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Analysis of Profitability in the Banking Sector of the Federation of Bosnia & Herzegovina

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ABSTARCT – *In this research, authors will be focused on looking for relations between different performance indicators of banks in Federation of Bosnia and Herzegovina (FB&H) in last five years what is period of consolidation and stabilization of banking sector. Final result and essence of this analysis is to answer on question: will banks in FB&H be able to increase their profitability? Using appropriate scientific methods, authors will answer on this question.*

KEY WORDS: *banking sector, profitability, liquidity, efficiency, ROA (return on assets), ROE (return on equity)*

Introduction

The role of banking sector in achieving economic growth, as well as regional and local development is recognizable. This claim is based on fact that reform processes in transition countries, as B&H, are based on reform of financial sector. Strong financial sector has to support a development of real sector as the most important bearer of economic growth in general. Therefore, financial sector should give an initiation to the real sector, but without corresponding growth of real sector, there is no strong financial sector.

The main characteristic of banking sector in FB&H is that banks operations are based on international standards and principles, in function of growth and progress of whole system, its efficiency, stability, solvency, profitability and liquidity. Banks have undertaken a lot of activities on enforcement of a new technology and increasing in a quality and multiplicity of products and services. It has resulted in rising competition to increase market share. Regardless of these facts, banking sector of B&H is rigid and traditional, what is, in some way, positive. There are no huge returns on equity, as we will see in the body, but also there are no losses. For now, global financial crisis has affected on own banks in low measure, what is not case with flexible and opened financial system of development countries.

Very important aspect of performance analysis is profitability. We will research if profitability of own banks is settled and what is their position in compare with other transitional countries. We will be focused on five the biggest banks in assets and they are: Raiffeisen bank, Hypo Alpe-Adria bank, UniCredit bank, HVB Central Profit bank and UPI bank.

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Table 1 Five largest banks ranked by value of assets in 2007

in 000 KM

No	Bank	Assets
1	Raiffaisen	3.814.370.000,00
2	Hypo Alpe Adria	2.225.106.000,00
3	UniCredit	2.163.309.000,00
4	HVB CPB	1.408.739.000,00
5	UPI Banka	955.380.000,00

Source: Condensed reports of external auditors on financial statements of banks in Federation of Bosnia and Herzegovina in 2003- 2007), FBA, www.fba.ba. Data prepared by authors.

We will try to choose relevant indicators, which will point us to condition in banking sector and performance trends in future. Final results, we will compare with other transitional countries and interpret in that large context.

Hypothesis: In Federation of Bosnia and Herzegovina, there is possibility for increasing in profitability in banking sector.

Presumptions: Decrease in liquidity results in increase in profitability.

Increase in productivity results in increase in profitability.

The aim of this analysis is to test abilities for increasing in profitability of banking sector of FB&H.

The subject of this analysis is performance of banking sector of FB&H.

Methods: analysis, synthesis, induction, deduction, comparison, description, statistics methods of regression and correlation.

Liquidity vs profitability

Analysis of liquidity

Risk of liquidity management is, with credit risk, one of the most important and complex segment of bank management. Keeping of liquidity in market economy is permanent obligation of bank and main presumption for its survival on financial market. It is also one of the main presumptions for establishing and keeping confidence in banking system in every country.

Minimal standards which bank has to assure and keep in process of risk management are prescribed by Decision on minimum standards for banks liquidity risk[1] . Above mentioned prescript is frame for risk of liquidity management and it contains qualitative and

[1] Federal banking agency of FB&H, Decision on minimum standards for banks liquidity risk, it is required maturity adjustment of the remaining maturities up to the contracted maturity of assets and liabilities instruments, while the bank is required to: 1.2. engage at least 95% of its sources with maturity up to 180 days in the assets instruments with maturity up to 180 days; 1.3. engage a full amount of its sources with maturity up to 90 days in the assets instruments with maturity up to 90 days; 1.4. engage a full amount of its sources with maturity up to 30 days in the assets instruments with maturity up to 30 days.»

quantitative regulations and requirement to banks. It prescribes limits for decade and daily minimum of cash of short term liabilities, as well as minimal limits for maturity adjustment the assets to the liabilities to 180 days.

Prescribed regulations to banks are very restrictive and it has resulted in very high liquidity of individual banks and banking sector in general. All banks constantly measure up to requirements and even more than prescribed minimum considerably. Decade cash minimum of short term liabilities is 20%, and the daily minimum of cash is 10% of the same base.

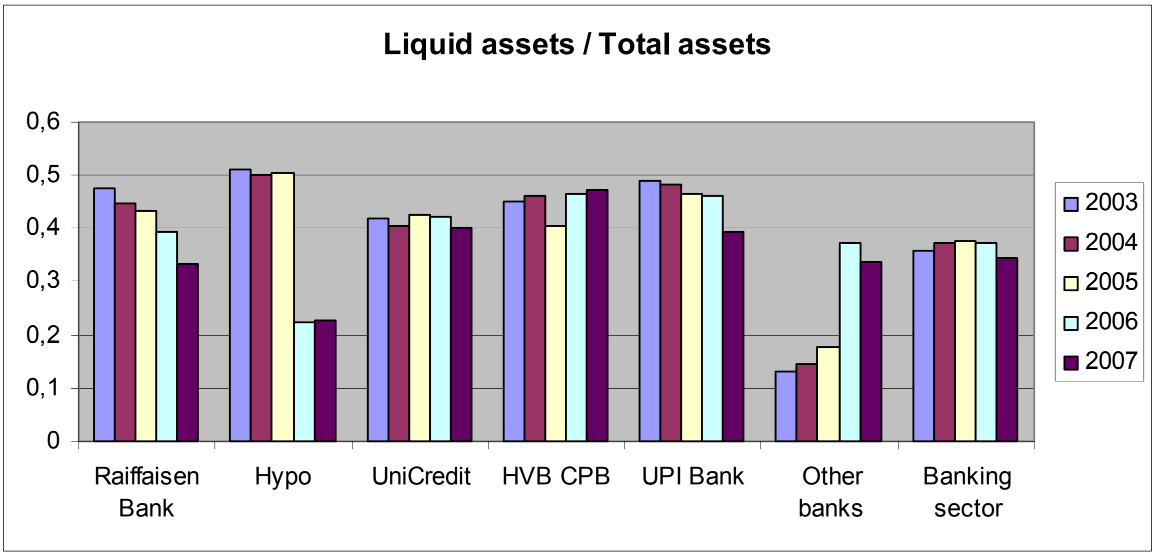
Risk of liquidity is in high correlation with other risks and it is often negative affected on performance and profitability of banks.

In this liquidity analysis, next indicators are analyzed:

1. Liquid assets/ Total assets
2. Liquid assets/ Short term obligations
3. Credits/ Deposits and credit obligations

Liquid assets include cash, deposits at other banks and securities for trade.

Figure 1 Liquid assets / Total assets ratio



Source: Condensed reports of external auditors on financial statements of banks in Federation of Bosnia and Herzegovina in 2003- 2007), FBA, www.fba.ba. Data prepared by authors.

Table 2 Liquid assets / Total assets ratio

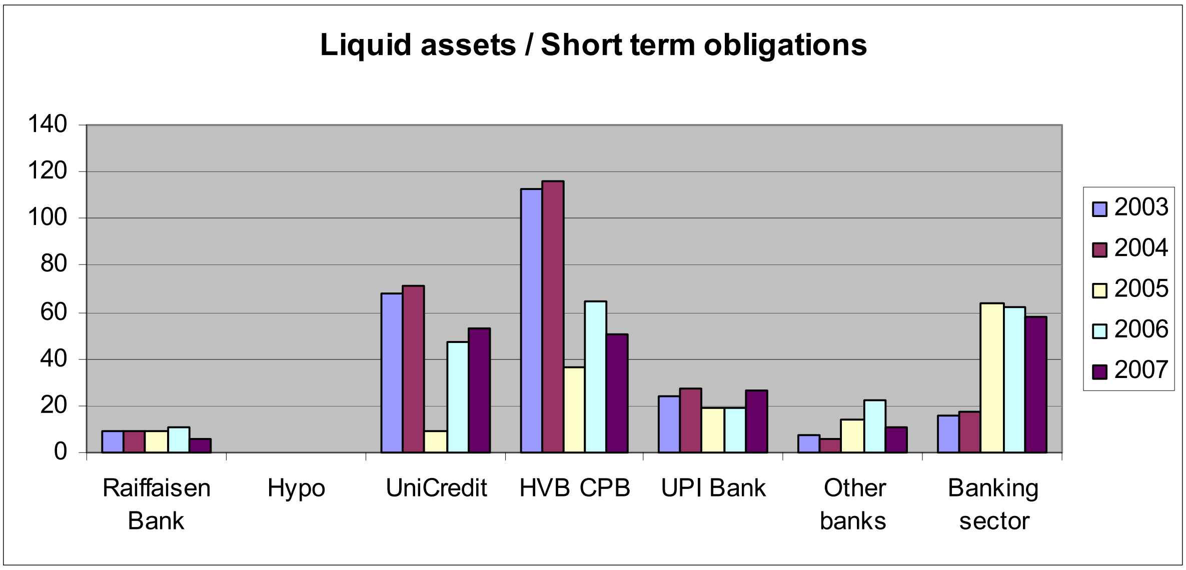
	2003	2004	2005	2006	2007
Raiffeisen	0,48	0,45	0,43	0,39	0,33
Hypo	0,51	0,50	0,50	0,22	0,23
UniCredit	0,42	0,41	0,42	0,42	0,40
HVB CPB	0,45	0,46	0,41	0,46	0,47
UPI banka	0,49	0,48	0,46	0,46	0,39
Other banks	0,13	0,15	0,18	0,37	0,34
Banking sector	0,36	0,37	0,38	0,37	0,35

Source: Condensed reports of external auditors on financial statements of banks in Federation of Bosnia and Herzegovina in 2003- 2007), FBA, www.fba.ba. Data prepared by authors.

All banks, except HVB Central Profit bank, in observed five years period, have chalked up a decrease of this ratio. That is understandable, in consideration that decrease in liquidity results in increase of profitability. It is interesting that all big banks, which we analyzed, have a trend of decreasing of this ratio, while other banks have increase to 2006, and then decrease of it.

In banking sector it is continued the trend of decrease in liquidity. Reason of that is increase of credits in assets. Meanwhile, liquidity of banking system of FB&H is not endangered and ratio of liquid assets in total assets is settled.

Figure 2 Ratio of liquid assets and short term obligations of individual banks and banking sector in period 2003-2007.



Source: Condensed reports of external auditors on financial statements of banks in Federation of Bosnia and Herzegovina in 2003- 2007), FBA, www.fba.ba. Data prepared by authors.

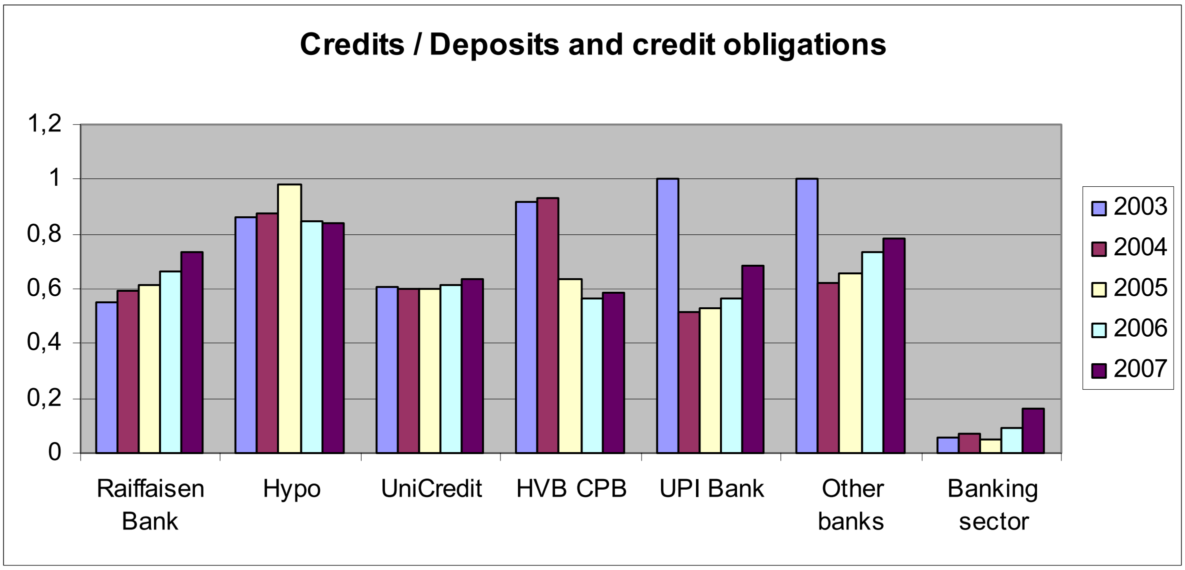
Table 3 Ratio of liquid assets and short term obligations for individual banks and banking sector in period 2003-2007

	2003	**2004**	**2005**	**2006**	**2007**
Raiffeisen	9,46	9,44	9,42	11,00	6,03
Hypo	0,00	0,00	-	-	-
UniCredit	67,87	71,41	8,73	47,32	52,64
HVB CPB	112,79	115,66	36,71	64,62	50,44
UPI banka	23,73	27,43	19,29	19,13	26,32
Other banks	7,74	5,87	14,47	22,63	10,88
Banking sector	15,42	17,38	63,90	62,20	58,10

Source: Condensed reports of external auditors on financial statements of banks in Federation of Bosnia and Herzegovina in 2003- 2007), FBA, www.fba.ba. Data prepared by authors.

The highest ratio had a HVB Central Profit Bank and UniCredit Zagrebačka bank which had the most oscillations of it too. The most stable ratio had Raiffeisen bank and UPI bank. This stability is the result of successful liquid assets and short term obligations management. This analyze does not include Hypo bank because it has not had short term obligations in 2004, so it would affect extremely on quality of this analysis.

Figure 3 Ratio of credits and deposits with credit obligations for individual banks and banking sector in period 2003-2007



Source: Condensed reports of external auditors on financial statements of banks in Federation of Bosnia and Herzegovina in 2003- 2007), FBA, www.fba.ba. Data prepared by authors.

Table 4 Ratio of credits and deposits with credit obligations

	2003	**2004**	**2005**	**2006**	**2007**
Raiffeisen	0,55	0,59	0,61	0,66	0,74
Hypo	0,86	0,87	0,98	0,85	0,84
UniCredit	0,61	0,60	0,60	0,61	0,63
HVB CPB	0,92	0,93	0,63	0,57	0,59
UPI banka	1,00	0,51	0,53	0,56	0,68
Other banks	1,00	0,62	0,66	0,73	0,78
Banking sector	0,06	0,07	0,05	0,09	0,16

Source: Condensed reports of external auditors on financial statements of banks in Federation of Bosnia and Herzegovina in 2003- 2007), FBA, www.fba.ba. Data prepared by authors.

There is a trend of growth of ratio of credits and deposits with credit obligations and it means that credits are rising faster than sum of deposits and credit obligations. Also it means that disposed sources of assets are more and more used for financing interest assets.

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From what it is said, we conclude that banks in FB&H have a trend of decreasing in liquidity and it, according to our presumption, results in increasing in profitability. It means that own banks have started to invest their short term disposed assets and on that way they are trying to cut the opportunity costs. . Meanwhile, liquidity of banking system of FB&H is not endangered and banks constantly measure up to requirements and even more than prescribed minimum considerably. Banks still dispose by liquid assets which are not placed and in that way there is ability for improving their effectively.

Analysis of profitability

Profitability is the result of successful realization of business politics. Upcoming results depend of the results in the past, which are analyzed through different indicators.

In this profitability analysis, next indicators are analyzed:

1. net profit
2. return on assets – *ROA*
3. return on equity – *ROE*

Data about net profit of banks in FB&H for observed period are presented in following table.

Table 5 Neto profit of banks in FB&H in period 2003-2007

in 000 KM

	2003	2004	2005	2006	2007
Raiffeisen Bank	20.271	21.146	24.229	27.739	26.132
Hypo banka	528	7.212	12.009	7.231	17.088
UniCredit	16.940	8.848	19.192	24.896	29.748
HVB CPB	-6.616	-144	5.228	15.503	14.965
UPI Banka	3.596	3.889	3.360	751	1.528
Other banks	13.505	6.068	19.818	17.224	21.057
Banking sector	48.224	47.019	83.836	93.344	110.518

Source: Condensed reports of external auditors on financial statements of banks in Federation of Bosnia and Herzegovina in 2003- 2007), FBA, www.fba.ba. Data prepared by authors.

Net profit has rise as an absolute value at all banks and average growth rate of banking sector is 23%. This rate is even more for individual banks and for example net profit of Hypo Alpe Adria bank has grown at a yearly rate of 138%. According to financial result, we can conclude that profitability of banking sector is well.

Return on assets is ratio of net profit and average total assets. It is net profit per unit of assets and it includes two parts: incomes and costs (including taxes)

$$\mathrm{ROA} = \frac{\text{Net profit}}{\text{Total assets}} \qquad (1)$$

In ideal conditions, denominator should be daily average of values. Into consideration that it is impossible to assure those values, it is often used monthly and quarterly average.

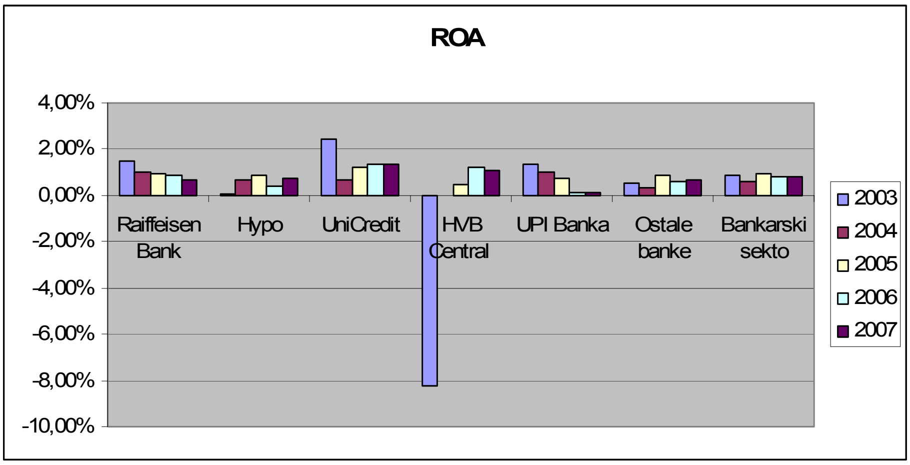
Data about ROA are presented in the following table.

Table 6 ROA of banks in FB&H in period 2003-2007

	2003	2004	2005	2006	2007
Raiffeisen Bank	1,45%	1,04%	0,97%	0,90%	0,69%
Hypo banka	0,07%	0,68%	0,87%	0,43%	0,77%
UniCredit	2,41%	0,67%	1,22%	1,34%	1,38%
HVB CPB	-8,23%	-0,02%	0,48%	1,21%	1,06%
UPI Banka	1,37%	1,02%	0,76%	0,15%	0,16%
Other banks	0,56%	0,33%	0,89%	0,60%	0,64%
Banking sector	1,09%	0,72%	0,73%	0,87%	0,90%

Source: Condensed reports of external auditors on financial statements of banks in Federation of Bosnia and Herzegovina in 2003- 2007), FBA, www.fba.ba. Data prepared by authors.

Figure 4 ROA in the 2003-2007 period



Source: Condensed reports of external auditors on financial statements of banks in Federation of Bosnia and Herzegovina in 2003- 2007), FBA, www.fba.ba. Data prepared by authors.

ROA of banks in FB&H is under international standard of 1% and reason of that is probably lack of assets investments. Because of that in FB&H are hyper liquid. Form what it is said, it is clear that there are still abilities for banking sector to increase its profitability. If banks increase theirinvestments, their profitability would be increased.

Return on equity (ROE) is ratio of net profit and equity average. It is net profit per unit of equity. Data about ROE are presented in the following table. It is clear that return on equity is under international standard too and the reason could be same as for undersized ROA.

$$ROE = \frac{\text{Net profit}}{\text{Equity}} \tag{2}$$

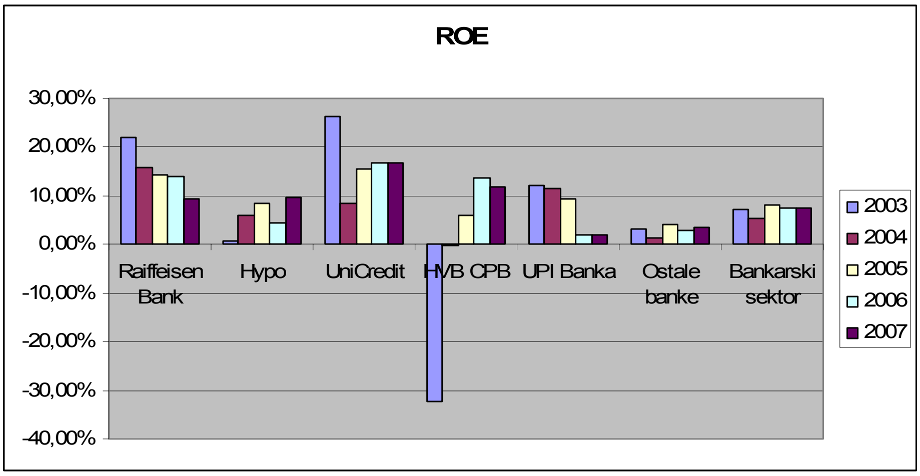
Table 7 ROE of banks in FB&H in period 2003-2007.

	2003	2004	2005	2006	2007
Raiffeisen Bank	22,12%	15,81%	14,30%	13,85%	9,35%
Hypo banka	0,75%	6,09%	8,55%	4,42%	9,52%
UniCredit	26,28%	8,46%	15,54%	16,79%	16,74%
HVB CPB	-32,38%	-0,24%	6,07%	13,70%	11,68%
UPI Banka	12,16%	11,62%	9,21%	2,03%	1,91%
Other banks	3,31%	1,37%	4,21%	3,01%	3,47%
Banking sector	10,08%	6,89%	7,83%	10,82%	12,19%
Benchmarking			12-18%		

Source: Condensed reports of external auditors on financial statements of banks in Federation of Bosnia and Herzegovina in 2003- 2007), FBA, www.fba.ba. Data prepared by authors.

Figure 5 ROE of banks in FB&H in period 2003-2007

U grafiku nisam uspeo da izmenim Ostale banke i Banking sector (to treba izmeniti)



Source: Condensed reports of external auditors on financial statements of banks in Federation of Bosnia and Herzegovina in 2003- 2007), FBA, www.fba.ba. Data prepared by authors.

Regressian model

As it is already said, banks liquidity has a trend of decrease. Meannwhile, it is still above prescribed minimun. It means that there is ability for decreasing liquidity to increasing profitabiliy. This constatation is based on high correlation of these two categories. Correlation of variables liquid assets/ total assets and return on equity is -0,743 what proves high correlation.

It is best to determine the type and degree of dependence of profitability and liquidity through such as the simple regression analysis. General regression model is:

$$Y = a + bX + e \qquad (3)$$

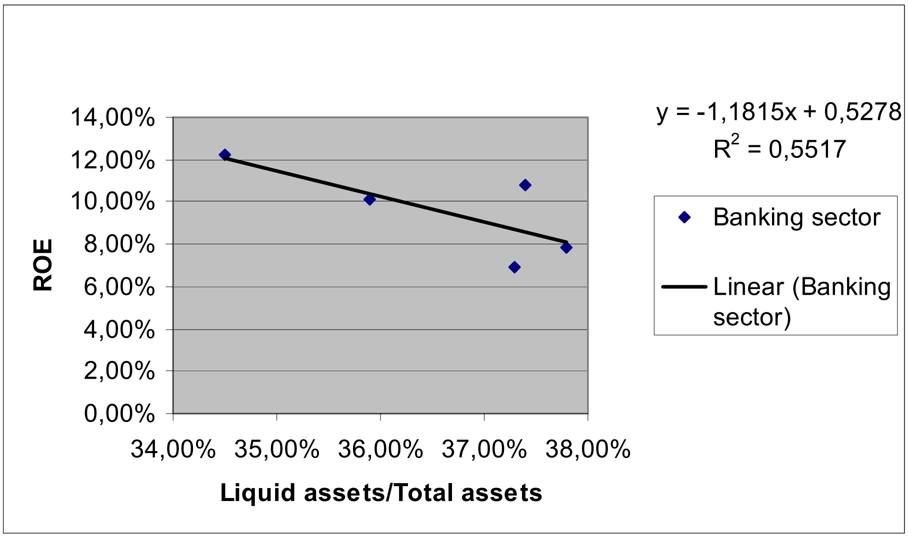
Where

Y- is dependent variable that is amount of ROE,

X- is independent variable that is amount of liquidity assets/total assets ,
a and *b* represent regression parameters where a is segment of dependent variable and b is inclination.,
e is stochastic term or disorder (random mistake) which, basically, would reflect the effects of other factors that are not included in the model and accidental influences as well.

Model is presented in next figure.

Figure 6 Regression line between liquidity and profitability in banking sector in FB&H



By using this simple regression model it is found that if banks decrease their liquidity for one percent, their profitability (ROE) would be increased for 1,18 percent. It proves our hypothesis that there is ability for increasing profitability. Therefore it is necessary to consider coefficient of determination r^2 which should be relatively high, so the analyzed appearances could give the adequate illustration of connection and interdependence. Coefficient of determination R^2, which in this case is 0.5517, shows that this regression represents the adequate illustration of connection between these two variables and that 55,17% liquid assets/ total assets total variability is explained by the value ROE.

Income and expenditures

The total income in banks can be divided into two groups: interest income and non-interest income.

The banking sector of FB&H, in its current development stage, is predominantly based on credits as the most important activity, which strongly determines the financial result. This is shown in the following table:

We may conclude that the trend of credit expansion is continuing, which led to an increase in the proportion of credits in total assets. Between 2003 and 2007 credits have risen at an average yearly rate of 27,6 % and have risen faster than banks' assets by 2,5%. This may have been the result of a high demand for credits, especially in the population sector.

Because of the increase in credits, the interest income has also risen by 25,5% each year, in individual banks, as well as the banking sector.

Nevertheless, interest expenditures have also grown by 35,1% each year, which is more than the growth rate of interest income by 7,5%. This resulted in a smaller net income margin. The increase of interest expenditures is mainly the result of higher passive interest rates and higher interest rates on banks' liabilities. Growing competition in the FB&H banking sector has had an effect to the decrease of the net interest margin.

Despite the decrease of the net interest margin, we notice an increase in profitability, mostly thanks to the effect of economy of scale. This means that the increase in volume of interest income more than covers the decrease of active interest rates and increase of interest expenditures.

The proportion of total income in assets has continuously fallen because of a more dynamic growth of assets than the growth of income. A significant contribution to the growth of profitability has been given by the decrease of the capital-to-assets ratio. This ratio has fallen from 12,14% in 2003 down to 10,48% in 2007.

Non-interest income has seen lower growth rates (7,6%) and with its volume have not contributed as much to profitability. This type of income has been recording a constant growth in absolute amounts, but their participation in total income is actually falling, so the ratio in 2007 was 25,65%. Such a low ratio indicates that the FB&H banking sector is undeveloped and predominantly directed toward traditional banking services e.g. credit. This ratio, in developed banking systems reaches beyond 50%.

From this data, we see a potential to increase profitability, by widening the spectrum of bank services. As the process of consolidation and stabilization ends, the banking sector is going to enter a phase of more intense competition, which will result in better cost efficiency and development of non-interest business and products. Combined with the continuous credit expansion, this will represent the main development trends in the FB&H banking sector.

Productivity

Productivity and profit represent two sides of the same phenomenon, two different perspectives to the same process – the process of continuous success, which every modern organiyation strives for. In the conditions of a global market, the productivity issue and the profit issue as its consequence poses itself as the key issue to every organized activity committed to create profit.

There can be no profit without productivity, nor is there productivity which is not followed by new quality.

Productivity is the measure of success in doing business in relation to the used resources.

The number of employees in the banking sector has grown at an average rate of 5,6% every year.

It is interesting to view the relative number of employees, as the percentage employed in an individual bank compared to the banking sector. We may notice that there are relatively more employees in UniCredit than Hypo, although Hypo has more assets.

Table 8 Number of employees in the FB&H banking sector in the 2003-2007 period

	2003	2004	2005	2006	2007
Raiffeisen Bank	1020	1109	1205	1351	1548
Hypo	301	377	433	492	550
UniCredit	n/a	755	790	840	840
HVB CPB	71	454	451	476	465
UPI Banka	169	191	208	233	479
Other banks	3383	2296	2470	2740	2829
Banking sector	5394	5182	5557	6132	6711

Source: Information on banking system of the Federation of Bosnia and Herzegovina As Of 2003-2007.

Table 9 Precentage of employees per bank in the period 2003-2007

	2003	2004	2005	2006	2007
Raiffeisen Bank	19,91%	21,40%	21,68%	22,03%	23,07%
Hypo	5,58%	7,28%	7,79%	8,02%	8,20%
UniCredit	7,34%	14,57%	14,22%	13,70%	12,52%
HVB CPB	1,32%	8,76%	8,12%	7,76%	6,93%
UPI Banka	3,13%	3,69%	3,74%	3,80%	7,14%
Other banks	62,72%	44,31%	44,45%	44,68%	42,15%
Banking sector	100,00%	100,00%	100,00%	100,00%	100,00%

Source: Information on banking system of the Federation of Bosnia and Herzegovina As Of 2003-2007. data prepared by authors.

Table 10 Profit per employee as of 2003-2007

	2003	2004	2005	2006	2007
Raiffeisen Bank	19.873,53	19.067,63	20.107,05	20.532,20	16.881,14
Hypo	1.754,15	19.129,97	27.734,41	14.697,15	31.069,09
UniCredit	37.644,44	11.719,21	24.293,67	29.638,10	35.414,29
HVB cpb	-93.183,10	-317,18	11.592,02	32.569,33	32.182,80
UPI Banka	21.278,11	20.361,26	16.153,85	3.223,18	3.189,98
Other banks	3.992,02	2.642,86	8.023,48	6.286,13	7.443,27
Banking sector	8.940,30	9.073,52	15.086,56	15.222,44	16.468,19

Source: Information on banking system of the Federation of Bosnia and Herzegovina As Of 2003-2007.

Obviously, Raiffeisen bank has the largest fluctuation in net profit per employee, and the decrease is evident in 2007. Other banks have experienced a growth trend in net profit per employee, with a minor fall in 2007 in HVB and UPI. Generally speaking, the productivity expressed as net profit per employee has grown in the sector by 16,49%. If we take into consideration that the number of employees has risen by 5,6%, we may conclude that the productivity level can only rise until a certain level and that the growth rate of 16,49% is unsustainable in the long run. However, we still predict an increase, possibly at a lower rate. The increase of productivity is an opportunity to increase profitability.

This conclusion may be tested by using an alternative method of evaluating productivity - assets per employee.

Table 11 Assets per employee as of 2003-2007.

	2003	2004	2005	2006	2007
Raiffeisen Bank	1.367.174,51	1.839.490,53	2.069.272,20	2.293.352,33	2.464.063,31
Hypo	2.608.644,52	2.830.291,78	3.180.265,59	3.450.390,24	4.045.647,27
UniCredit	1.560.044,44	1.741.540,40	1.996.367,09	2.213.645,24	2.575.367,86
HVB CPB	1.132.309,86	1.631.922,91	2.399.376,94	2.687.373,95	3.029.546,24
UPI Banka	1.551.295,86	1.999.272,25	2.114.394,23	2.170.244,64	1.994.530,27
Other banks	714.141,00	808.114,11	900.434,82	1.052.840,88	1.157.507,25
Banking sector	1.045.651,09	1.428.032,03	1.654.425,95	1.846.871,17	2.062.508,12

Source: Information on banking system of the Federation of Bosnia and Herzegovina As Of 2003-2007.

The data from the table confirm the conclusion that productivity has a rising trend. Assets per employee have increased by 18,51% each year. This result is fairly consistent with the previous conclusion, therefore we confirm that productivity can increase even more.

Equity

The 2003-2007 period records a change of shareholders in the sector. The percentage of total government capital at the end of 2003 was 14,9%, while in 2007 this percentage was down to 9,7%. At the same time, private capital has risen from 85,1% in 2003 to 90,3% in 2007. Foreign private capital has risen by 5% every year, while the share government-held capital has fallen by 10,1% every year.

If we analyze the structure of foreign capital by countries, we can state that the vast majority (48,7%) is Austrian capital, followed by Italian (21,9%), Turkish, Slovenian, Emirati and German capital.

The growth of private capital is the result of continuous capitalization, founding new banks and sale of shares to private buyers. The following table shows the number of banks throughout the analyzed period.

Table 12 Number of banks in FB&H in the 2003-2007 period

	2003	2004	2005	2006	2007
Domestic private capital	7	8	6	4	7
Foreign private capital	12	10	12	14	12
Government-held capital	7	6	6	5	3
Total	**26**	**24**	**24**	**23**	**22**

Source: Information on banking system of the Federation of Bosnia and Herzegovina As Of 2003-2007.

Table 13 Percentage of capital in FB&H banks in 2003-2007 period

	2003	2004	2005	2006	2007
Domestic private capital	19,70%	16,80%	8,00%	3,70%	10,90%
Foreign private capital	65,40%	65,30%	75,60%	82,40%	79,40%
Government-held capital	14,90%	17,90%	16,40%	13,90%	9,70%
Total	100%	100%	100%	100%	100%

Source: Information on banking system of the Federation of Bosnia and Herzegovina As Of 2003-2007.

Private banks have better performances, so the change in shareholder structure has a positive effect on profitability. Moreover, there is a strong positive correlation between the percentage of private capital and return on equity, 0,944. This means that growth of the proportion of private capital means higher profitability.

Considering the fact that there are still two banks awaiting privatization, it is evident that there will be an increase in profitability. The change in shareholder structure opens new opportunities for profitability growth.

Table 14 Total private capital and profitability in the 2003-2007 period

	2003	2004	2005	2006	2007
Total private capital	85,1%	82,1%	83,6%	86,1%	90,3%
ROE	10,08%	6,89%	7,83%	10,82%	12,19%

Source: Information on banking system of the Federation of Bosnia and Herzegovina As Of 2003-2007.

At the same time, the integration and consolidation processes can result in better efficiency and synergy resulting in higher profits.

Table 15 Equity multiplier and profitability in the 2003-2007 period

	2003	2004	2005	2006	2007
ROE	10,08%	6,89%	7,83%	10,82%	12,19%
ROA	1,09%	0,72%	0,73%	0,87%	0,90%
EM	9,247706422	9,569444	10,72603	12,43678	13,54444

Source: Information on banking system of the Federation of Bosnia and Herzegovina As Of 2003-2007.

The equity-to-assets ratio is also known as EM - the equity multiplier, which is rising in the analyzed period. The growth of this indicator suggests that the proportion of equity in total liabilities is decreasing. This means banks are using the positive leverage effects by including more debt into their total liabilities. That being said, we have to bear in mind that regulation concerning capital adequacy is much stricter in FB&H – 12%, while the international standard is 8%. This means that banks in FB&H still have to maintain a higher level of capital than is required in other countries. The international standard of capital adequacy will have to be allowed here sooner or later, so that represents a chance to increase profitability.

Transition countries – a short comparison

In order to perceive a clearer picture of the real dimension of profitability of the banking sector in FB&H, we compared some indicators of profitability in transition countries. If we take into consideration that the transition processes in some of these countries started already in the 1990s and that all these countries are in a different stage of the transition process and a different development stage, it is clear that a simplified comparison does not provide a realistic perspective. Still, the transition process is also the only common characteristic in all of these countries, so we may conclude that it is a valid frame for a comparison.

The data showing return on equity and return on assets in transition countries in 2007. are shown in Table 16.

Table 16 ROE and ROA in transition countries' banking systems

	ROE	ROA
Slovakia	9,7%	0,7%
FB&H	12,19%	0,9%
Israel	19,7%	1,2%
Czech Republic	23,1%	1,3%
Romania	11,5%	1,4%
Montenegro	11,6%	1,4%
Ukraine	12,7%	1,5%
Albania	21,0%	1,6%
Croatia	11,8%	1,6%
Belarus	10,8%	1,7%
Poland	25,6%	1,8%
Hungary	22,9%	1,8%
Lithuania	26,8%	2,0%
Latvia	24,2%	2,0%
Serbia	12,8%	2,1%
Bulgaria	25,4%	2,5%
Estonia	31,0%	2,7%
Russia	21,1%	2,8%
Turkey	24,4%	3,1%
Moldova	24,9%	4,0%

Source: IMF Global Financial stability report, www.imf.org

The banking sector of FB&H, compared to other transition countries, achieves a return on capital that is lower than the average of 19%. However, ROE has grown by 20,9% every year the last four year, while the average in transition countries was 7,8%.

ROA is also one of the lowest in all the transition countries. Only Slovakia had a lower ROA (0,7%) in 2007, while the transition countries' average is 1,9%. ROA has been growing by 7,7% each year for the past four years, which is 2% higher than the average growth in transition countries. ROE on the other hand has grown at a higher rate than ROA. This is characteristic of of transition countries because they represent markets with potentially higher growth rates and higher risks.

In the process of integration of B&H into EU membership and automatically by accepting international banking standards, especially Basel I and II, we may expect higher profits. Profit indicators would be closer to other countries' indicators and benchmark standards, which could motivate new investments, not only in banks, but the whole financial sector.

The 2008. financial crisis - an overview

So far, our analysis has been based on historical data in the 2003-2007 period, when the financial crisis still had not reached its climax and when BiH had not been affected by the crisis. By abstracting the fact that the global financial crisis will lead to a global recession, which is going to spread from the bh economy to the bh banking system, we managed to state that the hypothesis was accepted. By testing the profitability factors' future trend we were able to give the answer to the main question posed in this text.

However, we must emphasize that B&H, sooner or later, will go through a difficult period of recession, so we presume that growth in profitability will not occur, at least not as dynamically as we expected, as long as there are any economic problems. Specifically, we expect a slowdown in the current credit expansion. Additionally, banks won't take as many credits from foreign banks, especially their mother banks, which are subject to greater turbulence.

FB&H banks will also try to reduce costs at a lowest possible level. What is not going to be under banks' control is the predicted recession that will result in higher unemployment rates. The crisis expected in companies will surely mean more credit risk. This is confirmed by the fact that as of the beginning of 2009, foreign orders will be cancelled.

The population, as the largest borrower will also be hit by the crisis, in the sense that the number of unemployed people will rise as the result of the companies' effort to cut costs. Consequently, credit risk is also expected to rise in the population sector.

These predictions surely do not diminish the value of previously given conclusions and analyses. Moreover, banks will give their best effort so that a more significant drop in profitability would not occur.

Conclusion

The main issue we intended to address in this text was do banks in FB&H can increase their profitability even more. We formed a hypothesis that states that there are possibilities to increase profitability. This means we focused on banks in FB&H. Additionally, it was of interest to follow profitability factors for five largest banks, ranked by the value of their total assets in 2007. Official reports from the Federal Banking Agency were used to calculate and present relevant data, as they are audited and standardized. In our research we used scientific methods: analysis, synthesis, induction, deduction and description. We illustrated the most interesting and relevant data on charts.

We selected four principal factors, which in our opinion determined profitability: liquidity, income and expenditure structure, productivity and equity. To ensure our assumption was correct, we calculated the correlation for all of them and proved that there is a strong correlation between these factors and profitability.

Liquidity indicators in banks are different from other entities. We analyzed three indicators:

Profitability was calculated as ROA and ROE. Our general conclusion is that profitability has been growing.

Having calculated liquidity and profitability indicators, we were able to establish a correlation. We have shown that the correlation is negative, which is consistent with our assumption. We were also able to establish a linear regression with the following equation: $y=-1{,}1815x+0{,}5278$. The determination factor is 55,17% and it means that the growth in profitability is caused by lower liquidity with 55,17%.

Having in mind the fact that banks keep up a significantly higher average of liquid assets that required by law, by reducing the amount of liquid assets, profitability could be higher.

The second factor was the structure of income and expenditure. Non-interest income has recorded significantly lower growth rates and the financial result was not affected much by their volume. This type of income has constantly been growing in absolute amounts, however their proportion in total income is decreasing, and in 2007. it was 25,65%. Such a low percentage indicates that the FB&H banking system is undeveloped and is mainly directed to traditional banking services.

As the proportion of non-interest income in total income in developed banking systems reaches up to 50%, we find that this proportion will increase in the future. Wider sets of services will contribute greatly to stability and profitability of the banking sector.

Productivity is also an important profitability factor. We measured it as profit per employee and assets per employee. We established a correlation of 0,53 for profit per employee and 0,47 for assets per employee.

If the existing trend of increase in productivity persists, profitability will also rise.

Finally, the nature of capital is yet another profitability factor. With a higher proportion of private capital came higher profitability. 0,944 correlation confirms it. Additionally, by calculating the equity multiplier we have shown that banks use more credit obligations to finance their activity, and that contributes positively to profitability when the financial results are positive.

There are still two banks to be privatized and that will contribute to growth of profitability.

By using more debt in total liabilities, profitability can rise even more.

By comparing ROA and ROE of FB&H banks and other transition countries, it is evident that FB&H has lower indicators. That is slightly confusing, because in general transition countries have higher returns. The reason is that the financial system in FB&H is inflexible and strictly regulated.

Getting closer to EU membership, B&H will have to harmonize the domestic regulative with international standards. When that occurs, higher profitability may be expected.

The purpose of the overview of the financial crisis was to anticipate any critics at the quality of our analysis. Our principal argument is that the effects of the financial crisis are only to be seen on the 2008 annual reports, which are currently unavailable. Also, we consider this crisis an anomaly, considering the fact that the crisis was not generated in our region. Based on the available data we could predict that, in the long run, profitability can be increased. 2009 is going to be a very difficult year, so the results of our analysis may not be visible at first.

Finally, by logic induction and proofs, we may state that the hypothesis about the possibility of increasing profitability of the banking sector is confirmed.

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