The Relationship between Corporate Performance and Ownership Structure: Evidence from Turkey

Hicabi Ersoy
Asst. Prof. Dr., Istanbul Commerce University, Department of Banking and Finance – Turkey, hersoy@ticaret.edu.tr

Ayben Koy
Research Asst., Istanbul Commerce University, Department of Banking and Finance – Turkey, akoy@ticaret.edu.tr

Abstract
This study investigates the effects of ownership structure on the performance of the listed companies in Borsa Istanbul Stock Exchange 30 Firms (BIST 30). The main hypothesis of our study is that there is a significant relationship between companies' performances and their ownership structures.

The statistical population includes 19 non-financial companies in the period of years between 2008 and 2013. The results show that, the concentration of the large shares of companies one or a few shareholders has a negative effect on related firm’s performance.

Keywords: ownership structure, corporate performance, Borsa Istanbul Stock Exchange 30 (BIST 30), panel data analysis.

New articles in this journal are licensed under a Creative Commons Attribution 3.0 United States License.
The Relationship between Corporate Performance and Ownership Structure: Evidence from Turkey

Hicabi Ersoy
Ayben Koy

I. Introduction

In finance literature, it is known that there are argues that there is a relationship between corporate performance and ownership structure of the firms, however institutional and economic influences differ from both nationwide and internationally. The major objective of this study is to provide an empirical evidence to respond to the argument that, ownership structures differ according to companies’ financial performances.

There are generally two basic types of ownership structure in Turkish economic environment, private and publicly ownership. When looking private sector, there is a tendency to foreign weighted ownership structure from domestic one in the last decade. In this study, we have taken into account the concentration of the shares in one hand or a group. In other words, the performance differences between sub samples such as private and public or domestic and foreign owner/s, and etc. weighted firms are not tested separately, because it is subject to another research in the literature.

The structure of the paper is as follows: After the Introduction, Section 2 is about to explain theoretical foundation and reviews the ownership structures and their significance in the corporate governance. Section 3 presents the research method, including hypotheses, research variables, model buildings, population and sample selection, data collection method, and statistical test. The findings of the study and hypotheses and discussion of the article is reported in section 4. Finally, 5th Section has concluding remarks of the study.

II. Literature Review

According to Craswell et al. (1997), the impact of the ownership structure on corporate performance occurs in at least three ways. First, there are studies which test for ex post performance effects. Demsetz and Lehn (1985) do not find evidence of a linear relationship between three measures of ownership concentration and measures of profitability.1 Morck et al. (1988) also point to Demsetz and Lehn’s failure to distinguish between the holdings of board members and those of other large stockholders.

Second, there are studies that relate ownership structure to actions or events which are believed to affect future corporate performance, typically evidenced by share price changes associated with the event in question. However, given the differing context in which these studies occur, it is difficult to generalize about the probable influence of ownership structure on corporate performance.

Third, there are the studies which examine the ex-ante impact of ownership structure as captured in firms’ market value. In contrast to Demsetz and Lehn’s focus on the ex post performance measures, Morck et al. (1988) examine the relationship between insiders’ stock ownership and firm performance (as measured by Tobin’s Q) for 371 large US firms. To capture possible non-linearities, Morck et al. use a piecewise regression and find that for every 1 percent increase in ownership in the range of 0 to 5 percent, Q raises significantly, for a similar increase in ownership between 5 to 25 percent, Q declines significantly and beyond 25 percent, Q begins to rise again although at a slower rate. They argue that the positive relationship, at relatively low levels of insider

---

1 These measures of concentration are the percentage of common stock held by the largest twenty stockholders and a similar measure restricted to the five largest stockholders, and a Herfindahl measure of ownership concentration. Additional control variables include dummy indicators for utilities and financial firms, along with capital, advertising and research and development expenditure and firm size. Profitability is measured by accounting profit after tax expressed as a percentage of book equity value.
holdings, reflects a convergence of managerial and stockholder interests.

In empirical studies on the relationship between the ownership and control structure and corporate performance, researchers encounter different econometric problems that, if not addressed, can result in erroneous inference on the relationship between the variables. Considering the multiple regression technique by researchers working on the subject, three sources of endogeneity must be highlighted that could derail the studies’ results: the omission of variables, the feedback effect, and the reverse causality (“simultaneous determination”) Börsch-Supan & Köke, (2002); Barros et al. (2010). As explained by Barros et al. (2010), the “assumption of exogeneity of regressors” in the regression model excludes the possibility of correlation between the explanatory variables and the random error term. If this assumption is invalid, the regressors are endogenous and should mitigate endogeneity; otherwise, the parameters will be biased.

According to Börsch-Supan & Köke, (2002), the omission of variables that are relevant to the estimated model occurs for two reasons: the non-availability of data on potentially important variables for corporate governance studies, and lack of knowledge about the type of that explains the relationship between the variables. Silveira (2010) noted that omissions of variables can result in a spurious correlation between variables of interest, also known as the fallacy of the common cause. The use of control variables and the procedures of Random and Fixed Effects, as in the studies by Claessens et al. (2002) and Fahlenbrach and Stulz (2009), are a way to combat the problem.

Claessens et al. (2002) analyzed the impact of the participation of the largest shareholder in the ownership and control on corporate market value. By employing regression with random effects on a sample of 1,301 companies from eight different countries in East Asia, the authors found evidence that ownership concentration and control concentration influenced Tobin’s Q positively and negatively, respectively. Thus, the conclusions from the study suggested that the incentive and entrenchment effects can be captured through proxies linked to cash flow and voting rights in organizations.

Lehman and Weigand (2000) found ownership concentration to affect profitability significantly negatively in panel regressions for 361 German corporations over the time period 1991 to 1996. Although they showed this effect depends intricately on stock market exposure, the location of control rights, and the time horizon.

Mishra et al. (2001) examined a sample of 120 Norwegian, founding family controlled and non-founding family controlled firms. They found a positive association between founding family control and firm value for alternative definitions of founding family control.

Faccio and Land (2002) analyzed the ultimate ownership and control of 5,232 corporations in 13 Western European countries. Typically firms are widely held (36.93%) or family controlled (44.29%). They found that financial and large firms are more likely widely held, while non-financial and small firms are more likely family controlled.

Kapopoulos and Lazaretou (2007) investigated whether there is strong evidence to support the notion that variations across firms in observed ownership structures result in systematic variations in observed firm performance. The paper tested this hypothesis by assessing the impact of the structure of ownership on corporate performance, measured by profitability, using data for 175 Greek listed firms. According to their study ownership structure is positively related to higher profitability of analyzed firms.

Cornett et al. (2008) investigated the relation between institutional investors’ involvement and operational performances of the large sized firms. Institutional ownership of shares, institutional investor representation on the board of directors, and the presence of independent outside directors on the board all reduce the use of discretionary accruals. They found that there was a significant relationship between operating cash
flow returns of the companies and the percentage of the institutional stock ownerships.

Fahrenbrach and Stulz (2009) investigated the possible determinants of insider ownership and its impact on the market value of 4,900 companies in the United States for the period from 1988 to 2003. The authors applied probit models and linear regression, both with fixed effects. The results indicated that good stock performance generally decreases managerial ownership, and an increase in shares held by managers tends to increase Tobin’s Q. However a large reduction in managerial ownership did not result in a decline in firm market value.

Gurbuz et al (2010) investigated the impact of corporate governance on financial performance in Turkey, taking the issue of institutional ownership into account. The paper employs panel data analysis on a sample of 164 firm-year observations for real sector firms on the Istanbul Stock Exchange (ISE) covering the 4 year time span between 2005-2008. The results of the analyses demonstrate the positive influence of corporate governance and institutional ownership on financial performance. Additionally, the impact of institutional investors is found to be more strongly pronounced on firms listed on the corporate governance index.

Azofra and Santamaria (2011) investigated the relationship between ownership structure and the corporate performance of 80 Spanish banks between 1996 and 2004. The results of the study’s regression models, estimated by the GMM (Generalized Method of Movements)\(^2\), indicated that the greater the separation between the largest shareholder’s cash flow and voting rights, the smaller the company’s return on assets, and there is no difference between ownership and control, the relationship between the controlling shareholder’s shareholding and the bank’s profitability is not monotonic.

Drakos and Bekiris (2010) studied the impact of ownership structure on the market value of 146 companies listed on the Athens Stock Exchange from 2000 to 2004. Regression estimated by Two Stage Least Squares (2SLS) and Three Stage Least Square (3SLS) were used. The authors found that inside directors’ shareholdings (member of the executive board) and the accumulation of shares by investors who owned more than 1% of the shares and who did not participate in senior management positively influenced Tobin’s Q.

García-Meca and Sanchez-Ballesta (2011) applied piecewise OLS (Ordinary Least Squares) regressions and 2SLS regressions with random effects in a non-balanced panel composed of 76 Spanish companies for the period from 1999 to 2002. The results generally pointed to the existence of a quadratic relationship between large shareholders’ shareholding (who owned more than 5% of the shares) and Tobin’s Q. An increase in ownership concentration increased the corporate market value up to 60% accumulation of the shares, and the market value decreased after that point.

Luo et al (2013) used data from Chinese family listed companies from 2004 to 2007. The study showed inverse U-shaped relationships between contest for control and corporate market value, as measured by Tobin’s Q, and between the number of large shareholders and corporate market value. Findings indicated that at low to medium levels of contest for control or number of large shareholders, formal institutions can strengthen.

Jusoh (2014) investigated the effect of audit quality on company performance. Panel data of 730 Malaysian public listed companies were examined. The results showed that managerial ownership had negative and significant relationship with ROA and Tobin’s Q. In contrast, institutional ownership showed positive and significant relationship with ROA and Tobin’s Q.

\(^2\)GMM, has performed by Gugler et al. (2008) and Azofra and Santamaria (2011), is a source of endogeneity in corporate finance studies (Wintoki, Linck, & Netter, 2012) is a way of mitigating feedback effect of feedback loop of the response variable to the regressors. This effect emerges when the past values of the dependent variables influence the contemporary and/or future values (Barros, Castro Júnior, Silveira, & Bergman, 2010).
III. Methodology and Data

The objective of this research is to identify financial effects of the various ownership structures on the performances of the BIST 30 companies, which are the biggest open to public companies according to firm size by their volume in Turkish stock market. Therefore, in this study we investigate the role of the different ownership concentration structures on the performances of the companies.

Research Hypotheses:

The Main Hypothesis is “there is a significant relationship between ownership structure and the performances of the BIST 30 companies”.

So “There is a significant relationship between the size of the largest share of the firm equity and the firm performance”

Research Variables:

We examine the effects of ownership structure on firm value among listed Turkish non-financial BIST 30 companies. Data used for this analysis come from two sources. First, the ownership structures were taken from annual reports of related firms. The other sources of data are based on the financial ratios of firms announced to public.

The dependent variable of this study is "the value of the firm" which is represented by the performances of the companies. The performance was measured by Tobin’s Q = (Market Value / Book Value).

In order to assess the relationship between corporate performance and ownership structure, as a measure of performance, Craswell at al. (1997) indicated that US researchers have utilized Tobin’s Q (=Market Value / Book Value).

The multivariate regression method consists of different forms and their difference is related to selecting the predicting variables. For determining the regression equation in this article, the following formula was extracted:

\[ Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + ... + \beta_n X_n \]

\( Y \): company’s performance
\( \alpha \): Constant
\( X_1, X_2, ..., X_n \): independent variables

\( \beta_1, \beta_2, ..., \beta_n \): coefficient of the achieved regressions for each variables.

The statistical data could be managed via three ways: cross sectional, time series and panel data approach. With the panel data method researchers can do cross sectional observations within different time periods. In this study, the panel method (Brooks, 2008) was exerted. By employing panel data, a group of data which cover a great number of cross sectional variables (N) that is obtained during a time period (T) is collected. The number of observations (N×T) could be estimated by different models. Efficient estimations could be determined by exerting the panel data model.

If the immeasurable variables are controlled by exerting Ordinary Least Squares (OLS) or Generalized Least Squares (GLS), then the variables have efficient estimations. One way for controlling is expending the fixed effects model. In the fixed effects model, the unobserved effects will enter into the fixed statement of the regression model.

With different tests such as Hausman or the Breusch-Pagan Lagrange Multiplier (LM) test, one could select suitable estimates. After selecting a suitable model, the continuity of the time series and the reliability of the regression should be followed.

The population of this study includes non-financial Turkish BIST 30 firms from 2008 to 2013 (6 years) period. Turkish BIST 30 market is the one of the world’s best performing stock exchanges and has been categorized as an emerging market.

Reliability of the continuity of the explanatory variables as well as control variables were studied. It is observed that studied variables’ mean and variances during the time period and the covariance of the variables were stable. As a result of exerting these variables in this model, we did not have a spurious regression.

We use both time series and cross sectional elements. Panel data (or longitudinal data) keeps the same individuals (firms) entities.
\[ Y_i = \alpha + \beta X_i + u_i \]

\[ Y_i = \text{Dependent variable.} \]
\[ \alpha = \text{Intercept term.} \]
\[ \beta = \text{k x 1 vector of parameters to be estimated on the explanatory variables.} \]
\[ X_i = \text{1xk vector of observations on the explanatory variables.} \]
\[ t = 1, \ldots, T \text{ (term)} \]
\[ i = 1, \ldots, N \text{ (firm)} \]

The applicability of this technique is limited. It can be employed only when the number of time series observations, \(T\), per cross sectional unit, \(i\), is at least as large as the total number of such unit, \(N\).

The simplest types of fixed effects models allow the intercept in the regression model to differ cross-sectionally but not over time.

\[ Y_i = \alpha + \beta X_i + \mu_i + \nu_i \]

\[ u_i = \mu_i + \nu_i \]

We can think of \(\mu_i\) as encapsulating all of the variables that affect \(Y_i\), cross-sectionally but do not vary over time—e.g., the sector that a firm operates in, a person’s gender, or the country where a bank had its headquarters, and etc. This model could be estimated using dummy variables, which would be termed the least squares dummy variable (LSDV) approach (Brooks, 2008).

The fixed effects approach is a sensible one, given the data analyzed here, since there is an unusually large number of years compared with the number of firms (19), resulting in a total of (114 = 19 firm x 6 years) firm years observation.

The data employed in the study are obtained from firms’ annual reports and BIST 30 Index statistics.

The analysis is conducted for the whole sample period of 2006-2013.

The model equation can be defined as:

\[ \text{Perf}_{it} = \alpha_0 + \alpha_1 \text{OwnStr}_{it} + \beta_1 \text{EBITSl}_{it} + \beta_2 \text{EBITCpt}_{it} + \beta_3 \text{LiqR}_{it} + \beta_4 \text{DbtR}_{it} + \beta_5 \text{EqtTotAssts}_{it} + \beta_6 \text{EBITTotAssts}_{it} + \beta_7 \text{EBITEq}_{it} + \gamma \text{GROWTH}_{it} + \mu_i + \nu_{it} \]

Where \(\text{Perf}_{it}\): corporate performance = Tobin’s Q = Market Value / Book Value,
\[ \alpha: \text{intercept term,} \]
\[ \beta: \text{k x 1 vector of observations on the explanatory variables,} \]
\[ t = 1, \ldots, T; i = 1, \ldots, N. \]

In order to control the effects of extraneous variables on the performance of the companies, seven control variables were also selected as follows:

1. \(\text{EBITSl}_{it}\): EBIT/Sales Ratio (EBITTOSALES)
2. \(\text{EBITCpt}_{it}\): EBIT/Capital (EBITTOCAPITAL)
3. \(\text{LiqR}_{it}\): Liquidity Ratio,
4. \(\text{DbtR}_{it}\): Total Debts/Total Assets,
5. \(\text{EqtTotAssts}_{it}\): Equity/Total Assets,
6. \(\text{EBITTotAssts}_{it}\): EBIT/Total Assets.
7. \(\text{EBITEq}_{it}\): EBIT/Equity,
8. \(\text{OWNER}_{it}\): the largest share of the firm equity

\[ \mu_i = \text{firm specific fixed effect,} \]
\[ \nu_{it} = \text{idiosyncratic disturbance term.} \]

As mentioned above, this research’s independent variable and ownership structure were considered as follows: The size of the largest share of the firm equity. The owner of the largest share may be publicly (or governmental) shareholdings, foreign investors, family shareholdings or domestic private shareholdings.

In this research, the followings were studied by the regression equation: Auto-correlation, the amounts of determining coefficient, and the significance of the model and its coefficient.

For determining whether a regression model error statements were self-correlated or not, the Durbin-Watson test was employed. In Durbin-Watson test the model hypotheses are:

\[ H_0: \rho = 0 \]
\[ H_1: \rho \neq 0 \]

In this model, when \(\rho\) is positive, self correlation is positive and when \(\rho\) is negative, self correlation is negative and if \(\rho=0\), there’s no self correlation.
Determining coefficient is a criteria which explain the strength of the relationship between the dependent and independent variables. The amount of this coefficient, in fact, determines what percentages of changes of the dependent variables are explained by the independent variables.

The significance of the regression equation was determined by F-statistic and related hypothesis were as follows (Pindycky&Rubinfield, 2001):

\[ H_0 : \beta_1 = \beta_2 = \ldots = \beta_k = 0 \]

\[ H_1 : \beta_j \neq 0 : i = 1, 2, \ldots, k \]

If \( H_0 \) is rejected (with 95 percent probability), the regression equation is significant. After implementing the regression significance test, the regressions of each of the coefficients should have been tested. The test hypotheses are presented below:

\[ H_0 : \beta_i = 0 \] means the population coefficient is zero,

\[ H_1 : \beta_i \neq 0 \] means the population coefficient is not zero.

For testing these hypotheses, t test was employed. In this test (with 95 percent probability) if we couldn’t reject \( H_0 \), it means that the considered coefficient isn’t significant and its rejection means the opposite.

IV. Empirical Results

The descriptive statistics of the variables and the results of the normality test are given in Table 1. The normality for five variables showed significant at 1 percent (P<0.01), two variables showed significant at 5 percent (P<0.05), and LiqR showed significant at 10 percent (P<0.01).

Different models are developed from the variables except EqtTotAssts. The F-statistic for one model is statistically significant at 5 % level. Table 2 reports that ownership coefficient on Tobin’s Q is negative and significant at 5 percent level (P<0.05). 1 percent increase in the size of the largest share of the firm equity will decrease 0.044871 in Tobin’s Q.
The study result shows that, when the large shares of the companies are held by one individual or a few persons or a group, the firm performances are affected negatively. The result appropriates the agency theory. The existence of large shareholders and concentrated ownership influence the level of agency cost and companies performance (Jensen and Meckling 1976).

Except from the variables OWNER, EBITSi5 and EBITCpt, the others tested EBIT/Capital, LiqR, DbtR, EqtTotAssts, EBITTotAssts, EBIT/Total Assets, EBITEqt are not found significantly in this study. So Table 2 below shows the results of the significance level of the explanatory variables OWNER, EBITSi5 and EBITCpt.

Then we rewrite the model as:

\[
\text{TOBINSQ} = -0.04487145591 \times \text{OWNER} - 5.787288895 \times \text{EBITTOSALES} + 17.21702618 \times \text{EBITOCAPITAL} + 2.901417306 \times \text{C} + [\text{CX=F, PER=F}]
\]

### Table 2. Results of Panel Least Squares

<table>
<thead>
<tr>
<th>Dependent Variable: TOBINSQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method: Panel Least Squares</td>
</tr>
<tr>
<td>Date: 02/04/15 Time: 13:36</td>
</tr>
<tr>
<td>Sample: 2008 2014</td>
</tr>
<tr>
<td>Cross-sections included: 17</td>
</tr>
<tr>
<td>Total panel (unbalanced) observations: 114</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OWNER</td>
<td>-0.044871</td>
<td>0.019282</td>
<td>-2.327154</td>
<td>0.0223**</td>
</tr>
<tr>
<td>EBITTOSALES</td>
<td>-5.787289</td>
<td>2.147322</td>
<td>-2.695120</td>
<td>0.0084*</td>
</tr>
<tr>
<td>EBITOCAPITAL</td>
<td>17.21703</td>
<td>1.919293</td>
<td>8.970503</td>
<td>0.0000*</td>
</tr>
<tr>
<td>C</td>
<td>2.901417</td>
<td>1.130206</td>
<td>2.567158</td>
<td>0.0119**</td>
</tr>
</tbody>
</table>

**Effects Specification**

Cross-section fixed (dummy variables)

Period fixed (dummy variables)

<table>
<thead>
<tr>
<th>R-squared</th>
<th>0.848528</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted R-squared</td>
<td>0.805496</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>1.468203</td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>189.6945</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-190.7843</td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td>1.962473</td>
</tr>
</tbody>
</table>

Notes: * significant at 1 percent (P<0.01), ** significant at 5 percent (P<0.05)

V. Conclusion

This study demonstrated that large shareholders and concentrated ownership of the firms would actually lead to different financial performances. The statistical population in this study includes 19 non-financial companies in the period of years between 2008 and 2013 in BIST 30 stock exchange, which are the biggest open to public companies according to firm size by their volume in Turkish stock market. According to test results, there is a significant relationship between Turkish BIST 30 non-financial companies’ ownerships structure and their performances.

REFERENCES


Web Sources:

http://www.arcelikas.com/sayfa/152/Yillik_Faaliyet_Raporlari


http://www.erdemir.com.tr/yatirimcilar/detay.aspx?SectionID=WSVn2mSQRHuysosZHueC6A%3D%3D&ContentId=H0eOXoTBgWZ5MhKyrJc%2B0w%3D%3D

The Relationship between Corporate Performance and Ownership Structure: Evidence from Turkey