Concentration of ownership and corporate performance: evidence from the Zagreb Stock Exchange

ALEN DŽANIĆ, MA*

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Alen DŽANIĆ
Nador 17, 1051 Budapest, Hungary
e-mail: alendzanic@hotmail.com

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Abstract

This study examines the relationship between ownership structure and firm performance using a sample of firms listed on the Zagreb Stock Exchange in period 2003-2009. The results obtained using a panel estimation with fixed effects show a significant negative relationship between the existence of a block holder owning more than 30% of the equity and the value of the firm's Tobin's Q. However, if there is a family-type second block holder, the effect disappears. Further, the study gives evidence of the negative impact of the fraction of equity owned by management on labor efficiency confirming the quiet-life hypothesis from Bertrand and Mullainathan (2003). Finally, it is shown that foreign ownership is not significantly better than domestic.

Keywords: ownership structure, ownership concentration, Tobin's Q, return on equity, labor efficiency, block holder, management ownership, Croatia, Zagreb Stock Exchange

1 INTRODUCTION

There has been much debate on corporate governance issues, but not many of them ended up with unambiguous answers. Different authors using different samples and methodologies often got dissimilar and even contradictory results. Disentangling the relationship between the ownership concentration and firm performance almost certainly took a longer time than authors expected when they first addressed this issue at the beginning of the twentieth century. Berle and Means (1932) were the first who seriously tried to explain the importance of ownership concentration. When managers hold a small fraction of the equity and shareholders are insufficiently dispersed to be able to enforce the value-maximization behavior of the management, corporate assets might be used in such a way as to benefit the manager instead of those who invested in the firm. A manager can, for example, use the weakness of shareholders to obtain private benefits such as sales growth, building a business empire, increasing employees' welfare so as to avoid conflicts or he can simply decide to shirk without fear of being fired. However, as the fraction of the equity owned by the manager grows, the problem should be reduced as the interests of management and outside owners start to converge.

This is only one of the potential theoretical explanations of the ownership-performance puzzle which developed during the last several decades and which emphasizes the importance of the issue. The study of ownership concentration, its determinants and the effect it has on different measures of corporate performance is even more important when the emerging markets are considered. In the post-communist countries of Central and Eastern Europe, such as Croatia, ownership concentration remained the most widely spread governance mechanism. Another argument that makes these economies attractive for studying the ownership-concentration relationship is that they all relatively recently went through the privatization process. Depending on the way the privatization was conducted, the endoge-

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neity issue can be avoided or at least reduced. Third, the analysis of the effect of ownership concentration and the type of owner on performance provides information that can be used to arrive at a closer definition of optimal ownership structure and optimal owner.

A number of studies have been performed using a sample of Central and Eastern European countries, but none of them went very deep in the analysis of the situation in Croatia. The aim of this paper is to identify the potential consequences of managerial ownership and large block holders on the performance of Croatian firms listed on the Zagreb Stock Exchange. The case of Croatia is not only interesting because it was not analyzed before, but also because of the specificity of the environment this country was exposed to during the late eighties and early nineties.

First, the early eighties were in Croatia characterized by worker self-management, economic liberalization and the appearance of small private firms. This means that the transition to capitalism was expected to be smoother than in other Eastern European countries as people knew how the market functions and what to expect. However, at the time the process of transition started, Croatia was hit by the war. It was because of this situation, it can be argued, that the process of privatization was often not transparent and much more politically influenced than it would have been in peacetime. Moreover, it postponed foreign investors entering in a big way until the second half of the nineties. This specific situation might yield results that are not in line with the studies done using the sample of other countries.

The study shows evidence of a negative relationship between the presence of a large shareholder and Tobin's Q value of the company, attributed to the extraction of extra benefits by the large block holder at the cost of small shareholders. If there is a family-type second block holder present as well, this extraction is prevented. Labor efficiency is affected by the fraction of equity held by the manager, and the relationship is negative and marginally significant. Also, there is no evidence that foreign is better domestic than ownership, as it usually is in emerging economics.

Before deeper explanation of the empirical results, first chapter introduces the topic. Chapter two briefly discusses the previous literature. Third chapter defines the sample and data used in the empirical analysis of the ownership-performance relationship. Chapter four provides details about the methodology and results. Chapter five discusses potential endogeneity issues and it is followed by the chapter six which provides brief summary of results and concluding remarks.

2 LITERATURE REVIEW

A look at previous studies might give a good first insight into the topic and provide a benchmark to which the results of this study can be compared. The relationship between ownership structure and firm performance has long been a focus for eco-

nomists' interests. Berle and Means (1932) argued that the dispersion of ownership leads to the deterioration of a firm's performance. Putting it more generally, they expected a negative correlation between the dispersion of shareholdings and corporate performance. When the manager and the owner are not the same person, interests do not always overlap, and conflict appears. When ownership is dispersed, the conflict is resolved in the manager's favor. Small shareholders cannot organize themselves effectively and therefore rarely have any influence on the management. Moreover, the cost of monitoring the management is often too high for them, so small shareholders will usually not even try to do so. The board of directors might seem a logical solution to this problem, but in reality it is often inefficient. Having less information about the firm than the manager, a board often cannot prevent management from extracting additional rent at the expense of the shareholders. Moreover, the large income of directors provides little incentive for monitoring, having in mind the manager's influence on election of the board members.

This approach was for the first time seriously challenged by Demsetz (1983). He argued that ownership concentration depends on shareholders' decisions and should be therefore treated as an endogenous variable. Demsetz also concludes that the profit rate, used as a measure of corporate performance, and ownership concentration should be therefore uncorrelated. Demsetz and Lehn (1985) analyzed five hundred US corporations. Their study examined two types of ownership concentration; the amount of shares owned by the five largest owners and the amount of shares owned by the manager. Estimates obtained showed no existence of a significant relationship between ownership concentration and accounting profit rates.

More evidence for the existence of the endogeneity of managerial ownership can be found in the work of Himmelberg, Hubbard and Palia (1999). After controlling for observed firm characteristics and holding individual firm effects fixed, the authors found no evidence of a significant relationship between managerial ownership and firm performance. Gugler and Weigand (2003) using a large sample of US firms concluded that managerial ownership is endogenous, but the largest shareholders, however, affect the performance of the firm exogenously. The robustness of the results was checked using a sample of German firms, which brought the authors to a conclusion similar to that already mentioned.

In the last two decades a significant number of papers were written on this topic, often yielding conflicting results. Morck, Shleifer and Vishny (1988) used Tobin's Q as a measure of firm's performance and obtained the evidence about the existence of a significant non-monotonic relationship between the two variables. McConnell and Servaes (1990) using both Tobin's Q and return on assets as measures of performance find a significant roof-shaped relation with ownership by managers and directors. Cho (1998) argues that ownership structure determines the level of

investments, which in turn determines performance, which again determines the ownership structure. Accounting for this type of endogeneity, he finds that Tobin's Q increases significantly until concentration reaches a certain limit and then starts to decrease. Using a sample of the largest European companies, Thomsen and Pedersen (2000) found positive effect of ownership concentration on corporate performance.

Damijan, Gregoric and Prasnikar (2004) tried to disentangle the relationship between ownership concentration and corporate performance in Slovenia. They find evidence for the absence of any significant influence of ownership control on a firm's productivity. Such results are attributed to most well-performing firms lack of controlling owners and their different sources of growth. A non-monotonic relationship between ownership concentration and performance, and a significantly worse performance of firms with block holders, is explained by the struggle among the block holders to gain ultimate control over the company.

There are very few studies using alternative approaches to address the issue. Farinos et al. (2006) use the event study to explain the link between ownership concentration and performance on the Spanish market, and Wyatt (1990) tries to use the same method to explain the link between the structure of the board of directors and corporate performance.

Considering the effect of owner's origin on the performance, the situation is somewhat clearer. Willmore (1986) concludes that the Brazilian firms with foreign owners significantly outperform domestically held firms. Chibber and Mujumdar (1999) confirmed this finding using the sample of Indian companies.

However, it seems that this effect is primarily characteristic of emerging economies. Globerman et al. (1994) compare foreign and domestically owned firms in Canada and find no differences in the performance. Foreign affiliates had significantly higher value-added per worker and gave higher salaries, but these differences disappeared after controlling for more factors. Kim and Lyn (1990) report foreign firms in the United States being less profitable than randomly selected domestic firms. In the United Kingdom Driffield and Girma (2003) find no difference between the performances of foreign and domestically owned firms. Barbosa and Louri (2003) conclude that ownership type is not related to the performance of firms in Greece and Portugal either.

3 DATA

This study analyzes official data on corporations listed on the Zagreb Stock Exchange (ZSE) in the period from 2003 until 2009. At the moment data for this study were collected (May 2011) the shares of 237 Croatian joint stock companies were listed. Out of those, 58 companies were listed after December 2003, and were therefore excluded from the sample. Further, the sample does not include

financial, utility and other severely regulated institutions, in order to avoid the effect of these regulations on corporate performance. For 24 companies, some of the data, usually about ownership structure, was unavailable for the whole or most of the period observed. In addition to this, firms with extreme values of observed variables have not been included in the regressions. When these exclusions were made, the final sample included 119 corporations listed on the ZSE and a total of 746[1] observations.

3.1 OWNERSHIP CONCENTRATION

All the data for this research was collected manually from the annual financial reports which companies need to deliver according to the Stock Exchange regulations. Table 1 shows some statistics on ownership concentration in the Croatian market for the first and the last year of the sample. Descriptive statistics are shown for the fraction of equity owned by the largest, three largest and five largest shareholders on the ZSE.

TABLE 1

Ownership concentration in Croatian firms (% of total equity)

	Top1		Top3		Top5		Management	
	2003	**2009**	**2003**	**2009**	**2003**	**2009**	**2003**	**2009**
Mean	52.74	52.43	54.03	55.89	75.91	75.42	3.97	3.98
Median	54.13	54.13	56.04	59.31	85.91	85.59	0	0
Max.	98.62	98.62	100	100	100	100	100	100
Min.	7.40	6.29	15.33	19.39	19.40	22.79	0	0
Std. dev.	26.66	26.96	24.53	27.37	23.22	23.08	12.30	12.99

A quick observation is enough to conclude that there were not many changes concerning the concentration of ownership. The ownership of the single largest shareholder varies from 6.29% to 98.62% around the quite high mean which is just above the 50%. This fact is not very surprising bearing in mind the concentration in other emerging economies, and continental Europe in general (Claesens and Djankov, 1998; Kapopoulos and Lazaretou, 2006; Gugler and Weigand, 2003). Having the approximately same value, the median tells that in half of the companies from the sample a single owner has absolute power over the corporation. However, the fractions of equity held by the following investors are also not insignificant. For inspecting the relationship between the largest shareholder and performance, dummy variable *B1_30* is created. It equals zero if the first block holder owns less than 30% of the equity and otherwise it equals one. On the other side, management ownership has a median equal to zero. Infrequent equity compensation and frequent changes of managers are probably the two main reasons for this

[1] One expects to see 833 observations in total. However, due to the incomplete reports for some of the observed companies, 746 observations are included in the research.

situation. Managerial ownership will be measured by the variable *Lmanager* which is defined as a logistic transformation[2] of the fraction of total equity owned by the management of the company. In order to capture possible non-linearity in the relationship between managerial ownership and firm performance, I also create the variable *Lmanager^2* which is the squared value of *Lmanager*.

Managerial ownership is a continuous variable since one expects a manager to influence company performance even at zero level of ownership. Therefore, in order to capture the effect of managerial ownership, all values of ownership are considered relevant. Considering non-managerial block holders, the situation is different. Up to a certain threshold, small shareholders are not expected to influence the performance of the company. However, once they become strong enough, an effect might appear. Following this logic, *B1_30* is defined as a dummy variable. Unfortunately, there is no specific method to identify the threshold at which the shareholder starts significantly influencing the performance of the company. Therefore, regressions were made using 20, 30 and 40% as a threshold for this dummy variable. The results were very similar, with the coefficients having the same sign, but slightly different values. I decided to use 30% as a threshold after introducing the second block holder *B2_10*. Such a combination of thresholds allows enough observations in which both first and second large block holders exist. A larger sample would allow for more freedom in defining the thresholds.

If the principal-agent problem exists in the relationship between management and owners, the concentration values of the largest, three largest and five largest shareholders are expected to be negatively correlated with managerial ownership, with the relationship getting stronger as we move from Top5 toward Top1. The stronger the owner, the less space a manager has to put his own interests before those of the shareholders. Also, entrenchment and accumulation of shares in order to strengthen his influence in the company becomes practically impossible without permission of the large owner. Votes of the single shareholder might also be enough to dismiss the manager, which, compared to the diffused ownership case, greatly simplifies the procedure. The data do confirm this hypothesis but correlations between the managerial ownership and three concentration measures are very low (-0.057; -0.062 and -0.076 for top one, three and five shareholders, respectively).

3.2 CORPORATE PERFORMANCE

In empirical studies focused on demystification of the ownership-performance relationship, two performance indicators tend to be used more than others. Starting from Demsetz and Lehn (1985) the profit rate was used to evaluate firms' performance. In later studies, most of the authors found Tobin's Q a more appropriate measure. While accounting profit rate is measured as the ratio of net income and

[2] Logistic measure of managerial ownership which converts the bounded numbers (0 to 100%) to an unbounded figure is widely used in the literature that deals with the ownership concentration-performance relationship (Demsezt and Lehn; 1985, Himmelberg, 1999; Grosfeld, 2006).

shareholders' equity, Tobin's Q is calculated as the market value of the company divided by the replacement value of the firm's assets.

Therefore, a low value of the coefficient (below 1) implies that the value of firm's assets is greater than is recognized by the market, and the stock is undervalued. Analogously, a high Tobin's Q implies that the stock is overvalued. There are two main differences in the mentioned approaches to performance measurements. From the time perspective, the profit rate can be described as a backward looking measure. It is a purely accounting way of measuring the success of the corporation and depends on the accomplishments of management in the previous period. On the other side, Tobin's Q is a forward looking indicator and it is based on the investors' expectations about the future profitability of the company. Therefore, it is highly affected by the stock market fluctuations. The second difference comes from the accounting standards. Profit rate is highly dependent on the accounting methods used and often does not give a reliable picture of the firm's performance. The advantage of using Tobin's Q is the avoidance of having to estimate true profit rates and balancing between different accounting rules under different jurisdictions. However, this performance indicator is also not completely immune to accounting problems. For Tobin's Q to be meaningful, one needs accurate measures of both the market valuation of the company and the replacement costs of the firm's assets. While the first is usually not the problem, if the firm's stocks are regularly traded, the replacement costs are more complicated to calculate (Venkatraman et al., 1986) and are therefore often proxied by the book value of total assets. Using the book value of assets makes the results once again vulnerable to accounting standards and firm policies. In this study I will use two widely-used measures of performance: return on equity (ROE) and Tobin's Q. Moreover, I will try to capture the effect of ownership concentration on labor performance as an additional important measure. Bertrand and Mullainathan (2003) concluded that, when insulated from takeovers, managers are less hesitant to raise wages, aiming at avoiding confrontations with unions. Using labor efficiency as a dependent variable allows a check on whether higher managerial ownership and entrenchment show some evidence in favor of the "quiet-life" hypothesis. This choice of dependent variables is made in such a way as to include representatives of all financial, market and operative measures of performance.

Return on equity is defined as the ratio of net profit and shareholders' equity. It reveals how much profit was made in comparison to total amount of shareholders' equity found on the balance sheet. *Labor efficiency* is approximated by the ratio of labor cost and total revenues. These two indicators can be used over the whole sample. In the case of Tobin's Q, it will be used on the subsample of more liquid firms. The Zagreb Stock Exchange distinguishes three degrees of liquidity, depending on the number of transactions in the previous twenty days. The least liquid shares will not be taken into account as the Tobin's Q of such stocks does not contain reliable information about the investors' valuation of company. Table 2

depicts the behavior of the firm's performance indicators over the observation period. The median is used instead of the mean to immunize the effect of the (both positive and negative) extreme values present in the sample. Labor efficiency does not suffer from this problem and the values of mean and median are very similar throughout the observed period.

Table 2
Median values of performance indicators and labor efficiency

	2003	2004	2005	2006	2007	2008	2009
ROE	1.24	1.46	1.77	2.52	2.24	0.57	0.03
Tobin's Q	0.25	0.36	0.44	0.64	0.82	0.31	0.29
Labor efficiency	0.22	0.21	0.23	0.23	0.22	0.21	0.23

Median ROE had a quite strong growth until 2006, and after a slow-down in 2007, it records a big fall in 2008 and a year later it practically reaches zero. Tobin's Q behaves more stably, but it also records a significant drop in the year 2008. This drop is certainly caused by the huge drop in the stock prices caused by the world financial crisis. However, even before that, the stocks on ZSE were on average undervalued. On the other hand, labor efficiency is fairly stable over the whole period. The possible explanation is that with the fall in revenues, firms started firing workers and reducing labor costs, keeping the indicator almost unchanged.

3.3 CONTROL VARIABLES

Additional variables need to be included in the regression in order to control for the possibility that factors other than ownership structure affect performance. *Leverage* is a natural logarithm of the amount of debt a firm uses to finance its assets. Management can decide to use high leverage in order to boost investments and increase shareholders' wealth. However, if it fails to do so, interest expense and credit risk can decrease wealth. The *Size* of the company may affect performance since a large company can enjoy the benefits of economy of scale. I use natural logarithm of employment to proxy for firm size. I also tried alternative proxies for the size, such as revenues and total assets, but the number of employees proved to yield the most significant results.

Following the work of Grosfeld (2006), I also include control for the intangible assets. *Intan* is defined as a share of intangibles in total assets. Since this category includes software, patents, brands, goodwill and other assets without physical substance, this variable is expected to proxy for high-tech firms with high added value in the process of production, and therefore better performance. However, it is also possible that this variable proxies for investments in R&D and patents more than for high-tech. To account for this I will check regressions for both the contemporaneous and lagged value of this variable.

Variable *foreign_20* is a dummy which takes value one if a foreigner or a group of foreigners are owners of at least 20% of the firm's equity and zero otherwise. Regressions were done using 20, 30 and 40% thresholds for this dummy variable as well. Coefficients proved to be similar. I decided to use 20% as a threshold since it allows for the largest number of observations. This variable is generally expected to have a positive influence on the firms' performance. However, as a result of the late entrance of foreign capital in Croatia, when the best companies had already been privatized by domestic investors, the effect can be different as well. As an alternative, I also use the variables *foreign_1* and *foreign_2* which equal 1 if the first (second) largest owner is a foreigner and zero otherwise.

Old is a dummy which equals one if the firm was established before 1991 and has therefore, at least partially, gone through the process of privatization. In line with the previous literature, I differentiate four types of owners: family, company, state and financial/institutional owner. Types of ownership are dummy variables which equal one if the largest owner is a family/company/state/financial institution, and zero otherwise. As a reference value I take ownership by another company. Anderson (2003) investigated the founding-family ownership and came to the results that when family members are serving as CEOs, the firm performance is significantly better than with the outside CEOs. A number of authors, including Grosfeld (2005), obtained negative coefficients for state ownership. Therefore, the family dummy is expected to be positively and state negatively correlated with the performance measures.

Finally, in all of the panel regressions I will use *year dummies*. Year dummies are included in order to control for the macroeconomic environment which affects all the observed firms. Controlling for macroeconomic shocks is crucial for an economy exposed to large changes. Moreover, the sample extends to the years in which we expect to observe the negative consequences of the world financial crisis on the performance of companies listed on the Croatian stock exchange.

I also include firm fixed effects in panel data. Holding for the effects of industry is not convenient as Zagreb Stock Exchange differentiates among 38 different industries where some categories include no, one or two firms.

4 EMPIRICAL METHODOLOGY

In the following estimations return on equity, Tobin's Q and labor efficiency are regressed on ownership variables and the control variables. First, the managerial ownership is put in focus, and then the ownership of the largest shareholder. The largest owner expectation is motivated by the great concentration of ownership on the Croatian stock exchange.

Panel data analysis has been used here. By their construction, panel data allow us to control for unobserved heterogeneity. The fixed effects method is considered

relevant when one expects that the means of the dependent variable, in this case ROE, Tobin's Q and labor efficiency, will be different for each firm and period, but with constant variance of the errors (Asteriou, 2006). Fixing the periods is important in order to capture the macroeconomic shocks present, especially in the last three years of the sample. Fixed cross-sections allow for capturing firm-specific effects. This gains even more in importance when one has in mind that Zagreb Stock Exchange is relatively small, and controlling for industry dummies would not be very useful.

4.1 MANAGERIAL OWNERSHIP

Two effects are usually discussed when speaking about managerial ownership: incentive and the entrenchment effect. As long as management is not powerful enough, the incentive effect prevails. In order to preserve their position, managers must persuade owners, represented by the board of directors, that firms are run in the best possible way. Therefore, firms' performance is expected to improve with higher managerial ownership up to the point at which the manager becomes entrenched and puts own private before the benefits of outside investors. Beyond this point, the relationship between managerial ownership and corporate performance is expected to be negative. This theoretical inverse U-shaped curve was empirically confirmed by a number of authors. However, most of the studies were done using US data, where the ownership is more dispersed than in the rest of the world, as shown by La Porta, Lopez-de-Silanes and Shleifer (1988).

Using the panel data for the period 2003-2009 with ROE as a dependent variable I obtain results summarized in table 3. Regression function (1) includes the manager as the only variable explaining the variations in firms' return on equity. Regression function (2) checks for the possible non-linearity in the relationship between the two variables, but finds none. Regression function (3) includes some variables which control for other things that might influence performance, and the fourth regression tries to capture the effect that the type of the ownership over the firm might have on ROE. In the last column the regression is defined as in the previous one, except for the fact that the squared value of managerial ownership is excluded once again.

The effect of managerial ownership is negative only in the simplest regressions, with the standard error being twice as large as the size of the estimated coefficient. Afterwards, in all the following regressions, the coefficient is positive, but remains insignificant. Panel data show that there is a significant non-linear relationship between the size of the firm and its return on equity. First, as the firm grows, its return on equity increases and after a certain point starts decreasing. Leverage has a strong negative effect which is similar in size with the strong positive effect of the fraction of intangibles. It is interesting that the panel estimation resulted in the negative coefficient for the *foreign_20*. This unexpected sign can be partially explained by the privatization process and will be addressed later in the study.

Table 3

Fixed effects estimation of the effect of managerial ownership on ROE

	(1)	(2)	(3)	(4)	(5)
Lmanager	-0.015	0.042	0.102	0.105	0.049
	(0.029)	(0.059)	(0.124)	(0.121)	(0.048)
Lmanager^2		-0.019	-0.013	-0.019	
		(0.020)	(0.035)	(0.036)	
Size			0.860*	0.790*	0.794***
			(0.267)	(0.294)	(0.294)
Size^2			-0.105*	-0.099*	-0.099***
			(0.026)	(0.027)	(0.027)
Leverage			-2.924***	-3.040**	-3.044**
			(1.702)	(1.759)	(1.758)
Intan(-1)			2.564*	2.561*	2.587*
			(1.683)	(1.678)	(1.581)
Old			0.792	0.804	0.807
			(0.648)	(0.654)	(0.654)
Foreign_20			-0.356*	-0.341*	-0.344*
			(0.221)	(0.244)	(0.222)
State				0.135	0.144
				(0.151)	(0.152)
Fin/Inst				0.542	0.555
				(0.469)	(0.477)
Family				0.301	0.276
				(0.291)	(0.279)
R-squared (%)	23	23	30	30	30
N	746	746	634	634	634

****, **, and * are used to denote 1%, 5% and 10% significance level, respectively. N stands for the number of observations. Standard errors in parenthesis.*

The regression with Tobin's Q as a measure of performance yields somewhat similar results (table 4). Although the coefficient on *Lmanager* is always negative, compared with the situation with ROE where it was mostly positive, it is still insignificant on any acceptable level of significance. In the firms listed on the ZSE, managerial ownership seems not the affect the value of Tobin's Q. Similarly to the estimate obtained for ROE, leverage has a negative effect on performance. However, two other control variables might be of more interest. Old firms seem to be more valued by the market.

Before arguing against this result, one should recall that old firms listed on the stock exchange are the best and the strongest firms, which started business in a market much larger than that in Croatia today. It is highly probable that they kept some of business connections and already have a developed brand in neighboring countries allowing them to expand more easily. Furthermore, they were strong enough to survive during the conflict period and the period of privatization. This

type of a selection bias is most certainly the main reason why the coefficient for old firms tends to be positive and significant.

Table 4

Fixed effects estimation of the effect of managerial ownership on Tobin's Q

	(1)	(2)	(3)	(4)	(5)
Lmanager	-0.016	-0.014	-0.043	-0.077	-0.021
	(0.032)	(0.071)	(0.088)	(0.088)	(0.033)
Lmanager^2		0.006	0.014	0.021	
		(0.019)	(0.027)	(0.027)	
Size			0.107	0.046	0.044
			(0.086)	(0.101)	(0.099)
Size^2			-0.017	-0.009	-0.009
			(0.016)	(0.017)	(0.017)
Leverage			-0.653**	-0.773***	-0.769***
			(0.264)	(0.265)	(0.265)
Intan(-1)			-1.036	0.851	0.792
			(0.992)	(0.921)	(0.998)
Old			0.474***	0.487***	0.485***
			(0.087)	(0.086)	(0.086)
Foreign_20			-0.166*	-0.132	-0.132
			(0.101)	(0.113)	(0.113)
State				0.227	0.226
				(0.048)	(0.047)
Fin/Inst				0.522***	0.501***
				(0.149)	(0.148)
Family				0.185*	0.192**
				(0.099)	(0.097)
R-squared (%)	69	69	71	71	71
N	446	446	403	403	403

****, **, and * are used to denote 1%, 5% and 10% significance level, respectively. N stands for the number of observations. Standard errors in parenthesis.*

Firms with significant foreign ownership, on the other hand, have once again a negative coefficient, although significant only in the regression (3). This result can be explained by the process of privatization. Most of the privatization process in Croatia was conducted during the conflict and post-conflict period when international companies were not attracted to Croatia. Other Eastern European economies were in the processes of mass privatization and the choice for investing was wider than ever. After 1999, when foreign investments became abundant in Croatia, the best firms already found their owners among domestic investors. Firms that have a financial institution as a largest owner have significantly larger value of Tobin's Q than others. The effect of the fraction of intangibles in the total assets is ambiguous in this case, meaning that although superior from the point of view of ROE, firms with a higher share of intangibles do not have a significantly higher value of Tobin's Q.

While cross-sectional analysis discovered negative relationship between the managerial ownership and labor efficiency (not reported in this paper), panel data show that these results were probably affected by the unobserved heterogeneity (table 5). Fixed effects estimator for managerial ownership is significant and negative at the 10% significance level only after inclusion of control variables. This result is a soft confirmation of the "quiet life" hypothesis stated by Bertrand (2003). As they become more entrenched, managers prefer to increase salaries than to fight the unions. Efficiency suffers, but since there is no danger from takeovers, managers fearlessly enjoy the quiet life.

TABLE 5

Fixed effects estimation of the effect of managerial ownership on labor efficiency

	(1)	(2)	(3)	(4)	(5)
Lmanager	-0.065	-0.174	-0.254*	-0.256*	-0.149*
	(0.068)	(0.113)	(0.152)	(0.145)	(0.089)
Lmanager^2		0.036	0.047	0.035	
		(0.022)	(0.031)	(0.025)	
Size			0.597	0.579	0.579
			(0.584)	(0.469)	(0.544)
Size^2			-0.056	-0.054	-0.053
			(0.051)	(0.042)	(0.047)
Leverage			-0.167	-0.132	-0.119
			(0.141)	(0.159)	(0.138)
Intan(-1)			0.501	0.486	0.545*
			(0.363)	(0.404)	(0.334)
Old			0.576***	0.544***	0.544***
			(0.087)	(0.107)	(0.118)
Foreign_20			0.008	0.051	0.049
			(0.029)	(0.053)	(0.053)
State				-0.275*	-0.244*
				(0.167)	(0.151)
Fin/Inst				-0.129	-0.154
				(0.123)	(0.125)
Family				0.297*	0.312*
				(0.196)	(0.186)
R-squared (%)	76	76	78	79	79
N	744	744	633	633	633

****, **, and * are used to denote 1%, 5% and 10% significance level, respectively. N stands for the number of observations. Standard errors in parenthesis.*

The size coefficient which was always significant in the cross-sectional analysis becomes insignificant and there is no evidence of non-linearity. Intangibles are positively related with the efficiency measure, but the coefficient is marginally significant only in the regression (5). Old firms are more efficient than firms founded after 1991. Again, one should recall the previously used argument that the group of old firms include only the best firms from the pre-independence period,

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which were strong enough to continue operating after the war and usually already had contacts and business in other countries, primarily the countries of ex-Yugoslavia. Firms where the state is the largest shareholder are expectedly less and family firms more efficient than firms owned by another company. State firms often belong to the traditional and labor intensive industries. Moreover, government is often very reluctant to cut the number of employees, even though it is often much higher optimally needed, as political are often privileged over economic objectives. On the other hand, a family as an owner cares in the first place about the profitability of its business as it is almost certainly the main source of its income. For this reason, families try to achieve the maximum possible labor efficiency and not employ more labor or pay salaries higher than they consider optimal.

4.2 LARGEST SHAREHOLDER

One of the most widely accepted views among authors, including Shleifer and Vishny (1986), McConnel and Servaes (1990), Zingales (1996), and Claessens and Djankov (1998), is that higher concentration of ownership improves the performance of the firms due to the stronger incentive to monitor the actions of management. For small shareholders this incentive is very low or even non-existing since the cost of monitoring is often higher than the potential benefits from it. On the other side, large block holders can offset the cost of the monitoring by the rise of their equity value. Moreover, in the case of non-monitoring, managers could put their private benefits in front of the shareholders' and in that way cause them losses that outweigh the cost of monitoring.

On the other side there are authors who argue that this relationship is dubious as the expected gains from active monitoring vary across countries and firms (Demsetz and Lehn, 1985). Also, in countries with not efficient protection for small shareholders, the existence of large block owners can decrease liquidity, make the firm less attractive to other investors and decrease its market capitalization causing a negative relationship of ownership concentration and Tobin's Q as a measure of performance.

Regressions using fixed period and cross-section effects show no significant relationship between the existence of a large block holder and return on equity (table 6). In the case when the financial institution is the block holder, the coefficient is positive and significant at the 5% level of significance. The presence of other types of owner neither increases nor decreases firms' return on equity. Both in regression functions (2) and (3) the leverage has a large negative effect, while the effect of intangibles is significantly positive only in the regression function (3), when the type of the owner is controlled for. Foreign ownership is once again negatively, but insignificantly related to the return on equity.

Table 6

Fixed effects estimation of the effect of block holder on return on equity

	(1)	(2)	(3)
B1_30	0.110	0.091	-0.050
	(0.123)	(0.167)	(0.131)
Size		0.856*	0.830*
		(0.506)	(0.494)
Size^2		-0.107**	-0.104*
		(0.058)	(0.032)
Leverage		-2.844***	-2.983**
		(1.678)	(1.479)
Intan(-1)		2.649	2.674**
		(2.045)	(1.221)
Old		0.858	0.851
		(0.644)	(0.646)
Foreign_b1		-0.492	-0.448
		(0.378)	(0.419)
State_b1			0.167
			(0.192)
Fin/Inst_b1			0.598**
			(0.265)
Family_b1			0.283
			(0.330)
R-squared (%)	23	29	30
N	746	634	634

****, **, and * are used to denote 1%, 5% and 10% significance level, respectively. N stands for the number of observations. Standard errors in parenthesis.*

Panel regression identifies the significant negative relationship between the variables *B1_30* and the value of Tobin's Q (table 7). This result is most likely influenced by the behavior of other firms being the owners of the companies listed on the Zagreb Stock Exchange. A financial institution as owner, on the other hand, affects performance positively. There are two potential explanations for the negative influence of a block holder on the value of Tobin's Q. First, as already mentioned, it reduces the liquidity of the firm's shares on the stock market.

Secondly, the large shareholder might use its influence to extract benefits from the firm through less than optimal dividend payments, failure to reinvest, transferring profitable parts of the business to other firms in its ownership and similar devices. Once again more leveraged firms perform significantly worse than those which finance their assets through equity and firms founded before 1991 are valued more by outside investors. If the block holder is a foreigner, the effect is negative and significant in regression function (2), but after controls for the type of owner are introduced, the effect disappears.

The presence of a large owner does not affect the efficiency of labor (table 8). It might be expected that a firm would be more under the influence of a manager if

it is owned by another company. However, having a family as a largest block holder increases the efficiency for the reasons previously discussed, and ownership by the state affects the efficiency negatively. Similarly to the estimates obtained when regressing managerial ownership on labor efficiency using panel data, company size is not so effective in explaining the variations in efficiency. Leverage has a negative effect, but visibly smaller than in the case of Tobin's Q and return on equity. The conclusion that the firms established prior to 1991 are more labor efficient is confirmed once again at the 10% level of significance. Foreign owners do not perform significantly better or worse than domestic owners.

Table 7
Fixed effects estimation of the effect of existance of block holder on Tobin's Q

	(1)	(2)	(3)
B1_30	-0.194**	-0.203*	-0.402*
	(0.094)	(0.117)	(0.237)
Size		0.204	0.159
		(0.177)	(0.162)
Size^2		-0.027	-0.021
		(0.022)	(0.021)
Leverage		-0.609**	-0.795***
		(0.279)	(0.303)
Intan(-1)		0.694	0.416
		(0.926)	(0.90)
Old		0.476*	0.454***
		(0.087)	(0.103)
Foreign_b1		-0.273**	-0.139
		(0.113)	(0.212)
State_b1			0.193
			(0.482)
Fin/Inst_b1			0.742**
			(0.369)
Family_b1			0.349
			(0.312)
R-squared (%)	69	71	72
N	446	403	403

Table 8
Fixed effects estimation of the effect of existance of block holder on LE

	(1)	(2)	(3)
B1_30	0.115	0.188	0.001
	(0.141)	(0.284)	(0.044)
Size		0.579	0.447
		(0.473)	(0.34)
Size^2		-0.055	-0.044
		(0.042)	(0.030)
Leverage		-0.194***	-0.308**
		(0.108)	(0.171)
Intan(-1)		0.429	0.319
		(0.341)	(0.288)
Old		0.662*	0.551*
		(0.106)	(0.118)
Foreign_b1		-0.133	0.054
		(0.093)	(0.116)
State_b1			0.673**
			(0.398)
Fin/Inst_b1			-0.241**
			(0.132)
Family_b1			0.387
			(0.281)
R-squared (%)	75	78	79
N	744	633	633

****, **, and * are used to denote 1%, 5% and 10% significance level, respectively. N stands for the number of observations. Standard errors in parenthesis.*

4.3 SECOND BLOCK HOLDER

The existence of a second large shareholder in the firm can also be important for the firm's performance. In the sample of firms from Zagreb Stock Exchange considered here, the mean value of the fraction of equity held by the second owner is more than 12%, making it potentially important for an explanation of firms' performance. If found negative effect of the largest shareholder on the value of To-

bin's Q is mainly due to the illiquidity issue, the effect of the second large shareholder should also be expected to be negative. The conclusion comes from the fact that in this case free-float is even smaller and liquidity is likely to be even less. However, if the negative coefficient is the result of the largest owner extracting private benefits from the firm, results might be different. If there is a chance for cooperation between the two agents, the private benefits will have to be shared among the two and the effect is likely to be small and negative or even insignificant. However, if there is no cooperation, the second large block holder has a large incentive to monitor the first one and prevent some of the private benefits being extracted. In order to check for the effect of the existence of the second large block holder in the company I define variable *b2*, the second block holder, as a dummy variable that takes value 1 if the second owner owns more than 10% of equity and zero otherwise. The results of the regression are shown in table 9.

Table 9

Fixed effects estimation of the effect of existance of second block holder on Tobin's Q

	(1)	(2)	(3)	(4)
B1_30	-0.202*	-0.178	-0.17*	-0.241**
	(0.075)	(0.122)	(0.10)	(0.131)
B2_10	-0.06	-0.043	0.06	0.001
	(0.044)	(0.076)	(0.08)	(0.006)
Size			0.21	-0.014
			(0.19)	(0.023)
Size^2			-0.03	-0.006
			(0.03)	(0.027)
Old			0.47*	0.422***
			(0.09)	(0.09)
Leverage			-0.67**	-0.641**
			(0.29)	(0.305)
Intan(-1)			0.84	0.889
			(1.93)	(1.017)
B1*B2		-0.042	-0.13	
		(0.048)	(0.19)	
Foreign_20			-0.18	
			(0.08)	
B1*B2*family_2				0.431***
				(0.153)
B1*B2*financ_2				0.074
				(0.105)
B1*B2*state_2				-0.028
				(0.025)
B1*B2*foreign_2				-0.184*
				(0.099)
R-squared (%)	69	70	71	72
N	446	446	403	403

****, **, and * are used to denote 1%, 5% and 10% significance level, respectively. N stands for the number of observations. Standard errors in parenthesis.*

Regression function (1) includes only two dummy variables which control for the presence of the first and second block holder, having more than 30% and 10% of equity, respectively. The effect of the first block holder remains significantly negative; while the coefficient for the second block holder has no effect on the value of Tobin's Q. Regression function (2) includes an interaction term which also fails to capture any significant effect. In the third regression, after controlling for other variables, the coefficient for the second block holder becomes positive, but still very insignificant. The regression in the fourth column also includes the interactions between the dummy variables for the presence of block holders and the identity of the second block holder. The reasoning for including the second block holder type in the interaction terms is that different types of owners have different strengths of incentive to undertake monitoring. A family is expected to have the strongest incentive, while the state is expected to be the most passive owner. Regression function (4) partially confirms the expectations. If the second block holder is a family, the effect is significantly positive and by its size more than offsets the negative effect of the first block holder. The state and financial institutions as the second block holders do not affect the value of Tobin's Q.

According to Gugler and Weigand (2003), large owners affect the performance exogenously. However, management influence can suffer from the endogeneity which is discussed in the following chapter.

5 ENDOGENEITY ISSUE

A large part of the empirical evidence on the relationship between the ownership structure and performance assumes ownership is exogenous. However, even since Demsetz (1983) and Demsetz and Lehn (1985) there is an idea that ownership is endogenously determined in the process of balancing advantages and disadvantages of different ownership structures. As shown by Demsetz and Villalonga (2001), endogeneity causes serious problems in estimating the relationship between the two variables and after controlling for the simultaneity between the two, the effect disappeared.

In dealing with this issue, I will consider the study of Gugler and Weigand (2003). They used panel data from Germany and the United States and concluded that managerial ownership is econometrically endogenous[3]. However, large shareholders affect the performance of the firms exogenously. Not only is it one of the most cited articles on this topic, but it is also interesting as it does not use only US data as most authors do. According to its legal framework, Croatia is much more similar to Germany than to the US. Moreover, the German economy is also characterized by the widespread existence of large shareholders. Furthermore, a politically influenced privatization process in the beginning and mass privatization after are also arguments for the exogeneity of the largest shareholder.

[3] Hausman test confirms the doubts about endogeneity of managerial ownership.

For all the stated reasons, the following part of this chapter will try to examine whether the previously found effect of managerial ownership on firm performance in Croatia is affected by endogeneity. In order to deal with the endogeneity concerns, the two stage estimator (2SLS) is used. In order for this instrumental variable estimation to be reliable, one needs to find an instrument that is correlated with the potentially endogenous variable and genuinely exogenous to the model. In the case of ownership concentration, it is unusually difficult to come out with such a variable. Himmelberg (1999) argued that stock price volatility is not a perfect but still an acceptable instrument for ownership structure. The argument is that when the environment is more volatile the cost of monitoring the management is higher, but the potential benefits from doing it are higher as well. On the other hand, when the firm environment is relatively stable, shareholders have less difficulty, but also less incentive to monitor the managers. As a result, it is expected that the riskier firms (firm with higher stock price volatility) will have on average higher concentration of ownership. I have calculated standard deviation and variance using the daily data on stock prices reported by the Zagreb Stock Exchange. However, this instrument is not correlated with the potentially endogenous managerial ownership and is therefore excluded as a possible instrumental variable.

Table 10

IV estimation of the effect of managerial ownership on return on equity and labor efficiency

	RHS: Labor efficiency	**RHS: Return on equity**	**RHS: Tobin's Q**
Manager	-0.518*	0.239	0.044
	(0.291)	(0.253)	(0.038)
Manager^2	0.111	-0.049	-0.031
	(0.071)	(0.069)	(0.052)
Size	0.538	0.883*	0.111
	(0.522)	(0.548)	(0.115)
Size^2	-0.048	-0.110*	-0.022
	(0.045)	(0.063)	(0.016)
Leverage	-0.364***	-2.968**	-0.688***
	(0.127)	(1.451)	(0.236)
Intan(-1)	0.198	2.574*	0.860
	(0.261)	(1.708)	(0.731)
Foreign_20	0.027	-0.374	-0.159*
	(0.263)	(0.348)	(0.091)
Old	0.601***	0.793	0.449*
	(0.127)	(0.562)	(0.259)
R-squared (%)	79	30	71
N	633	634	403

****, **, and * are used to denote 1%, 5% and 10% significance level, respectively. N stands for the number of observations. Standard errors in parenthesis.*

Another possibility is to use lagged explanatory variables as instruments for managerial ownership, as suggested and done by Hermalin and Weisbach (1991). Results of the 2SLS regressions of managerial ownership on labor earnings and return on equity, instrumented by the lagged right hand side variables, are shown in table 10. Before discussing the result in more detail, I would like to emphasize one serious weakness of this estimation. If the main sources of the endogeneity are the firm characteristics for which the model does not control for, and further if they are not constant over time, then the lagged variables will still suffer from the endogeneity issue. However, having in mind the given data set and for want of a better instrument, this is almost certainly the best one can do. The result of the 2SLS confirms the panel estimations that there is no significant relationship between managerial ownership with ROE or Tobin's Q. However, the effect on labor efficiency survives the endogeneity check and remains negative and significant at the 10% level. Moreover, the effect is even larger than in previous estimations. The squared managerial ownership is significant only at the 15% level of significance meaning that there is no non-linearity between the two variables.

6 CONCLUSION

The potential relationship between ownership structure and corporate performance has been one of the most important and most widely discussed questions in corporate governance, but explanations of this relationship have been often very different and indeed contradictory. This last part of the study summarizes the main results.

The presence of a large block holder decreases the value of Tobin's Q, while having no significant effects on ROE and labor efficiency. The explanation for this is that a powerful owner, in an environment where the small shareholders are not carefully protected by the authorities, will try to extract additional benefits from the firm at their expense of the small shareholders. This scares away small investors, decreasing the market capitalization of the firm and therefore the firm's Tobin's Q. Since the situation might be different if there is a second relatively large block holder that can monitor the first block holder and prevent some of the benefits being extracted, I separately examine this case.

The results of the regression show that if there is a second block holder in the company, it does not significantly influence the value of Tobin's Q, unless it is a family or an individual.
Families and individuals have large incentives to monitor and try to prevent the largest shareholder putting his interests before the interests of other shareholders since for them it is usually the main source of income (opposed to state ownership). Therefore, the regressions show a large, positive and statistically significant effect of the family-type second block holder on the value of Tobin's Q.

By accepting the finding of Gugler and Weigand (2003) that large owners affect performance exogenously while managerial ownership is endogenous, in estimating the effect of managerial ownership on performance, I first used cross-sectional and panel analysis, and then checked for endogeneity problems by using lagged control variables as instrumental variables. The regressions show a marginally significant negative effect of managerial ownership on labor efficiency. This result represents a weak confirmation of the "quiet-life hypothesis" stated by Bertrand and Mullainathan (2003). Once managers are entrenched enough, they prefer to avoid conflicts with labor unions, which they do by raising salaries and not cutting staff. As a result, labor efficiency decreases. The other two observed measures of performance proved to be unaffected by the fraction of equity held by manager.

Although different authors often confirmed the positive effect of foreign ownership on a firm's performance, the sample from Croatia does not support this view. In all the estimations conducted in this study, foreign ownership has either a negative or an insignificant effect on performance. This might be due to the relatively late entry of foreign capital in Croatia due to the war to which the country was exposed until 1995. Foreign investment became significantly higher only after 1998, and by that time most of the best firms had already been privatized by domestic investors.

It might be interesting to re-check the results using a longer data set that would allow for examination of the relationships between the first and second block holder while controlling for the type of both of them. However, only these data were available at the time this study was written, while the sample is too small and has too few changes in ownership to allow for such extensive controls, which must be reserved for some future research.

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