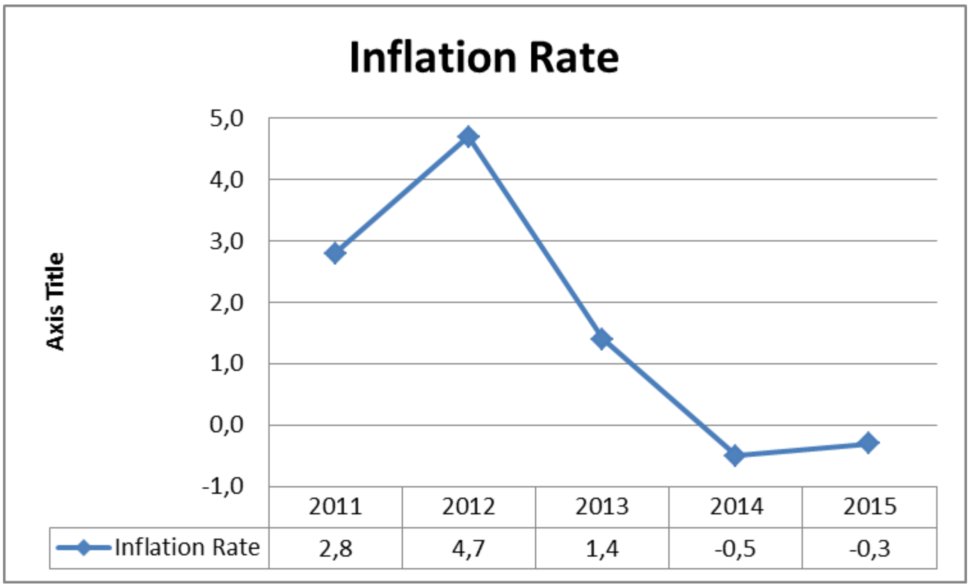
Inflation Rate: it measures the overall percentage increase in Consumer Price Index (CPI) for all goods and services. Inflation affects the real value of costs and revenues [17].

In literature there are different views about the impact of inflation on the profitability of banks.

For instance, Demirgüç-Kunt and Huizinga [18] suggest that inflation enhances bank profitability. They opine that the positive relationship between inflation and bank profitability implies that bank income increases more with inflation than bank costs. High inflation rates are also generally associated with high loan interest rates, and therefore, high incomes. Banks also obtain higher earnings from float or delays in crediting customer accounts in an inflationary environment [19].

However, if inflation are not anticipated and banks are sluggish in adjusting their interest rates then there is a possibility that bank costs may increase faster than bank revenues and hence adversely affect bank profitability[20].

In graphic no xxx is exposed the inflation rate in Republic of Macedonia. So, it could be concluded that there is decreasing trend in the researched period (2011-2015).



Graphic no 8: Inflation rates

Source: Authors' compilation from the reports of the State Statistical Office of Republic of Macedonia

5. Correlation of internal and external factors as per profitability of banking institutions, expressed by the indicators ROA, ROE and Net Interest Margin

Table no 1: Correlation of internal factors (Total Loans, NPL, Capital Abequacy and Total deposits to Total Assets) as per profitability of banking institutions, expressed by the ROA

	ROAA	Total Loans	NPL to Total Loans ratio	Capital Abequacy Ratio	Total deposits to Total Assets
2011	0.4	338,062	9.9	16.8	234,161
2012	0.4	365,561	10.5	17.1	245,373
2013	0.6	386,952	11.5	16.8	259,299
2014	0.8	423,575	11.3	15.7	286,979
2015	1.1	459,658	10.8	15.5	306,190

	ROAA	Total Loans	NLP to Total Loans ratoo	Capital Abequacy Ratio	Total deposits to Total Assets
ROAA	1				
Total Loans	0.974936	1			
NLP to Total Loans ratoo	0.447492	0.560444008	1		
Capital Abequacy Ratio	-0.93336	-0.897756967	-0.344209416	1	
Total deposits to Total Assets	0.982171	0.995795964	0.533499795	-0.93403706	1

On the basis of the results obtained from the performed analysis, it can be concluded that there is a very strong positive correlation between Total Loans and Total deposits on the one hand as internal factors, and the indicator of the banking institutions profitability ROA, on the other hand. Also, there is a very strong negative correlation between Capital Adequacy as an internal factor and the indicator of the banking institutions profitability ROA. NPL have weak influence on this indicator of the banking institutions profitability.

Table no 2: Correlation between the external factors (GDP and Inflation Rate) as per the profitability of the banking institutions expressed by the indicator ROA

	ROAA	GDP	Inflation Rate
2011	0.4	2.3	2.8
2012	0.4	-0.5	4.7
2013	0.6	2.9	1.4
2014	0.8	3.5	-0.5
2015	1.1	3.9	-0.3

	ROAA	*GDP*	*Inflation Rate*
ROAA	1		
GDP	0.756956	1	
Inflation Rate	-0.86217	-0.94409	1

The obtained results show that there is a positive correlation between GDP as an external factor and the indicator of the banking institutions profitability ROA. Also, there is a strong negative correlation between Inflator Rate as an external factor and the indicator of the banking institutions profitability ROA.

Table no 3: Correlation of internal factors (Total Loans, NPL, Capital Adequacy and Total deposits) as per the banking institutions profitability expressed by the ROE indicators

	ROAE	Total Loans	NLP to Total Loans ratio	Capital Abequacy Ratio	Total deposits to Total Assets
2011	1.2	338,062	9.9	16.8	234,161
2012	0.8	365,561	10.5	17.1	245,373
2013	0.8	386,952	11.5	16.8	259,299
2014	1	423,575	11.3	15.7	286,979
2015	1.3	459,658	10.8	15.5	306,190

	ROAE	Total Loans	NLP to Total Loans ratio	Capital Abequacy Ratio	Total deposits to Total Assets
ROAE	1				
Total Loans	0.355613	1			
NLP to Total Loans ratoo	-0.44516	0.56044401	1		
Capital Abequacy Ratio	-0.61616	-0.897757	-0.344209416	1	
Total deposits to Total Assets	0.409684	0.99579596	0.533499795	-0.93403706	1

From the previous table, it can be seen that there is a weak positive correlation between Total Loans and Total deposits on the one hand as internal factors and the indicator of the banking institutions profitability ROA. Also, there is a weak negative correlation between NLP as an internal factor and the indicator of the banking institutions profitability ROA. Capital Adequacy has significant influence on this indicator of the banking institutions profitability expressed by the negative value of the correlation coefficient.

Table no 4: Correlation of external factors (GDP and Inflation Rate) as per the banking institutions profitability expressed by the indicator ROE.

	ROAE	GDP	Inflation Rate
2011	1.2	2.3	2.8
2012	0.8	-0.5	4.7
2013	0.8	2.9	1.4
2014	1	3.5	-0.5
2015	1.3	3.9	-0.3

	ROAE	GDP	Inflation Rate
ROAE	1		
GDP	0.571688672	1	
Inflation Rate	-0.457462558	-0.94409	1

There is a significant correlation between GDP as an external factor and the indicator of the banking institutions profitability ROE. Also, there is a weak negative correlation between Inflator Rate as an external factor and the indicator of the banking institutions profitability ROE.

Table 5: Correlation of internal factors (Total Loans, NPL, Capital Adequacy and Total deposits) as per the banking institutions profitability expressed by Net Interest Margin

	Net Interest Margin	Total Loans	NLP to Total Loans ratoo	Capital Abequacy Ratio	Total deposits to Total Assets
2011	3.6	338,062	9.9	16.8	234,161
2012	3.6	365,561	10.5	17.1	245,373
2013	3.7	386,952	11.5	16.8	259,299
2014	3.9	423,575	11.3	15.7	286,979
2015	4.1	459,658	10.8	15.5	306,190

	Net Interest Margin	Total Loans	NLP to Total Loans ratoo	Capital Abequacy Ratio	Total deposits to Total Assets
Net Interest Margin	1				
Total Loans	0.970859808	1			
NLP to Total Loans ratoo	0.396206715	0.56044401	1		
Capital Abequacy Ratio	-0.956273814	-0.897757	-0.344209416	1	
Total deposits to Total Assets	0.983153417	0.99579596	0.533499795	-0.93403706	1

There is a very strong positive correlation between Total Loans and Total deposits on the one hand as internal factors and the indicator of the banking institutions profitability Net Interest Margin. Also, there is a very strong negative correlation between Capital Adequacy as an internal factor and the indicator of the banking institutions profitability Net Interest Margin. NPL have a weak influence on this indicator of the banking institutions profitability.

Table no 6: Correlation of external factors (GDP and Inflation Rate) as per the banking institutions profitability expressed by Net Interest Margin

	Net Interest Margin	GDP	Inflation Rate
2011	3.6	2.3	2.8
2012	3.6	-0.5	4.7
2013	3.7	2.9	1.4
2014	3.9	3.5	-0.5
2015	4.1	3.9	-0.3

	Net Interest Margin	GDP	Inflation Rate
Net Interest Margin	1		
GDP	0.736429655	1	
Inflation Rate	-0.853673846	-0.94409	1

There is a strong positive correlation between GDP as an external factor and the indicator of the banking institutions profitability Net Interest Margin. Also, there is a strong negative correlation between Inflator Rate as an external factor and the indicator of the banking institutions profitability Net Interest Margin.

CONCLUSION

This paper has examined how bank-specific characteristics and some macroeconomic factors had affected the profitability of commercial banks in Republic of Macedonia over the period from 2011 to 2015. The determinants of banks' profitability used in thisstudy were total loans, assets quality, capital adequacy, total deposit to total assets as bankspecific factors and GDP and Inflation rate as macroeconomic factors. The results from this study showed that compared with internal factors, external factors have less impact on bank profitability.

Empirical findings can be summarized as follows:

- There is a very strong positive correlation between Total Loans and Total deposits on the one hand as internal factors and the indicators of the banking institutions profitability ROA and Net Interest Margin, but a weak positive correlation with reference to the indicator of the banking institutions profitability ROE.
- NLP have a weak influence on ROA, ROE and NIM, having in mind the fact that during the observed period, there has not been any significant deterioration in the amount of non-functional credits.
- There is a very strong negative correlation between Capital Adequacy as an internal factor and the indicators of the banking institutions profitability ROA, ROE and BIM. Such a relation is a result of the fact that the capital adequacy rate in R. Macedonia is still almost twice higher than the minimum of 8% determined by the law.
- There is a significant correlation between GDP as an external factor and ROA, ROE and NIM. On the other hand, the inflation rate has not any significant influence on the profitability shown through ROA and ROE. Namely, there is a weak negative correlation between Inflator Rate as an external factor and the indicator of the banking institutions profitability ROE. Also, there is a strong negative correlation between Inflator Rate as an external factor and the indicators of the banking institutions profitability ROA and NIM.

Having in mind the actual situation of the banking institutions in Republic of Macedonia and the results of the performed research, our further researches will be directed towards a detailed analysis of non-functional credits influence on the profitability of the banking institutions in Republic of Macedonia.

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