

**Equity Ownership Structure,
Risk-Taking and Performance:
An Empirical Investigation in Turkish Companies**

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Abstract

The paper describes the main characteristics of ownership structure of the Turkish nonfinancial firms listed on the Istanbul Stock Exchange (ISE) and examines the impact of ownership structure on performance and risk-taking behavior of Turkish firms. Turkish corporations can be characterized as highly concentrated, family owned firms attached to a group of companies generally owned by the same family or a group of families. Ownership structure is defined along two attributes: concentration and identity of the owner(s). We conclude that there is a significant impact of ownership structure -ownership concentration and ownership mix- on both performance and risk-taking behavior of Turkish firms. Higher concentration leads to better market performance. Family owned firms seem to have lower performance with lower risk. While firms with foreign ownership display better performance, government owned firms have lower accounting, but higher market performance with high risk.

Keywords: Ownership Structure, Corporate Governance, Performance, Risk

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I. Introduction

The relationship between equity ownership structure and firm performance has become a key issue in understanding the effectiveness of alternative corporate governance mechanisms. In the light of massive privatization efforts in former Eastern block countries as well as experiences of developed economies of USA, Japan and Western Europe, researchers face vast amount of data to test various corporate governance issues brought out by the theory. In this paper, the impact of concentration of ownership and ownership mix, if any, on the performance and risk taking behavior of Turkish non-financial companies listed on Istanbul Stock Exchange is examined. With public offerings of equity through IPOs, direct foreign investment and a large public sector in the economy, the Turkish market offers a very rich combination of corporate governance schemes to be compared. Moreover, privatization of publicly owned companies is still being debated on the basis of the impact of ownership mix on performance. A related issue surfaces with respect to the method of privatization. The merits of public offering of equity which leads to a more diffuse ownership versus private placement through block sales that results in a concentrated ownership is another controversy to be resolved. Hence, we address ownership structure and ownership mix issues in the Turkish market in order to shed some light on this debate.

The literature on corporate governance provides us with several testable hypotheses as well as empirical evidence from different countries. The theoretical debate focuses on agency relationship. Separation of ownership and management gives rise to a conflict of interest

between owners and managers as their agents. Jensen and Meckling (1976) explore the costs of agency relationship on the corporation. They claim that there exist governance mechanisms by which this conflict can be resolved to a certain extent. This assertion indicates that, governance scheme is likely to affect a firm's performance. Fama (1980) argues that a well functioning managerial labor market will impose the necessary discipline on managers. Likewise, markets for corporate control, if they function properly, are expected to serve as an incentive for managers to act in the best interest of owners (e.g. Jensen and Ruback, 1983; Martin and McConnell, 1991). Grossman and Hart (1982), on the other hand, point out that if ownership is widely dispersed, no individual shareholder will have the incentive to monitor managers since each will regard the potential benefit from a takeover to be too small to justify the cost of monitoring. Shliefer and Vishny (1986) points out the benefits of ownership concentration in enhancing the functioning of takeover market.

Large equity ownership may impose potential costs on the company too. Lack of diversification on the part of a large shareholder will expose him to unnecessarily high risks. As he controls the strategic decisions of the firm, he may pass up some profitable projects on the basis of total risk, rather than merely evaluating the projects in terms of their systematic risk. Large equity ownership may have some direct costs on other stakeholders in the firm, most notably, the minority shareholders and employees. Large shareholders can divert funds for their own personal benefits in the form of special (hidden) dividends and preferential deals with their other businesses. On the other hand, Shliefer and Vishny (1986) argue that large shareholders have the capability of monitoring and controlling the managerial activities. Thereby, they are liable to contribute to corporate performance. The overall impact of large shareholders seems to be ambiguous. Actually, there are both theoretical and empirical studies suggesting a quadratic shaped relationship between level of ownership and firm

performance (e.g. Stulz, 1988; McDonnel and Servaes, 1990). At lower levels of ownership concentration, companies benefit from resolution of the agency problem, however, as the share of large owner increases potential costs take over, surpassing the benefits.

Whether the ownership structure is related to performance and risk-taking behavior of Turkish nonfinancial companies is tested in this paper. Ownership structure is defined along two dimensions: ownership concentration and ownership mix. The former refers to the percentage of shares owned by majority shareholder(s) while the latter is related to the identity of the major shareholder. For empirical testing, after controlling for size and leverage, we attempt to uncover the impact of both ownership concentration and ownership mix on corporate performance and risk-taking behavior.

We find out significant effect of ownership structure on both corporate performance and risk taking behavior. Specifically, as the concentration in ownership increases, we experience lower accounting-based performance, and higher market performance. This is consistent with the findings reported in other emerging markets such as China (Xu and Wang, 1997) and Czech Republic (Claessens, 1997). When the effects of ownership mix variables are considered, we observe the dominant effect of family ownership, foreign ownership, and government ownership in the Turkish market. While firms with foreign ownership display better performance, government-owned firms tend to have lower accounting, but higher market performance with higher risk. On the other hand, family-owned firms seem to have lower market performance with lower risk.

The organization of the paper is as follows. In Section 2, we provide some insights into the corporate governance schemes in Turkey and describe our sample of companies in terms of their ownership characteristics. Ownership structure and performance relationship is

addressed in Section 3, and risk-taking behavior is elaborated in Section 4. Section 5 concludes the paper.

II. Ownership Structure in Turkish Corporations:

In terms of ownership structure, Turkish corporations can be characterized as highly concentrated, family owned firms attached to a group of companies generally owned by the same family or a group of families. The group usually includes a bank, which does not have significant equity ownership in member firms. Very large groups are well-diversified conglomerates sometimes with pyramidal structures. Others are usually vertically integrated companies in the same line of business. Although professional managers run these companies, family members are highly actively involved in strategic as well as daily decisions. Joint ventures with foreign firms are not uncommon. Some of the very largest companies are government owned monopolies.

Our sample consists of non-financial corporations listed on Istanbul Stock Exchange (ISE) between 1992 and 1998. Most (73%) of these companies are ranked among the largest 500 manufacturing companies compiled by Istanbul Chamber of Industry. Transportation and service corporations in our sample are clearly comparable in size with the largest 500. Hence, it will not be wrong to label our sample as largest companies in Turkey with public ownership

We define ownership structure along two dimensions: ownership concentration and ownership mix. Ownership concentration refers to the distribution of the shares owned by a certain number of individuals, institutions, or families. Ownership mix, on the other hand, is related to the presence of certain institutions or groups such as government or foreign partners among the shareholders. These two categories of measures incorporate both the influence power of shareholders as well as identity of owners with their unique incentive mechanisms

and preferences. Table 1 reports the summary statistics on various features of ownership concentration for our sample of companies. The average percentage of total shares held by outside dispersed shareholders whose shares are less than 1% (*OTHER*) is 32%. On the other hand, average percentage share of the largest shareholder (*LSH1*) is 43% and the mean value of the cumulative percentage of shares held by the largest three shareholders (*LSH3*) is 62%. Most of the Turkish firms have a complex network of ownership. By using this pyramidal ownership structure, we calculate cash flow rights (*CASH*) of the ultimate controlling owner by considering both direct ownership and indirect ownership via the shares of the parent company. In order to explain the pyramidal and complex network of ownership structures, consider the case of *Koç Holding*, a holding company, and *Arçelik*, a manufacturer of consumer durables, owned by Koç family. The controlling family owns and controls the majority stake of 65.52% of *Koç Holding*, and 10.55% of the shares of *Arçelik*, which is also an affiliate of *Koç Holding*. Given that *Koç Holding Co.* holds 38.25% of shares in *Arçelik*, cash flow rights of the controlling family in that company is 35.61% $[(0.6552 \times 0.3825) + 0.1055]$. In our sample, the mean value of cash flow rights of the controlling ultimate owner (*CASH*) is 61%. These figures provide sufficient evidence that most of the Turkish firms have concentrated ownership and only a small percentage of shares are held by dispersed and unorganized investors.

INSERT TABLE 1 HERE

In addition to ownership concentration characteristics, we also examine the identity of owners with ownership mix variables. Summary statistics are presented in Table 2. In many cases, largest shareholders of a company are members of the same family or other companies in the group. We have identified 30% of companies in our sample as a member firm in one of the distinct conglomerates. Obviously, there have to be some advantages of the conglomerate

form of ownership. It is obvious that conglomerates enable their owners to diversify when there are no other possible diversification alternatives in the underdeveloped capital markets. Besides, member firms in a conglomerate pool their funds for efficient allocation within the group. To the extent that the financial system lacks operational efficiency due to high transaction costs and taxes, local optimization of resource allocation within a group would make sense.

INSERT TABLE 2 HERE

On the average, 44% of the firms belong to a family or a group of families that diverge from a conglomerate with more family involvement in the corporate governance system, and less institutionalization. 74% of our sample either belongs to a conglomerate or controlled by a family, verifying the intense involvement of families in the Turkish corporate governance system. We also consider cross ownership in our sample. On the average, 28% of the Turkish firms have complex cross ownership relations, although this value has declined in more recent years.

Foreign investments in Turkish companies take the form of a portfolio investment or direct investment. Since portfolio investors own a very small percentage of shares, they do not have much interest in the control of the company. We concentrate on direct investments where the foreign partner has a certain role in the firm's governance structure. Hence, foreign ownership is defined on the basis of shares held above 10% of equity, with an average value of 17% for our sample.

Government controlled firms constitute 6.2% of our sample in 1998, a decline from 10.5% in 1992. Government is the ultimate controlling owner in these firms. Historically, firms owned and controlled by the government have been under the influence of politicians. Since economic realities may not coincide with political expectations and interests,

government ownership has its unique identity characteristics. Megginson et al. (1994) support this argument with their conclusion that government-owned firms are less efficient than privately owned firms. Conditional on the success of the privatization program, we expect further declines in the share of government ownership in the near future.

We use ISE's electronic database and ISE yearbooks for 1992 - 1998 to obtain the data on ownership structure. Because of the increase in the number of firms listed on Istanbul Stock Exchange, the number of firms included in the sample increases each year. The number of firms in the sample is 106 in 1992, and it goes up to 194 in 1998. Banks, leasing companies, investment companies, holding companies, and insurance firms are excluded from the sample.¹

III. Ownership Structure and Performance:

A. Ownership Concentration and Performance

We first investigate the impact of ownership concentration on firm performance. Basically, two groups of variables are employed to measure performance: accounting and market based. Accounting-based variables of performance measure are return on equity (*ROE*) and return on total assets (*ROA*). Price to earnings ratio (*P/E*) and stock returns (*RET*) are the market-based variables of performance.

Ownership concentration (*CON*) is defined with three related measures: (1) cumulative percentage shares of the largest three shareholders (*LSH3*), (2) percentage ownership of outside stockholders, who are anonymous, diffuse and relatively less powerful

¹ Investment companies are closed-end mutual funds that invest in a portfolio of securities. Holding companies invest only in member firms of a conglomerate.

in the one-share-one-vote system and those with shares less than 1% (*OTHER*), and (3) cash flow rights of the ultimate controlling owner(s) (*CASH*).

To test the hypothesis that ownership concentration influences a firm's performance, we regress an ownership variable on a performance variable in the presence of the control variables within a multiple OLS regression model:

$$PER_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 CON_i + \varepsilon_i \quad (1)$$

Where; *PER* is one of the performance variables of *ROA*, *ROE*, *RET*, or *P/E*; *SIZE* and *LEV* are the two control variables to denote firm size, measured as the natural log of total assets, and leverage, measured as the ratio of debt to total assets, respectively. Ownership concentration variables, *CON*, are *LSH3*, *OTHER* and *CASH*. In the above model, β_i 's are the parameters and ε_i is the error term. The model is estimated for each relevant combination of the explanatory and dependent variables. Since our sample consists of time series – cross sectional pooled data, we corrected OLS estimations by GMM methodology. Problems that are likely to be encountered in pooled data are generally resolved by applying Generalized Method of Moments (GMM). GMM utilizes Newey and West (1987) methodology in correcting both heteroskedasticity and autocorrelation.

According to the results presented in Table 3, we can assert that ownership concentration is related to both accounting and market based measures of performance, albeit in opposite directions. While higher concentration in ownership is found to be positively related with *P/E*, accounting measures *ROA* and *ROE* decline as ownership concentration increases. In models with accounting measures of performance, we consistently observe significantly negative coefficient for *LSH3* and positive coefficient for *OTHER*. R-square values are satisfactory and all F-test values are significant at the 0.01 level. This shows that

increase in the concentration of ownership leads to a decline in the accounting profitability level of the Turkish firms.

INSERT TABLE 3 HERE

We extend the analysis by including stock returns as a market performance indicator. Stock returns are mainly determined by the market on the basis of the investors' assessments and they are good indicators of a firm's performance perceived by the market. We employ average monthly stock returns in 24 months around the year in which measurement on variables of interest are taken. For example, average returns over 1997-1998 are used with ownership and control variables at the end of 1997. The stock return model is investigated by running multivariate OLS regression model (1) with the inclusion of market risk as an additional control variable² and the results are reported in Table 3. All control variables have expected signs. While leverage is positively related to stock returns, we observe an inverse relationship between size and 24 month stock returns. These findings are consistent with the literature. As measures of ownership concentration, both *OTHER* and *CASH* are significant in the *RET* model, while we have significant coefficients for *LSH3* and *OTHER* in the *P/E* model. As *OTHER* has negative signs in both of the models, *LSH3* and *CASH* have positive signs. These results consistently indicate that market performance increases with an increase in the concentration of ownership.

It is worth noting that the signs for the coefficients for control variables *SIZE* and *LEV* vary depending on the performance measure employed. In models with accounting performance models, *SIZE* is positively related with both *ROA* and *ROE*, whereas *LEV* carries negative coefficients. We attribute this apparent anomaly to the detrimental effects of high inflation on financial statements in this time period.

²This variable is measured by the regression coefficient in a time series regression of monthly stock returns on the return on Istanbul Stock Exchange Index.

B. Ownership Mix and Performance

We also investigate the impact of ownership mix on firm performance. In particular, we are interested to see if foreign ownership (*FRGN*), government ownership (*GOV*), cross ownership (*CROSS*), family ownership (*FAM*) and affiliation to a conglomerate (*CONG*) have any impact on performance. In the literature, there is evidence on the role played by institutional investors in monitoring corporate decisions, thereby affecting performance. For example, Smith (1996) finds institutional investors in the US, with or without seats on the board, monitor companies so as to improve their performance. Similarly, Gorton and Schmid (1996) provide evidence on stronger operating results by German corporations owned by banks.

Two types of institutional investors with a potential for monitoring stand out in large Turkish corporations. They are the foreign investors and the government. Foreign ownership is usually the result of direct investment in a joint venture. Portfolio investments by foreign investors are hard to keep track of unless their share exceeds 5%. Even then, foreign shareholders do not get involved in monitoring corporate decisions. On the government side, 7.6% of our sample is owned by the government. Almost all of those government-owned firms are subject to privatization program. Those with less than 50% government ownership have already been privatized. Others have offered shares to the public, but the government still controls the management. However, they, too, are targeted for further privatization by either public offering or private placement of their shares.

To test the impact of ownership mix on performance, we regress performance variables defined earlier on ownership mix dummies one at a time. We control for size and leverage as before. The following model is estimated:

$$PER_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 MIX_i + \varepsilon_i \quad (2)$$

Where; MIX_i is a dummy variable that takes a value of 1 for a particular type of ownership, 0 otherwise. Ownership types are foreign ownership (*FRGN*), government ownership (*GOV*), cross ownership (*CROSS*), family ownership (*FAM*), and conglomerate affiliation (*CONG*). Other terms in (2) are the same as before. Hence, we run the above model for each relevant combination of ownership mix and performance variables. In models with stock returns as a performance measure we include market risk (*BETA*) as an additional control variable as before.

The results for the accounting-based performance measures are presented in Table 4. Only two dummies designating foreign and government ownership turn out to be significant. The coefficient for foreign ownership is positive while government ownership has a negative sign. Control variables are significant with a positive coefficient for *SIZE* and negative coefficient for *LEV*, findings consistent with the concentration models.

INSERT TABLE 4 HERE

The results of the regression analyses that examine relationship between ownership mix and market-based performance are documented in Table 5. In models with *P/E* ratio and stock returns, signs of all coefficients are reversed. In particular, family owned firms have lower *P/E* ratios and returns whereas firms owned by the government command higher *P/E* values with higher returns. Apparently, the market considers factors other than accounting profits in evaluating companies. For family- owned companies, we suspect that it is the agency problem between majority shareholder(s) and minority shareholders. Government owned companies in our sample are in the privatization program. Expectations of the market with respect to the timing and method of privatization may play a role in the valuation of those companies.

Among the other dummy variables in *P/E* and stock return models, affiliation to a conglomerate (*CONGL*) and cross ownership (*CROSS*) have positive signs, however only coefficients in the *P/E* model are significant. Benefits to conglomerate affiliation deserves some further discussion. It has been conjectured that conglomerate form brings certain advantages in procuring debt financing to group companies especially when the group includes a bank. Yülek (1997) finds that in his sample of Turkish firms, debt to asset ratio of companies belonging to a conglomerate that own a bank is 53% versus 48% for the rest of the firms.³ In our sample debt to asset ratios of conglomerate affiliated and non-affiliated firms are 53.82% and 55.27% respectively, the difference lacking statistical significance. Apparently, conglomerate affiliation does not lead to higher leverage. Banking legislation limits the amount of loans to a specific company to a fraction of bank's equity. In addition, banks are further constrained in the amount of loans to their equity participations. Fierce competition between banks to attract financially sound, relatively larger companies, such as those listed in ISE, has eliminated advantages that conglomerates owning a bank used to enjoy. In short, lack of significant difference in leverage between conglomerate affiliates and others is hardly surprising. Yet, there has to be some advantage in conglomerate form of ownership. As mentioned above, these are diversification benefits, and efficient allocation of resources within the group in an otherwise operationally inefficient market with high taxes and transaction costs. In our opinion, higher valuation as depicted by larger average *P/E* values for conglomerate affiliates is an indication of the market's perception of such advantages.

INSERT TABLE 5 HERE

³ Yulek (1997) does not report any statistical test for the significance of the difference.

IV. Ownership Structure and Risk

Owners and managers generally have differing risk preferences. Agency theory predicts that managers, who have invested their non-diversifiable human capital in the firm, are going to pass up risky projects that are desirable from the perspective of a diversified stockholder. To the extent that they can diversify, owners tend to take relatively higher risks than managers. For example, Saunders et al. (1990) show that owner-controlled banks exhibit higher risk-taking behavior than manager-controlled banks. On the other hand, viewing the common stock of a firm as a call option, stockholders have the incentive to take higher risks at the expense of creditors if the latter cannot monitor shareholders. Downs et al. (1999) examine the managerial ownership and risk taking relation and conclude that there is a significant positive relation between managerial ownership and risk. By giving managers an ownership stake, risk preferences of managers can be altered in order to align the conflicting interests of managers and owners.

A. Ownership Concentration and Risk

We investigate whether ownership concentration is related to risk taking behavior of our sample companies. We employ capital market measurements such as total risk and market risk of equity for risk-taking behavior. Hence, for ownership concentration, we use the same right hand side variables as in models (1) and (2) with the performance measures replaced by the risk variables as the dependent variable of the model.

$$RISK_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 CON_i + \varepsilon_i \quad (3)$$

We estimate model (3) with standard deviation of monthly returns (*STDEV*) and market model beta (*BETA*) as dependent variables and the same set of explanatory variables. To calculate *STDEV* and *BETA*, we employ monthly returns over the three-year period prior

to the time period in which other measurements are taken. Findings, summarized in Table 6 indicate that risk models with *BETA* and *STDEV* as the capital market risk measures are significantly related to ownership concentration measures. Models with *BETA* have lower explanatory power with low R-square values. While *LSH3* lacks significance, percentage of shares held by diffuse shareholders (*OTHER*) carries a positive sign. This is in sharp contrast with the models where *STDEV* is the dependent variable. Here, shares owned by largest three shareholders, *LSH3*, is positively related to risk whereas coefficient for *OTHER* is negative. Hence we observe that firms with concentrated ownership have higher total risk and lower market risk than companies with diffuse ownership. If we bear in mind that firms with diffuse ownership are usually run by professional managers with little or no interest in the firm, low market risk can be explained in terms of risk averse managers who cannot diversify their human capital. Moreover presence of large shareholders is expected to increase the incentive to take higher risk by those shareholders at the expense of creditors. Significant positive coefficient for ownership concentration (*LSH3*) is consistent with this argument as well. It is also interesting to note that both control variables *SIZE* and leverage (*LEV*) have expected signs in the *STDEV* models. Larger firms have less total risk and higher leverage. *BETA* models, however, have counterintuitive signs, especially for leverage.

INSERT TABLE 6 HERE

B. Ownership Mix and Risk

Finally, we consider the role of ownership mix as it relates to risk taking. It is hypothesized that different ownership groups with their unique incentive mechanisms and preferences, should have different risk attitudes. We modify model (3) to incorporate ownership mix variables instead of concentration variables:

$$RISK_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 MIX_i + \varepsilon_i \quad (4)$$

As before, *RISK* in the above model is either standard deviation (*STDEV*) of three-year monthly returns of the common stock of firm *i*, or beta coefficient (*BETA*) of the stock estimated by the market model, considering three-year monthly stock returns. Explanatory variables are the same as before.

We estimate model (4) that incorporates ownership mix dummies one at a time in order to reveal the impact of ownership mix dummies on risk-taking behavior of Turkish firms. Results are presented in Table 7. As with previous models involving ownership mix, all dummy variables but conglomerate affiliation (*CONG*) and cross ownership (*CROSS*), have significant coefficients in the capital market risk model.

INSERT TABLE 7 HERE

Significant negative sign of the family ownership (*FAM*) indicates that family-owned firms have relatively less risk. Firms owned by a single family are managed by either a family member or a manager who has close ties with the family. This causes an alignment with the risk preferences of managers and owners, leading a decrease in firm's market risk. Thus, both risk measures of *BETA* and *STDEV* are negatively related to family ownership. These findings are consistent with the performance relationships.

Government-owned or controlled firms are perceived as risky ones in the market and government ownership (*GOV*) is positively related to both definitions of risk, *BETA* and *STDEV*. Hence, the profile of firms with government held shares can be described as large enterprises with high risk and high *P/E* ratio. Drawbacks of government ownership as a corporate governance mechanism are well known in the literature. Yet, high risk despite their large size deserves further explanation. In our opinion, the ambiguities as to the timing and method of privatization of government shares in those firms add to the return variability. It is

not uncommon to read or hear about conflicting news on if or when a government owned company is going to be privatized. Method of privatization is also a subject of market gossip. It makes a huge difference whether a large company is going to be sold by a public offering of equity or privately placing its majority shares as a block sale. Amidst all the uncertainties, fluctuation in these shares is not at all surprising.

Interestingly, firms with foreign ownership display higher total risk. This incident can be explained by the exposure of foreigners to additional risks such as exchange risk. Yet, firms with foreign ownership do not have higher returns or P/E ratios. From the perspective of the foreign owners, high total risk in ISE may not matter as they are diversified internationally.

V. Summary and Conclusions

In this paper, we investigate the impact of ownership structure on performance and risk-taking behavior of Turkish companies listed on ISE. We define ownership structure along two dimensions: ownership concentration and ownership mix. Those two categories incorporate both the influence power of shareholders as well as the identity of owners with their unique incentive mechanisms and preferences. Ownership concentration is defined as the percentage share of the largest three shareholders, percentage of dispersed shareholders, and cash flow right(s) of the ultimate owner. Ownership mix refers to the type of shareholders. Hence, we identify ownership identities (mix) as family ownership, foreign ownership, government ownership, cross ownership, and conglomerate affiliation. In our empirical models, ownership mix variables are taken as dummy variables. We also employ control variables to account for differences in firm size and leverage.

The results indicate that firms with concentrated ownership have higher P/E ratios and higher average returns. Firms affiliated to a conglomerate and government owned firms have higher returns and command higher earnings multiples. Family owned firms, on the other hand, experience lower returns with low P/E ratios. Signs of control variables size and leverage are consistent with the literature in these models. However, models with accounting measures of performance yield inconsistent results in terms of both ownership and control variables.

Concerning the risk-taking behavior of our sample of companies, our results reveal that highly concentrated and less diffuse firms have higher risk as suggested by larger standard deviation of monthly stock returns. Government-owned firms and firms with foreign ownership in our sample display higher risk, although they are larger on the average. Family-owned firms, on the other hand, have lower risk.

The overall findings in this paper are consistent with the empirical findings in the literature in general. While we observe concentration of ownership as a significant determinant of corporate governance mechanism, identity of controlling owners seem to have a vital role in performance-ownership relationship. Among the ownership mix variables, conglomerate affiliation is the most complex governance mechanism. While the market rewards this mechanism, it is highly questionable whether this form of ownership is economically efficient. Hence we believe that this issue merits further investigation in the future.

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Table I
Descriptive Statistics of the Ownership Concentration Variables

Ownership concentration variables are described in percentages as: LSH1: Percentage share of the largest shareholder, LSH3: Total shares of the largest three shareholders, OTHER: Percentage of shares held by diffuse shareholders, CASH: Cash flow right(s) of the controlling shareholder(s).

(%)	Mean	Median	Std. Dev.	Min	Max
LSH1	43.46	40.07	21.16	0.52	99.30
LSH3	62.13	64.00	19.07	0.82	99.30
OTHER	31.86	28.84	18.52	0.70	99.15
CASH	61.18	61.79	18.95	1.00	99.80

Table II
Descriptive Statistics of the Ownership Mix Variables

Ownership mix variables (in percentages) are conglomerate affiliation (CONG), family ownership (FAM), foreign ownership (FRGN), cross ownership (CROSS), and government ownership (GOV). The yearly mean value of each ownership mix variable and overall pooled data is presented in columns.

(%)	1992	1993	1994	1995	1996	1997	1998	Avg.
CONGL	33.3	31.4	30.1	30.5	29.1	27.3	27.3	29.9
FAM	36.2	40.5	43.4	44.2	45.7	48.5	49.0	43.9
FRGN	17.1	15.7	17.6	17.5	16.6	18.0	18.6	17.3
CROSS	35.2	30.6	29.4	27.9	25.1	25.3	24.7	28.3
GOV	10.5	8.3	7.4	7.1	7.4	6.2	6.2	7.6

Table III
Ownership Concentration and Performance

Test results of the relationship between ownership concentration and performance are examined with the model of “ $PER_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 CON_i + \varepsilon_i$.” Note that market risk BETA is included into the RET model as an additional control variable. Figures in the body of the table are coefficient estimates; t-values are reported respectively in parentheses. “*” denotes statistical significance at the 0.05 level and “**” specifies 0.10 significance level. Performance (PER) variables are return on total assets (ROA), return on equity (ROE), price to earnings (P/E) ratio and average monthly stock returns in 24 months(RET). Ownership concentration variables, CON, are total shares of the largest three shareholders(LSH3), percentage of shares held by diffuse shareholders (OTHER), and cash flow rights of the controlling shareholder(s) (CASH).

Constant	LEV	SIZE	BETA	LSH3	OTHER	CASH	R Square	F-Test
<i>PANEL A: $ROA_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 CON_i + \varepsilon_i$</i>								
9.118 (2.27)*	-0.198 (-8.00)*	0.762 (3.19)*		-0.039 (-1.83)**			0.185	81.382
6.144 (1.54)	-0.200 (-8.10)*	0.748 (3.10)*			0.028 (1.35)		0.182	79.883
8.667 (8.12)*	-0.199 (-8.10)*	0.725 (3.01)*				-0.021 (-1.09)	0.181	78.864
<i>PANEL B: $ROE_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 CON_i + \varepsilon_i$</i>								
16.206 (1.11)	-0.315 (-3.56)*	1.520 (1.90)**		-0.134 (-2.04)*			0.078	30.000
6.135 (0.45)	-0.321 (-3.62)*	1.475 (1.82)**			0.098 (1.63)**		0.074	28.228
14.479 (0.98)	-0.319 (-3.57)*	1.392 (1.71)**				-0.071 (-1.13)	0.071	27.092
<i>PANEL C: $PE_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 CON_i + \varepsilon_i$</i>								
28.190 (1.19)	0.091 (1.12)	-1.533 (-1.07)		0.248 (2.15)*			0.012	48.877
47.836 (2.45)	0.102 (1.30)	-1.444 (-1.00)			-0.0197 (-1.90)**		0.009	48.961
28.125 (1.13)	0.096 (1.14)	-1.309 (-0.90)				0.191 (1.50)	0.009	48.963
<i>PANEL D: $RET_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 BETA_i + \beta_4 CON_i + \varepsilon_i$</i>								
10.577 (6.72)*	0.005 (0.54)	-0.450 (-4.68)*	0.461 (1.22)	0.014 (1.59)			0.025	6.682
0.121 (7.20)*	0.000 (0.50)	-0.005 (-4.72)*	0.005 (1.43)		-0.0003 (-1.95)*		0.026	7.172
0.104 (6.67)*	0.000 (0.51)	-0.004 (-4.63)*	0.495 (1.31)			0.015 (1.76)**	0.025	6.701

Table IV
Ownership Mix and Accounting-Based Performance

Test results of the relation between ownership mix and performance are examined with the model of “ $PER_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 MIX_i + \varepsilon_i$.” Figures in the body of the table are coefficient estimates; t-values are reported respectively in parentheses. “*” denotes statistical significance at the 0.05 level. Performance measures are return on asset (ROA) and return on equity (ROE) ratios. Ownership mix variables are conglomerate affiliation (CONG), family ownership (FAM), foreign ownership (FRGN), cross ownership (CROSS), and government ownership (GOV).

Const.	Lev	Size	Congl	Fam	Frgn	Cross	Gov	R2	F-Test
<i>PANEL A: $ROA_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 MIX_i + \varepsilon_i$</i>									
7.880 (2.01)*	-0.203 (-8.24)*	0.707 (2.86)*	-0.124 (-0.14)					0.179	78.384
8.327 (2.10)*	-0.202 (-7.92)*	0.686 (2.76)*		-0.532 (-0.62)				0.180	78.822
8.641 (2.23)*	-0.201 (-8.26)*	0.616 (2.58)*			2.689 (1.91)**			0.190	84.021
8.039 (2.04)*	-0.203 (-8.25)*	0.704 (2.88)*				-0.584 (-0.65)		0.180	78.777
6.718 (1.77)*	-0.201 (-8.29)*	0.791 (3.32)*					-3.893 (-2.56)*	0.189	83.557
<i>PANEL B: $ROE_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 MIX_i + \varepsilon_i$</i>									
11.867 (0.84)	-0.336 (-3.72)*	1.303 (1.54)	2.129 (0.88)					0.070	27.163
12.868 (0.93)	-0.335 (-3.67)*	1.302 (1.57)		-0.937 (-0.43)				0.070	26.970
13.401 (0.94)	-0.334 (-3.69)*	1.184 (1.37)			4.521 (1.26)			0.073	28.312
11.926 (0.84)	-0.337 (-3.72)*	1.334 (1.58)				0.552 (0.22)		0.071	27.543
8.815 (0.69)	-0.330 (-3.70)*	1.581 (2.12)*					-11.896 (-1.97)*	0.080	31.003

Table V
Ownership Mix and Market-Based Performance

Test results of the relation between ownership mix and performance are examined with the model of “ $PER_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 MIX_i + \varepsilon_i$ ” Note that market risk BETA is included into the RET model as an additional control variable. Figures in the body of the table are coefficient estimates; t-values are reported respectively in parentheses. “*” denotes statistical significance at the 0.05 level. “**” specifies 0.10 significance level. Performance measures are price to earnings ratio (P/E) and average monthly stock returns in 24 months (RET). Ownership mix variables are conglomerate affiliation (CONG), family ownership (FAM), foreign ownership (FRGN), cross ownership (CROSS), and government ownership (GOV).

Const.	Lev	Size	Beta	Congl	Fam	Frgn	Cross	Gov	R2	F-Test
PANEL A: $PE_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 MIX_i + \varepsilon_i$										
34.737 (1.58)	0.126 (1.68)**	-1.28 (-0.81)		9.859 (2.18)*					0.028	9.255
43.093 (1.94)**	0.155 (2.06)*	-1.465 (-0.97)			-9.283 (-2.77)*				0.03	9.847
34.858 (1.54)	0.129 (1.64)**	-1.075 (-0.68)				-2.119 (-0.61)			0.026	8.465
32.708 (1.52)	0.126 (1.66)**	-1.116 (-0.73)					9.133 (2.01)*		0.03	9.95
40.088 (2.04)*	0.119 (1.47)	-1.488 (-1.13)						17.898 (1.13)	0.024	7.862
PANEL B: $RET_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 BETA_i + \beta_4 MIX_i + \varepsilon_i$										
0.108 (6.88)*	0.003 (0.77)	-0.004 (-4.32)*	0.005 (1.25)	0.004 (1.19)					0.033	6.127
0.116 (7.53)*	0.001 (0.99)	-0.004 (-4.71)*	0.003 (0.89)		-0.009 (-2.79)*				0.043	8.058
0.109 (6.94)*	0.001 (0.77)	-0.004 (-4.29)*	0.005 (1.23)			0.001 (0.36)			0.031	5.804
0.108 (6.89)*	0.001 (0.75)	-0.004 (-4.27)*	0.005 (1.23)				0.002 -0.58		0.032	5.848
0.116 (7.62)*	0.003 (0.58)	-0.005 (-5.01)*	0.003 (0.84)					0.017 (3.12)*	0.042	8.854

Table VI
Ownership Concentration and Risk

Test results of the relation between ownership concentration and performance are examined with the model of “ $RISK_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 CON_i + \varepsilon_i$.” Figures in the body of the table are coefficient estimates; t-values are reported respectively in parentheses. Statistical significance level 0.05 is denoted with “” and 0.10 significance level is marked with “**”. Risk measures are defined as market risk (BETA), total risk (STDEV). Ownership concentration measures are total shares of the largest three shareholders (LSH3), percentage of shares held by diffuse shareholders (OTHER), cash flow rights of the controlling shareholder(s) (CASH).*

<i>Const.</i>	<i>LEV</i>	<i>SIZE</i>	<i>LSH3</i>	<i>OTHER</i>	<i>CASH</i>	<i>R2</i>	<i>F-Test</i>
<i>PANEL A: $BETA_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 CON_i + \varepsilon_i$</i>							
0.231 (1.28)	-0.001 (-1.65)**	0.050 (4.42)*	-0.001 (-0.12)			0.047	13.423
0.074 (0.36)	-0.001 (-1.33)**	0.054 (4.80)*		0.002 (2.12)*		0.053	16.095
0.271 (1.47)	-0.001 (-1.47)	0.052 (4.66)*			-0.001 (-1.19)	0.050	14.255
<i>PANEL B: $STDEV_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 CON_i + \varepsilon_i$</i>							
32.328 (8.30)*	0.008 (0.44)	-2.181 (-7.68)*	0.055 (3.24)*			0.166	53.550
36.273 (7.85)*	0.009 (0.61)	-2.15 (-7.63)*		-0.036 (-2.14)*		0.158	50.798
33.239 (8.40)*	0.011 (0.79)	-2.107 (-7.68)*			0.018 (1.07)	0.155	49.449

Table VII
Ownership Mix and Risk

Test results of the relation between ownership mix and performance are examined with the model of “ $RISK_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 MIX_i + \varepsilon_i$.” Figures in the body of the table are coefficient estimates; t-values are reported respectively in parentheses. Statistical significance level 0.05 is denoted with “” and 0.10 significance level is marked with “**”. Risk measures are defined as: BETA: market risk, STDEV: total risk. Ownership mix variables are conglomerate affiliation (CONG), family ownership (FAM), foreign ownership (FRGN), cross ownership (CROSS), and government ownership (GOV).*

<i>Const.</i>	<i>Lev</i>	<i>Size</i>	<i>Congl</i>	<i>Fam</i>	<i>Frgn</i>	<i>Cross</i>	<i>Gov</i>	<i>R2</i>	<i>F-Test</i>
PANEL A: $BETA_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 MIX_i + \varepsilon_i$.									
0.230 (1.26)	-0.001 (-1.71)**	0.050 (4.58)*	-0.008 (-0.19)					0.048	13.435
0.300 (1.67)*	-0.001 (-1.53)	0.047 (4.43)*		-0.104 (-2.50)*				0.062	17.801
0.221 (1.20)	-0.002 (-1.72)**	0.051 (4.53)*			-0.017 (-0.38)			0.048	13.488
0.221 (1.26)	-0.002 (-1.70)**	0.051 (4.55)*				-0.017 (-0.18)		0.048	13.435
0.268 (1.53)	-0.002 (-1.84)**	0.047 (4.39)*					0.125 (1.79)**	0.055	15.531
PANEL B: $STDEV_i = \beta_0 + \beta_1 LEV_i + \beta_2 SIZE_i + \beta_3 MIX_i + \varepsilon_i$.									
33.755 (8.24)*	0.014 (0.97)	-2.086 (-7.75)*	0.373 (0.66)					0.154	49.109
35.032 (8.62)*	0.017 (1.21)	-2.130 (-7.93)*		-1.700 (-3.17)*				0.162	52.112
34.465 (8.29)*	0.014 (0.99)	-2.145 (-7.73)*			1.619 (2.33)*			0.158	50.710
33.709 (8.11)*	0.014 (0.95)	-2.080 (-7.65)*				0.265 (0.45)		0.154	49.037
34.721 (8.59)*	0.012 (0.84)	-2.149 (-8.04)*					2.661 (2.28)*	0.160	51.549