EFFECT OF THE REGULATORY FRAMEWORK BASEL III ON BENEFITS OF THE BANKING SECTOR IN THE REPUBLIC OF NORTH MACEDONIA

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Abstract: Object of attention in the present work is the profitability and efficiency of banks in the Republic of Northern Macedonia. The subject of the study is focused on the strength and direction of influence of the new Basel III regulatory framework on their final financial results. The purpose of the paper is to reveal the effect of using modern regulatory requirements on the profitability of the country's banking system. The study includes observations on developments in the banking sector for the period 2007-2018. A coefficient of analysis is applied using a system of appropriately selected indicators: cost / income ratio, ROA, asset yield, earnings margin, unit costs, net earnings per share unit cost of staff efficiency factor. An analysis of real empirical data reveals that the implementation of the new regulatory measures does not have a negative effect on the final financial results of the banks, but rather a trend towards improvement of a number of their key financial indicators.
Keywords: Banks; banking system; profitability and efficiency of banking activities; Basel III

1. INTRODUCTION

The emergence of the global financial crisis and its consequences have directed the functioning of the banking system in the direction of building regulation rules. Additional regulatory requirements affect different aspects of bank business. In this regard, one of the most important issues that is being raised is how the implementation of the new Basel III regulatory framework has an impact on the financial performance of banking institutions.

Object of attention in the present work is the profitability and efficiency of banks in the Republic of Northern Macedonia. The subject of the study is focused on the strength and direction of influence of the new Basel III regulatory framework on their final financial results. The aim is to reveal the effect of applying stricter regulatory requirements on the profitability and profitability of the banking sector in the country.

For the purposes of the study, two working hypotheses are formulated:

- First hypothesis - the new rules for regulating capital adequacy and liquidity have a negative or stagnating effect on the profitability of banks in the Republic of Northern Macedonia, which manifests itself in the form of sensitive fluctuations or worsening of a number of their financial indicators for profitability and efficiency;
- Second hypothesis - the implementation of the new regulatory measures does not have a negative effect on the final financial results of the banks, but rather on the contrary - there is a trend towards improvement of their key financial indicators.

2. METHODOLOGY AND DATA

In the present study a coefficient analysis is applied. A system of indicators selected according to the object and subject of the survey outlined above is used. For convenience, they are systematized in the Table. 1, which presents a brief characteristic of each of them. Of course, other financial indicators may also be used, but since most of them are interrelated, we believe that this would only burden the report[39].

[39] See in more detail Greuning H., Bratanovic S. Analyzing Banking Risk. Washington: The World Bank, 2000; Koch T., MacDonald S. Bank Management (4th Edition). Orlando: Harcourt, Inc., 2000; Rose P. Commercial Bank Management (2nd Edition). Boston: Irwin, 1993; Sinkey J. Commercial Bank Financial Management (6th Edition). New Jersey: Prentice Hall, 2001

Table 1: Indicators for assessing the profitability and performance of banks and their characteristics

Indicators	Characteristics
***Coefficient* (*Cost/Income ratio*)** $$\frac{\mathit{Amount\ of\ Expenses}}{\text{Amount of Revenue}}$$	It expresses how much of the bank's revenue covers the costs and how much of the revenue remains to form a net financial result. Its values decrease with increased revenue and / or lowering costs, which is a favorable situation.
Return on Assets (ROA) $$\frac{\text{Net Profit)}}{\text{Amount of Assets}}$$	Refers to the amount of profit per unit of assets. The use of this indicator is appropriate because the earnings give a concentrated expression of the overall banking activity and the assets best express its scope. Similar information has significance indicator return on equity (ROE)
Return on assets $$\frac{\text{Revenue Amount}}{\text{Assets}}$$	Assets are the most important revenue generator for banks, which determines the significance of this indicator. It gives an idea of how much revenue is per unit of assets over a given period.
Margin (share) of profit in revenue $$\frac{\text{Net Profit}}{\text{Amount of Revenue}}$$	It expresses how much of the revenue remains for the profit after deducting the corresponding costs. If the indicator tends to decrease, this indicates that the share of profit in revenue decreases, ie. a significant part of them is used to cover certain costs.
Administrative costs per unit of assets $$\frac{\text{Administrative Expenses}}{\text{Amount of Bank Assets}}$$	Administrative costs are inevitable, but because of their unproductive nature, keeping them in unjustifiably large proportions negatively affects the efficiency of banking activity. Initially, decreasing coefficient values is more effective. The situation is not favorable if, over a certain period, the increase in administrative costs outweighs that of assets.
Earnings per unit of personnel costs $$\frac{\text{Net Profit}}{\text{Staff Expenses}}$$	The relationship between bank profits and staff costs (wages, social security, etc.). Expresses the contribution of the staff to the final financial result. Higher values indicate that with less staff costs a higher profit is generated and vice versa.
Efficiency ratio $$\frac{\text{Non} - \text{Interest Expenses}}{\mathit{Net\ interest\ income}\ + \mathit{Non} - \mathit{interest\ income}}$$	It is known that banks typically have non-interest costs to exceed non-interest earnings. This makes it necessary for interest income to be sufficient not only to fully reimburse the interest costs but to allow for the remainder, first, to cover non-interest costs not covered by non-interest income and, secondly, to form a sufficient profit. For example, assuming that the efficiency ratio is 0.60, it means that 60% of net interest income and other non-interest income go to cover non-interest costs, while the remaining 40% is profitable. Lower indicator levels correspond to higher profitability figures.

The idea is to reveal the trends in the development of these key financial indicators for profitability and efficiency of banks for a certain period, covering stages with different characteristics. One of these is the gradual introduction of the new regulatory framework (Basel III).

The analysis and conclusions presented in this paper are based on observations on the state of the banking sector in the Republic of Northern Macedonia over a twelve-year period (2007-2018). The choice of this time interval is based on the following considerations. Firstly, the aim is to study data for a longer time as a prerequisite for more accurately delineating typical patterns in the development of profitability and efficiency of banks. This can eliminate the influence of some short or random factors. Secondly, in view of the impact of the new regulatory framework on banking, the analyzed twelve-year period includes three separate stages: 1) the time before the start of the global financial crisis (from 2007 to 2009), 2) the crisis period (until 2012), and 3) a post-crisis period (after 2012), during which the new regulatory measures (Basel III) are gradually being implemented. This allows for a more accurate benchmarking of the indicators surveyed at each of these stages.

The findings of the survey are based on the National Bank of Northern Macedonia's official information on the state of the banking sector in the country[40]. More specifically, we are interested in the following basic information, summarized in the Table. 2.

Table 2: Baseline information for calculating financial performance and performance indicators

(in millions of denars)

Year	***Assets***	***Net profit***	***Income***	***Expenses***	***Interest income***	***Interest costs***	***Non-interest income***	***Non-interest costs***	***Administrative costs***	***Staff costs***
2007	223 659	3 650	18 673	15 024	12 688	5 125	5 985	9 899	6 837	3 074
2008	250 704	3 410	23 074	19 663	16 641	7 542	6 433	12 121	8 345	3 610
2009	268 542	1 676	24 848	23 172	19 131	8 436	5 717	14 736	10 278	4 064
2010	305 290	2 307	25 106	22 799	19 535	9 138	5 571	13 661	10582	4 139
2011	331 176	1 183	25 396	24 212	19 522	9 120	5 874	15 091	11 067	4 125
2012	352 886	1 461	26 432	24 971	20 104	8 734	6 328	16 237	11 188	4 052
2013	369 505	2 311	26 405	24 094	20 100	7 942	6 305	16 152	11 305	4 297
2014	400 281	3 149	26 535	23 386	20 216	7 133	6 319	16 253	10 864	4 259
2015	423 668	4 639	27 002	22 362	19 954	5 602	7 048	16 760	11213	4 473
2016	444 680	6 325	27 658	21 333	20 169	4 780	7 489	16 553	11 378	4 600
2017	461 992	6 555	28 305	21 751	19 940	4 308	8 365	17 443	11 674	4 708
2018	503 469	8 353	28 683	20 330	19 605	4 225	9 078	16 105	11 316	5 018

Source: http://www.nbrm.mk

3. EMPIRICAL RESULTS

The following is an analysis of real empirical data on the state and development of the banking sector in the Republic of Northern Macedonia. The aim is to test the working hypotheses formulated[41].

On Table 2 are shown data on the dynamics of the net profit of the banking system for the period 2007-2018. Three stages are clearly outlined within the period. Until 2008, the profits of the sector were characterized by considerable size. This is driven by the rapid economic growth of financial institutions and, above all, the credit boom at this stage. The economic crisis since 2008 has had a negative impact on banking activity, which is the constant decline in the bank's profits (in 2011 it is about three times lower than in 2009). It is only after 2011 that there is a positive trend towards a gradual increase in the net profit of the sector. Only for the period 2011-2018 it grew almost five times.

Let us specify the finding made by presenting the widest of the indicators considered - the Cost / Revenue ratio (Figure 1). Trends in its development are determined by the dynamics of the two dimensions that shape it - costs and revenues. Data show that in the years before the financial crisis at the level of the banking system, the cost has been steadily rising, which is normal in the context of the growing activity of the banks. Nevertheless, costs are entirely offset by revenues that at this stage have an upward growth rate. The consequences of the crisis since 2008 have a negative impact on the profitability of banks. The tightening of revenue growth in crisis conditions forces them, as far as possible, to outweigh their costs. The banking sector's revenue-cost "scissors" is gradually "closing". The dynamics of the Cost / Revenue ratio outlines a negative trend - total for the sector has increased significantly from 0.80 in 2007 to 0.94 in 2012. After 2013 (from Basel III point of view this is the time when its gradual application begins), the trend is changing. Negative dynamics are overcome - costs are gradually decreasing, while revenue is steadily rising. At the end of 2018, the Cost / Revenue ratio was significantly better (0.71) than even the pre-crisis times of 2007.

[40] URL:http://www.nbrm.mk

[41] All data presented in the following report are based on the author's own calculations based on publicly available information, reflected in the banks' reports at the end of the year. URL: http: //www.nbrm.mk

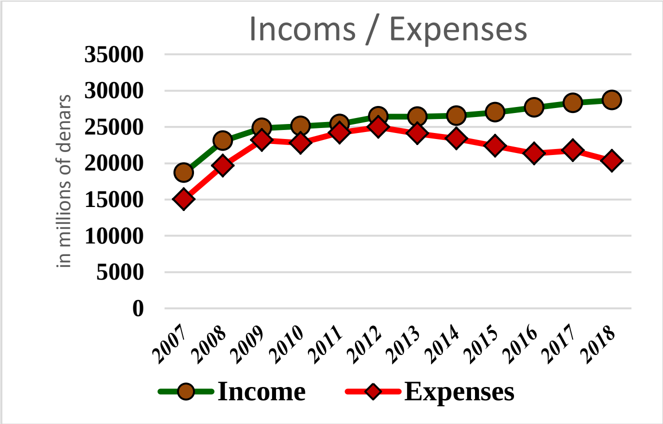


Figure 1 - Income-cost "scissors"

Year	Coefficients of Expenses
2007	0.80
2008	0.85
2009	0.93
2010	0.91
2011	0.95
2012	0.94
2013	0.91
2014	0.88
2015	0.83
2016	0.77
2017	0.77
2018	0.71

A more detailed analysis of the factors influencing the bank profit in dynamics is presented in Figure 2. The review of data and trends shows that the outlined factors have different effects and varying strengths over the years. The most controversial is the impact of the "interest income" factor. By 2010, bank profits are mainly supported by significant interest income. In the conditions of the economic crisis and afterwards, mainly due to the decrease in volumes and the decrease of lending interest rates, interest income remains virtually constant, which negatively affects the final financial results. The "interest expense" factor has a strong quantitative impact in the negative direction over the first few years of the analyzed period. In the coming years, its negative impact is rather insignificant, and after 2012 even positive (lowering interest rates on deposits, or lowering interest rates). With a lasting positive effect, the "other (non-interest) revenue" factor is the only factor for the whole of the analyzed period. At the beginning of the period, however, its impact is not particularly significant, but in recent years non-interest income has become increasingly important in the formation of bank profits. Concerning the "other (non-interest) expense" factor, it has a permanent effect on financial performance, mainly due to a deterioration in the quality of bank credit portfolios and hence an increase in the cost of provisions against impairment. The negative impact of this factor was strongest during the first few years of the analyzed period. It can be summed up that over the last few years the growth of the banking sector revenues is mainly supported by the growth of non-interest income, and the greatest contribution to the lowering of costs is the significant reduction of interest costs.

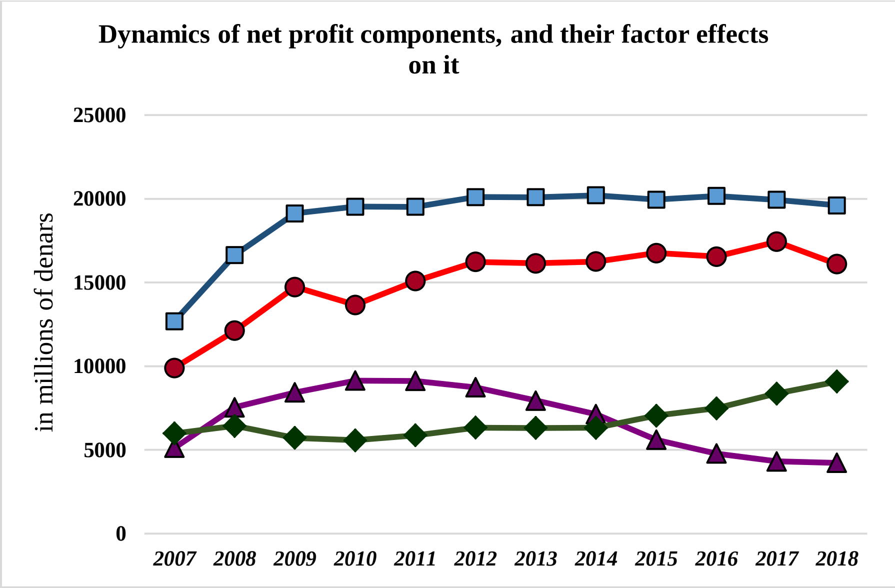


Figure 2 - Dynamics of net profit components, and their factor effects on it

Summary indicators for the efficiency of the banking sector are ROA and ROE. In the present study, the emphasis is on the first (Figure 3). Data shows that the ROA of the banking sector in the country over the last twelve years varies widely. Starting at relatively high levels in the pre-crisis period (1.7% in 2007), ROA has fallen more than fourfold over the next few years, hitting the bottom in the 2011 and 2012 crisis horizons (0.4%). As the figures show, against a backdrop of relatively steady growth in assets, the sector's profits fell about threefold during this period (from 3,650 million in 2007 to 1,183 million in 2011). After 2013, the "reverse" of the negative trend is reported - ROA is continuously rising to reach high levels in the pre-crisis period in 2018. The main reason was the significant increase in profits - about seven times for the period 2011-2018 (from 1,183 million in 2011 to 8,353 million in 2018), which repeatedly exceeded asset growth over the same period . In this case, there is hardly any reason to argue that the new Basel III regulatory framework has a negative impact on the profitability of the banking sector. On the contrary, precisely in the years of its application, ROI shows an impressive increase.

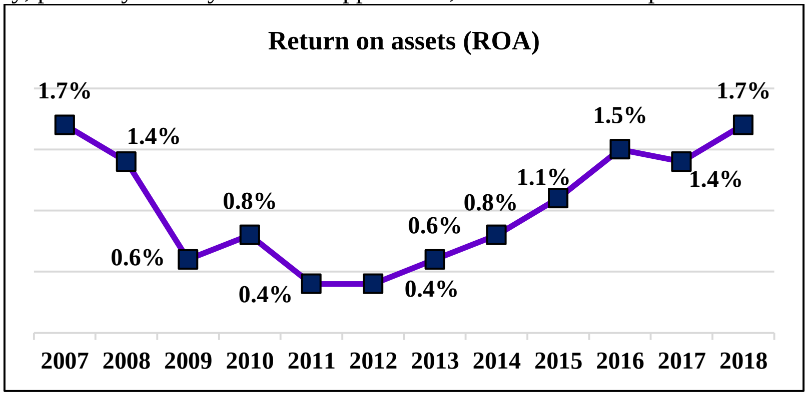


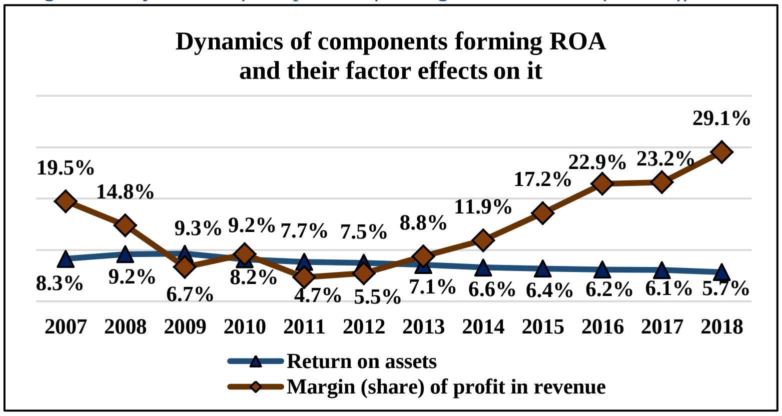
Figure 3 - Return on assets (ROA)

It is well known that ROA is directly driven by two internal structural factors - asset returns and profit margins (earnings / assets = earnings / assets * earnings / income). In Figure 4 presents the power and direction of the factor influence of these two components forming ROA. As the data show, their impact is very controversial.

Return on assets (revenues / assets) has a favorable impact through its growth in the pre-crisis phase. However, after 2009, until the end of the analyzed period, the values of the indicator, albeit not sharply, but gradually deteriorating. Obviously, revenue growth is slower than this asset. For the period 2009-2018, banking sector assets grew by 87% (from 268,542 million to 503,469 million), while bank revenues by only 15 percent (from 24,848 million to 28,683 million).

The impact of the other factor is more complicated - the profit margin in revenue (profit / income). Over the years, this indicator has a varying effect on ROA. The most critical levels he recorded during the economic crisis - 4.7% in 2011 and 5.5% in 2012. In other words, only about 4-5% of the banking system's revenue ultimately generates a profit of sector, while the remainder is used to cover costs. The low profit margins in these years are a factor with a strong negative impact on the profitability of banking. After 2012, reverse contingency is emerging - the profit margin in revenues is steadily rising, which is a symptom of efficiency gains. In 2018, the indicator reached 29.1%, i.e. a level much higher than in the pre-crisis 2007, when it was 19.5%. Therefore, in view of the continuous improvement of ROA in recent years, it can be concluded that the favorable trend in the development of the earnings margin fully offset the well-known deterioration in bank asset yields.

Figure 4 - Dynamics of components forming ROA and their factor effects on it



The administrative costs are strongly influenced by the profitability of banking activities. Due to their relatively permanent nature, it is possible with an expansion of activity to increase absolutely, but to a unit of activity - to decrease. The data of Figure 5 show that in 2009, compared to baseline 2007, administrative expenditure has grown significantly by around 50% (with asset growth at the same time 20%). Over the next few years, improving cost control makes the amount of administrative costs not change significantly, despite the significant expansion of banking activity. As mentioned in the above report, the assets of the banking sector grew by 87% for the period 2009-2018, while the administrative costs were only 10%. On this basis, banks have recorded a long-term positive trend - a lower percentage of administrative costs than their assets, unit asset growth occurs with relatively lower administrative-management costs.

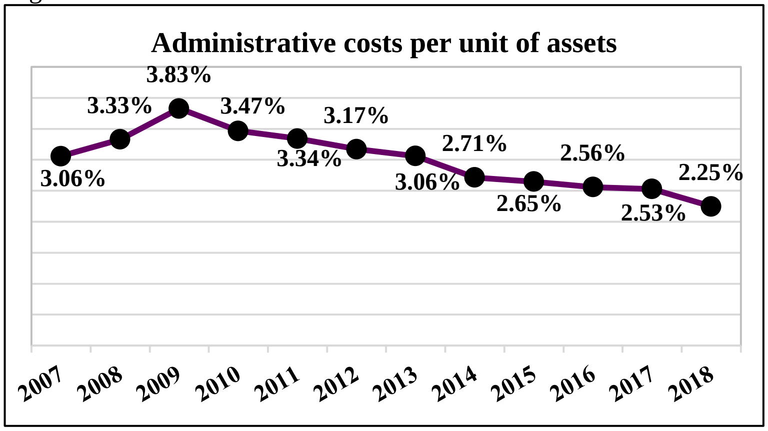


Figure 5 - Administrative costs per unit of assets

With regard to the efficiency of banking activity, expressed by the magnitude of the profit, falling per unit of personnel costs, similar conclusions can be made (Figure 6). The poor financial performance of banks and the diminishing of their profits during the economic crisis are the main reason for the strong deterioration of this indicator in the years to 2011. In the following years of the analyzed period personnel costs remained relatively constant but the steady increase in bank profits is done so as to increase the staff contribution to the final financial result.

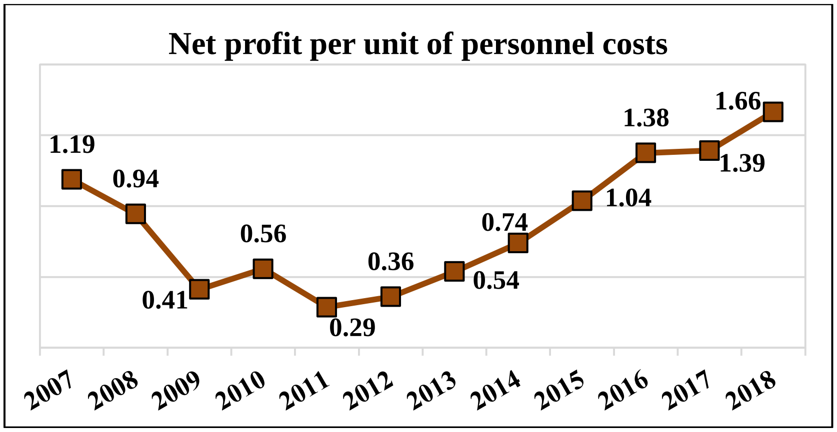


Figure 6 - Net profit per unit of personnel costs

The effects of the economic crisis in the country also have an unfavorable effect on the efficiency ratio (Figure 7). The negative trend is strong until 2012. This is due to the fact that the increase in non-interest expenditure is at a faster rate than net interest income and non-interest income. The most significant increase in non-interest expenditure is the deterioration in the quality of bank credit portfolios, leading to a significant increase in the cost of provisions against impairment. During the post-crisis period (2012-2018), which coincides with the implementation of the new Basel III regulatory framework, the efficiency ratio breaks down its negative trend and reaches the levels typical of the time before the start of the financial crisis.

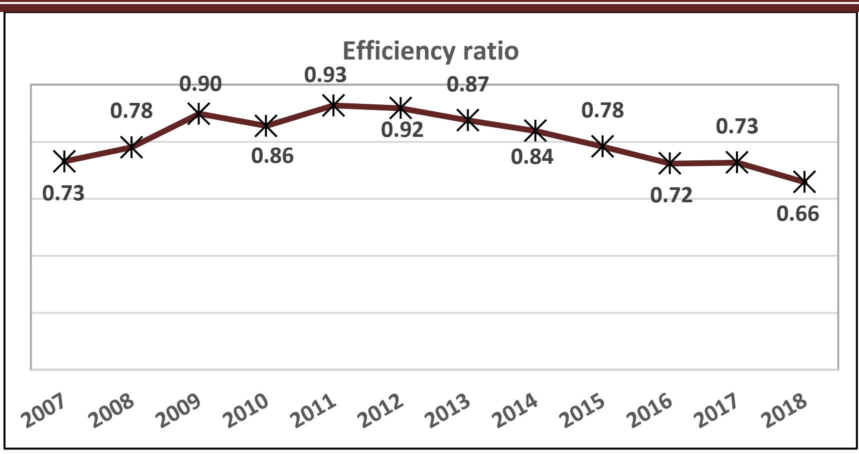


Figure 7 - Efficiency ratio

4. CONCLUSION

This allows us to make the corresponding summaries about the working hypotheses formulated at the beginning. The first hypothesis that the implementation of the new Basel III regulatory framework, with its stricter rules of regulation, has a negative or stagnating effect on the profitability of banks in the Republic of Northern Macedonia is not confirmed. The results of the empirical data analysis prove the second hypothesis - the new requirements for regulating capital adequacy and liquidity do not have a negative impact on banks' final financial performance, but rather a trend towards improving their key financial indicators.

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