Does Corporate Governance Affect Firm Value?
Evidence from Korea[†]

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Abstract

We report evidence that corporate governance is an important factor in explaining firm value for Korean public companies. We construct a corporate governance index (0~100) for 540 companies based primarily on responses to a survey of listed companies conducted by the Korea Stock Exchange in Spring 2001. We find that a moderate improvement in corporate governance, say an increase of 10 points in the corporate governance index, predicts an increase in Tobin's q of 15 percent of the company's book value of assets or 40 percent of the company's book value of common equity. This effect is robust to choice of performance variable (Tobin's q, market/book, and market/sales) and to specification of the corporate governance index. Each of the subindices that comprise our overall index (for shareholder rights, board of directors in general, outside directors, auditing, disclosure to investors, and ownership parity) are individually significant predictors of higher Tobin's q.

Unique features of Korea's corporate governance rules make it possible for us to use an instrumental variables approach to address two alternate explanations for these results: signaling (firms signal quality by adopting good governance rules) and endogeneity (firms with high Tobin's q choose good governance rules). Many important Korean corporate governance rules apply only to firms with assets over 2 trillion Korean won. If the exogenous portion of the corporate governance index that is due to these rules predicts higher Tobin's q, this cannot be due to signaling or endogeneity. We use both a two-stage (2SLS) and a three-stage (3SLS) least squares approach, using as our instrument a dummy variable for assets over 2 trillion won, with a separate control for log of asset size. The 2SLS and 3SLS coefficients are generally larger than the OLS coefficients, and are highly statistically significant. This is consistent with causation running from the exogenous component of governance rules to higher Tobin's q.

Key words: Korea, corporate governance, firm valuation
JEL classification: G300

I. Introduction

How do a country's corporate governance rules, or the corporate governance practices of individual firms within a country, affect overall firm value and performance? A well-known line of research that began with a series of papers by La Porta, Lopes-de-Silanes, Shleifer and Vishny provides evidence that countries with stronger legal protections of minority shareholders have larger securities markets, less concentrated share ownership, and a higher value for minority shares.[1]

A separate question is whether variation *within a single country* in the corporate governance practices of individual firms predicts firm market values. This question is central when individual firms – which can change their own practices, but not their country's rules – decide whether and how to change their corporate governance practices. To what extent can a firm improve its market value by upgrading its corporate governance practices? To what extent is it irrevocably tied to its home country's overall reputation?

This question is also central to the usefulness to investors of the new private sector corporate governance rankings. In 2001, Credit Lyonnaise Securities Asia (CLSA) published a corporate governance ranking of 495 companies in 25 emerging markets (CLSA, 2001). Also in 2001, Standard & Poor's published a "corporate governance" ranking (based only on disclosure), covering 859 companies in 27 countries (Standard & Poor's, 2001). In 2000, Deminor published a governance ranking of the 300 European companies in the FTSE-300 index (Deminor, 2000; Coppieters, 2001). In the United States, Institutional Shareholder Services launched in 2002 a governance ranking for the 3000 U.S. companies in the Russell 3000 index.

If within-country, across-firm governance practices correlate with firm market value, a third question arises: Do good corporate governance practices *cause* an increase in firm value? An alternate explanation is that firms adopt "good" governance rules to signal that the firm's insiders intend to behave well; the signal, not the firm's practices, affects firm value. A second alternate explanation involves endogeneity – firms with high market values adopt good governance practices, rather than vice versa.

This paper is part of a new set of several contemporaneous papers that explore how within-country variation in governance practices affect firm value, primarily in emerging markets. For related research, see Black, 2001 (Russian firms); Durnev & Kim, 2002 (using CLSA and Standard & Poor's rankings); Klapper & Love, 2002 (using CLSA rankings);

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[1] La Porta et al. (1997, 1998, 1999, 2000, 2002). For selected criticisms of this approach, see [citations to come].

Gompers, Ishii & Metrick, 2001 (studying United States firms). Our paper differs from this related research in two principal respects. Frst, Korea's corporate governance rules uniquely lets us use an instrumental variables approach to address signalling and endogeneity explanations. No other study has this potential. Second, we study a full cross-section of all listed Korean firms, both large and small. The other papers on emerging markets either use a small single-country sample (Black) or multicountry samples (Durnev & Kim; Klapper & Love) that contain only the largest firms in each country.

Our corporate governance data is taken from a detailed survey of all companies listed on the Korea Stock Exchange (KSE), conducted by the KSE in Spring 2001. The KSE's sponsorship of the survey ensures a high response rate (540 of 560 surveyed companies), and enhances the credibility of the responses, because the KSE has regulatory authority over listed companies and can punish them for false responses. We use the survey responses to construct a corporate governance index (0~100). The index is composed of six subindices, for shareholder rights, board of directors in general, outside directors, audit committee and internal auditor, disclosure to investors, and ownership parity (a measure of the lack of a "pyramid" ownership structure). The subindices are based on responses to a total of 123 separate questions.[2]

A unique feature of Korean corporate governance rules allows us to address the question of causation. Some important rules apply only to firms that have assets of at least KRW2 trillion (roughly US$2 billion). Other rules apply only to banks or only to firms that are part of one of the 30 largest *chaebol* groups. The variation in exogenously imposed legal rules allows us to test whether both voluntarily adopted corporate governance rules and mandatory legal rules affect firm value.

These exogenously imposed rules also allow us to control for endogeneity with a two-stage least squares (2SLS) and a three stage least squares (3SLS) simultaneous equations approach. We use as an instrument for corporate governance a dummy variable for whether a firm has assets greater than KRW2 trillion, while also using a separate control variable *ln*(assets) to control for firm size. This asset size dummy variable correlates strongly with our corporate governance index and should be a good instrument as long as *ln*(assets) captures most of the variation in the dependent variable based on firm size. Our results are similar in OLS, 2SLS, and 3SLS specifications, with larger coefficients in the simultaneous equations results. These results are consistent with causation running from

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[2] The survey contains both objective and subjective questions. In this paper, we construct and study an objective corporate governance index based on responses to the objective questions. We plan to construct and study a subjective corporate governance index, based on responses to the subjective questions, in separate research (Black, Jang and Kim, in progress, 2003).

good governance to higher firm value. They do not support either the signaling hypothesis or the hypothesis that more highly valued firms adopt better governance rules.

Our simultaneous equations results imply that a moderate improvement in corporate governance, say an increase of 10 points in the corporate governance index, predicts an increase in Tobin's q of 15 percent of the company's book asset value or 40 percent of the company's book value of common equity. These results are both statistically strong and economically important. Turning from the overall index to the subindices, each of the six subindices separately predicts higher firm value. However, much of this effect is because the subindices are all positively correlated with each other. The subindices that remain significant in regressions including the remainder of the index are disclosure to investors and ownership parity.

In addition to addressing the general question of whether improved governance rules can pay off in greater firm market value, our results are important for the internal debate in Korea on the desirability of the post-crisis corporate governance rules. Prior to the 1997-1998 financial crisis, Korean corporate governance practices were weak by international standards, and self-dealing by controlling shareholders was common. Since the financial crisis, the Korean government has aggressively changed its governance rules. A minimum number of outside directors became legally mandatory. Audit and nomination committees were introduced. *Chaebol*-affiliated firms must disclose consolidated statements and obtain board-of-directors approval for self-dealing transactions. The number of shares a shareholder must hold to file a derivative suit or inspect a company's financial records has been reduced dramatically. The list goes on. However, Korea's economy has been strong for several years. *Chaebol* managers oppose further reforms and are seeking to reverse some of the post-crisis reforms. They portray corporate governance regulations as choking off their freedom and creativity, and question the link between corporate governance and firm performance.[3]

This paper is organized as follows. Part II reviews the literature on the relationship between corporate governance and firm value. Part III describes our data set and how we constructed our corporate governance index. Parts IV and V discuss results from ordinary least squares (OLS) and simultaneous equations (two-stage (2SLS) and three-stage (3SLS) least squares) regressions, respectively. Part VI discusses various robustness checks on our results, and Part VII concludes.

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[3] On the politics of Korean corporate governance reform, see [Black, Metzger; H-J Kim; others].

II.   Related Literature

In developed countries, statistically significant effects are often not found, and when found, are often economically small (Gompers, Ishii & Metrick, 2002, is a recent exception).   Black (2001), argues that large effects are more likely to be found in transition and developing countries, because variations in corporate governance practices are likely to be larger.

Most of the empirical literature studying the link between corporate governance and firm performance concentrate on a particular aspect of governance, such as board, shareholders' activism, compensation, anti-takeover provisions, investor protection, and so on.   To name a few, Millstein and MacAvoy (1998) and Bhagat and Black (1999) investigate the relationship between board characteristics and firm performance.   Karpoff, Malatesta, and Walking (1996) and Carleton, Nelson, and Weisbach (1998) link firm performance with shareholders' activism.   Bhagat, Carey, and Elson (1999) look at the relationship between outside directors' pay and firm performance.   Sundaramurthy, Mahoney, and Mahoney (1997) links firm performance with anti-takeover provisions and LLSV (2002) analyses the relationship between investor protection and firm performance.

III.   Data and Construction of Corporate Governance Index

A.   Data Sources

This paper makes use of a 2001 survey conducted by the Korea Stock Exchange (KSE).   The KSE sent an extensive survey of corporate governance practices and attitudes to the disclosure officers of all listed companies.   The survey was completed between March and July 2001.   The response rate was very high: 540 out of the 560 surveyed companies responded.[4]

Balance sheet and income statement data used in this paper is from a database called *TS2000*, which is provided by the Korea Listed Companies Association.   Stock market and share ownership data is obtained from a database complied by the KSE.   The list of top-30 *chaebol* companies is from press releases by the Korean Fair Trade Commission (KFTC).   *Table 3-B* and *3-C* show the summary statistics and the correlation matrix of selected variables used in this paper.

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[4] At the time of the survey, the KSE had 699 listed companies.   It did not survey 139 companies that were on a watch list for possible delisting.

B.   Construction of the Corporate Governance Index

We extract 123 variables from the survey questions.   We exclude variables that are subjective and ask for management's opinions and future plans; lack clear relevance to corporate governance; are ambiguous as to which answer indicates better governance; had minimal variation between firms; overlap highly with another variable; or had very few responses.[5]   This leaves us with a usable set of 38 variables.

We classify these variables into five subindices: (i) shareholder rights (subindex *A*); (ii) board of directors in general (subindex *B*); (iii) outside directors (subindex *C*); (iv) audit committee and internal auditor (subindex *D*); and (v) disclosure to investors (subindex *E*).[6] We add a sixth one-element subindex for "ownership parity", which measures the extent to which the largest shareholder uses a pyramidal or cross-holding structure to control more votes than the shareholder directly owns (subindex *P*).   These structures increase both the incentives and ability of controlling shareholders to engage in self-dealing (Bebchuk, Kraakman, and Triantis, 2000).   Ownership parity is defined as 1 - ownership disparity, with ownership disparity defined as ownership by all affiliated shareholders - ownership by the largest shareholder.   *Table 1* describes the variables used in constructing the indices and provides summary statistics for these variables.

The subindices are combined into an overall corporate governance index as follows. Each subindex is standardized to have a value between 0 and 20.   Our principal overall corporate governance index (*CG1*) is constructed as follows:

$$CG1 = A + (B + C)/2 + D + E + P \tag{1}$$

Here, we combine the related *B* and *C* subindices into a single board of directors subindex. Thus, the overall corporate governance index is constructed to have a value between 0 and 100, with better governed firms having higher index scores.

Each variable in each subindex is constructed to have a value between 0 and 1.   To

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[5]   An English translation of the survey and an explanation of the excluded variables and our reasons for omitting them are available from the authors on request.

[6]   The KSE survey is composed of questions in five categories: (i) shareholders, (ii) directors & board, (iii) outside directors, (iv) auditing, and (v) other stakeholders.   The questions on "auditing" include both questions on auditing and on disclosure to investors.   The questions on "other stakeholders" are a miscellaneous set of questions, only some of which relate to stakeholders.   We reassigned the corporate governance related questions in this category to other categories, as appropriate.   We also reassigned other selected questions where this seemed appropriate.

obtain a subindex, we first compute a simple sum over the variables in the subindex. We then divide by the number of 'non-missing' variables.[7] We then multiply this ratio by 20, so that the resulting subindex takes a value between 0 and 20.

C.   Description of the Index

Figure 1 shows the histogram of the overall corporate governance index *CG1*. A normal distribution curve is superimposed. By comparing the histogram and the normal distribution curve, one can easily see that the distribution of corporate governance index is slightly skewed to the right (long tails to the right).[8] That is, many companies concentrated below the mean and few companies located at very high scores. *Table 3-A* shows that the mean is 38.35, the minimum is 12.93, and the maximum is 85.85.[9] *Table 3-D* shows the correlation matrix of corporate governance subindices.

IV.   Corporate Governance and Firm Value: OLS Results

A.   Whole Sample Results

Figures 2, 3, and 4 show scatter plots for ordinary least squares regressions of corporate governance index, CG1, against three measures of firm performance: Tobin's q, (market value of equity/book value of equity) (market/book), and market value of equity/sales (market/sales).

In *Table 4*, Tobin's q is regressed on corporate governance index, *CG1*, and six subindices, *A* (shareholders' right), *B* (board of directors in general), *C* (outside directors), *D* (audit committee and internal auditor), *E* (disclosure to investors), and *P* (ownership parity). Tobin's q is computed by [(book value of debt + market value of common equity)/(book value of asset)].

Following Shin and Stulz (2000) and Gompers, Ishii, and Metrick (2001), we use the log of book asset value, the log of years of listing, and industry dummy variables, as the

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[7] Since we compute a ratio based only on nonmissing values, we do not have to worry directly about missing values. However, because the mean score on some variables differs from the mean on others, a firm could score higher or lower under our approach than under an alternate approach where we first normalized the responses to each question, and then used the normalized responses to compute an overall subindex.

[8] Skewness is computed to be 0.7804. The median is 37.72.

[9] Please note that KSE requested that we do not disclose the names of the companies.

basic controlling variables. We use the 2-digit KSIC to capture industry effects. Sales growth is additionally included in the equations to capture growth opportunities. We also include debt-to-equity ratio and share ownership by the largest shareholder to control for their impact on firm value. Detailed description of each variable can be found in *Table 2*. Outliers are identified and dropped from the sample when estimating the equations. Observations are identified as outliers if a studentized residual obtained from a regression of Tobin's q on *CG1* is greater than 1.96 or smaller than –1.96. Such method identified 30 outliers.

The result in *Table 4* shows that the coefficients on the overall index, *CG1*, and each of the subindices are statistically significant and economically meaningful. In equation (1), the coefficient on *CG1* is 0.0059 and statistically significant at 1% level. This implies that an increase in corporate governance index by 10 points results in an increase of market capitalization by 10 x .0059 = .059 (5.9 percent) of the company's book asset value. Notice that corporate governance index, *CG1*, ranges from 0 to 100. Sales growth and sole ownership turned out to be insignificant.

When individual subindices are regressed, the coefficients range between 0.0043 and 0.0193 and they are all statistically significant at 1 or 5% level. The coefficient of 0.0043 in equation (5), for example, implies that an improvement in the audit committee and internal auditor practice, *D*, by 10 points results in an increase of market capitalization by 4.3% of the company's book asset value. Notice that each subindex ranges from 0 to 20.

Among the subindices, ownership parity (*P*) has the largest coefficient, followed by disclosure to investors (*E*), and outside directors (*C*). Since all the individual subindices are statistically significant, any weighting scheme will produce an overall index that is statistically significant in explaining the variation of firm value. Robustness checks reported in Part VI shows that overall indices computed from different weighting schemes are all statistically significant. Relative magnitude of the coefficients in *Table 4* show that the impact of each subindex is smaller than that of the overall index. This implies that across-the-board improvement in corporate governance is more effective in increasing firm value than improvement in one sub-area of corporate governance.

Table 5, Panel A, shows results when Tobin's q is regressed on each individual element of the corporate governance index. Each regression includes the same set of control variables that we use in *Table 4*. We also exclude the same set of outliers dropped in *Table 4*. Almost all (35/38) of the coefficients on individual corporate governance elements are positive, and the three negative coefficients are insignificant. At the same time, only 8 our of 38 individual elements are significant at the 5% level. This implies that the elements of the corporate governance index have more predictive power when aggregated into an index

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than individually.

The coefficients on individual elements that are positive and significant are listed in *Table 5, Panel B.* The importance of some of these elements seems sensible -- they relate to plausibly important governance elements. This conclusion applies to element C1 (firm has at least 50% outside directors); element C2 (firm has more than 50% outside directors); element D1 (firm has an audit committee); element D10 (audit committee or internal auditor meets with the external auditor), and element P (ownership parity, described above). The other three significant elements appear to us to address less central elements of corporate governance. It is not apparent why these elements were significant, while other elements were not. These elements are A4 (firm discloses director candidates to shareholders in advance of shareholder meeting), E1 (firm conducted investor relations activity in 2000), and E2 (firm website includes resumes of board members). Elements E1 and E2 likely correlate with and proxy for other measures of disclosure quality. The KSE survey did not ask many questions about disclosure, so we cannot verify or refute this suspicion.

B. Subsample Results

The governance structure of Korean firms is in large part determined by law and because of the way the laws are written, the governance structure is heavily influenced by the following three factors: book asset value, affiliation to banking industry, and affiliation to *chaebol.*

The *Securities & Exchange Act* sets the minimum ratio and number of outside directors, requires the establishment of audit and nomination committees, and sets the minimum ratio of outside directors in the audit committee. Such minimum ratios and requirements, however, vary according to the company's book asset value. That is, listed companies with book value of asset greater than KRW2 trillion must have at least three outside directors and the ratio of outside directors must be at least one half. Those below the KRW2 trillion-threshold need only to have one quarter of their directors from outside. Also, listed companies with book value of asset greater than KRW2 trillion must establish audit and nomination committees, while those below the KRW2 trillion-threshold do not have to. When the audit committee is required, two third of the members must be filled with outside directors and the chairperson must come from outside. All these suggest that the book value of asset is a very important determinant of corporate governance in Korea.[10]

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[10] The correlation coefficient between corporate governance index *CG1* and asset size dummy (=1 if greater than KRW2 trillion) in our sample is 0.5880 and statistically different from zero at 1% significance level.

In Korea, the *Banking Act* shapes the governance structure of banks differently from others. That is, most of the requirements in the *Securities & Exchange Act* that is applied to companies with book asset value greater than KRW2 trillion are applied to commercial banks and merchant banks, regardless of their size. Thus, one can easily see that affiliation to banking industry is another important factor determining corporate governance in Korea.[11]

In Korea, the *Monopoly Regulation and Fair Trade Act* shapes the governance structure of *chaebol*-affiliated firms differently from others. That is, for companies affiliated to the 30 largest *chaebols*, the Act requires board approval for related-party transactions if transaction size is greater than 10% of equity capital or KRW10 billion. Such requirement was not in effect for non-*chaebol* firms at the time the survey was conducted.[12] Thus, affiliation to *chaebol* can be considered as another factor influencing the level of corporate governance in Korea.[13]

The fact that corporate governance is positively correlated with book asset value, affiliation to a banking industry, and affiliation to a *chaebol* raises a concern that the positive correlation found in *Table 4* between corporate governance and firm value can be spurious. For instance, if asset size is positively correlated with firm value (Tobin's q) for some reason, and if asset size is positively correlated with corporate governance index (*CG1*) because of the way Korean law is written, one will see a positive relationship between *CG1* and Tobin's q even when there is no direct link between the two. The spurious relationship, however, can be easily checked by running the same regression reported in *Table 4* on the following six sub-samples: banks (commercial and merchant), non-banks, firms affiliated to *chaebol*, firms not affiliated to *chaebols*, firms with book asset value greater than KRW2 trillion, and firms with book asset value below KRW2 trillion.[14] If one still finds a positive link between corporate governance and firm value even within the subsamples, the relationship is not spurious.

Table 6 shows the results. Notice that corporate governance index, *CG1*, is still an important factor explaining the variation of firm value in five out of six subsamples. The

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[11] The correlation coefficient between corporate governance index and banking dummy (=1 if a commercial bank or a merchant bank) in our sample is 0.4154 and statistically different from zero at 1% significance level.
[12] With the amendment of the *Securities & Exchange Act* in March 28, 2001, all listed companies with book asset value greater than KRW2 trillion must obtain board approval for related party transactions if the size is greater than 1% of book asset value or 1% of total sales. Such amendment, however, was not in effect at the time when the survey was conducted.
[13] The correlation coefficient between corporate governance index and *chaebol* dummy (=1 if affiliated to a *chaebol*) in our sample is 0.2348 and statistically different from zero at 1% significance level.
[14] We also ran a regression with intercept dummy variables representing asset size, affiliation to banking industry, and affiliation to *chaebol*. The coefficient on corporate governance index turned out to be still significant with a similar magnitude.

coefficient on corporate governance is not significant in the subsample of banks, but this subsample has only 17 observations. It is also worth noting that the explanatory power of corporate governance is particularly high when applied to the *chaebol* subsample. When explaining Tobin's *q*, the coefficient on corporate governance index is 0.0088 when applied to the *chaebol* subsample, while it is only 0.0051 when applied to the non-*chaebol* subsample.

V. Corporate Governance and Firm Value: Simultaneous Equations Results

A. Test of Endogeneity

A recurring issue in this and other studies of corporate governance is the possibility of endogeneity. Firms with higher market values (for whatever reason) could be more likely than other firms to choose better governance structures. They could do so because the firm's insiders believe that these governance structures will further raise firm value, or potentially to signal management quality even if the signal (the governance structure) in fact has no effect on firm value. In the first case, there will be a causal connection between corporate governance and firm value, but the OLS coefficient will overstate the actual connection. In the second case, there will be no causal connection at all.

There is evidence of endogeneity in other corporate governance studies. For example, Bhagat and Black (2002) report evidence from OLS regressions of a negative correlation between board independence and measures of firm performance. However, they also find evidence that firms that perform poorly increase the independence of their boards of directors. After controlling for this endogenous effect of performance on board composition, the negative correlation between board independence and firm performance weakens and is not reliably significant. Durnev and Kim (2002) shows that firms with profitable investment opportunities and more reliance on external financing tend to have higher-quality governance. See also the survey of board composition studies by Weisbach and Hermalin (2001).

To test for the endogeneity of corporate governance, we follow the method suggested by Wooldridge (2000). The method follows two steps. First, the corporate governance index variable is regressed on all exogenous variables and residuals are obtained from the estimation. The residuals can be understood as the endogenous portion of the corporate governance variable. Second, the residual is added to the original equation and OLS is estimated. If the coefficient on the residual is statistically different from zero, we conclude that corporate governance is endogenous. If the coefficient on the residual is negative

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(positive), we infer that corporate governance is negatively (positively) correlated with the error term for the dependent variable (Tobin's q).

Test results are reported in *Table 7*. The results show that the endogenous component of corporate governance is negatively correlated with the error term for Tobin's q. This suggests that the coefficients estimated by OLS in *Tables 4, 5, and 6* are downward biased. This implies that once the endogeneity problem is corrected, the coefficient on corporate governance should increase -- as we find in the 2SLS and 3SLS regressions reported below.[15]

B. *Specifications*

There are standard econometric techniques for addressing possible endogeneity. All of them require identifying a good instrument – a variable that is correlated with the independent variable of interest (corporate governance) but otherwise uncorrelated with the dependent variable of interest (Tobin's q, market/book, or market/sales). The instrument should predict the dependent variable only indirectly, through its effect on the independent variable (for a recent survey, see Angrist & Krueger, 2001).

To control for the endogeneity, we use two-stage (2SLS) and three-stage (3SLS) least squares to estimate the coefficients.[16] Asset size dummy is chosen to be the exogenous variable that is highly correlated with corporate governance, but that does not appear in the firm value equation.[17]

There are three reasons underlying this choice of an instrumental variable (IV). First, as explained in the previous section, the *Securities & Exchange Act* made the asset size dummy an important determinant of corporate governance in Korea. Firms with book asset size greater than KRW2 trillion are required to have an audit committee, an outside director nomination committee, and a greater portion of outside directors. Second, since the asset size dummy represents the legally mandated portion of corporate governance, it can be safely said to be exogenous. That is, firms have no choice but to meet the legal requirement.[18] Third, when asset size is already controlled for, it is hard to imagine that asset size dummy will have any additional explanatory power over firm value other than through strengthened corporate governance. Bank and *chaebol* dummies are not used as

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[15] By construction, the coefficients on corporate governance index and subindices in *Table 7* are identical with the 2SLS / 3SLS coefficients in *Table 9*.

[16] 3SLS differs from 2SLS since it makes use of the covariance matrix computed from the two disturbance terms in the simultaneous equations framework.   If equations are just identified, the coefficients on 2SLS and 3SLS will become identical.   The coefficient standard errors, however, will become different.

[17] Asset size dummy takes a value of 1 if book value of asset is greater than KRW2 trillion, and 0 otherwise.

[18] Of course some firms with asset size close to the KRW2 trillion level might intentionally manage their balance sheet so as not to be subject to the legal requirement.

instrumental variables since they might be correlated with firm value without changing the quality of governance.

In *Table 8*, we regress the overall index and the subindices on a standard set of control variables (including log of book asset value) plus seven asset size dummy variables. Asset size dummy 1 is defined to have a value of 1 if log of book asset value is greater than 3.6, and 0 otherwise. Asset size dummy 2 is defined to be 1 if log of book asset value is greater than 4.6, and 0 otherwise. Asset size dummy 3, 4, 5, 6, and 7 are defined accordingly. If firms with book asset value greater than KRW2 trillion have higher level of corporate governance, one should observe a significant coefficient on asset size dummy 5.[19] This is observed for the overall index *CG1*, and subindices *C* (outside directors) and *D* (audit committee and internal auditor). However, this is not observed in subindices *A* (shareholders' right), *B* (board of directors in general), *E* (disclosure to investors), and *P* (ownership parity), indicating that asset size dummy may not be the right instrument for these indices. Also notice that no element in the subindices *A*, *B*, *E*, and *P*, directly requires a hirer corporate governance standard for firms with book asset value greater than KRW2 trillion.

Years of listing is chosen to be the variable that is highly correlated with Tobin's *q*, but that does not appear in the corporate governance equation. One can easily observe in *Table 4* that years of listing is statistically significant at 1% level across all indices when explaining Tobin's *q*. On the other hand, there is no obvious reason why one might think years of listing affects the quality of corporate governance. 3SLS estimates the following system of simultaneous equations.

$$\text{Tobin's } q = f(CG1, \text{ years of listing, other exogenous variables}) + \varepsilon \text{ --------------------- (2)}$$
$$CG1 = g(\text{Tobin's } q, \text{ asset size dummy, other exogenous variables}) + \eta \text{ ----------------- (3)}$$

C.   Whole Sample Results

Table 9 shows the 2SLS and 3SLS results for the overall index *CG1*, and the subindices. Subindex *P* (ownership parity) is not regressed since there exists no obvious reason to believe that asset size dummy can be a good instrument. Notice that the coefficients on the indices are much larger than those estimated by OLS. This is consistent with the test result for endogeneity in *Table 7* that there exists a negative correlation between the corporate

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[19]   Asset size dummy 5 takes a value of 1 if log of book asset value is greater than 7.6, and 0 otherwise. Note that natural log of 2,000 is 7.6.

governance indices and the error term. The coefficient of 0.0157 on *CG1* in equation (2) is statistically significant at 1% level and it is almost three times larger than the OLS estimate in *Table 4*. The coefficient implies that an increase in the overall corporate governance by 10 points results in an increase of market capitalization by 15.7% of the company's book asset value. Notice that our instrumental variable, asset size dummy, is highly significant in equation (1).[20]

Also notice that not all index coefficients are statistically significant. The coefficient on subindex *B* (board of directors in general) is significant in 2SLS, but not in 3SLS (equation 10 and 12). In case of subindex *B*, the coefficients on asset size dummy are not even significant, suggesting that the system is not well identified (equation 9 and 11). Indices *A* and *E* are also problematic given that the coefficients on asset size dummy are not statistically significant in the 3SLS models (equation 7 and 23). Such results are consistent with *Table 8* that shows asset size dummy may not be the right instrument for subindices *A*, *B*, and *E*.

The system, however, is well identified for *CG1*, *C* (outside directors), and *D* (audit committee and internal auditor). The coefficient of 0.0374 on subindex *C* in equation (16) suggests that an improvement of outside director practice by 10 points results in an increase of market capitalization by 37.4% of the company's book asset value. Also, the coefficient of 0.0413 on subindex *D* in equation (20) suggests that an improvement of audit committee and inside auditor practice by 10 points results in an increase of market capitalization by 41.3% of the company's book asset value. Also notice that the coefficients on Tobin's *q* in our 3SLS models for indices *CG1*, *C*, and *D* are not statistically significant, suggesting that the causality goes only from corporate governance to firm value, and not the other way around (equations 3, 15 and 19).

D. Subsample Results

Table 10 shows the 2SLS and 3SLS results for the overall index *CG1* in the subsamples of non-banks, chaebols, and non-chaebols. The subsample of banks is not analyzed for its small sample size (17 observations). The subsamples divided by book asset value are not analyzed for we are using asset size dummy as an instrument. The results show that corporate governance does affect firm value within non-banks and within non-chaebol firms.

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[20] Also notice that 2SLS and 3SLS coefficients are identical. This is because the system is just identified. In some of the 3SLS equations, R-squared is negative. This is possible because in 3SLS, the actual values, not the instruments for the endogenous right-hand-side variables, are used to determine R-squared. Thus, the residual sum of squares is no longer constrained to be smaller than the total sum of squares.

The coefficient on *CG1* in the non-bank subsample is 0.0179, which is larger than that in the whole sample (0.0157). The coefficient on CG1 in the non-chaebol subsample is 0.01, which is smaller than that in the whole sample.

In case of chaebol firms, we cannot make any conclusion because the system does not seem to be well identified with our asset size dummy. The coefficient on asset size dummy is not significant in equation (7). Observation size in this subsample is also relatively smaller than other subsamples.

VI.   Robustness Check

In this section, robustness check is conducted in two dimensions. First, we try out other weighting schemes to construct the overall corporate governance index. Second, we try out other measures of firm value.

Five additional corporate governance indices are constructed. *CG2* splits *B* (board of directors in general) and *C* (outside directors), and thus give more weight on these two subindices. *CG3* drops subindex *C* (outside directors), and thus give zero weight on *C* (outside directors) and a greater weight on *B* (board of directors). *CG4*, *CG5*, and *CG6* are identically defined with *CG1*, *CG2*, and *CG3*, except that they drop subindex *P* (ownership parity). Thus, *CG4*, *CG5*, and *CG6* give zero weight on *P* (ownership parity) and a greater weight on other five subindices. Following equations show how the indices are constructed.[21]

$$CG1 = A + (B+C)/2 + D + E + P \ \text{---} \ (1)$$
$$CG2 = (100/120)[A + B + C + D + E + P] \ \text{--} \ (4)$$
$$CG3 = A + B + D + E + P \ \text{--} \ (5)$$
$$CG4 = (100/80)[A + (B+C)/2 + D + E] \ \text{---} \ (6)$$
$$CG5 = A + B + C + D + E \ \text{---} \ (7)$$
$$CG6 = (100/80)[A + B + D + E] \ \text{--} \ (8)$$

Two additional firm performance measures are introduced: market-to-book ratio and market-to-sales ratio. Market-to-book ratio is defined by market value of common equity over book value of common equity. Market-to-sales ratio is defined by market value of common equity over sales.

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[21] Notice that each index is scaled to have a value between 0 and 100.

Table 11 shows the results.   The table reports the coefficients on six corporate governance indices for various combinations of estimation model and firm performance. 42 coefficients are statistically significant at 1% level, 8 coefficients are significant at 5% level, and 4 coefficients are significant at 10% level.   No coefficient is insignificant.

VII.   Conclusion

In this paper, we report evidence that corporate governance is an important factor in explaining firm value of Korean public companies.   Such analysis is made possible by making use of a survey data collected by the Korean Stock Exchange during the first half of 2001, from which we construct a corporate governance index (0~100) for a cross-section of 540 companies.

When analyzing the link, we treat corporate governance as an endogenous variable and estimate 2SLS and 3SLS.   Asset size dummy taking a value of 1 if book asset value is greater than KRW2 trillion is used as our instrument for corporate governance since many important Korean corporate governance rules require higher standards for firms with book asset value over KRW2 trillion.   We separately control for asset size in logs so that the asset size dummy only picks up the variation in the exogenous portion of corporate governance.

We find that, even when the endogeneity is controlled for, a moderate improvement in corporate governance, say an increase of 10 points in the corporate governance index predicts an increase in Tobin's q of 15 percent of the company's book value of assets or 40 percent of the company's book value of common equity.   This effect is robust to choice of performance variable and specification of the corporate governance index.   The results are also robust in subsamples.

The instrumental variables approach we adopt effectively excludes two alternate explanations for the positive link between corporate governance and firm value: signaling (firms signal quality by adopting good governance rules) and opposite causality (firms with high Tobin's q choose good governance rules).

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Figure 1. Distribution of Corporate Governance Index, *CG1*
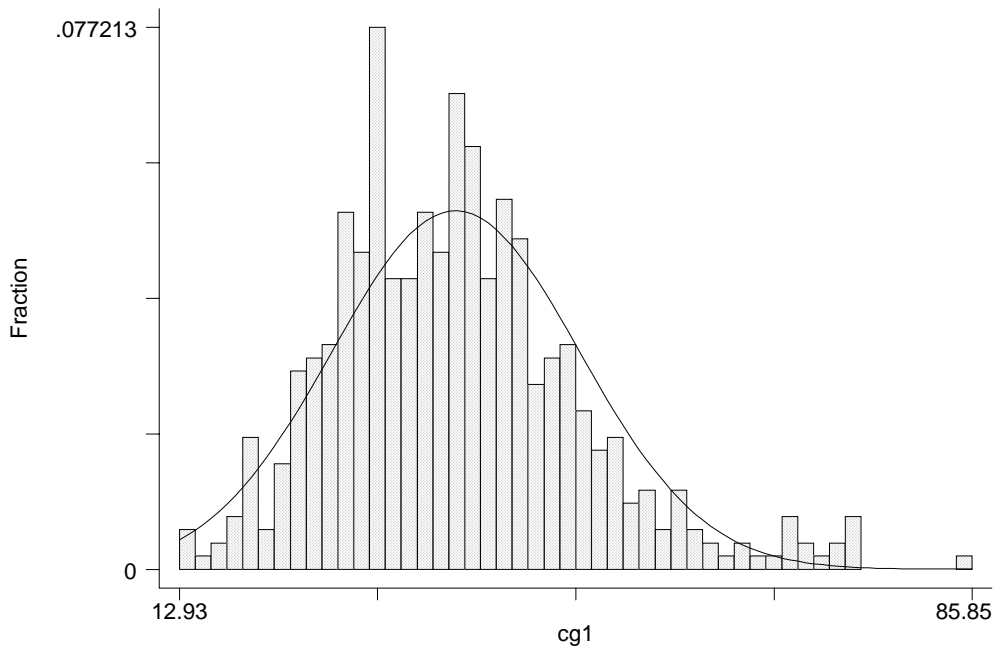
Figure 2. Corporate Governance and Tobin's *q*

Scatter plot of corporate governance index (CG1) versus Tobin's *q*. Fitted line includes all 531 observations for which we have data on CG1 and Tobin's *q*. Outliers (highest and lowest 5% of values for Tobin's *q*) do not appear in the figure.
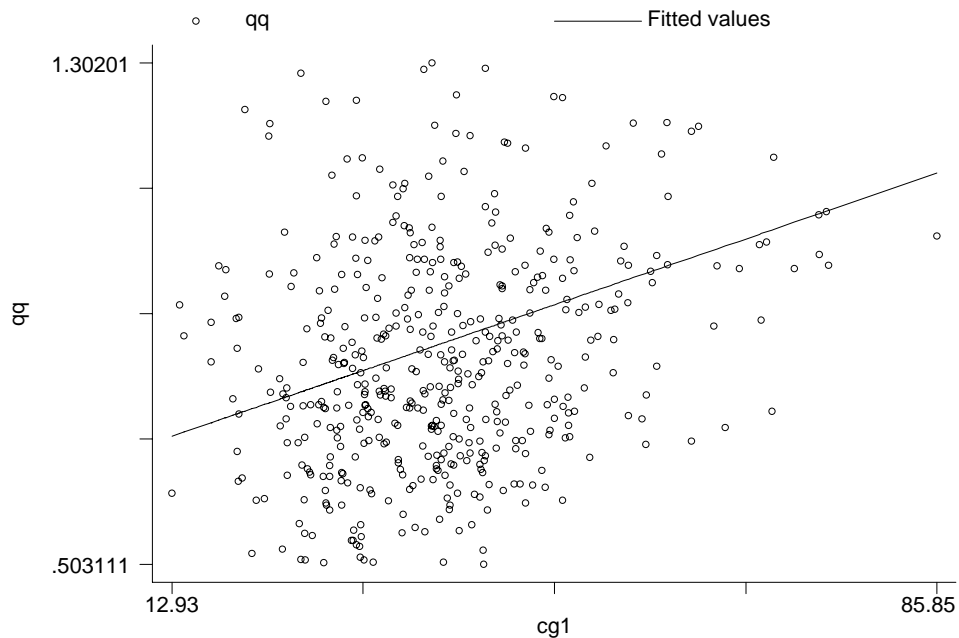
Figure 3: Corporate Governance and Market-to-Book Ratio

Scatter plot of corporate governance index (CG1) versus market/book ratio.   Fitted line includes all 531 observations for which we have data on CG1 and market/book ratio.   Outliers (highest and lowest 5% of values for market/book ratio) do not appear in the figure.
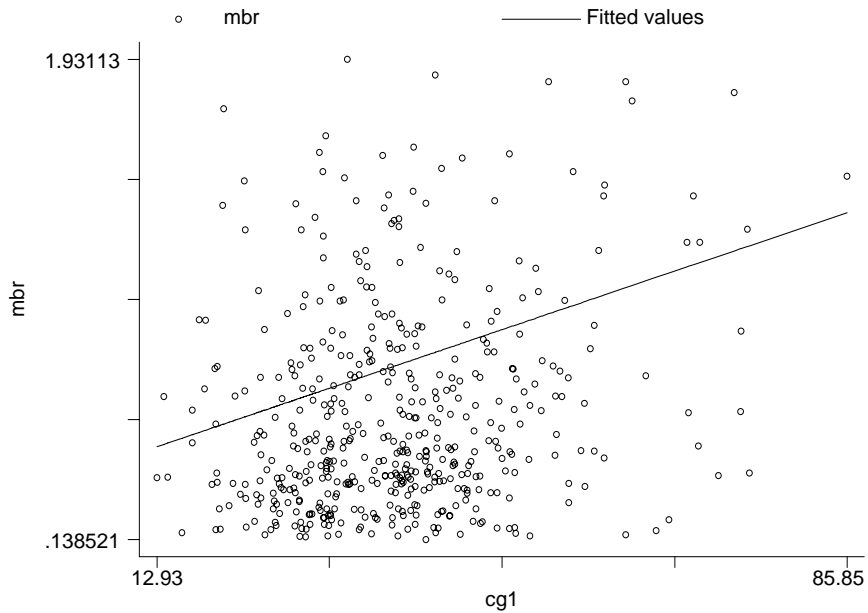
Figure 4: Corporate Governance and Market-to-Sales Ratio

Scatter plot of corporate governance index (CG1) versus market/sales ratio.   Fitted line includes all 531 observations for which we have data on CG1 and market/sales ratio.   Outliers (highest and lowest 5% of values for market/sales ratio) do not appear in the figure.
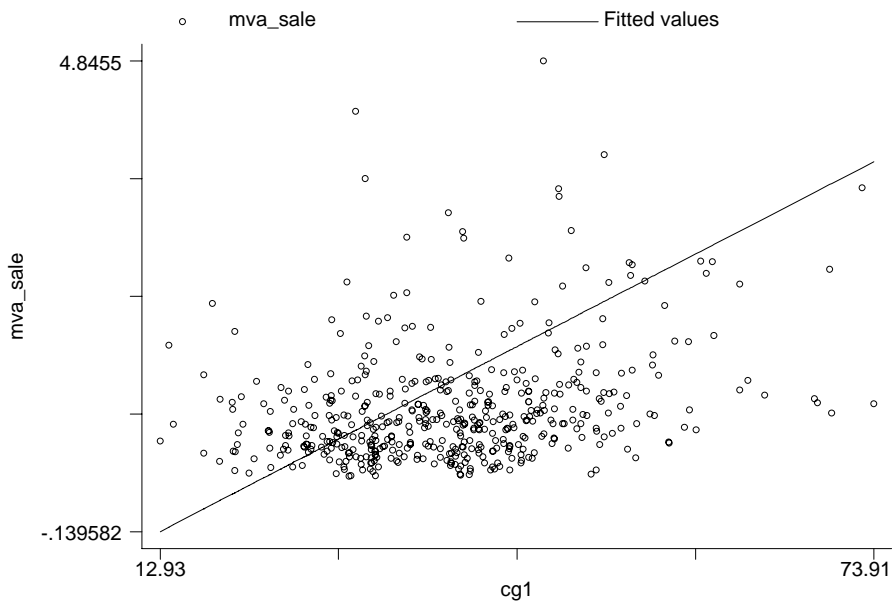
Table 1. Corporate Governance Index: Elements and Summary Statistics

A. Shareholder Rights Subindex

Variable	Summary of the Variable (yes = 1, no = 0)	Responses	No. of "1" Responses	Mean
A.1	Firm uses cumulative voting for election of directors. Cumulative voting is the default rule under the Commercial Code, but companies can opt out by majority shareholder vote. Under the Securities and Exchange Act, for annual meetings beginning in 2002, companies can opt out of cumulative voting only with a 2/3 of shareholder vote. For companies with assets greater than KRW2 trillion, the controlling shareholder can vote a maximum of 3% of the outstanding shares on this issue. This rule will make opting out very hard, but does not affect companies that have already opted out. Survey question I-1-(1).	540	34	0.06
A.2	Firm permits voting by mail. Survey question I-1-(2).	540	71	0.13
A.3	Firm chooses shareholder meeting date to not overlap with other firms in same industry, or chooses meeting location to encourage attendance. Survey question I-7-2.[22]	508	89	0.18
A.4	Firm discloses director candidates to shareholders in advance of shareholder meeting. Under the Securities and Exchange Act, disclosure of this information is required for annual meetings beginning in 2002. Survey question II-5-(3).	540	96	0.18
A.5	Board approval is required for related party transactions. For companies that belong to the top-30 *chaebol*, the Monopoly Regulation and Fair Trade Act requires this approval if transaction size is greater than 10% of equity capital or KRW10 billion. 58 of the 111 firms in our sample that belong to top-30 *chaebol* (52%) answered yes, as did 123 of the remaining 429 firms (29%). For top-30 *chaebol* firms that answered no, the responding officer may not have known about this legal requirement (in force only since 1999). Since March 28, 2001, companies with assets greater than KRW2 trillion must obtain board approval for a related-party transaction involving more than 1% of book asset value or total sales. The regulations to implement this requirement were adopted in July 2001, after the period when the survey was conducted. Survey question II-5-(5).	540	181	0.34

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[22] Almost all respondents treated the four possible responses for question I-7-2 as mutually exclusive.   Only 8 respondents checked more than one response.   No respondent checked both of the responses that we count as "positive" responses.

B. Board of Directors in General Subindex

Variable	Summary of the Variable (yes = 1, no = 0)	Responses	No. of "1" Responses	Mean
B.1	Directors attend at least 75% of meetings, on average. Survey question II-2.	482	266	0.55
B.2	Directors' positions on board meeting agenda items are recorded in board minutes. Survey question II-5-(6)	540	223	0.41
B.3	CEO and board chairman are different people. Banks were more likely than other firms to do so (4/17 banks (23%), versus 21/523 other firms (4%). Survey question II-5-(7).	540	27	0.05
B.4	A system for evaluating directors exists. Survey question II-5-(8).	540	36	0.07
B.5	A bylaw to govern board meetings exists. There is no legal requirement for such a bylaw, but companies must disclose in their annual report whether they have one or not. Survey question II-6.	540	381	0.71
B.6	Firm holds four or more regular board meetings per year. Survey question II-5-(1).	356	260	0.73

C. Outside Directors Subindex

Variable	Summary of the Variable (yes = 1, no = 0)	Responses	No. of "1" Responses	Mean
C.1	Firm has at least 50% outside directors. Under the Securities and Exchange Act and the Banking Act, all listed companies must have at least 25% outside directors; banks (regardless of size) and companies with assets greater than KRW2 trillion must have at least 50% outside directors and at least 3 outside directors. Survey questions II-1 and III-1.	527	86	0.16
C.2	Firm has more than 50% outside directors. Survey questions II-1 and III-1.	527	33	0.06
C.3	Firm has one or more foreign outside directors. Survey question II-1-2.	540	37	0.07
C.4	Firm has outside director nominating committee. This committee is required by the Banking Act and the Securities and Exchange Act for banks (regardless of size) and firms with assets greater than KRW2 trillion. Survey question III-3-9.	540	75	0.14
C.5	Outside directors do not receive retirement pay. Survey question III-4-3-(3)	320	281	0.88
C.6	Outside directors can obtain advice from outside experts at the company's expense. The Securities & Exchange Act was revised to require this for listed firms, [describe date of implementing regulations]. Survey question III-4-3-(5).	320	77	0.24
C.7	Firm has a system for evaluating outside directors or plans to have one. This question potentially overlaps	509	155	0.30

	with question B.4 (firm has a system for evaluating directors), but the correlation coefficient between the two questions was only 0.14. Survey question III-4-5.			
C.8	Shareholders approve outside directors' aggregate pay at shareholder meeting (separate from shareholder approval of all directors' aggregate pay). Question III-4-7.	482	48	0.10
C.9	Outside directors attend at least 75% of meetings, on average. Survey question III-5.	465	197	0.42
C.10	Firm has code of conduct for outside directors. Survey question III-9-(1).	540	43	0.08
C.11	Firm has designated a contact person to support outside directors. Survey question III-9-(2).	540	274	0.51
C.12	A board meeting exclusively for outside directors exists. Survey question III-9-(3) and III-9-1.	540	24	0.04
C.13	Firm has not lent outside directors funds to purchase unsubscribed shares from the company. Survey questions III-4-9, III-4-10. In Korea, unsubscribed shares are often sold to directors at a discounted price. 27 firms sold unsubscribed shares to outside directors, of these 8 lent directors funds to buy the shares.	540	532	0.99

D. Audit Committee and Internal Auditor Subindex

Variable	Summary of the Variable (yes = 1, no = 0)	Responses	No. of "1" Responses[23]	Mean
D.1	Audit committee of the board of directors exists. The Banking Act and the Securities and Exchange Act require banks (regardless of size) and listed firms with assets greater than KRW2 trillion to have an audit committee, consisting of at least 2/3 outside directors, with an outside director as chair. Other firms may have either an audit committee or an internal auditor. Survey question IV-1-5.[24]	518	95	0.18
D.2	Ratio of outside directors in audit committee: 1 if ratio is more than 2/3 (the legal minimum for companies that must have an audit committee); 0 otherwise. Survey question IV-1-5.	95	56	0.59
D.3	Bylaws governing audit committee (or internal auditor) exists. Survey question IV-1-1.	489	321	0.66

[23] The small sample size for questions D.4, D.9, and D.11 is because these questions apply only to companies with an audit committee.

[24] Due to the phrasing of the survey, respondents could not directly answer "yes" or "no" to a single question about whether they had an audit committee, but instead had to provide information on the composition of the committee.   This led some respondents not to answer this question, either because they had no committee (20 firms) or (we infer) because the respondent did not know the composition of the committee (2 firms).   To avoid loss of sample size, we determined directly from the KSE whether these 22 firms had audit committees.

D.4	Audit committee includes someone with expertise in accounting. Survey question IV-1-3.	95	71	0.75
D.5	Audit committee (or internal auditor) recommends the external auditor at the annual shareholder meeting. Survey question IV-1-6.	495	369	0.75
D.6	Audit committee (or internal auditor) approves the appointment of the internal audit head. Survey question IV-2-1.	404	192	0.48
D.7	Minutes written for each audit committee (internal auditor) meeting. Survey question IV-2-2.	267	164	0.61
D.8	Report on audit committee's (or internal auditor's) activities at the annual shareholder meeting. Survey question IV-2-4.	473	422	0.89
D.9	Audit committee members attend at least 75% of meetings, on average. Survey question IV-7.	72	68	0.94
D.10	Audit committee (or internal auditor) meets with external auditor to review financial statements. Survey question IV-1-5.	492	332	0.67
D.11	Audit committee meets two or more times per year. Survey question IV-7.	74		

E.   Disclosure to Investors Subindex

Variable	Summary of the Variable (yes = 1, no = 0)	Responses	No. of "1" Responses	Mean
E.1	Firm conducted investor relations activity in year 2000. Survey question I-8.	540	21	0.04
E.2	Firm website includes resumes of board members. Survey question II-5-(4).	540	47	0.09
E.3	English disclosure exists. Survey question V-7.	498	24	0.05

P.   Ownership Parity Subindex

Variable	Summary of the Variable (continuous between 0 and 1; in our sample, minimum = 0.32; maximum = 1)	Sample Size	Number of "1" Responses	Mean
Parity	This variable measures the *lack of* disparity between total voting control and direct ownership by the largest shareholder. Parity = 1 - ownership disparity, where ownership disparity = ownership by all affiliated shareholders - ownership by largest shareholder.	531	not applicable	0.83

Table 2. Other Variables

Variables	Descriptions
Tobin's q	[Book value of debt plus market value of common equity], divided by book value of assets. Korean accounting rules require reasonably frequent updating of book values to reflect market values, so book value of assets should not differ markedly from current values. Market value of equity is measured at June 29 2001. If a company is de-listed before June 29, 2001, the most recent figure is used. [*Source for market values: Korea Stock Exchange*] Book values for this and other variables are measured at December 26, 2000, or if the firm's fiscal year ends on another date, the fiscal year end between July 2000 and June 2001. If more than one fiscal year ends during the period, we use the most recent year-end. [*Source for accounting data: Korea Listed Companies Association*]
Market-to-Book Ratio	Market value of common equity divided by book value of common equity
Market-to-Sales Ratio	Market value of common equity divided by sales
Book Value of Debt	Book value of total liabilities in billion won.
Book Value of Assets	Book value of assets in billion won.
Book Value of (Common) Equity	Book value of assets - book value of debt - book value of preferred stock.
Debt/Equity Ratio	Book value of debt divided by market value of common equity
Market Value of (Common) Equity	Market value of common equity in billion won.
Years of Listing	Number of years since original listing [*Source: Korea Listed Companies Association*].
Sales Growth	Average growth rate of sales during the 5 fiscal years from 1996 through 2000. If sales figures are available for less than five years, we compute the average growth rate during the period for which data is available.
Asset Size Dummy	1 if book value of assets is greater than KRW2 trillion; 0 otherwise. 72 firms in the sample have asset size greater than KRW2 trillion.
Bank Dummy	1 if the firm is a commercial bank or a merchant bank; 0 otherwise
Chaebol30 Dummy	1 if a member of one of the top-30 c*haebol* as of April 2000; 0 otherwise. The Fair Trade Commission identifies the top-30 chaebols and their members, in April of each year. 111 firms in the sample were members of a top-30 chaebol. [*Source: Fair Trade Commission press releases*].
Sole Ownership	Percentage share ownership by largest shareholder. Ownership for this and other variables is measured at year-end 2000. [*Source for ownership data: Korea Stock Exchange*]
Total Affiliated Ownership	Percentage share ownership by all affiliated shareholders
Ownership Parity	1 - ownership disparity, where ownership disparity = total affiliated ownership - sole ownership
Industry Dummy Variables	Dummy variables for membership in one of twenty 2-digit industries (based on KSIC codes). Our sample includes only 12 out of 20 industry categories.

Table 3. Descriptive Statistics

A. Corporate Governance Indices

	Code	No. of Obs.	Mean	Stand. Dev.	Min.	Max.
Shareholder Rights	A	540	3.50	3.69	0.00	16.00
Board of Directors in General	B	540	7.79	4.35	0.00	20.00
Outside Directors	C	540	4.35	3.27	0.00	16.40
Audit Committee and Internal Auditor	D	540	11.01	5.24	0.00	20.00
Disclosure to Investors	E	540	1.17	3.14	0.00	20.00
Ownership Parity	P	531	16.62	2.82	6.40	20.00
Overall Indices	CG1	531	38.35	11.39	12.93	85.85
	CG2	531	37.00	11.61	10.78	85.30
	CG3	531	40.08	11.69	12.57	86.00
	CG4	540	27.19	13.46	0.00	82.31
	CG5	540	27.82	13.36	0.00	82.36
	CG6	540	29.34	13.85	0.00	82.50

B. Other Variables

	No. of Obs.	Mean	Stand. Dev.	Min.	Max.
Tobin's q	539	0.85	0.29	0.32	3.04
Market-to-Book Ratio	538	0.79	1.64	-7.55	21.61
Market-to-Sales Ratio	539	1.81	6.69	0.02	149.92
Market Value of Common Equity	539	357.39	1860.94	2.01	29038.07
Book Value of Common Equity	539	438.78	1791.23	-121.37	31834.55
Book Value of Debt	539	1479.63	6724.70	1.23	77265.05
Book Value of Asset	539	1923.39	7617.29	10.26	81521.57
Debt/Equity Ratio	538	8.12	23.65	0.05	348.48
Years of Listing	540	15.84	9.49	0.00	45.00
Sales Growth	517	0.14	0.31	-0.29	5.85
Asset Size Dummy	540	0.13	0.34	0.00	1.00
Bank Dummy	540	0.03	0.17	0.00	1.00
Chaebol 30 Dummy	540	0.21	0.40	0.00	1.00
Sole Ownership	531	20.40	16.32	0.14	100.00

C. Correlation Matrix of Selected Variables

*, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels.

	CG1	Tobin's q	Market /Book	Market / Sales	Debt / Equity	ln(assets)	Years of listing	Sales Growth (%)	Asset Size Dummy	Bank Dummy	Chaebol30 Dummy	Parity
CG1	1.00											
Tobin's q	0.23***	1.00										
Market/Book	0.08*	0.52***	1.00									
Market/Sales	0.38***	0.08*	0.01	1.00								
Debt/Equity	0.24***	0.06	-0.03	0.02***	1.00							
ln (assets)	0.58***	0.01	-0.07	0.19***	0.34***	1.00						
Years of listing	0.07	-0.13***	-0.05	0.03	0.18***	0.21***	1.00					
Sales Growth (%)	0.11***	0.10**	0.04	-0.01	-0.04	0.08*	-0.05	1.00				
Asset Size Dummy	0.59***	0.16***	0.07	0.22***	0.31***	0.74***	0.10**	0.07	1.00			
Bank Dummy	0.42***	0.09**	-0.02	0.21***	0.58***	0.44***	0.10**	0.05	0.40***	1.00		
Chaebol30 Dummy	0.26***	0.04	0.01	-0.04	-0.02	0.43***	0.14***	0.12***	0.37***	-0.04	1.00	
Parity	0.07*	0.05	0.03	0.20***	0.38***	0.11**	-0.12***	-0.02	0.10**	0.26***	0.00	1.00

D. Correlation Matrix of Corporate Governance Subindices

*, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels.

	A	B	C	D	E	F
A	1.00					
B	0.33***	1.00				
C	0.38***	0.42***	1.00			
D	0.27***	0.30***	0.49***	1.00		
E	0.25***	0.19***	0.33***	0.21***	1.00	
P	0.10**	0.14***	0.17***	0.02	0.08*	1.00

Table 4.   OLS for Overall Index and Subindices
(Whole Sample)

*, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels.   T-values in absolute terms are reported in the parentheses.

| | Tobin's q | | | | | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Overall Index (CG1)	0.0059***						
	(5.85)						
Shareholder Rights (A)		0.0081***					
		(3.38)					
BOD in General (B)			0.0056**				
			(2.50)				
Outside Directors (C)				0.0082**			
				(2.29)			
Audit Committee (D)					0.0043**		
					(2.01)		
Disclosure (E)						0.0114***	
						(3.35)	
Ownership Parity (P)							0.0193***
							(5.51)
Debt/Equity	0.0008*	0.0007*	0.0009**	0.0009**	0.0009**	0.0011***	0.0009***
	(1.82)	(1.67)	(2.06)	(2.27)	(2.34)	(2.69)	(2.61)
Log (asset)	-0.0127*	0.0048	0.0068	0.0019	0.0052	0.0012	0.0129*
	(1.72)	(0.64)	(0.86)	(0.20)	(0.64)	(0.18)	(1.71)
Log (years of listing)	-0.0530***	-0.0528***	-0.0613***	-0.0562***	-0.0604***	-0.0543***	-0.0605***
	(4.19)	(4.09)	(4.84)	(4.41)	(4.80)	(4.29)	(4.57)
Sales Growth	0.0186	0.0288	0.0288	0.0287	0.0281	0.0351	0.0169
	(0.71)	(1.11)	(1.17)	(1.13)	(1.10)	(1.43)	(0.69)
Sole Ownership	-0.0002	0.0000	-0.0002	-0.0002	-0.0002	-0.0002	-0.0013**
	(0.31)	(0.05)	(0.28)	(0.34)	(0.32)	(0.35)	(2.07)
Intercept	0.7569***	0.8137***	0.8332***	0.8592***	0.8303***	0.8723***	0.5537***
	(8.25)	(9.46)	(9.45)	(9.47)	(9.09)	(9.97)	(5.52)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	493	493	493	493	493	493	493
Adjusted R-Square	0.1700	0.1209	0.1141	0.1135	0.1119	0.1279	0.1656

Table 4a. OLS for Subindices

(Whole Sample)

*, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. T-statistics in absolute terms are reported in the parentheses.

| | Tobin's q | | | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
	A	B	C	D	E	P
Subindex	0.0043*	0.0023	-0.00003	0.0017	0.0090***	0.0169***
	(1.65)	(1.00)	(0.01)	(0.86)	(2.96)	(5.20)
[A + B + C + D + E + P]	0.0048***	0.0054***	0.0055***	0.0057***	0.0042***	0.0033***
- Subindex	(4.99)	(5.49)	(5.57)	(5.75)	(4.81)	(3.79)
Debt/Equity	0.0008*	0.0008*	0.0008*	0.0007*	0.0008**	0.0008**
	(1.81)	(1.83)	(1.88)	(1.74)	(1.99)	(1.92)
Log (asset)	-.0128067*	-0.0135*	-0.0103	-0.0121	-0.0144	-0.0044
	(1.68)	(1.77)	(1.32)	(1.59)	(1.88)	(0.57)
Log (years of listing)	-0.0544***	-0.0523***	-0.0554***	-0.0521***	-0.0524***	-0.0564***
	(4.20)	(4.06)	(4.32)	(4.07)	(4.09)	(4.47)
Sales Growth	0.0188	0.0188	0.0189	0.0196	0.0216	0.0122
	(0.65)	(0.65)	(0.65)	(0.68)	(0.75)	(0.43)
Sole Ownership	-0.0002	-0.0002	-0.0002	-0.0002	-0.0001	-0.0009
	(0.28)	(0.31)	(0.29)	(0.32)	(0.25)	(1.48)
Intercept	0.7792***	0.7718***	0.7528***	0.7704***	0.8013***	0.5983***
	(7.46)	(7.39)	(7.10)	(7.39)	(0 7.61)	(5.29)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	493	493	493	493	493	493
Adjusted R-Square	0.1348	0.1372	0.1381	0.1401	0.1387	0.1611

Table 5, Panel *A*.   OLS Results for Individual Elements of the Corporate Governance Index
(Whole Sample)

Ordinary least squares regression results for individual components of the corporate governance index.   Control variables are the same as in Table 4. *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels.   Significant results (at 5% level or better) are shown in boldface.   T-values in absolute terms are reported in parentheses and sample sizes are reported in brackets.

A1	0.0111 (0.34) [493]	B4	0.0267 (0.98) [493]	C6	0.0087 (0.29) [297]	**D1**	**0.0819*** (2.65) [493]**	D9	0.0716 (1.12) [70]
A2	0.0181 (0.75) [493]	B5	0.0197 (0.95) [493]	C7	0.0331* (1.74) [469]	D2	0.0047 (0.10) [88]	**D10**	**0.0360** (2.01) [454]**
A3	0.0329 (1.29) [470]	B6	0.0307 (1.15) [324]	C8	-0.0589* (1.87) [444]	D3	0.0565 (2.74) [450]	D11	0.0849 (1.08) [74]
A4	**0.0782*** (3.64) [493]**	**C1**	**0.1654*** (5.08) [485]**	C9	-0.0058 (0.29) [429]	D4	0.0356 (0.71) [87]	**E1**	**0.1239** (2.54) [493]**
A5	0.0292 (1.57) [493]	**C2**	**0.0758** (1.96) [485]**	C10	0.0137 (0.49) [493]	D5	0.0032 (0.16) [455]	**E2**	**0.0935*** (2.82) [493]**
B1	0.0142 (0.73) [449]	C3	0.0474 (1.19) [493]	C11	0.0172 (0.92) [493]	D6	0.0212 (0.98) [377]	E3	0.0450 (1.38) [458]
B2	0.0341* (1.89) [493]	C4	0.0296 (0.97) [493]	C12	0.0672 (1.53) [493]	D7	0.0220 (0.79) [249]	**P**	**0.0193*** (5.51) [493]**
B3	0.0134 (0.28) [493]	C5	0.0365 (1.14) [297]	C13	-0.0975 (0.75) [493]	D8	0.0081 (0.26) [438]		

Table 5, Panel *B*:   Details for Significant Elements of Corporate Governance Index

Element	Description	Regression Results (from Panel A)
A4	Firm discloses director candidates to shareholders in advance of shareholder meeting.	0.0782*** (3.64)
C1	Firm has at least 50% outside directors (legally required for banks and firms with assets > 2 trillion KRW).	0.1654*** (5.08)
C2	Firm has more than 50% outside directors	0.0758** (1.96)
D1	An audit committee of the board of directors exists (legally required for banks and firms with assets > 2 trillion KRW).	0.0819*** (2.65)
D10	Audit committee (or internal auditor) meets with external auditor to review financial statements.	0.0360** (2.01)
E1	Firm conducted investor relations activity in year 2000.	0.1239** (2.54)
E2	Firm website includes resumes of board members.	0.0935*** (2.82)
P	Parity = 1 - ownership disparity, where ownership disparity = ownership by all affiliated shareholders - ownership by largest shareholder.	0.0193*** (5.51)

Table 6. OLS in Sub-Samples

*, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels.   T-values in absolute terms are reported in the parentheses.

	Tobin's q					
	(1)	(2)	(3)	(4)	(5)	(6)
	Banks	Non-Banks	*Chaebol*	Non-*Chaebol*	Asset > KRW2 trillion	Asset < KRW2 trillion
CG1	0.0005	0.0063***	0.0088***	0.0051***	0.0085**	0.0048***
	(0.69)	(5.78)	(3.19)	(5.05)	(2.32)	(4.53)
Debt / Equity	-0.00002	0.0029***	0.0005	0.0010**	-0.0004	0.0040***
	(0.35)	(4.66)	(0.33)	(1.97)	(1.28)	(5.10)
Log (asset)	0.0083	-0.0156*	0.0103	-0.0242**	-0.0364	-0.0352***
	(1.04)	(1.95)	(0.69)	(2.32)	(1.11)	(3.19)
Log (years of listing)	-0.0247***	-0.0563***	-0.0337	-0.0562***	-0.0180	-0.0554***
	(3.04)	(4.25)	(1.25)	(3.82)	(0.60)	(3.55)
Sales Growth	-0.0014	0.0253	0.0415**	-0.0131	0.0412	0.0310
	(0.05)	(1.02)	(2.25)	(0.14)	(0.29)	(1.22)
Sole Ownership	0.0000	-0.0001	0.0010	-0.0003	0.0007	-0.0001
	(0.22)	(0.17)	(0.62)	(0.41)	(0.60)	(0.12)
Intercept	0.9546***	0.7523	0.4545**	0.8497***	0.6878**	0.8938***
	(25.48)	(7.86)	(2.22)	(8.85)	(2.44)	(8.76)
Industry Dummies	No	Yes	Yes	Yes	Yes	Yes
Number of Observations	17	476	103	390	65	428
Adjusted R-Square	0.6949	0.1632	0.3395	0.1594	0.3400	0.1528

Table 7.   Test of Endogeneity

Wooldridge's (2000) test for endogeneity. The residual in each regression is interpreted as the endogenous component of the independent variable that is being tested for endogeneity (CG1 and subindices A, B, C, D, E, and P).   A positive (negative) residual indicates a positive correlation with the error term for the dependent variable, and implies that OLS regression coefficients are downward (upward) biased.   *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels.   T-values in absolute terms are reported in the parentheses.

	Tobin's q						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Overall Index (CG1)	0.0157***						
	(4.46)						
Shareholder Rights (A)		0.1189***					
		(4.28)					
BOD in General (B)			0.2212***				
			(4.27)				
Outside Directors (C)				0.0374***			
				(4.23)			
Audit Committee (D)					0.0413		
					(4.22)		
Disclosure (E)						0.0878***	
						(4.34)	
Ownership Parity (P)							0.2297***
							(4.38)
Residual	-0.0105***	-0.1117***	-0.2161***	-0.0339***	-0.0385***	-0.0781***	-0.2111***
	(3.00)	(4.06)	(4.16)	(3.62)	(3.82)	(3.96)	(4.03)

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Debt/Equity	0.0005	-0.0021***	-0.0017***	0.0005	0.0008*	0.0021***	0.0006
	(1.08)	(2.43)	(2.14)	(1.25)	(1.93)	(4.29)	(1.51)
Log (asset)	-0.0533***	-0.0863***	-0.1765***	-0.0325***	-0.0494***	-0.0678***	0.0281***
	(3.27)	(3.58)	(3.96)	(2.55)	(3.06)	(3.44)	(3.42)
Log (years of listing)	-0.0420***	0.0394	-0.1290***	-0.0442***	-0.0670***	-0.0183	-0.0710***
	(3.18)	(1.49)	(6.30)	(3.34)	(5.27)	(1.17)	(5.29)
Sales Growth	-0.0038	-0.0151	-0.0976***	0.0170	-0.0052	0.0558**	-0.1475***
	(0.14)	(0.52)	(2.42)	(0.65)	(0.19)	(2.18)	(3.00)
Sole Ownership	-0.0001	0.0039***	0.0031***	-0.00002	0.0004	0.0001	-0.0124***
	(0.13)	(3.35)	(3.04)	(0.03)	(0.57)	(0.12)	(4.39)
Intercept	0.6272***	0.5342***	0.7945***	0.9486***	0.7973***	1.1293***	-2.5064***
	(1.21)	(4.71)	(8.62)	(9.95)	(8.47)	(9.91)	(3.26)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	493	493	493	493	493	493	493
Adjusted R-Square	0.1830	0.1481	0.1437	0.1356	0.1378	0.1519	0.1917

Table 8. Instrument Reliability: Asset Size Dummies and Corporate Governance

*, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels.   T-values in absolute terms are reported in the parentheses.   Asset size dummies are as follows: [to come].   Dummy 5 (ln(assets) = 7.6; assets = 2 trillion won) is the level at which a number of significant corporate governance rules, relating primarily most related to outside directors and audit committees, become mandatory.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	CG1	A	B	C	D	E	P
Asset Size Dummy 1	-4.0977*	-0.8618	-2.4407***	-0.1928	-0.4745	-0.6492	-0.7797
	(1.89)	(0.91)	(2.47)	(0.36)	(0.35)	(1.13)	(1.24)
Asset Size Dummy 2	0.1134	-0.2537	0.4443	-0.0700	0.6552	-0.2542	-0.2450
	(0.07)	(0.36)	(0.58)	(0.15)	(0.73)	(0.46)	(0.48)
Asset Size Dummy 3	-1.8759	-0.6825	-0.3234	-0.4397	-0.5479	-0.9339**	0.6711
	(1.14)	(1.06)	(0.41)	(0.95)	(0.64)	(2.01)	(1.35)
Asset Size Dummy 4	-3.2501	-0.5815	-0.4993	-0.2643	-1.9877*	-0.2071	-0.1050
	(1.58)	(0.73)	(0.51)	(0.42)	(1.82)	(0.38)	(0.15)
Asset Size Dummy 5	8.6703***	0.5067	0.2907	3.9173***	4.7754***	0.8737	0.4359
(>2 trillion won)	(3.53)	(0.51)	(0.26)	(5.25)	(4.73)	(0.98)	(0.60)
Asset Size Dummy 6	2.6736	1.5702	1.5546	1.2823	-2.1517*	0.8617	0.9508
	(0.73)	(1.16)	(1.32)	(1.46)	(1.80)	(0.58)	(1.06)
Asset Size Dummy 7	3.2205	-0.2885	-1.7818	-0.5065	0.4417	2.2627	1.9170**
	(0.75)	(0.16)	(1.23)	(0.41)	(0.31)	(1.06)	(2.04)
Debt/Equity	0.0093	0.0199**	0.0071	0.0023	0.0019	-0.0171***	-0.0002
	(0.56)	(2.27)	(0.71)	(0.28)	(0.28)	(3.00)	(0.03)
Log (asset)	3.5584***	0.9730	0.9761	0.6229	1.3541*	0.8593*	-0.4177
	(2.63)	(1.71)	(1.57)	(1.56)	(1.94)	(1.89)	(0.97)
Log (years of listing)	-0.3776	-0.6805***	0.3613	-0.1438	0.2948	-0.2621	0.1611
	(0.56)	(2.74)	(1.22)	(0.88)	(1.00)	(1.07)	(0.78)
Sales Growth	2.2149**	0.3992	0.6277*	0.4403*	0.7403	-0.3163	0.8733***
	(2.21)	(0.91)	(1.66)	(1.80)	(1.22)	(0.86)	(3.33)
Sole Ownership	-0.0047	-0.0329***	-0.0132	-0.0017	-0.0142	-0.0025	0.0527***
	(0.19)	(3.39)	(1.09)	(0.20)	(1.06)	(0.27)	(7.72)
Intercept	18.7777***	2.6348	1.4594	-0.5416	1.1880	-2.5107	16.9357***
	(3.59)	(1.10)	(0.56)	(0.38)	(0.41)	(1.50)	(11.15)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	493	493	493	493	493	493	493
Adjusted R-Square	0.4401	0.2071	0.2146	0.4704	0.2715	0.2563	0.1581

Table 9.   2SLS / 3SLS for Overall Index and Subindices
(Whole Sample)

A. Overall Index CG1 and Subindex A (Shareholder Rights)

*, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels.   T-values in absolute terms are reported in the parentheses.

	2SLS		3SLS		2SLS		3SLS	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	CG1	Tobin's q	CG1	Tobin's q	A	Tobin's q	A	Tobin's q
CG1 or A		0.0157***		0.0157***		0.1189***		0.1189**
		(4.21)		(3.88)		(4.21)		(1.90)
Tobin's q			11.6964				14.8517***	
			(1.04)				(2.74)	
Debt / Equity	0.0150	0.0005	0.0066	0.0005	0.0237***	-0.0021***	0.0129	-0.0021
	(0.97)	(1.12)	(0.34)	(1.04)	(2.75)	(2.44)	(1.39)	(1.13)
Log (asset)	2.3970***	-0.0533***	2.5813***	-0.0533***	0.5931***	-0.0863***	0.8271***	-0.0863
	(5.29)	(3.13)	(5.32)	(2.94)	(3.37)	(3.55)	(3.52)	(1.61)
Log (years of listing)	-0.6020	-0.0420***		-0.0420***	-0.7643***	0.0394		0.0394
	(0.89)	(3.13)		(2.89)	(3.07)	(1.46)		(0.66)
Sales Growth	2.4171**	-0.0038	2.0188	-0.0038	0.4139	-0.0151	-0.0919	-0.0151
	(2.45)	(0.14)	(1.47)	(0.12)	(0.99)	(0.53)	(0.14)	(0.22)
Sole Ownership	-0.0024	-0.0001	-0.0011	-0.0001	-0.0337***	0.0039***	-0.0320***	0.0039
	(0.09)	(0.13)	(0.04)	(0.12)	(3.43)	(3.30)	(2.54)	(1.53)
Asset Size Dummy	10.5334***		8.6026***		1.3887*		-1.0630	
	(5.26)		(3.15)		(1.80)		(0.80)	
Intercept	20.7999***	0.6272***	9.6508	0.6272***	3.5252**	0.5342***	-10.6316***	0.5342*
	(6.32)	(5.98)	(0.89)	(5.03)	(2.19)	(4.56)	(2.03)	(1.91)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	493	493	493	493	493	493	493	493
Adjusted R-Square	0.4183	0.1339	0.4512	-0.0189	0.1934	0.1339	-0.1977	-3.2584

B. Subindices B (Board in General) and C (Outside Directors)

*, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels.   T-values in absolute terms are reported in the parentheses.

	2SLS		3SLS		2SLS		3SLS	
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	B	Tobin's q	B	Tobin's q	C	Tobin's q	C	Tobin's q
B or C		0.2212***		0.2212		0.0374***		0.0374***
		(4.21)		(0.92)		(4.21)		(3.87)
Tobin's q			-6.8103				3.7639	
			(1.22)				(1.15)	
Debt / Equity	0.0108	-0.0017***	0.0158*	-0.0017	0.0052	0.0005	0.0025	0.0005
	(1.09)	(2.17)	(1.64)	(0.49)	(0.65)	(1.22)	(0.45)	(1.13)
Log (asset)	0.7264***	-0.1765***	0.6191***	-0.1765	0.4475***	-0.0325***	0.5068***	-0.0325***
	(3.72)	(3.91)	(2.55)	(0.86)	(3.57)	(2.55)	(3.59)	(2.43)
Log (years of listing)	0.3505	-0.1290***		-0.1290	-0.1937	-0.0442***		-0.0442***
	(1.24)	(6.26)		(1.36)	(1.18)	(3.34)		(3.06)
Sales Growth	0.5950	-0.0976***	0.8269	-0.0976	0.4554*	0.0170	0.3272	0.0170
	(1.64)	(2.39)	(1.21)	(0.51)	(1.88)	(0.65)	(0.82)	(0.54)
Sole Ownership	-0.0145	0.0031***	-0.0153	0.0031	-0.0025	-0.00002	-0.0021	-0.00002
	(1.18)	(3.03)	(1.17)	(0.69)	(0.31)	(0.03)	(0.28)	(0.03)
Asset Size Dummy	0.7462		1.8704		4.4174***		3.7960***	
	(0.86)		(1.37)		(7.61)		(4.77)	
Intercept	0.7173	0.7945***	7.2090	0.7945*	0.1235	0.9486***	-3.4643	0.9486***
	(0.40)	(08.62)	(1.34)	(1.67)	(0.18)	(10.00)	(1.10)	(8.12)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	493	493	493	493	493	493	493	493
Adjusted R-Square	0.2024	0.1339	0.0585	-16.9124	0.4636	0.1339	0.4298	-0.0230

C. Subindices D (Auditing) and E (Disclosure)

*, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels.   T-values in absolute terms are reported in the parentheses.

	2SLS		3SLS		2SLS		3SLS	
	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
	D	Tobin's q	D	Tobin's q	E	Tobin's q	E	Tobin's q
D or E		0.0413		0.0413***		0.0878***		0.0878***
		(4.21)		(3.14)		(4.21)		(2.76)
Tobin's q			-7.3090				7.3298*	
			(1.17)				(1.88)	
Debt / Equity	-0.0020	0.0008*	0.0032	0.0008	-0.0154***	0.0021***	-0.0207***	0.0021***
	(-0.35)	(1.93)	(0.30)	(1.43)	(2.69)	(4.33)	(3.10)	(2.75)
Log (asset)	0.8140***	-0.0494***	0.6988***	-0.0494***	0.5929***	-0.0678***	0.7084***	-0.0678**
	(3.62)	(3.05)	(2.59)	(2.33)	(3.68)	(3.36)	(4.20)	(2.24)
Log (years of listing)	0.3762	-0.0670***		-0.0670***	-0.3772	-0.0183		-0.0183
	(1.29)	(5.25)		(3.88)	(1.61)	(1.13)		(0.75)
Sales Growth	0.9495	-0.0052	1.1984	-0.0052	-0.2474	0.0558**	-0.4971	0.0558
	(1.54)	(0.19)	(1.57)	(0.13)	(0.66)	(2.13)	(1.04)	(1.25)
Sole Ownership	-0.0113	0.0004	-0.0121	0.0004	-0.0021	0.0001	-0.0013	0.0001
	(0.84)	(0.57)	(0.83)	(0.43)	(0.20)	(0.12)	(0.14)	(0.08)
Asset Size Dummy	3.9934***		5.1999***		1.8795***		0.6695	
	(5.01)		(3.42)		(2.60)		(0.70)	
Intercept	3.7719**	0.7973***	10.7389*	0.7973***	-2.0047**	1.1293***	-8.9915**	1.1293***
	(2.33)	(8.65)	(1.79)	(5.70)	(2.07)	(9.90)	(2.40)	(5.92)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	493	493	493	493	493	493	493	493
Adjusted R-Square	0.2563	0.1339	0.1517	-0.5570	0.2144	0.1339	0.1338	-1.0045

Table 10. Robustness Check: 2SLS / 3SLS for Sub-Samples

A. Non-Banks

*, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels.   T-values in absolute terms are reported in the parentheses.

	2SLS		3SLS	
	(1) CG1	(2) Tobin's q	(3) CG1	(4) Tobin's q
CG1		0.0179***		0.0179***
		(4.23)		(3.88)
Tobin's q			3.3478	
			(0.29)	
Debt ∕ Equity	-0.0377	0.0034***	-0.0468	0.0034***
	(1.16)	(4.52)	(0.99)	(3.41)
Log (asset)	2.0696***	-0.0582***	2.1404***	-0.0582***
	(4.56)	(3.34)	(3.93)	(3.12)
Log (years of listing)	-0.1726	-0.0485***		-0.0485***
	(0.26)	(3.53)		(3.21)
Sales Growth	2.3881**	-0.00005	2.2449	-0.00005
	(2.39)	(0.00)	(1.57)	(0.00)
Sole Ownership	0.0085	-0.0001	0.0084	-0.0001
	(0.31)	(0.20)	(0.29)	(0.19)
Asset Size Dummy	9.8320***		9.2417***	
	(4.94)		(3.18)	
Intercept	21.4448***	0.5827***	18.2067	0.5827
	(6.28)	(5.05)	(1.63)	(4.28)
Industry Dummies	Yes	Yes	Yes	Yes
Number of Observations	476	476	476	476
Adjusted R-Square	0.3013	0.1237	0.3236	-0.0902

B. *Chaebols*

*, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels.   T-values in absolute terms are reported in the parentheses.

	2SLS		3SLS	
	(5)	(6)	(7)	(8)
	CG1	Tobin's q	CG1	Tobin's q
CG1		0.0135		0.0135*
		(1.48)		(1.75)
Tobin's q			6.0784	
			(0.16)	
Debt / Equity	-0.1390**	0.0011	-0.1342	0.0011
	(2.18)	(0.51)	(1.57)	(0.61)
Log (asset)	2.5393**	-0.0114	2.4005	-0.0114
	(2.28)	(0.25)	(1.82)	(0.30)
Log (years of listing)	-0.2170	-0.0328		-0.0328
	(0.14)	(1.16)		(1.20)
Sales Growth	1.4377*	0.0325	1.1221	0.0325
	(1.94)	(1.31)	(0.43)	(0.97)
Sole Ownership	0.0633	0.0006	0.0541	0.0006
	(1.14)	(0.43)	(0.62)	(0.50)
Asset Size Dummy	7.0103**		6.4351	
	(2.12)		(1.42)	
Intercept	18.5856**	0.5730	13.5776	0.3707
	(2.16)	(3.33)	(0.46)	(1.46)
Industry Dummies	Yes	Yes	Yes	Yes
Number of Observations	103	103	103	103
Adjusted R-Square	0.3904	0.2020	0.4440	0.2928

C. Non-*Chaebols*

*, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels.   T-values in absolute terms are reported in the parentheses.

	2SLS		3SLS	
	(9)	(10)	(11)	(12)
	CG1	Tobin's q	CG1	Tobin's q
CG1		0.0100***		0.0100***
		(3.48)		(3.09)
Tobin's q			5.3654	
			(0.44)	
Debt ∕ Equity	0.0101	0.0008	0.0055	0.0008
	(0.62)	(1.49)	(0.27)	(1.57)
Log (asset)	2.1815***	-0.0450***	2.3055***	-0.0450***
	(3.94)	(2.61)	(3.62)	(2.70)
Log (years of listing)	-0.2816	-0.0497***		-0.0497***
	(0.40)	(3.25)		(3.27)
Sales Growth	5.6896**	-0.0338	5.5647**	-0.0338
	(1.99)	(0.35)	(2.08)	(0.54)
Sole Ownership	-0.0165	-0.0001	-0.0149	-0.0001
	(0.54)	(0.21)	(0.52)	(0.20)
Asset Size Dummy	19.7203***		18.6593***	
	(6.34)		(4.61)	
Intercept	21.3958***	0.7838***	16.0391	0.7838***
	(5.96)	(7.98)	(1.31)	(6.50)
Industry Dummies	Yes	Yes	Yes	Yes
Number of Observations	390	390	390	390
Adjusted R-Square	0.4264	0.1312	0.4455	0.1139

Table 11. Robustness Check: Different Performance Variables

*, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels.   T-values in absolute terms are reported in the parentheses and numbers of observation are reported in the brackets.

	OLS			2SLS			3SLS		
	Tobin's q	M/B	M/S	Tobin's q	M/B	M/S	Tobin's q	M/B	M/S
CG1	0.0059***	0.0144***	0.0112***	0.0157***	0.0426***	0.0308**	0.0157***	0.0426***	0.0308**
	(5.85)	(5.48)	(4.08)	(4.21)	(4.22)	(2.16)	(3.88)	(4.16)	(2.49)
	[493]	[503]	[490]	[493]	[503]	[490]	[493]	[503]	[490]
CG2	0.0056***	0.0139***	0.0112***	0.0151***	0.0410***	0.0287**	0.0151***	0.0410***	0.0287**
	(5.77)	(5.29)	(4.17)	(4.21)	(4.22)	(2.08)	(3.90)	(4.19)	(2.49)
	[493]	[503]	[489]	[493]	[503]	[489]	[493]	[503]	[489]
CG3	0.0052***	0.0127***	0.0103***	0.0180***	0.0478***	0.0393**	0.0180***	0.0478***	0.0393**
	(5.79)	(5.49)	(4.01)	(4.12)	(4.11)	(2.16)	(3.28)	(3.64)	(2.33)
	[492]	[502]	[490]	[492]	[502]	[490]	[492]	[502]	[490]
CG4	0.0038***	0.0100***	0.0198***	0.0128***	0.0336***	0.0447*	0.0128***	0.0336**	0.0447**
	(4.42)	(4.43)	(2.93)	(4.24)	(4.11)	(1.70)	(3.57)	(3.95)	(2.04)
	[491]	[502]	[511]	[491]	[502]	[511]	[491]	[502]	[511]
CG5	0.0037***	0.0102***	0.0206***	0.0133***	0.0332***	0.0445*	0.0133***	0.0332***	0.0445**
	(4.39)	(4.41)	(2.92)	(4.31)	(4.11)	(1.70)	(3.70)	(3.99)	(2.05)
	[491]	[502]	[511]	[491]	[502]	[511]	[491]	[502]	[511]
CG6	0.0036***	0.0095***	0.0174***	0.0171***	0.0412***	0.0551*	0.0171***	0.0412***	0.0551*
	(4.48)	(4.50)	(2.68)	(4.39)	(4.11)	(1.70)	(3.34)	(3.58)	(1.98)
	[492]	[502]	[511]	[492]	[502]	[511]	[492]	[502]	[511]