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Preliminary Communication

Croatian Banking Sector Research: Relationship between Ownership Structure, Concentration, Owners' Type and Bank Performance

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Abstract

Banks are important financial intermediaries of any national economy, and corporate governance has an important role in banking sector; especially due to processes of the globalization and the internationalization, and also because of the sensitivity of the activities between the interest groups. The objective of this paper is to examine the relationship between ownership structure, concentration, owners' type and bank performance. The authors made a research of banks' ownership structure using publicly available data. Using statistical tools authors discovered relationships between bank ownership structure and bank performance indicators (average asset, total asset, average equity, profit (loss) before taxes, profit (loss) after taxes, ROAA, ROAE). Further they discuss the relationships between ownership structure and a number of consequences for the bank performance. The authors discovered significant correlation between bank ownership structure and performance indicators variables that are described in the paper.

Keywords: corporate governance, ownership structure, performance indicators, banking sector in Croatia

1. Introduction

The concept of corporate governance in banking sector is relatively new, but it could be observed in the correlation with other business companies. However, corporate governance in banks, as specific financial intermediaries, has many differences in comparison to other business companies. One of the main differences is in large number of stakeholders with different interests. The main stakeholders are shareholders, managers, employers and the state, and there are also specific stakeholders as depositors and debt holders [15]. Importance of corporate governance in banking sector is significant, because of the fact that poor corporate governance in that specific sector can damage stability of whole national financial system [3]. Banks represent one of the most important segments of any national economy, so it is important that banks provide qualitative, transparent, efficient and good corporate governance practice [12].

Effective corporate governance in banking sector is a key element of the Basel Core Principles for Effective Banking Supervision. From 1999 until now, the Basel Committee[1] published several papers where some of the elements of corporate governance in banking sector were emphasised. Some of those important elements for corporate governance are: a well-articulated corporate strategy; the clear list of responsibilities and decision-making authorities, beginning with individuals to the board of directors; senior management and the auditors; appropriate information flows internally and to the public, etc. [5]

2. Corporate governance in Croatian banking sector

The corporate governance in Croatia has its backgrounds in the periods of privatization and institution building [13]. The Croatian financial system is the bank-based Continental system. Banking sector is one of the largest industries in Croatia, so it is important that corporate governance has a significant role in creating investor confidence and efficient market. Almost all investment funds, pension funds and leasing companies were also owned by banks, whose total assets have exceeded USD 49 billion [13].

At the beginning of 90-ties Croatian economy was transitioned from state owned to capitalist and this transformation make a big influence on banking sector. During the period of 20 years, a lot of domestic banks also became foreign banks. During the same period, banking sector in Croatia has shown merging and acquisition trends, and some banks were going through the process of bankruptcy. In early 90-ties the number of banks was always around 50 to 60, and at the end of the year 2010, there were 32 banks in Croatia [9]. Future predictions involve further acquisition and merging processes, especially among small and medium sized banks. The Croatian banking sector is highly concentrated; the five large banking group (Zagrebačka banka, Privredna banka, Erste & Steiermaerkische banka, Raiffeisenbank Austrija, Societe Generale-Splitska banka) control for around 75 percent of the total assets in the industry [9]. Golja et al. [7] report that by the first half of 2010, 82.2% of the total bank assets still belonged to the group of large banks, and that more than half of total number of banks were under domestic ownership, and that majority of total asset of all banks were under foreign ownership.

Effective bank and other credit institutions governance, is crucial to maintain public confidence in the banking system and the overall financial sector [8]. HNB in the same document states that "adequate corporate governance in banks include a clear organizational structure with well defined powers and responsibilities, effective procedures of identifying, measurement, monitoring of risks and reporting of risks which is or might be bank exposed, adequate internal control mechanisms that include reasonable administrative and accounting procedures, strategies and procedures for ongoing assessment and review of the amount, composition and distribution of internal capital needed to cover current and future risks, compliance with the general requirements of transparency dictated by investors, clients, agencies to assess the ratings, supervisors and other market participants, obligations and responsibilities to shareholders, employees and other stakeholders, secure and stable business and operations in accordance with laws and regulations" [8].

3. Aim of the study and the literature review

This analysis was made on the secondary data regarding the Croatian bank ownership structure, ownership concentration and ownership type. At the end of 2010, there were 32 banks in Croatia. It must be noted that authors observed ten biggest owners from the available data at Central Depository & Clearing Company. Also, authors made a categorization

[1] The Basel Committee on Banking Supervision provides a forum for regular cooperation on banking supervisory matters.

according to the nature of all owners in a few categories: (1) domestic and foreign owners, (2) financial institution and non financial institution owners and individual investors (private person), (3) domestic bank owners and foreign bank owners, (4) domestic company owners and foreign company owners and (5) domestic private person and foreign private person.

The main research questions are: *Is ownership structure and type of owners connected with the bank performance indicators? Who controls the Croatian banks?* The questions in this research paper are based on the fact that structure and type of ownership affects performance as an important element of corporate governance. For that reason, the objective of this paper is to examine the relationship between ownership structure, concentration, ownership type, and bank performance.

There are numerous studies from all parts of the world examining ownership structure and performance in the banking industry. Auvray and Brossard in their research [4] observed 77 European banks in the period of 8 years. They investigated the impact of banks' ownership concentration on the effectiveness of shareholders' market discipline. They conclude that the level of more than 20% ownership concentration is necessary to correctly transmit one shareholders' monitoring into the distance-to-default indicator. Kern in his research [10] on UK banks reported that the major corporate governance challenge banks principal – agents' problem when bank management is not aligned with banks owners. This can result with different operating performance which is connected with different risk preferences of management and owners. In their research on the random sample of community banks in Midwest, Spong and Sullivan [14] find out that ownership structures impacts the operating performance of the bank. Banks that have good ownership structures allocate capital more efficiently. Arun and Turner in their research paper [2] based their opinion on the theoretical discussion of corporate governance in banks in developing economies. Among a few of their suggestions, they think that foreign banks may have a positive impact on banking system stability and efficiency. Love and Rachinsky made a research [11] on 107 banks in Russia and 50 banks in Ukraine in the period from 2003 to 2006. They discovered that corporate governance has at best a second-order effect on operating performance in both countries, and that banks with more concentrated ownership have lower rankings on corporate governance.

4. Research methodology and study results

This study focuses on 32 banks in Croatia at the end of 2010. The empirical analysis has been carried out on ownership data and bank performance indicators collected from Central Depository & Clearing Company (Cro. SKDD) and Croatian national bank reports (Cro. HNB). Data used in calculations and presentation is publicly available and disclosed on the Internet sites.

4.1. Corporate governance, ownership and bank performance

From 2006 till 2008 there were 33 banks in Croatia. But during the year 2008 and 2009 the two savings banks entered into the Croatia banking sector. One as a result of the process of transformation from the savings and loan association into a savings bank, and other is a newly established savings bank. By the end of the first 6 months in the 2010 there were 34 operating banks in Croatia: six major banks, three medium-sized banks and 25 small banks. Almost all banks in Croatia are in private ownership. Only one bank is in state's majority. That is "Hrvatska poštanska banka" (Engl. Croatian Postal Bank). Within this paper authors consider 32 banks at the end of 2010 excluding two savings banks.

Croatian national bank states in its research the following ownership structure of banking system trough years [9]:

in %	1996	1997	1998	1999	2000	2001	2002
State owned banks*	78,4	41,9	43,1	45,6	5,7	5,0	4,0
Private domestic banks	20,7	54,1	50,3	14,5	10,2	5,6	5,8
Foreign owned banks	1,0	4,0	6,7	39,9	84,1	89,3	90,2

in %	2003	2004	2005	2006	2007	2008	2009	3.tr.10 Q3/10
State owned banks*	3,4	3,1	3,4	4,2	4,7	4,4	4,2	4,3
Private domestic banks	5,6	5,6	5,3	5,0	4,9	4,9	5,0	5,4
Foreign owned banks	91,0	91,3	91,3	90,8	90,4	90,6	90,9	90,4

Table 1: Ownership structure of Croatian banks
(Source: http://www.hnb.hr/publikac/epublikac.htm)

Table 1 suggests that the bank privatization in Croatia has drastically reduced the number of state owned banks, and in compliance with that, increased the number of foreign owned banks.

Through the research analysis the authors introduced several variables: $Ow_{1,}$ Ow_2 *... and* Ow_{all10}. Variable Ow_1 represents percent of ownership average share held by the largest shareholders of 32 banks operating in Croatia. Variable Ow_2 represents percent of average ownership share held by the second largest shareholders of 32 banks operating in Croatia, etc. Variable Ow_{all10} represents percent of average ownership share held by the largest top ten shareholders of 32 banks operating in Croatia. The research analysis showed that first owner in average controls about 62.83% (Ow_1) of bank shares, and the second owner controls in average 9.57% (Ow_2). Gap between average percent of shares held by the first and the second owner is more than 50%. We can conclude that first owner in average controls more than 60% of bank shares. The total average ownership of the top ten largest owners of the 32 banks operating in Croatia is 89% (Ow_{all10}). The detailed analysis can be seen in the Figure 1.

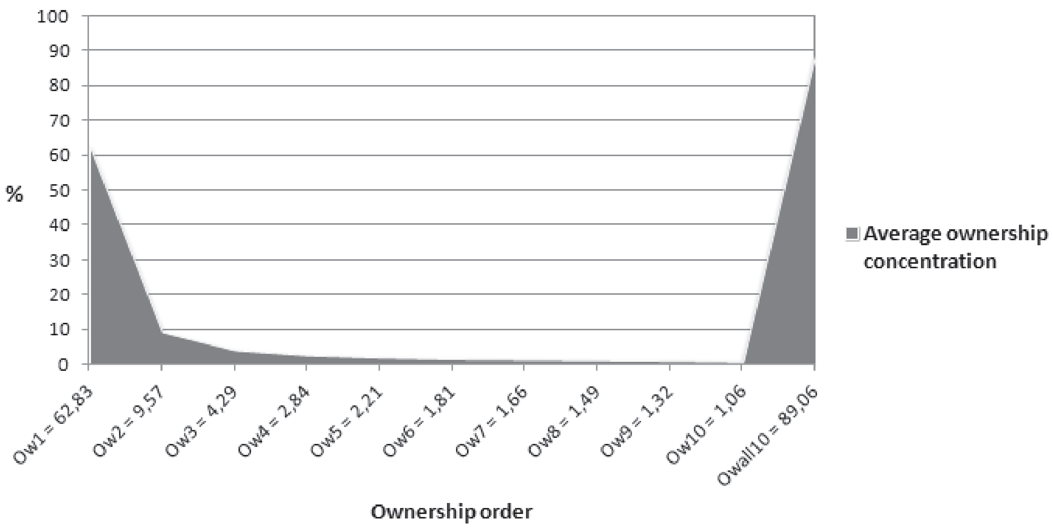

Figure 1: Average concentration of top ten largest owners of 32 banks share in Croatia
(Source: *authors' calculation from the data available at the Central Depository & Clearing Company website (Cro. SKDD) at the end of 2010)*

Having in mind the Croatian Law on takeover of joint stock companies [6], the authors can conclude that concentration of ownership in Croatian banks is very high, because the first owner in average has more than 62% of banks share. Also, authors made several categorization of the bank owners' type.

Through the first categorization we distinguished domestic and foreign owners. Our research showed that domestic top ten owners control 62% share of banks operating in Croatia, and foreign top ten owners control 38% share of banks operating in Croatia. According to these results we can conclude that the majority of bank share is controlled by Croatian owners. Through the second categorization of bank owner type we distinguish financial institution owners, non financial institution owners and private person owners. Ownership structure for this categorization can be seen in Figure 1.

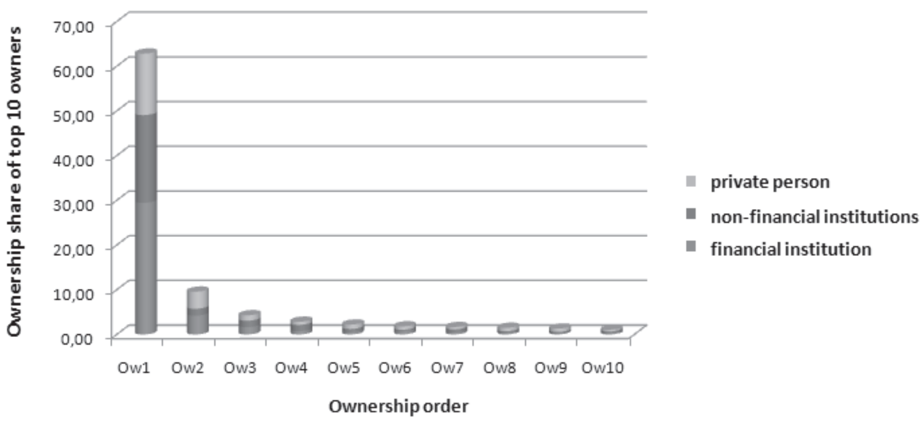

Figure 2: Average ownership structure share of the financial institutions, nonfinancial institutions and private person

The ratio of ownership structure for total average ownership looking the first top ten owners consists of 43% shares under financial institutions ownership, 30% of shares under non-financial institutions ownership and 27% of share under private person ownership. If we analyse the finical institution ownership structure we can notice that more than half of top ten largest bank share owners are under control of the foreign financial institution. This means that foreign financial institution have greater influence on banking sector than domestic financial institution.

Majority of the bank shares, 74.79% of top ten largest financial owner shares, are controlled by bank institution. Other shares are under control of pension funds (0.53%), investment funds (12.37%), investment (0.25%) and insurance companies (12.06%). Domestic banks control 28% of bank shares owned by financial institutions, and 72% of bank shares owned by financial institutions are under control of foreign banks. This indicates that foreign banks have major influence on bank operation in Croatia. Non-financial institutions occupy 30% of the ownership structure of banks among the top ten largest owners of bank share. With further analysis of the nonfinancial institutions ownership structure we found that 75% of non-financial owners were domestic company owners and 25% were foreign company owners. From this we can conclude that most non-financial institution owners are in majority domestic.

Our research results showed that even five banks in Croatia are under 100% foreign ownership by the first owner (four banks are under foreign bank ownership and one bank is under nonfinancial foreign ownership). Two banks are under 100% domestic bank ownership by the first owner, 7 banks operating in Croatia are under foreign ownership by the first top ten owners and even 13 banks operating in Croatia are under domestic ownership by the first top ten owners.

If we correlate results of concentration index of assets share with ownership structure of four largest banks in Croatia, we can conclude that largest banks in Croatia are under highly concentrated foreign ownership, and they had in average 65% of share of assets in total bank assets in 2010. Although the majority of bank share is controlled by Croatian owners, the largest banks are under foreign owners and they have in average more than 60% of share of assets in total bank assets.

5. Correlation between bank ownership structure and performance indicators

In this section authors describe the main characteristics of the data used in this paper and show correlation between bank ownership structure (domestic, foreign, state, private ownership) and standard bank performance indicators (average assets, total assets, average equity, profit, Return on Average Assets, Return on Average Equity). As suggested in the paper of Nigerian author Aburime [1], ownership structure is an important factor of the company's health, so it is possible to use ownership structure for prediction of company's profitability.

Authors used JMP, a computer program for simple and complex statistical analyses, for correlation testing. Pearson's coefficient was used in the study, but because of the small sample, results could not be classified as very reliable. Spearman's coefficient showed weaker relationships between certain variables and this represents ground for further research.

Year	Domestic state and private owned	Domestic State owned	Domestic Private owned	Foreign owned	Average Assets	Total Assets	Average Equity	Profit (loss) before taxes	Profit (loss) after taxes	ROAA before taxes	ROAE after taxes
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1998	93,34	43,09	50,25	6,67	98689,69	96,78	18035,19	-2723,02	-2902,86	-2,76	-16,10
1999	60,10	45,60	14,50	39,90	98733,25	93,52	14966,23	727,03	714,63	0,74	4,77
2000	15,90	5,70	10,20	84,10	103401,78	111,84	12181,17	1429,40	1306,09	1,38	10,72
2001	10,68	5,04	5,64	89,32	130132,99	148,43	13507,43	1228,77	894,17	0,94	6,62
2002	9,84	4,01	5,83	90,16	161283,74	174,14	15102,52	2544,75	2074,75	1,58	13,74
2003	8,97	3,37	5,60	91,03	189127,07	204,11	17333,06	3010,67	2506,69	1,59	14,46
2004	8,71	3,07	5,64	91,29	216710,12	229,31	18919,55	3634,29	3036,84	1,68	16,05
2005	8,68	3,37	5,31	91,32	244791,43	260,28	21563,13	4030,20	3247,80	1,65	15,06
2006	9,20	4,21	4,99	90,80	282441,44	304,61	27351,90	4236,34	3394,81	1,50	12,41
2007	9,60	4,70	4,89	90,40	324843,32	345,08	37216,99	5105,13	4067,44	1,57	10,93
2008	9,37	4,45	4,92	90,63	357587,19	370,09	46550,35	5736,52	4612,48	1,60	9,91
2009	9,11	4,16	4,95	90,89	374231,79	378,37	51250,55	4215,48	3277,68	1,13	6,40

Table 2: Summarized data concerning bank ownership structure and performance indicators

Table 2 represents summarized data about bank ownership structure and bank performance indicators for time period 1998 – 2009. Data from the table is derived and joined together from publicly available reports of Croatian national bank (HNB), published on their Internet site www.hnb.hr.

Table contains three different variable groups:

a) *Year of observation* (1);

b) *Bank ownership structure* (variables are presented in percentage (%) of the total ownership share): summarized state and private domestic ownerships (2), domestic state ownership (3), domestic private ownership (4), foreign ownership (5);

c) *Bank performance indicators:* Average Assets presented in million HRK (6), Total Assets presented in billion HRK (7), Average Equity presented in million HRK (8), Profit or loss before taxes presented in million HRK (9), Profit or loss after taxes presented in million HRK (10), Return on Average Assets (ROAA) before taxes (11) and Return on Average Equity (ROAE) after taxes presented in percentage (12).

Table 3 clearly reports that the year period from 1998 to 2000 is critical for the bank ownership structure, as foreign ownership share increased from 6,67% to 84,10%, leaving domestic private and state owners only with 15,90% ownership share. Later years indicate much less rapid fluctuations in the ownership shares, but it is clear that foreign ownership share remains dominant. It is important to note that the most of the above results are to be interpreted as averages. Also, the globalization of the banking industry in the 1990s has affected the banks performance indicators.

Authors tried to find statistical correlation between ownership structure variables and two performance indicator variables (Return on Average Assets - ROAA and Return on Average Equity - ROAE), to see if there is a hint of connection between those two sets of variables. Analysis on the available data using statistical tool JMP and Pearson's correlation coefficient shows that there is a significant correlation between the following variables:

1) *ROAA before taxes* and *Domestic state and private owned*: correlation coefficient is -0,9107 with significant probability of <0,0001 (the 95% confidence interval is -0,98 to -0,71).

Negative correlation coefficient suggests that higher values of domestic state and private owned bank ownership percentage mean lesser ROAA values and vice versa. Significant probability of <0,0001 means that there is a less then 0,01% probability that the correlation happened by a pure chance and more then a 99,99% probability that this correlation is genuine and relevant. In the literature dealing with statistical significance these results could be interpreted as "highly significant". However, sample size must also be taken into consideration when dealing with data analysis; it is possible that the twelve year period (and consequently sample size 12) could not be sufficient for relevant hypothesis testing. Confidence interval suggests that there is a 95% probability that the correlation coefficient of the entire population resides between values -0,98 and -0,71.

These interpretations can be applied to following results of the correlations between variables.

2) *ROAE after taxes* and *Domestic state and private owned*: correlation coefficient is -0,8935 with significant probability of <0,0001 (the 95% confidence interval is -0,97 to -0,66)

3) *ROAA before taxes* and *Domestic Private owned*: correlation coefficient is -0,98 with significant probability of <0,0001 (the 95% confidence interval is -0,99 to -0,93)

4) *ROAE after taxes* and *Domestic Private owned*: correlation coefficient is -0,93 with significant probability of <0,0001 (the 95% confidence interval is -0,98 to -0,76)

5) *ROAA before taxes* and *Foreign owned:* correlation coefficient is -0,91 with significant probability of <0,0001 (the 95% confidence interval is -0,71 to -0,98)

6) *ROAE after taxes* and *Foreign owned*: correlation coefficient is -0,89 with significant probability of <0,0001 (the 95% confidence interval is -0,66 to -0,97)

As no more than 12 year period (1998-2009) is available for statistical analysis, it is difficult to generalize these results for more precise hypothesis testing. Also, data on which the analysis was performed is derived average data from all the banks in the observed years, so potential influential factors that could have influence all the banks in this period and bias calculated results are not identified and made into consideration in these correlation values. Nevertheless, it is apparent that certain statistical relationship exists between these two sets of variables which should not be discarded and ignored and that needs to be further investigated. For more detailed examination into these relationships we recommend further analysis with more than 12 years time period and ideally measuring correlations between variables for individual banks, thus presenting more records (greater sample size) for more substantial analysis. Unfortunately, data for any former year period is not available at this moment.

One more thing to consider is results for correlations between variables *Domestic state owned* and *ROAA/ROAE*:

7) *ROAE before taxes* and *Domestic state owned*: correlation coefficient is -0,77 with significant probability of 0,0032 (the 95% confidence interval is -0,93 to -0,36)

8) *ROAA after taxes* and *Domestic state owned*: correlation coefficient -0,76 with significant probability of 0,0041 (the 95% confidence interval is -0,93 to -0,33)

Correlation coefficient for (7) and (8) could be represented as significant, but greater significant probabilities and far greater confidence intervals mitigate relationships between those variables and suggest that these correlations could have emerged by pure chance.

It seems that there is a weaker statistical correlation between *Domestic **state** ownership* and *ROAA/ROAE performance indicators* then between *Domestic **private** ownership* and *ROAA/ROAE performance indicators*, which "boost" statistical correlation between overall domestic ownership and performance indicators. These findings would need further investigation on the bank specific level, which could identify significant influential factors which are not encompassed by this paper.

6. Conclusion and implications for further research

It is impossible nowadays to lead a successful bank institution, as well as to have a successful national economy, without effective corporate governance and analysis in the fields of ownership and performance. This paper, as an empirical analysis, examines the structure of bank ownership and its impact on selected performance indicators. During the observed period authors followed transformation from state owned to foreign owned banks. The research analysis showed that first owner in average controls about 62.83% (Ow_1) of bank shares which is relatively high by definition. It is interesting to point out that the ratio of ownership structure for total average ownership of the first top ten owners consists of 43% shares under financial institutions ownership, mostly by bank institutions and pension funds. Looking at overall results, authors could conclude that certain statistical relationship exists between these two sets of variables and that there is a space for further research. The main research question - that bank ownership structure is related to bank performance - is discussed in detail. Based on the research results we can conclude that ownership structure as one of the main dimensions of corporate governance is correlated with bank performance. Measures of performance tend to show statistically significant correlation with bank's ownership structure. Within the scope of this paper authors did not examined the influence of other corporate governance factors (innovation rate, market share, time to market, relationship between stakeholders, employees' and customers' satisfaction on bank performance etc.). The correlation and comparison between other factors (external and internal) and bank performance in Croatia should be examined in further research.

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